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GEOLOGICAL SURVEY

W. C. Mendenhall, Director

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BIBLIOGRAPHY
OF
NORTH AMERICAN GEOLOGY
FOR
1940 AND 1941

BY
EMMA MERTINS THOM



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II

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BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY 1940 and 1941

By EMMA MERTINS THOM

INTRODUCTION

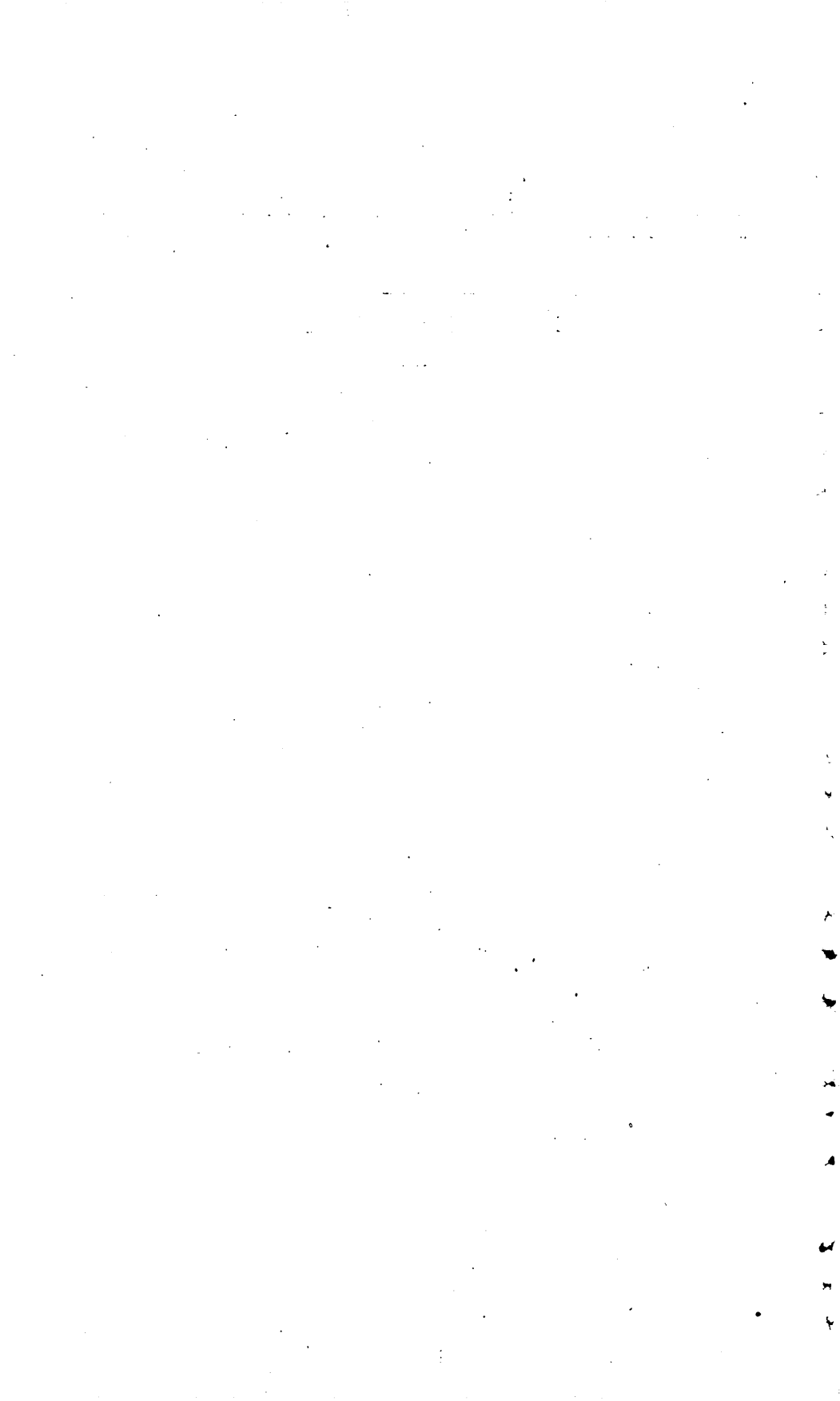
The bibliography of North American geology, including paleontology, petrology, and mineralogy, for the years 1940 and 1941 lists publications on the geology of the continent of North America and adjacent islands and on Panama, the Hawaiian Island, and Guam. It includes textbooks and papers of general character by American authors, but not those by foreign authors, except papers that appear in American publications.

The papers, with full title and medium of publication, are listed under the names of their authors, which are arranged in alphabetical order. The author list is followed by an index to the literature cited.

The bibliography of North American geology to the end of the year 1939 is contained in Bulletins 746 (Bibliography) and 747 (Index), covering the period 1785-1918; Bulletin 823, covering the period 1919-28, in which previous bibliographies and cumulations of the United States Geological Survey have been combined, and Bulletin 937, the cumulative volume for the years 1929-39, which combines Bulletins 834 (1929-30), 858 (1931-32), 869 (1933-34), 892 (1935-36), and material for 1937-39 which will not be published separately.

Bulletins 746, 747, 823, 834, and 858 were prepared by John M. Nickles; Bulletins 869, 892, and 937 by the present author.

For valued help in preparing the matter for the press, the compiler is indebted to Miss Helen M. Duncan and Miss Barbara P. Gordon.



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CORRECTIONS

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Page 283

Under Williams, James Steele.

Transfer last entry, "4. Correlation of
the Bledsoe limestone..." to page 284,
to stand as entry 4 under Wilson, Charles
William, Jr.

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After Wilson, James Tinley

Cancel "also Canada G. S., 1;" leaving
reference to read, "See Macelwane, J.B., 3"

Following the entry for Wilson, John Human.

Insert "Wilson, John Tuzo. See also
Canada G. S., 1."

Transfer entries 1 and 2 now under
Wilson, James Tinley, to stand under
Wilson, John Tuzo.

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Calderas, origin : Williams, H., 4.
Earthquake, July 22, 1937 : Adkins,
J. N., 1.
Earthquake, Nov. 10, 1938 : Mukherjee,
S. M., 1.
Tetling River area : Moffit, F. H., 1.

Physiographic geology.

Alaska R. R. region : Capps, S. R., 1.
General : Smith, P. S., 1.
Glaciers : Field, W. O., Jr., 1 ; Wash-
burn, H. B., Jr., 1.

Alaska—Continued.

Physiographic geology—Continued.

Muck-silt, Fairbanks area : Tuck, R., 1.
Submarine mts., Gulf of Alaska : Mur-
ray, H. W., 1.

Tetling River area : Moffit, F. H., 1.

Alaska, Gulf of, submarine mts. : Murray,
H. W., 1.

Alaskite.

North Carolina, kaolin deposits : Hun-
ter, C. E., 2.

Alberta.

Economic geology.

Athabaska oil sands : Ball, M. W., 2.
Foothills, Highwood-Bow River area :
Hume, G. S., 4.
Lloydminster gas-oil area : Hume, G. S.,
5.
Redcliff area : Stewart, J. S., 2.
Stevenville oil, gas fields : Stewart,
J. S., 3.
Turner Valley Carb. lms. : Mackenzie,
W. D. C., 1.

Historical geology.

Athabaska oil sands : Ball, M. W., 2.
Bearberry area : Beach, H. H., 1.
Beaver Mines area : Hage, C. O., 2.
Big Horn River area : MacKay, B. R., 6.
Bragg Creek area : Hume, G. S., 3.
Brazeau area : MacKay, B. R., 1.
Cambrian, Lower, Middle : Deiss, C. F.,
1.

Dunmore area : Canada G. S., 1.

Fish Creek area : Canada G. S., 1 ;
Hume, G. S., 2.

Foothills, Highwood-Bow River area :
Hume, G. S., 4.

Foremost area : Canada G. S., 1.

George Creek area : MacKay, B. R., 2.

Grave Flats area : MacKay, B. R., 3.

Jumpingpound area : Hume, G. S., 1.

Lloydminster gas-oil area : Hume, G. S.,
5.

Midnapore area : Canada G. S., 1.

Moraines, age : Jones, W. D., 1.

Morley area : Hume, G. S., 7.

Peace River area : Allan, J. A., 2.

Pembina Forks area : MacKay, B. R., 4.

Plains, sou : Landes, R. W., 1 ; Russell,
L. S., 1, 2.

Pouce Coupe fms. : Allan, J. A., 1.

Redcliff area : Stewart, J. S., 2.

Rocky Mts., structure : Allan, J. A., 5.

Stevenville oil, gas fields : Stewart, J. S., 3.

Taber area : Canada G. S., 1.

Turner Valley Carb. lms : Mackenzie, W.
D. C., 1.

Wapiti Creek area : MacKay, B. R., 5.

Wildcat Hills area : Hage, C. O., 1.

Paleontology.

Ceratopsidae : Sternberg, C. M., 1.

Edmontonia : Russell, L. S., 3.

Faunas, Peace River area : Warren, P.
S., 2.

Gastropoda : Russell, L. S., 9.

Alberta—Continued.

Paleontology—Continued.

Micrichnus tracks, Paskapoo fm.: Russell, L. S., 7.

Plains, sou.: Landes, R. W., 1; Russell, L. S., 1, 2.

Prograngerella: Russell, L. S., 10.

Theselosaurus: Sternberg, C. M., 2.

Petrology.

Cambrian, Cordilleran trough: Deiss, C. F., 1.

Plains, sou.: Russell, L. S., 2.

Turner Valley Carb. lms.: Mackenzie, W. D. C., 1.

Wildcat Hills area: Hage, C. O., 1.

Physical geology.

Fault, folded, Pekisko area: Hume, G. S., 8.

Folded thrust faults: Hake, B. F., 1; Mackay, B. R., 7.

Foothills, Highwood-Bow River: Hume, G. S., 4.

Plains, sou.: Russell, L. S., 1, 2.

Rocky Mts., structure: Allen, J. A., 5.

Wildcat Hills area: Hage, C. O., 1.

Physiographic geology.

Glacial erratics, origin: Rutherford, R. L., 1.

Glaciation: Rutherford, R. L., 1.

Moraines, age: Jones, W. D., 1.

Plains, sou.: Russell, L. S., 1, 2.

Wildcat Hills area: Hage, C. O., 1.

Albite.

Albite and gold: Bruce, E. L., 1; Gallagher, D., 1; Reid, J. A., 1.

Ontario: Fairbairn, H. W., 3; Reid, J. A., 1.

Pennsylvania, Lowville lms.: Honess, A. P., 1.

Algae.

Ecology of marine organisms: Ladd, H. S., 1.

Koninckopora, Canada: Wood, A., 1.

Minnesota: Stauffer, C. R., 3.

Rocks, transport by kelp: Emery, K. O., 1.

Solenopora, Canada: Fritz, M. A., 5.

Allanite, Texas: Marble, J. P., 1.

Alnoites, Montana: Larson, E. S., 6.

Alunite. See also Potash.

California: Vonsen, M., 1.

Newfoundland: Howland, A. L., 1.

United States: Thoenen, J. R., 1.

Alunogen, California: Vonsen, M., 1.

Amazonstone, Colorado: Pearl, R. M., 4, 7.

American doctorates in geology, 1931-40: Ray, L. L., 3.

Amethyst.

Nova Scotia: Wilson, G. A., 1.

Ontario: Corbett, J. F., 1.

Texas: Miles, F. A., 1.

Virginia: Bevan, A. C., 3; Shiffen, S. W., 1.

Wyoming, geode: Anonymous, 3.

Ammonites. See Ammonoidea; Cephalopoda.

Ammonoid sutures, representation: Furnish, W. M., 1.

Ammonoidea. See also Cephalopoda.

British Columbia: McLearn, F. H., 3.

Oregon, cent.: Lupper, R. L., 2.

Texas, Dallas Co.: Dallas Petroleum Geologists, 1.

Amphibia. See also Vertebrates.

Buettneria, Tex.: Sternberg, C. W., 1.

Eryops, Tex.: Romer, A. S., 4; Sawin, H. J., 1.

Evolution: Romer, A. S., 6.

Foreleg in locomotion: Evans, F. G., 1.

General: Romer, A. S., 2.

Kansas: Frye, J. C., 8; Hibbard, C. W., 4.

Land animals, first: Romer, A. S., 5.

Miopelodytes, Nev.: Taylor, E. H., 1.

Tarsus evolution: Schaeffer, B., 3.

Tetrapoda, W. Va.: Romer, A. S., 3.

Texas: Romer, A. S., 5; Sawin, H. J., 2.

Trematopsidae, Tex.: Olson, E. C., 3.

Vertebrata, Tex.: Olson, E. C., 6.

Amphibole.

Montana, Highwood Mts.: Larsen, E. S., 5.

New York, Tilly Foster mine: Trainer, J. N., 2.

Anacline, Montana: Larsen, E. S., 5.

Analcite, Nova Scotia: Wilson, G. A., 1.

Analyses, age by lead ratios: Muench, O. B., 3.

Andalusite, California: Allen, V. T., 1; Funk, B. G., 1.

Andesites.

Oregon: Bogue, R., 1; Hodge, E. T., 2.

Washington: Warren, W. C., 1.

Andorite and sundite the same?: Donnay, J. D. H., 8.

Anhydrite, Quebec: Osborne, F. F., 1.

Ankerite, New York, Tilly Foster mine: Trainer, J. N., 2.

Annelida.

Arabellites, preoccupied: Stauffer, C. R., 1.

New Jersey, Vincentown fm.: Greacen, K. F., 1.

Niagaran, Ohio-Ind.: Busch, D. A., 1.

Ontario: Caley, J. F., 1.

Anorthosites, Quebec: Faessler, C., 4.

Anthozoa. See also Coelenterata.

Alabama, Eocene: Vaughan, T. W., 3.

Antigua: Trechmann, C. T., 1.

Bainbridge lms., Mo.: Ball, J. R., 3.

Bermuda: Denison, A. R., 1.

California: Wells, J. W., 3; Woodring, W. P., 1.

Campophyllum, Nor. Am.: Easton, W. H., 3.

Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 4.

Anthozoa—Continued.

- Columnariidae family: Bassler, R. S., 8.
 Cuba, Cret.: Wells, J. W., 4.
 Ecology of: Ladd, H. S., 1; Vaughan, T. W., 4.
 Eocene, Calif.: Wells, J. W., 3.
 Fauna, Frobisher Bay, Arc. Am.: Roy, S. K., 1.
 Ripogonius Dam, Maine: Willard, B., 7.
 Favositidae, wall structure: Swann, D. H., 1.
 Florida, chalcedony pseudomorphs after: Manchester, J. G., 2.
 Generic names, corrections: Knight, J. B., 1.
 Heliolitidae, Manitoba: Leith, E., 1.
 Illinois, Woosung quad.: Templeton, J. S., 1.
 Louisiana, Eocene: Vaughan, T. W., 3.
 Maine, Aroostook Co.: Twenhofel, W. H., 7.
 Mexico, Neocomian: Imlay, R. W., 2.
 Michigan, Onaway dist.: Kelly, W. A., 1.
 Minnesota, S. E.: Stauffer, C. R., 3.
 Nevada, Roberts Mts.: Merriam, C. W., 1.
 New Jersey, Vincentown fm.: Greacen, K. F., 1.
 New Mexico, Sacramento Mts.: Laudon, L. R., 4.
 New York Dev.: Busch, D. A., 2.
 Niagara, Ohio-Ird.: Busch, D. A., 1.
 North America, Perm.: Moore, R. C., 11.
 Ohio, corals: Stumm, E. C., 1.
 Ontario: Caley, J. F., 1.
 Oregon, Wallowa Mts.: Smith, W. D., 4.
 Palaeocyclus, Calif.: McAllister, J. F., 2.
 Petroleum, sources: Bergmann, W., 1.
 Pleospongia, Nor. Am.: Okulitch, V. J., 1, 3.
 Prismaticophyllum, Iowa: Stainbrook, M. A., 2.
 Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
 Rhizosommia, Calif.: Durham, J. W., 2.
 Tennessee: Whitlatch, G. I., 1.
 Tetradium, Ohio: James, C., 1.
 Texas: Dallas Petroleum Geologists, 1: Stainbrook, M. A., 8.
 Utah: Bacon, C. S., Jr., 1.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Virginia, Tidewater Miocene: Barclay, G. C., 1.
 Washington, Tert.: Durham, J. W., 1.
 Wisconsin, Door Co.: Shrock, R. R., 1.

Antigua.

Historical geology.

General: Trechmann, C. T., 1.

Paleontology.

General: Trechmann, C. T., 1.

Petrology.

General: Trechmann, C. T., 1.

Antimony.

- California: Bailey, E. H., 3; White, D. E., 2; Anonymous, 27.
 Idaho: White, D. E., 1.

Antimony—Continued.

- Nevada: Vanderberg, W. O., 1.
 Nova Scotia: Douglas, G. V., 3.
 Oregon: Wells, F. G., 1.
 Radioactivity: Mitchell, A. C. G., 1.
 Apatite, Montana: Larsen, E. S., 5.
 Aplite, Newfoundland: White, D. E., 3.
 Apophyllite.
 California: Bailey, E. H., 2.
 Nova Scotia: Wilson, G. A., 1.
 Applied paleontology: Schenck, H. G., 4.
 Applied sedimentology: Rea, H. C., 1.
 Aragonite.
 New York, Gailor quarry: Zodac, P., 4.
 Pearls: Alexander, A. E., 1.
 Wyoming: Goldring, E. D., 1.
 Archean. See Pre-Cambrian.
 Arctic America.
Historical geology.
 Ellesmere I.: Bentham, R., 1.
 Frobisher Bay: Roy, S. K., 1.
Paleontology.
 Fauna, Ord., Frobisher Bay: Roy, S. K., 1.
Physical geology.
 Ellesmere I.: Bentham, R., 1.
 Frost action and solidiuction: Paterson, T. T., 1.
Physiographic geology.
 Ellesmere I.: Bentham, R., 1.
 Frobisher Bay, Baffin Land: Roy, S. K., 1.
 Arizona.
Economic geology.
 Miami mine fault breccia: White, C. H., 1.
 Mineralization, Ajo copper dist.: Gilling, J., 1.
 Minerals: Galbraith, F. W., 3d., 6.
 Ore deposits: Mills, H. F., 1; Kuhn, T. H., 1.
 Tungsten: Wilson, E. D., 2.
Historical geology.
 Age, Carb. lms.: Keyes, 110.
 Apache group: Keyes, 49.
 Aubreyan lms.: Keyes, 16.
 Breccia, Grand Canyon: Sharp, R. P., 4.
 Cambrian and pre-Cambrian: Keyes, 115; Schenk, E. T., 1; Wheeler, H. E., 3.
 Chinle fm.: Keyes, 59.
 Cross-lamination, Paleozoic: McKee, E. D., 3.
 Dagoon quartzite: Keyes, 19, 116.
 Empire Mts.: Galbraith, F. W., 4.
 Ep-Archean, Ep-Algonkian, Grand Canyon: Sharp, R. P., 3.
 Eparchean interval: Keyes, 13.
 General: Keyes, 55.
 Hurricane fault, Utah-Ariz.: Gardner, L. S., 1.
 Landslides: Strahler, A. N., 1.
 Leaf beds, Petrified Forest: Stagner, H. R., 1.
 Little Dagoon Mts.: Enlows, H. E., 1.

Arizona—Continued.

Historical geology—Continued.

- Longfellow lms.: Keyes, 27.
 Mnatzatzal quartzite: Keyes, 52.
 Metamorphics, nomenclature: Keyes, 12.
 Ouray lms.: Keyes, 38.
 Paleozoic paleogeography: Stoyanow, A. A., 1.
 Paleozoic seas: McKee, E. D., 5.
 Peneplanal unconformities: Keyes, 32.
 Peneplains, ancient: Keyes, 133.
 Permian, Ariz.-Utah basin: McKee, E. D., 2.
 Rocky Mts.-Colo. plateau area: Baker, A. A., 1.
 Pipe ore deposits, Copper Creek: Kuhn, H., 1.
 Plateau erosion stages: Reiche, P., 2.
 Pre-Cambrian, Basin Ranges: Wilson, E. D., 1.
 Protozoic lava-flows, Grand Canyon: Keyes, 54.
 Redwall fm., Grand Canyon: Keyes, 17.
 Tohachi shales: Keyes, 53.
 Yaquian, Grand Canyon: Keyes, 51.

Mineralogy.

- Canyon Diablo meteorite: Lord, J. O., 2.
 Diaboleite: Palache, C., 8.
 Dioptase: Galbraith, F. W., 3.
 Fluorescent minerals: Eaton, A. L., 1.
 Holbrook, aerolites: Leonard, F. C., 5.
 Lawrencite, Mt. Eldon meteorite: Budd hue, 2.
 Meteorite, nickel-iron: Nininger, H. H., 3.
 Mineralization, Ajo copper dist.: Gilluly, J., 1.
 Minerals: Galbraith, F. W., 3d., 6.
 Mt. Eldon meteorite: Buddhue, 2.
 Ore deposits, Iron King mine: Mills, H. F., 1.
 Paramelaconite: Frondel, C., 9.
 Pipe ore deposits, Copper Creek: Kuhn, T. H., 1.
 Stolzite: Palache, C., 7.
 Tungsten: Wilson, E. D., 2.
 Wulfenite: King, J. B., 1.

Paleontology.

- Fauna, Rampart Cave: Wilson, R. W., 4.
 Fish, Dev.: Hussakof, L., 1.
 Flora, Trias.: Daugherty, L. H., 1.
 Fossils, Camb., Grand Canyon: Resser, C. E., 4.
 Jellyfish, pre-Camb., Grand Canyon: Bassler, R. S., 4.
 Leaf beds, Petrified Forest: Stagner, H. R., 1.
 Lion tracks: Nininger, H. H., 6.
 Petrified wood: Mayes, W., 1.

Petrology.

- Abrizo lmp.: Wiese, J. H., 1.
 Cross-lamination, Grand Canyon: McKee, E. D., 3.
 General: Keyes, 55.
 Lava flow, Grand Canyon: Campbell, I., 1.
 Little Dragon Mts.: Enlows, H. E., 1.

Arizona—Continued.

Petrology—Continued.

- Pre-Cambrian, Basin Ranges: Wilson, E. D., 1.
Physical geology.
 Boulder Dam area: Mead, T. C., 1.
 Breccia, Camb., Grand Canyon: Sharp, R. P., 4.
 Dragon Mts. thrust faults: Gilluly, J., 2.
 Empire Mts.: Galbraith, F. W., 2, 4.
 General: Keyes, 55.
 Graben, Grand Canyon: Johnson, D. W., 1.
 Hurricane fault, Utah-Ariz.: Gardner, L. S., 1.
 Ice cave: Stewart, W. O., 2.
 Landslides: Strahler, A. N., 1.
 Lava flow, Grand Canyon: Campbell, I., 1.
 Little Dragon Mts.: Enlows, H. E., 1.
 Miami mine fault breccia: White, C. H., 1.
 Pipe ore deposits, Copper Creek: Kuhn, T. H., 1.
 Pre-Cambrian, Basin Ranges: Wilson, E. D., 1.
 Protozoic lava-flows, Grand Canyon: Keyes, 54.
Physiographic geology.
 Dunes, Navajo country: Hack, J. T., 1;
 Smith, H. T. U., 6.
 Ep-Archean, Ep-Algonkian, Grand Canyon: Sharp, R. P., 3.
 General geology: Keyes, 55.
 Glaciation, San Francisco Peaks: Sharp, R. P., 7.
 Landslides: Strahler, A. N., 1.
 Pediment gaps, Sacaton Mts.: Howard, A. D., 4.
 Peneplains, ancient: Keyes, 133.
 Plateau erosion stages: Reiche, P., 2.
 Protozoic lava-flows, Grand Canyon: Keyes, 54.
Underground water.
 Floods recharge ground water: Babcock, H. M., 1.
 Forecasting ground water in deserts: Smith, G. E. P., 1.
 Ground water, Gila River valley: Turner, S. F., 1.

Arkansas.

Economic geology.

- Bauxite, Branner, G. C., 4.
 Benton Co. min. res.: Branner, G. C., 2.
 Carroll Co., min. res.: Branner, G. C., 2.
 Cretaceous, Jura, flus.: Imhry, R. W., 1.
 Dorcheat pool: Trager, H. H., 1.
 Gulf Coast oil: Malkin, D. S., 1.
 Limestones, Tert.: Corbin, M. W., 1.
 Madison Co., min. res.: Branner, G. C., 2.
 Manganese carbonate: Miser, H. D., 3.
 Petroleum, nat. gas, lava: Farzer, J., 1.
 Polk Co.: Branner, G. C., 1.
 Schuler oil field: Weeks, W. B., 1.
 State mineral survey: Branner, G. C., 3.
 Washington Co., min. res.: Branner, G. C., 2.

Arkansas—Continued.

Historical geology.

- Boone chert: Keyes, 68.
Carboniferous, Middle: Easton, W. H., 1.
Cret., Juras. fms.: Imlay, R. W., 1.
Dorcheat pool: Trager, H. H., 1.
General: Branner, G. C., 5.
Jurassic: Imlay, R. W., 4.
Manganese carbonate: Miser, H. D., 3.
Ouachita Mts.: Hendricks, T. A., 4.
Polk Co.: Branner, G. C., 1.
Schuler oil field: Weeks, W. B., 1.
Yegua problem: Stenzel, H. B., 6.

Mineralogy.

- Carbonate-apatite: McDonnell, D., 1.
Hackmanite: Miser, H. D., 3.
Manganese carbonate: Miser, H. D., 3.
Molybdenite: Sleight, V. G., 1.
Polk Co.: Branner, G. C., 1.
Sodalite: Miser, H. D., 3.
State mineral survey: Branner, G. C., 3.

Paleontology.

- Ammonoids: Miller, A. K., 3.
Bryozoa: Bassler, 6.
Cephalopoda: Scott, G., 2.
Fauna, Juras.: Imlay, R. W., 4.
Fish, Cret.: Hussakof, L., 2.
Podocnemis: Schmidt, K. P., 1.

Physical geology.

- Cretaceous, Juras. fms.: Imlay, R. W., 1.
Earthquake, Sept. 17, 1938: Walter, E. J., 1.
Ouachita Mts.: Hendricks, T. A., 4.
Polk Co.: Branner, G. C., 1.

Physiographic geology.

- Ozark province: Cozzens, A. B., 1.

Underground water.

- Polk Co.: Branner, G. C., 1.

Arkoses, significance: Krynine, P. D., 11.

Arsenic.

- New Brunswick: Alcock, F. J., 1.
New Jersey: Palache, C., 9.
Radioactivity: Mitchell, A. C. G., 1.

Arsenopyrite, New Jersey: Palache, C., 9.

Arthropoda.

- Bolinurus, Pa.: Ellr. E. R., 2.
California, Kettleman Hills oil field: Woodring, W. P., 1.
Ecology of: Ladd, H. S., 1.
Fauna, Frobisher Bay, Arc. Am.: Roy, S. K., 1.
Libinia, Md.: Easton, W. H., 2.
Merostomata, Camb.: Raymond, P. E., 2.
Micrichnus: Russell, L. S., 7.
Mississippi: Stephenson, L. W., 1.

Artificial helictites and gypsum flowers: Huff, L. C., 1.

Artifacts, glassy andesite, N. Mex.: Bryan, K., 2.

Asbestos.

- General: Myers, O. J., 1.
Quebec: Bannerman, H. M., 1.

Ash, Specimen Mt., Colo.: Wahlstrom, E. E., 3.

Asphalt.

- Alberta, Athabaska area: Ball, M. W., 2.
Carbohydrates in formation: Berl, E., 1.
Kansas, eastern: Jewett, J. M., 1.
Utah, non-metallics: Gabriel, C., 1.

Associations, meetings.

- American Assoc. Adv. Sci. Mtgs.: Campbell, C. D., 1; Meyerhoff, 1, 2.
Cordilleran Sec., G. S. A., Ann. Mtgs.: Anderson, C. A., 2.
Geological notes: Sharp, H. S., 1.
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Pacific Coast Branch, Paleont. Soc. Mtg. 1940: Bentson, H., 3.
Paleontological Soc., Ann. Mtgs.: Howell, B. F., 2; Keen, A. M., 1; Vokes, H. E., 4.
Section E, A. A. A. S. joint mtg. with G. S. A., 1940: Meyerhoff, 2.
Texas, Houston field trips: Culbertson, J. A., 2.

Asteroidea. See also Echinodermata.

- Minnesota, S. E.: Stauffer, C. R., 3.

Atlantic Coastal Plain, magnetic studies: Ewing, W. M., 2; Woollard, G. P., 1, 4.

Attapulgate, Georgia: Bradley, W. F., 1.

Attenuators, seismic recording: McDermott, E., 2.

Augite, Hawaii, Oahu: Wentworth, C. K., 4.

Aurichalcite, Missouri: Keller, W. D., 1.

Autoradiography of ores: Goodman, C., 4.

Aves.

- California: DeMay, I. S., 1, 2, 3; Furlong, E. L., 2; Miller, L. H., 2, 3; Woodring, W. P., 1.
Coragyps, Calif., Mex.: Miller, L. H., 3.
Corvidae: Ashley, J. F., 1.
Gavia, Md.: Wetmore, A., 3.
Gaviota, Neb.: Miller, A. H., 3.
General: Romer, A. S., 2.
Ichnites: Curry, H. D., 1.
Kansas: Frye, J. C., 8; Hibbard, C. W., 4.
Melagris, Mex.: Miller, L. H., 1.
Nevada, pelican nesting place: Hall, E. R., 1.
North America, check list: Wetmore, A., 2.
Pleistocene climate shown by fossil birds: Miller, A. H., 1.
Polyborus, Mexico: Howard, H., 1.
Puffinus, Calif.: Orr, R. T., 1.
Tertiary, U. S.: Wetmore, A., 1.
Uria, Calif.: Miller, A. H., 2.

Axinite.

- California: Murdoch, J. I.
Maine: Yedlin, L. N., 1.

- Babingtonite, Massachusetts: Schaub, B. M., 3.
- Bacteria from Triassic coprolite: Lipman, C. B., 1.
- Banded iron deposits, origin: Woolnough, W. G., 2.
- Band, layer, kindred terms: Calkins, F. C., 1.
- Barbados.
- Historical geology.*
- Paleogene: Senn, A., 1.
- Paleontology.*
- Globigerina sediments: Crickmay, G. W., 2.
- Paleogene: Senn, A., 1.
- Barite.
- Alabama: Adams, G. I., 1.
- Arkansas: Branner, G. D., 1.
- California: Bradley, W. W., 2; Murdoch, J., 1.
- Nevada: Gianella, V. P., 1.
- Puerto Rico: Ray, H. C., 1.
- Barium, Appalachian brines: Heck, E. T., 2.
- Barytes, Nova Scotia: Cameron, A. E., 3; Messervey, J. P., 1.
- Bars.
- Massachusetts, Cape Cod: Mather, K. F., 1.
- Oklahoma, Burbank oil fields: Bass, N. W., 3.
- South Carolina, elliptical bays: Cooke, C. W., 1.
- Texas, Hardin field: Casey, S. R., 1.
- Bars, spits, etc., origin: Evans, O. F., 4.
- Basalt.
- Arizona: Kuhn, T. H., 1.
- California: Eaton, J. E., 3; Gresswell, W. K., 1; Webb, R. W., 2.
- Columbia River area: Waters, A. C., 3.
- Hawaii: MacDonald, G. A., 2, 3; Stearns, H. T., 3, 4; Wentworth, C. K., 5.
- Idaho: Anderson, A. L., 1.
- Lava, trees show velocity: Nichols, R. L., 2.
- Montana: Horberg, L., 1; Larsen, E. S., 3.
- Oregon: Nichols, R. L., 4; Wells, F. G., 6.
- Washington: Beck, G. F., 4; Warren, W. C., 1.
- Basic science, geol. curricula: Straley, H. W., III, 2.
- Batholiths. See also Intrusions.
- British Columbia: Cairnes, C. E., 1; Hedley, M. S., 2; Maconachie, R. J., 1; Rice, H. M. A., 1; Sargent, T. E. H., 2; Schofield, S. J., 1; Smith, A., 1.
- California: MacDonald, G. A., 5; Merriam, R. H., 1, 2; Prout, J. W., Jr., 1.
- Colorado: Boos, M. F., 1; Lovering, T. S., 1.
- Batholiths—Continued.
- Idaho: Anderson, A. L., 1, 3; White, D. E., 1.
- Igneous-looking rocks from metasomatism: Grout, F. F., 2.
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- Gold placers, Wheaton Creek: Holland, S. C., 1.
 Mt. Bosworth-Mt. Assiniboine: Deiss, C. F., 1.
 Nickel Plate Mt.: Billingsley, P. R., 3.
 Peace River foothills: McLearn, F. H., 3.
 Turnagain-Kechika Rivers: Hedley, M. S., 2.

Economic geology.

- Aiken Lake area: Lay, D., 1.
 Camp McKinney area: Hedley, M. S., 1.
 Fraser River area: Lay, D., 2.
 General: Walker, J. F., 1.
 Gold placers: Holland, S. S., 1.
 Houston area: Lang, A. H., 1.
 Kettle River area: Canada G. S., 1.
 Lode gold, Kootenay dist.: Macounachie, R. J., 1.
 Mineral res., Haselton-Smithers areas: Kindie, E. D., 1.
 Mining industry, 1939: Walker, J. F., 1.
 Molybdenum deposits: Stevenson, J. S., 3.
 Nelson area: Rice, H. M. A., 1.
 Nickel Plate Mt. ores: Billingsley, P. R., 3.
 Ore deposits, Pocher I.: Smith, A., 1.
 Quicksilver: Stevenson, J. S., 2.
 Saline, hydromagnesite deposits: Cummings, J. M., 1.
 Silica sand poss.: Cummings, J. M., 2.
 Tungsten: Stevenson, J. S., 4.
 Turnagain-Kechika Rivers area: Hedley, M. S., 2.

Zetallos area: Bancroft, M. F., 1.

Historical geology.

- Aiken Lake area: Lay, D., 1.
 Beattie Hill: McLearn, F. H., 4.
 Bedwell River area: Sargent, T. E. H., 1, 2.
 Cambrian, Lower, Middle: Deiss, C. F., 1.
 Camp McKinney area: Hedley, M. S., 1.
 Cariboo Mt. area: Canada G. S., 1.
 Cascadia: Schofield, S. J., 2.
 Chiaz Creek area: Canada G. S., 1.
 Coast Range batholith, age: Schofield, S. J., 1.
 Fort Fraser area: Armstrong, J. E., 1; Canada G. S., 1.
 Fraser River area: Lay, D., 2.
 Gold placers, Wheaton Creek: Holland, S. C., 1.
 Hedley area: Canada G. S., 1.
 Houston area: Lang, A. H., 1.
 Keithley Creek area: Canada G. S., 1.
 Keremeos area: Canada G. S., 1.
 Kettle River area: Canada G. S., 1.
 Little River area: Canada G. S., 1.
 Kootenay dist.: Macounachie, R. J., 1.
 Manson Creek area: Lang, A. H., 2.
 Maude I.: McLearn, F. H., 1.
 Mineral res., Haselton, Smithers areas: Kindie, E. D., 1.

British Columbia—Continued.

Historical geology—Continued.

Molybdenum deposits: Stevenson, J. S., 3.

Nelson area: Canada G. S., 1; Rice, H. M. A., 1.

Nickel Plate Mt.: Billingsley, P. R., 3.

Okanagan Falls area: Canada G. S., 1.

Olalla area: Canada G. S., 1.

Peace River foothills: McLearn, F. H., 3.

Quicksilver deposits: Stevenson, J. S., 2.

Shuswap rocks: Cairnes, C. E., 1.

Triassic: McLearn, F. H., 7, 8.

Tungsten deposits: Stevenson, J. S., 4.

Turnagain-Kechika Rivers: Hedley, M. S., 2.

Wolfe Creek area: Canada G. S., 1.

Zeballos area: Bancroft, M. F., 1.

Mineralogy.

Aiken Lake area: Lay, D., 1.

Albite and gold: Gallagher, D., 1.

Bismuth minerals: Warren, H. V., 1.

Gold placers: Holland, S. C., 1.

Houston area: Lang, A. H., 1.

Joseite: Peacock, M. A., 5.

Mineral res., Haselton, Smithers areas: Kindie, E. D., 1.

Molybdenum: Stevenson, J. S., 3.

Nickel Plate Mt. ore deposits: Billingsley, P. R., 3.

Quicksilver: Stevenson, J. S., 2.

Saline, hydromagnesite deposits: Cummings, J. M., 1.

Scheelite: Stevenson, J. S., 1.

Silica sand: Cummings, J. M., 2.

White silt terraces, Okanagan Valley: Meyer, C., 1.

Paleontology.

Ammonoids: McLearn, F. H., 5.

Beattie Hill: McLearn, F. H., 4.

Faunas, Peace River Cret.: Warren, P. S., 2.

Mammalia, Quat.: Cowan, I. M., 1.

Peace River foothills: McLearn, F. H., 3.

Pelecypoda: McLearn, F. H., 5, 6.

Pollen analysis, peat: Hansen, H. P., 2.

Triassic, Mabaffy Cliffs-Red Rock Spur: McLearn, F. H., 7.

Petrology.

Bedwell River area: Sargent, T. E. H., 1, 2.

Cambrian, Cordilleran trough: Deiss, C. F., 1.

Fort Fraser ultrabasic rocks: Armstrong, J. E., 1.

Fraser River area: Lay, D., 2.

Houston area: Lang, A. H., 1.

Iceland spar: Van Arminge, E. V., 2.

Nelson area: Rice, H. M. A., 1.

Shuswap rocks: Cairnes, C. E., 1.

Turnagain-Kechika Rivers: Hedley, M. S., 2.

White silt terraces, Okanagan Valley: Meyer, C., 1.

British Columbia—Continued.

Physical geology.

Aiken Lake area: Lay, D., 1.

Bedwell River area: Sargent, T. E. H., 1, 2.

Camp McKinney area: Hedley, M. S., 1.

Coast Range batholith: Schofield, S. J., 1.

Fort Fraser area: Armstrong, J. E., 1.

Fraser River area: Lay, D., 2.

Haselton area: Kindie, E. D., 1.

Nelson area: Rice, H. M. A., 1.

Nickel Plate Mt.: Billingsley, P. R., 3.

Peace River foothills: McLearn, F. H., 3.

Pocher I.: Smith, A., 1.

Shuswap rocks: Cairnes, C. E., 1.

Smithers area: Kindie, E. D., 1.

Turnagain-Kechika Rivers area: Hedley, M. S., 2.

Zeballos area: Bancroft, M. F., 1.

Physiographic geology.

Aiken Lake area: Lay, D., 1.

Fraser River area: Lay, D., 2.

Gold placers, Wheaton Creek: Holland, S. C., 1.

Kootenay dist.: Maconachie, R. J., 1.

Nelson area: Rice, H. M. A., 1.

Peace River foothills: McLearn, F. H., 3.

Turnagain-Kechika Rivers: Hedley, M. S., 2.

White silt terraces, Okanagan Valley: Meyer, C., 1.

Broderickite, Massachusetts: Dake, H. C., 6.

Brucite, Canada: Goudge, M. F., 1.

Bryozoa.

Archimedes, revision: Condra, G. E., 5.

Arkansas, Carb.: Bassler, R. S., 6.

California, Kettleman Hills oil field: Woodring, W. P., 1.

Cambridge lms., Pa.: Seaman, D. M., 3.

Fauna, Whitehorse ss.: Newell, N. D., 1.

Frobisher Bay, Arc. Am.: Roy, S. K., 1.

Fenestella vs. Fenestrellina: Condra, G. E., 4.

Fenestrellina, Quebec: Fritz, M. A., 2.

Hallopora, Quebec: Fritz, M. A., 3.

Kansas, Missn.: Girty, G. H., 1; Lee, W., 2.

Minnesota, S. E.: Stauffer, C. R., 3.

Mississippi: Stephenson, L. W., 1.

New Jersey, Vincentown fm.: Greacen, K. F., 1.

New Mexico, Sacramento Mts.: Laudon, L. R., 4.

Ontario, Toronto-Hamilton area: Caley, J. F., 1.

Pennsylvania, Ames lms.: Seaman, D. M., 1.

Photographing fossil impressions: McNair, A. H., 1.

Quebec: Fritz, M. A., 1, 2, 3.

Randolph quad., Utah-Wyo.: Richardson, G. B., 3.

Tennessee: Whitlatch, G. I., 1.

Texas, Perm.: Stainbrook, M. A., 8.

Building stone.

- Alabama: Bowles, E. O., 2; Hunter, C. E., 1; Penhallegon, W. J., 1.
 British Columbia: Rice, H. M. A., 1.
 California: Anderson, C. A., 1; Bradley, W. W., 2.
 Iowa: Wood, L. W., 2.
 Kansas: Jewett, J. M., 4; Smith, H. T. U., 9.
 Maryland: Gray, W. B., III, 1.
 Massachusetts: Chute, N. E., 1.
 New Brunswick: Alcock, F. J., 1.
 New Hampshire: Meyers, T. R., 1.
 New Jersey: Bayley, W. S., 1; Lewis, J. V., 1.
 New York: Gillette, T., 1.
 Nova Scotia: Bell, W. A., 1.
 Ohio: Williams, A. B., 1.
 Oklahoma: Oakes, M. C., 1.
 Pennsylvania: Bayley, W. S., 1.
 Texas: Dallas Petroleum Geologists, 1.

Burrows.

- Daemonelix, origin: Lugin, A. L., 2.
 Organic, Perm., Kans.: Byrne, F., 1.
 Planolites, Pa.: Howell, B. F., 4.
 Skolithos, Pa.: Howell, B. F., 4.

Calcite.

- California: Murdock, J., 1; Van Amringe, E. V., 1.
 Colorado, Specimen Mt.: Wahlstrom, E. E., 3.
 Crystal, misshapen: Lucas, E. L., 1.
 Iceland spar: Van Amringe, E. V., 1.
 Indiana: Shrock, R. R., 6.
 Luminescence: Northup, M. A., 1.
 Mexico: Toothaker, C. R., 1.
 Missouri: Gallagher, R. T., 1.
 New York: Trainer, J. N., 1, 2; Zedac, P., 4.
 North Carolina: Hafer, C., 1.
 Pennsylvania: Haeblerle, W. F., 1.
 Texas: Miles, F. A., 1.

Calcium sulfate deposition from sea water: Posnjak, E., 1.

Calculations, gravity anomalies: Levine, S., 1.

Calderas and their origin: Finch, R. H., 2.

Caliche.

- Karst topog: Price, W. A., 1.
 Origin: Price, W. A., 2, 4.
 Texas: Leuenberger, B., 1; Price, W. A., 4.

California.

- Biennial report, State mineralogist: Bradley, W. W., 1.
 Rocks, transport by kelp: Emery, K. O., 1.
 State Division of Mines, history 1930-40: Jenkins, O. P., 7.
 Tertiary ss. and shs.: Haskell, N. A., 1.

Areas described.

- Blind Spring Hill area: Ransome, A. L., 2.
 Calico Mts.: Erwin, H. D., 1.
 Covelo dist.: Clark, S. G., 1.
 Grass Valley area: Johnston, W. D., Jr., 1.

California—Continued.**Areas described—Continued.**

- Kernville quad.: Miller, W. J., 2.
 Newberry and Ord Mts.: Gardner, D. L., 1.
 Trinity County: Averill, C. V., 2.
 Virgin Spring area, Death Valley: Noble, L. F., 1.

Economic geology.

- Accumulation, oil: Hoots, H. W., 1.
 Antimony: Bailey, E. H., 3; White, D. E., 2; Anonymous, 27.
 Benton Range: Lemmon, D. M., 3.
 Big Blue mines: Prout, J. W., Jr., 1.
 Blind Spring Hill area: Ransome, A. L., 2.
 Calico Mts.: Erwin, H. D., 1.
 Caliente Range: Eaton, J. E., 1.
 Captain oil field: Dolman, S. G., 2.
 Chromite: Allen, J. E., 3; Hawkes, H. E., Jr., 2; Rynearson, G. A., 1; Wells, F. G., 2, 5.
 Clay: Dietrich, W. F., 1.
 Coal: Clark, R. W., 2.
 Deep oil well: Travis, C. B., 1.
 Del Valle oil field: Sherman, R. W., 1; Tarbet, L. A., 1.
 Eocene oil: Menken, F. A., 2.
 Geochemical prosp. for oil: Rosalre, E. E., 6.
 Geology and mineral deposits: Jenkins, O. P., 6.
 Geomorphic provinces: Jenkins, O. P., 5.
 Geophysical prosp.: Vaughan, F. E., 1.
 Geothermal gradients, oil wells: French, R. W., 1.
 Gold: Gallagher, D., 1.
 History, oil and gas explor.: Stalder, W., 1.
 Host-rock inflation, Grasslands: Farmin, R., 1.
 Inglewood oil field: Willis, R., 1; Woodward, A. F., 1.
 Kettleman Hills oil field: Woodring, W. P., 1.
 Los Angeles Basin oil fields: Wissler, S. G., 1.
 Lost Hills oil field: Ayars, R. N., 1.
 Magnesite: Gary, G. L., 4.
 Manganese: Gary, G. L., 3; Hadley, J. B., 1.
 Marysville Buttes: Johnson, H. R., 1.
 Mesa oil field: Dolman, S. G., 1.
 Migration, oil: Hoots, H. W., 1.
 Minerals: Bradley, W. W., 2.
 Mono County min. res.: Sampson, R. J., 1.
 Mother Lode area: Averill, C. V., 1.
 Natural gas fields: Jenkins, O. P., 4; Winterburn, R., 1.
 Newberry Mts.: Gardner, D. L., 1.
 Newhall-Castaic area oil poss.: Wosk, D., 1.
 North Belridge oil field: Bailey, W. C., 2.
 Oak Canyon oil field: Loel, W., 2.
 Oil fields: Jenkins, O. P., 4; Reed, R. D., 2.

California—Continued.

Economic geology—Continued.

- Ord Mts.: Gardner, D. L., 1.
 Origin, petroleum: Hoots, H. W., 1.
 Paloma oil field: Clark, R. W., 1.
 Petroleum exploration, 1940: Vallat, E. H., 1.
 Petroleum geology for 20 years: Barnes, R. M., 1.
 Petroleum possibilities: Atwill, E. R., 1.
 Quicksilver: Bailey, E. H., 3; Ekel, E. B., 2, 3, 4; Ross, C. P., 1, 2, 3; Ransome, A. L., 1; Anonymous, 27.
 Rio Bravo oil field: Noble, E. B., 1.
 San Joaquin Valley: Stulken, E. J., 1.
 Santa Maria oil fields: Frame, R. G., 1; Wissler, S. G., 2.
 Shasta copper belt: Seager, G. F., 1.
 Sierra Nevada: Locke, A., 1.
 Stevens sand: Eckis, R., 1.
 Strand oil field: Menken, F. A., 1.
 Stratigraphic studies: Galliher, E. W., 1.
 Tertiary, Sacramento Valley: Anderson, C. A., 1.
 Tertiary ss. and shs.: Haskell, N. A., 1.
 Trinity County: Averill, C. V., 2.
 Tungsten: Lemmon, D. M., 1, 2, 4; Partridge, J. F., Jr., 1.
 Wasco oil field: Bailey, W. C., 1.
 Well logs, oil field data: Oil and Gas Journal, 1.
 Wilmington oil and gas field: Winterburn, R., 1.

Historical geology.

- Atolia area: Lemmon, D. M., 1.
 Aucella-bearing beds: Blot, R. L., 1.
 Benton Range: Lemmon, D. M., 3.
 Big Blue mines area: Prout, J. W., Jr., 1.
 Blind Spring Hill area: Ransome, A. L., 2.
 Calico Mts.: Erwin, H. D., 1.
 Caliente Range: Eaton, J. E., 1.
 Capay Eocene: Bentson, H., 2.
 Canyon oil field: Dolman, S. G., 2.
 Chico fm.: Taff, J. A., 1.
 Chromite deposits: Allen, J. E., 3; Wells, F. G., 2.
 Coal, Eocene: Clark, R. W., 2.
 Coast Ranges: Bailey, T. L., 1; Taliaferro, N. L., 3.
 Correlations: Eaton, J. E., 2; Ferguson, G. C., 1; Goudkoff, P. P., 1; Laiming, B. G., 1, 2, 3; Taliaferro, N. L., 4.
 Coso Hot Springs: Wilson, H. D. B., 1.
 Covelo district: Clark, S. G., 1.
 Cretaceous: Anderson, F. M., 1; Huey, A. S., 1; Jenkins, O. P., 3, 8; Kirby, J. M., 1; Popenoe, W. P., 2; Reinhart, P. W., 1; Taliaferro, N. L., 2.
 Deep coastal structures: Byerly, P., 3.
 Deep oil well: Travis, C. B., 1.
 Deformation, Mt. Lyell-Mt. Whitney: Mayo, E. B., 1.
 Devonian: Merriam, C. W., 1.

California—Continued.

Historical geology—Continued.

- Ecologic factors in correlation: Eaton, J. E., 2.
 Eocene oil exploration: Menken, F. A., 2.
 Faulting, clastics, Temblor Range: Hudson, F. S., 1.
 Foraminifera, index fossils: Adams, B. C., 1; Laiming, B. G., 1, 2, 3.
 Formations, Los Angeles Basin oil fields: Wissler, S. G., 1.
 Geologic history: Reed, R. D., 3.
 Geology and mineral deposits: Jenkins, O. P., 6.
 Grass Valley area: Johnston, W. D., Jr., 1.
 Index fossils, Foraminifera: Adams, B. C., 1; Laiming, B. G., 1, 2, 3.
 Inglewood oil field: Woodward, A. F., 1.
 June Lake area: Putnam, W. C., 2.
 Jurassic correlations: Taliaferro, N. L., 4.
 Kettleman Hills oil field: Woodring, W. P., 1.
 Kernville quad.: Miller, W. J., 2.
 Lakes, Searles Basin: Blackwelder, E., 5.
 Lost Hills oil field: Ayars, R. N., 1.
 Marysville Buttes: Johnson, H. R., 1.
 Mendocino Co.: Weaver, C. E., 2.
 Mesa oil field: Dolman, S. G., 1.
 Mesozoic, later: Anderson, F. M., 2.
 Metamorphism, Sierra Nevada: Durrell, C., 1.
 Miocene, Caliente Range: Eaton, J. E., 3.
 Miocene correl. chart: Kleinpell, R. M., 1.
 Mono Craters tunnel fms.: Gresswell, W. K., 1.
 Mono Lake area: Gilbert, C. M., 1.
 Moreno sh. fm.: Payne, M. B., 1.
 Mt. Diablo area: Clark, B. L., 4.
 Newberry Mts.: Gardner, D. L., 1.
 Newhall-Castaic area: Wosk, D., 1.
 Newport Bay Pleist.: Bruff, S. C., 1.
 North Belridge oil field: Bailey, W. C., 2.
 Oak Canyon oil field: Loel, W., 2.
 Oil field positions: Reed, R. D., 2.
 Oil and gas fields: Jenkins, O. P., 4.
 Oligocene fms., sequence: Forrest, Lesh C., 1.
 Ord. Mts.: Gardner, L. D., 1.
 Origin, petroleum: Hoots, H. W., 1.
 Pahrump ser., Kingston Range: Hewett, D. F., 1.
 Paleozoic, Klamath Mts.: Hinds, N. E. A., 2.
 Paloma oil field: Clark, R. W., 1.
 Petroleum geology for 20 years: Barnes, R. M., 1.
 Pleistocene: Eaton, J. E., 4.
 Pliocene correl. chart: Grant, U. S., IV, 5.
 Pliocene fms.: Clark, B. L., 1.
 Pre-Miocene, Bakersfield area: Clark, A., 1.
 Pre-Tertiary diastrophism and plutonism: Woodford, A. O., 1.

California—Continued.

Historical geology—Continued.

- Quicksilver deposits: Eckel, E. B., 2;
 Ross, C. P., 2, 3.
 Ramona quad.: Merriam, R. H., 1.
 Rhyolite. Mammoth area: Chelkowsky,
 J. R., 1.
 San Benito quad.: Wilson, I. F., 1.
 San Francisco Bay: Louderback, G. D., 2.
 San Joaquin Hills: Bode, F. D., 1.
 San Joaquin Valley: English, W. A., 1;
 Forbes, H., 1; Jones, G. H., 1.
 Santa Maria area: Woodring, W. P., 2.
 Santa Maria Valley oil field: Frame, R.
 G., 1; Wissler, S. G., 2.
 Sea floor levels: Shepard, F. P., 1.
 Serpentine, Sierra Nevada: MacDonald,
 G. A., 4.
 Sierra Nevada: Locke, A., 1; MacDonald,
 G. A., 4, 5; MacGinitie, H. D., 1;
 Webb, R. W., 1.
 Signal Hill Pleist.: DeLong, J. H., Jr., 1.
 Shasta copper belt: Seager, G. F., 1.
 Stratigraphic studies: Galliber, E. W., 1.
 Tecopa area: Mason, J. F., 1.
 Tejon fm.: Marks, J. G., 2.
 Tertiary, correlations: Clark, B. L., 3.
 Sacramento Valley: Anderson, C. A., 1.
 Sandstones and shales: Haskell, N.
 A., 1.
 Trabuco, Baker conglomerates: Popenoe,
 W. P., 3.
 Tungsten Hills area: Lemmon D. M., 2.
 Vagueros fm. type locality: Thorup, R.
 R., 1.
 Ventura basin area: Jahns, R. H., 1;
 Kew, W. S. W., 1.
 Virgin springs area, Death Valley: Noble,
 L. F., 1.
 Volcanoes, Medicine Lake highland: An-
 derson C. A., 4.
 Wasco oil field: Bailey, W. C., 1.
 Wildrose Canyon: White, D. E., 2.
 Yokut, ss., Eocene: White, R. T., 1.
 Yosemite Valley: Harrison, C., 2.

Mineralogy.

- Albite: Gallagher, D., 1.
 Anauxite clays: Allen, V. T., 2.
 Andalusite: Allen, V. T., 1.
 Antimony: White, D. E., 2; Anonymous,
 27.
 Apophyllite: Bailey, E. H., 2.
 Benton Range: Lemmon, D. M., 3.
 Big Blue mines: Prout, J. W., Jr., 1.
 Blind Spring Hill area: Ransome, A.
 L., 2.
 Calico Mts., Erwin, H. D., 1.
 Chromite deposits: Allen, J. E., 3;
 Hawkes, H. E., Jr., 2; Rynearson,
 G. A., 1; Wells, F. G., 2, 5.
 Clays: Allen, V. T., 2; Dietrich, W. F., 1.
 Coal, Eocene: Clark, R. W., 2.
 Commercial quarry sec.: Woodford, A.
 O., 2.
 Dust from granite landslide: Miller, C.
 J., 1.

California—Continued.

Mineralogy—Continued.

- Fluorescent minerals: Eaton, A. L., 1.
 Geochemistry, quicksilver: Dreyer, R.
 M., 1.
 Gold: Gallagher, D., 1.
 Goose Lake siderite: Leonard, F. C., 1;
 Linsley, E. G., 1.
 Grass Valley area: Johnston, W. D., Jr.,
 1.
 Graywackes: Nicol, A., 1.
 Host-rock inflation, Grasslands: Farmin,
 R., 1.
 Iceland spar: Van Amringe, E. V., 1.
 Iron sulphide in lms.: Lauder milk, J.
 D., 1.
 Kyanite: Bailey, E. H., 1.
 Magnesite: Gary, G. L., 4.
 Manganese: Gary, G. L., 3; Hadley,
 J. B., 1.
 Minerals: Bradley, W. W., 2; Murdoch,
 J., 1; Vonsen, M., 1.
 Mint Canyon minerals: Nicol, B. A., 1.
 Mono Co. min. res.: Sampson, R. J., 1.
 Mono Lake Basin: Groesbeck, M. J., 1.
 Mother Lode: Averill, C. V., 1.
 Nahcolite: Fosbarg, W. F., 2.
 Newberry Mts.: Gardner, D. L., 1.
 Oil and gas fields: Jenkins, O. P., 4.
 Ord Mts.: Gardner, D. L., 1.
 Piedmontite: Bailey, E. H., 1.
 Pyrite: Pabst, A., 1.
 Pyrotilpnite: Murdoch, J., 3.
 Quarry, Crestmore: Woodford, A. O., 4.
 Quartz xenocrysts: Webb, R. W., 2.
 Quicksilver: Dreyer, R. M., 1; Eckel,
 E. B., 2, 3, 4; Ransome, A. L., 1;
 Ross, C. P., 1, 2; Anonymous, 27.
 Rosamond Dry Lake aerolite: Whitney,
 W. T., 1.
 Sands, anauxite: Allen, V. T., 2.
 Scheelite: Dale, N. C., 1; Farmin, R. 2.
 Selenite crystals: Underwood, J. F., 1.
 Serpentine, Sierra Nevada: MacDonald,
 G. A., 4.
 Sierra Nevada tectonic pattern: Locke,
 A., 1.
 Sillimanite mins.: Funk, B. G., 1.
 South coastal basins: Krumbein, W. C.,
 7.
 Sulphates, Leviathan mine: Gary, G.
 L., 1.
 Teepelite: Anonymous, 1.
 Thunder eggs: Cutler, V. P., 1; Dake,
 H. C., 2.
 Treanorite: Woodford, A. O., 3.
 Tridymite: Durrell, C., 1.
 Trinity Co.: Averill, C. V., 2.
 Tungsten: Lemmon, D. M., 1, 2, 4; Part-
 ridge, J. F., Jr., 1.
 Valentinite crystals: Murdoch, J., 4.
 Veatchite: Anonymous, 1.

Paleontology.

- Alabina, Pleist.: Willett, G., 1.
 Aucella-bearing beds: Rist, R. L., 1.

California—Continued.

Paleontology—Continued.

- Aves: DeMay, I. S., 1, 2, 3; Miller, L. H., 2; Orr, R. T., 1.
- Balanus, Miocene: Rothwell, W. T., Jr., 1.
- Black Hawk Ranch fauna: Richey, K. A., 1.
- Calva Popenoe, invalid: Popenoe, W. P., 1.
- Cantharus, Pleist.: Burch, T., 1.
- Capay Eocene: Benson, H., 2.
- Characteristic fossils: Hanna, G. D., 1.
- Chico fm., Cret., type locality: Taff, J. A., 1.
- Cibicides, Pliocene: LeRoy, L. W., 1.
- Coragyps, Pleist.: Miller, L. H., 3.
- Corals, Tert.: Durham, J. W., 2; Wells, J. W., 3.
- Correlations: Ferguson, G. C., 1; Goudkoff, P. P., 1; Laiming, B. G., 1, 3.
- Covelo district: Clark, S. G., 1.
- Cretaceous sed. succession: Anderson, F. M., 1.
- Dinosaur, Cret.: Stock, C., 4.
- Domingine fm., fauna, paleoecology: Vokes, H. E., 1.
- Equidae, Tert.: Drescher, A. B., 1.
- Fauna, Rincon Creek: Cooper, J. C., 1.
- Fish, Cenozoic: David, L. R., 1, 2, 3, 5.
- Floras, Tert.: Axelrod, 2; MacGinitie, H. D., 1.
- Foraminifera: Adams, B. C., 1; Chapman, F., 2; Crume, R. W., 1; Israelsky, M. C., 2; Laiming, B. G., 1, 2, 3; Marks, J. G., 1; Natland, M. L., 1.
- Foraminiferal correlations: Laiming, B., 1, 2.
- Formations, Los Angeles Basin oil fields: Wissler, S. G., 1.
- Fossil guidebook: Schenck, H. G., 1.
- Fossil man: Bowden, A. O., 1; Lopatkin, I. A., 1.
- Fossils, Stone Man Cave: Furlong, E. L., 2.
- Fusulinids: Thompson, M. L., 2.
- Ghoratia: Ingram, W. M., 2.
- Horses: Richey, K. A., 3.
- Ichnites: Curry, H. D., 1.
- Ichthyosaurs: Camp, C. L., 4.
- Index fossils, Foraminifera: Adams, B. C., 1; Laiming, B. G., 3.
- Kettleman Hills oil field: Woodring, W. P., 1.
- Lyonothamnus, Tert.: Axelrod, D. I., 3.
- Mammalia: Dougherty, J. F., 2.
- Man, fossil: Bowden, A. O., 1; Lopatkin, I. A., 1.
- Mesozoic, later: Anderson, F. M., 2.
- Metallurus: Richey, K. A., 4.
- Micropaleontology: Schenck, H. G., 3.
- Mint Canyon flora: Axelrod, D. I., 4.
- Miocene, Caliente Range: Eaton, J. E., 3.
- Mollusca: Berry, S. S., 1; Keen, A. M., 2.
- Mosasaurs: Stock, C., 2.
- Oil and gas fields: Jenkins, O. P., 4.

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Paleontology—Continued.

- Palaeocyclus: McAllister, J. F., 2.
- Pareumys: Wilson, R. W., 3.
- Pecten: Edwards, K. L., 1.
- Pseudotsuga: Mason, H. L., 1.
- Puffinus: Orr, R. T., 1.
- Radiolaria: Campbell, A. S., 1.
- Rodents: Wilson, R. W., 1, 2.
- Sea-cow: VanderHoof, V. L., 2.
- Signal Hill Pleist.: DeLong, J. H., Jr., 1.
- Sponges, Chazyan: Raymond, P. E., 1.
- Tar pit tiger: Colbert, E. H., 2.
- Tertiary life-zones, Mt. Diablo: Richey, K. A., 2.
- Tick Canyon fauna: Kew, W. S. W., 1.
- Uria, Pleist.: Miller, A. H., 2.
- Ventura Basin: Jahns, R. H., 1.
- Vertebrata, Cret.: Stock, C., 3.
- Petrology.*
- Anauxite clays: Allen, V. T., 2.
- Arroyo Seco flood deposits: Krumbein, W. C., 12.
- Benton Range: Lemmon, D. M., 3.
- Blind Spring Hill area: Ransome, A. L., 2.
- Clays, anauxite: Allen, V. T., 2.
- Coast Ranges: Taliaferro, N. L., 3.
- Commercial quarry: Woodford, A. O., 2.
- Conglomerates: Bellemín, G. J., 1; Popenoe, W. P., 3.
- Covelo district: Clark, S. G., 1.
- Deformation, Mt. Lyell-Mt. Whitney: Mayo, E. B., 1.
- Dust from granite landslide: Miller, C. J., 1.
- Flood gravel, San Gabriel Canyon: Krumbein, W. C., 3.
- Geochemistry, quicksilver: Dreyer, R. M., 1.
- Grass Valley area: Johnston, W. D., Jr., 1.
- Graywackes: Nicol, A., 1.
- Hat Creek lava flow: Anderson, C. A., 3.
- Host-rock inflation: Farmin, R., 1.
- Iceland spar: Van Amringe, E. V., 2.
- Kernville quad.: Miller, W. J., 2.
- Melanite-nepheline syenite: McAllister, J. F., 1.
- Metamorphism, Sierra Nevada: Durrell, C., 1.
- Mono Lake area: Gilbert, C. M., 1; Groesbeck, M. J., 1.
- Nephrite jade: Rogers, A. F., 2.
- Newberry Mts.: Gardner, D. L., 1.
- Ord Mts.: Gardner, D. L., 1.
- Paleozoic, Klamath Mts.: Hinds, N. E. A., 2.
- Quarry, Crestmore: Woodford, A. O., 1.
- Quartz gem stones: Symons, H. H., 1.
- Quartz veins, Grass Valley: Ingerson, F. E., 3.
- Quicksilver deposits: Eckel, E. B., 2.
- Rhyolite, Mammoth area: Chelikowsky, J. R., 1.
- Ring dike: Merriam, R. H., 2.

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Petrology—Continued.

- Sands, anauxite: Allen, V. T., 2.
- San Francisco Bay sediments: Louderback, G. D., 1.
- Sea floor, lithology: Emery, K. O., 5.
- Selenium soils: Lakin, H. W., 1.
- Serpentine: MacDonald, G. A., 4.
- Sierra Nevada: MacDonald, G. A., 4, 5; MacGinitie, H. D., 1.
- South coastal basins: Krumbein, W. C., 7.
- Temblor Range: Hudson, F. S., 1.
- Virgin Spring area, Death Valley: Noble, L. F., 1.
- Volcanoes, Medicine Lake highland: Anderson, C. A., 4.
- Whittier conglomerates: Bellemin, G. J., 1.

Physical geology.

- Benton Range: Lemmon, D. M., 3.
- Blind Spring Hill area: Ransome, A. L., 2.
- Calico Mts.: Erwin, H. D., 1.
- Caliente Range: Eaton, J. E., 1.
- Coast Ranges: Bailey, T. L., 1; Taliaferro, N. L., 3.
- Coso Hot Springs: Wilson, H. D. B., 1.
- Covelo dist.: Clark, S. G., 1.
- Crocker Flat landslide: Simonson, R. R., 1.
- Deformation, Mt. Lyell-Mt. Whitney: Mayo, E. B., 1.
- Earth motions near fault slip: Heck, N. H., 4.
- Earthquakes: Byerly, P., 1; Heizer, R. F., 1; Wood, H. O., 2.
- Fault, active, shearing off oil wells: Wilson, G. M., 1.
- Faulting: Gutenberg, B., 5; Hazzard, J. C., 1; Miller, W. J., 1, 3; Wilson, G. M., 1.
- Fluctuations, ground-water during earthquakes: LaRocque, G. A., Jr., 1; Thomas, H. E., 1.
- Geology and mineral deposits: Jenkins, O. P., 6.
- Geothermal gradient, Grass Valley: Spicer, H. C., 3.
- Grass Valley area: Johnston, W. D., Jr., 1; Spicer, H. C., 3.
- Gullies, Lassen Peak: Swartzlow, C. R., 1.
- Hat Creek lava flow: Anderson, C. A., 3.
- Host-rock inflation, Grasslands: Farmin, R., 1.
- Ice caves: McLeod, E., 3.
- Imperial Valley earthquakes, 1940: Buwalda, J. P., 1; Heck, N. H., 2; Neumann, F., 4; Ulrich, F. P., 2; Wood, H. O., 1.
- June Lake area: Putnam, W. C., 2.
- Kernville quad.: Miller, W. J., 2.
- La Jolla beach sand movements: LaFond, E. C., 1.
- Landslides, earthflows, Ventura: Putnam, W. C., 1.
- Marysville Buttes: Johnson, H. R., 1.

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Physical geology—Continued.

- Metamorphism, Sierra Nevada: Durrell, C., 1.
- Deeply buried sediments: Lyons, J. B., 1.
- Miocene, Caliente Range: Eaton, J. E., 3.
- Mono Lake area: Gilbert, C. M., 1; Groesbeck, M. J., 1.
- Natural gas fields: Jenkins, O. P., 4.
- Newberry Mts.: Gardner, D. L., 1.
- North Belridge oil field: Bailey, W. C., 2.
- Oil fields: Jenkins, O. P., 4.
- Ord Mts.: Gardner, D. L., 1.
- Paleozoic, Klamath Mts.: Hinds, N. E. A., 2.
- Pilliken area: Wells, F. G., 2.
- Pre-Tertiary diastrophism and plutonism: Woodford, A. O., 1.
- Quicksilver deposits: Eckel, E. B., 2; Ross, C. P., 1, 2.
- Ramona quad.: Merriam, R. H., 1.
- Rhyolite, Mammoth area: Chelikowsky, J. R., 1.
- Ring dike: Merriam, R. H., 2.
- San Benito quad.: Wilson, I. F., 1.
- San Francisco Bay: Louderback, G. D., 2.
- San Joaquin Hills: Bode, F. D., 1.
- San Joaquin Valley: Forbes, H., 1; Olson, W. S., 1; Stulken, E. J., 1.
- Santa Clara Valley: Tolman, C. F., 1.
- Sea cliffs, surface retreat, La Jolla: Emery, K. O., 2.
- Sea level changes, Ventura area: Putnam, W. C., 3.
- Seiad quad.: Ryneanson, G. A., 1.
- Seismic variations, San Joaquin Valley: Olson, W. S., 1.
- Seismic velocities, Tert. basins: Hafner, W., 1.
- Seismicity, Pacific Coast: Byerly, P., 2.
- Serpentine, Sierra Nevada: MacDonald, G. A., 4.
- Sierra Nevada: Locke, A., 1; MacDonald, G. A., 4, 5; Webb, R. W., 1.
- Submarine topog. off coast: Shepard, F. P., 6.
- Tecopa area: Mason, J. F., 1.
- Temblor Range faulting: Hudson, F. S., 1.
- Tungsten Hills: Lemmon, D. M., 2.
- Virgin Spring area, Death Valley: Noble, L. F., 1.
- Volcanoes, Medicine Lake highland: Anderson, C. A., 4.
- Wildrose Canyon: White, D. E., 2.
- Wilmington oil and gas field: Winterburn, R., 1.
- Yosemite Valley: Harrison, C., 2.

Physiographic geology.

- Barrier beaches, Long Branch: Grant, U. S., IV, 2.
- Coastal sediment shifting: Grant, U. S., IV, 4.
- Geomorphic provinces: Jenkins, O. P., 5.
- Glaciation, Sierra Nevada: Kessell, J. E., 2.

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- Glaciers: Heald, W. F., 1; Matthes, F. E., 4.
 Great Basin Ranges: Keyes, 72.
 Gullies, Lassen Peak: Swartzlow, C. R., 1.
 June Lake area: Putnam, W. C., 2.
 Kernville quad.: Miller, W. J., 2.
 Lakes, Searles Basin: Blackwelder, E. 5.
 Landslides, earthflows, Ventura: Putnam, W. C., 1.
 Mean sea level and sand movements: Leyboldt, H., 3.
 Oil and gas fields: Jenkins, O. P., 4.
 Rock streams, Sierra Nevada: Kessell, J. E., 1.
 San Joaquin Hills: Bode, F. D., 1.
 San Joaquin Valley: Forbes, H., 1.
 Sea floor levels: Shepard, F. P., 1.
 Sea-level changes, Ventura area: Putnam, W. C., 3.
 Submarine canyons: Schaffer, F. X., 1; Shepard, F. P., 6.
 Submarine coastal topog.: Ferguson, J. L., 1; Shepard, F. P., 6.
 Virgin Spring area, Death Valley: Noble, L. F., 1.
 Volcanoes, Medicine Lake highland: Anderson, C. A., 4.
 Yosemite Valley: Harrison, C., 2.
Underground water.
 Coso hot springs: Bagby, S., 1.
 Fluctuations, ground-water levels during earthquakes: LaRocque, G. A., Jr., 1; Thomas, H. E., 1.
 Minerals of geysers, Sonoma Co.: Vonsen, M., 1.
 San Joaquin River Valley: Forbes, H., 1; Jones, G. H., 1; Ingerson, I. M., 1.
 Santa Clara Valley: Tolman, C. F., 1.
 Tertiary, Sacramento Valley: Anderson, C. A., 1.
 California fossil guidebook: Schenck, H. G., 1.
 Cambrian. See also Paleontology, Cambrian.
 Adirondack border, N. Y.-Vt., Cambro-Ord. boundary: Wheeler, R. R., 3.
 Alabama: Adams, G. I., 1; Bowles, E. O., 2; Butts, C., 1; Jones, W. B., 1.
 Alberta: Allan, J. A., 5; Deiss, C. F., 1; Hage, C. O., 2; Russell, L. S., 1, 2.
 Appalachia: Nelson, W. A., 1.
 Arizona: Enlows, H. E., 1; Galbraith, F. W., 4; Keyes, 55, 115, 133; McKee, E. D., 3, 5; Schenk, E. T., 1; Sharp, R. P., 4.
 Arizona-Nevada correl.: Wheeler, H. E., 3.
 Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.
 British Columbia: Rice, H. M. A., 1.
 British Columbia-Alberta: Deiss, C. F., 1.
 California: Gardner, D. L., 1; Jenkins, O. P., 4, 6; Mason, J. F., 1; Noble, L. F., 1; Reed, R. D., 3.

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- Cambrian-Ordovician boundary, Okla.: Frederickson, E. A., Jr., 2.
 Canada, Cordilleran geosyncline: Warren, P. S., 1.
 Colorado: Butler, R. D., 1; Kessler, F. C., 1; Singewald, Q. D., 1.
 Cordilleran paleogeography: Deiss, C. F., 2.
 Cross section, Tex.-N. Mex.: Fritz, W. C., 1.
 Delaware Water Gap-Easton quads., Pa.-N. J.: Bayley, W. S., 1.
 Elvins fm., Mo.: Keyes, 94.
 Forest City basin, Kans.-Nebr.: McClellan, H. W., 1.
 Georgia, Cartersville area: Kesler, T. L., 1.
 Great Plains basin: Kornfeld, J. A., 6.
 Hanoverian ser., Minn., Iowa: Keyes, 78.
 Idaho, Kootenai Co.: Anderson, A. L., 1.
 Illinois: Keyes, 119; Templeton, J. S., 1.
 Iowa: Cline, L. M., 1; Keyes, 79; Wood, L. W., 1.
 Kansas: Abernathy, G. E., 1, 3; Jewett, J. M., 2, 4; Kornfeld, J. A., 4; Postley, O. C., 1; Stephenson, E. A., 1.
 Maine, Lewiston area: Fisher, L. W., 1.
 Martie overthrust, Md.-Pa.: Cloos, E., 4.
 Massachusetts, Blue Hills quad.: Chute, N. E., 1.
 Michigan, Antrim Ellsworth-Coldwater shs.: Tarbell, E., 1.
 Minnesota: Crowley, A. J., 1; Stauffer, C. R., 3; Thiel, G. A., 2.
 Missouri: Keyes, 76, 82, 106.
 Missouri-Illinois section: Kans, G. S., 2.
 Montana: Blackstone, D. L., Jr., 1; Deiss, C. F., 3, 4; Dorf, E., 2; Goddard, E. N., 2; Newcomb, R. C., 1.
 Nevada: Sharp, R. P., 6; Wheeler, H. E., 2, 3.
 Nevada-Arizona correl.: Wheeler, H. E., 3.
 Newfoundland: Johnson, H., 1, 2.
 New Jersey: Lewis, J. V., 1; Ludlum, J. C., 1.
 New Mexico, anomalies: Keyes, 46.
 New York: Bird, P. H., 1; Buddington, A. F., 1; Fluhr, T. W., 2, 6; Miller, R. L., 3; Richardson, G. B., 2; Wheeler, R. R., 5; Zolac, P., 4.
 North America, Cordilleran area: Deiss, C., 2.
 Eastern, correl.: Wheeler, R. R., 2.
 Mid-continent area: Dott, R. H., 3.
 Ore districts: Billingsley, P. R., 1.
 Pacific Ocean shores: Resser, C. E., 2.
 Western fms.: Hinds, N. E. A., 3.

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North America, etc.—Continued.

- North Carolina, Hiwassee dam: Ward, J. B., 1.
- North Dakota, deep-well records: Laird, W. M., 3.
- Northwest Territories: Lord, C. S., 2.
- Nova Scotia: Douglas, G. V., 8; Meservey, J. P., 1.
- Ohio, Vance well: Stout, W. E., 3.
- Oklahoma: Cram, I. H., 2; Goodrich, H. B., 1; Kirk, C. T., 1.
- Paleozoic oil poss., Miss.-Ala.: Mellen, F. F., 3.
- Pennsylvania: Fraser, D. M., 2; Hickok, W. O., IV, 1; Lohman, S. W., 4.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- South Dakota: Gries, J. P., 1; Kans. G. S., 1; Smith, W. C., 1.
- Tennessee: Eckel, E. C., 2, 3; Fox, P. P., 1; Laurence, R. A., 1; McGavock, C. B., Jr., 1; Martin, G. C., Jr., 1; Moneymaker, B. C., 1, 2.
- Tennessee Valley region: Eckel, E. C., 2.
- Texas: Barnes, V. E., 7; Bridge, J., 2, 3; Cheney, M. G., 1; Geol. S. A., 1; Hendricks, L., 1, 2; Keyes, 47, 102; Maxwell, R. A., 1; Nelson, L. A., 1; Ross, C. P., 4.
- Trilobita, correlations: Frederickson, E. A., Jr., 1.
- United States: Keyes, 74; Resser, C. E., 1.
- Utah: Eardley, A. J., 2; Williams, J. S., 1; Williams, N. C., 1.
- Vermont: Cady, W. M., 1; Hawkes, H. E., Jr., 1; Jacobs, E. C., 1.
- Virginia: Blomer, R. O., 3; Cooper, B. N., 1; Edmundson, R. S., 3.
- Washington, Stevens Co.: Bennett, W. A. G., 2.
- West Texas-New Mexico: DeFord, R. K., 2.
- Wisconsin, heavy minerals: Ostrander, A. R., 1.
- Wyoming: Bartram, J. G., 2; Beckwith, R. H., 1; Bertagnolli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Reuse, J. T., 1.
- Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.
- Yaquian, Grand Canyon, Ariz.: Keyes, 51.

Canada.

- Geological Branch reports: McLeish, J., 1.
- Geological investigations: Walker, J. F., 2.
- Geological Survey: Young, G. A., 1.
- Report, Dept. Mines and Resources, 1940: Camsell, C., 1.

Areas described.

- Magdalen Islands: Alcock, F. J., 6.

Economic geology.

- Coal reserves: Campbell, C. M., 1.

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Economic geology—Continued.

- Future oil provinces: Canada, G. S., 2; Levorsen, A. I., 6.
- Geochemistry, nat. gas: Price, P. H., 2.
- Geological invests.: Walker, J. F., 2.
- Geophysical explor., 1924-39: Macellwane, J. B., 2.
- Gold deposits, Canadian Shield: Moore, E. S., 3.
- Gold mineralization: Moorhouse, W. W., 3.
- Magdalen Is.: Alcock, F. J., 3, 6.
- Magnesia: Goudge, M. F., 1.
- Magnetite: Hayes, A. O., 1.
- Mineral resources: Allan, J. A., 3.
- Natural gas: Edmunds, F. H., 2; Irwin, J. S., 1.
- Petroleum: Edmunds, F. H., 2; Howard, W. V., 2; Hume, G. S., 6; Irwin, J. S., 1; Levorsen, A. I., ed., 5.
- Pyrite, gold deposits: Auger, P. E., 1.
- Pyrophyllite: Spence, H. S., 1.
- Sedimentary basins, oil and gas poss.: Alcock, F. J., 4.
- Soapstone: Spence, H. S., 1.
- Steatite: Spence, H. S., 1.
- Talc: Spence, H. S., 1.
- Western oil provinces: Alberta S. P. G., 1.

Paleontology.

- Ammonoids: McLearn, F. H., 2.
- Fauna, Belcher I.: Richards, H. G., 1.
- Foraminifera, Cody sh., correl.: Fox, S. K., Jr., 2.
- Koninckopora, alga: Wood, A., 1.
- Micropaleontology, chert: Wetzel, O., 1.
- Pleosporgia, revision: Okulitch, V. J., 1.
- Solenopora: Fritz, M. A., 5.
- Telcosts, Cret.: Sternberg, R. M., 2.

Historical geology.

- Cascadia: Schofield, S. J., 2.
- Future oil provinces, E. Canada: Canada G. S., 2.
- Magdalen Is.: Alcock, F. J., 6.
- Pre-Cambrian, Canadian Shield: Wilson, M. E., 1.
- Sedimentation, Cordilleran geosyncline: Warren, P. S., 1.
- Western oil provinces: Alberta S. P. G., 1.

Mineralogy.

- Albite: Gallagher, D., 1.
- Gold: Gallagher, D., 1; Moore, E. S., 3.
- High chloride mine waters: Bruce, E. L., 2.
- Hydrothermal alteration: Bruce, E. L., 3.
- Magnesia from brucite: Goudge, M. F., 1.
- Magnetite, in iron ores: Hayes, A. O., 1.
- Mineral resources: Allan, J. A., 3.
- Natural gas: Irwin, J. S., 1.
- Petroleum: Irwin, J. S., 1.
- Pyrite, gold deposits: Auger, P. E., 1.

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Mineralogy—Continued.

Pyrophyllite: Spence, H. S., 1.

Steatite: Spence, H. S., 1.

Talc: Spence, H. S., 1.

Physical geology.

Canadian Shield: Moore, E. S., 3.

Gold mineralization, ig. intrus.: Moorhouse, W. W., 3.

Hydrothermal alteration, pre-Camb. ig. rocks: Bruce, E. L., 3.

Magdalen Is.: Alcock, F. J., 6.

Physiographic geology.

Arctic glaciation: Washburn, A. L., 1.

Athabasca glacier, Jasper Park: Clarke, H., 1.

Glacial map, invest.: Nichols, D. A., 2.
Lake Agassiz beaches: Johnston, W. A., 1.

Magdalen Is.: Alcock, F. J., 6.

Canal Zone. See Panama.

Carbohydrates, origin of oil and bituminous coals: Berl, E., 1.

Carbonate-apatite, Arkansas: McConnell, D., 1.

Carbon dioxide.

New Mexico: Miller, J. C., 1.

Utah: Miller, J. C., 1.

Carboniferous. See also Paleontology, Carboniferous.

Alabama: Adams, G. I., 1; Bowles, E. O., 2; Butts, C., 1; Jones, W. B., 1; Ross, R. M., 1; Spain, E. L., Jr., 1.

Alaska: Capps, S. R., 1; Moffit, F. H., 1.

Alberta: Mackenzie, W. D. C., 1; Russell, L. S., 1, 2.

Anthozoa, Kans., Okla., Tex.: Moore, R. C., 11.

Appalachia: Nelson, W. A., 1.

Appalachian coal fields: Wanless, H. R., 1.

Appalachian floral zones and fms.: Read, C. B., 3.

Appalachian geosyncline: Lafferty, R. C., Jr., 2.

Arctic America, Ellesmere I.: Bentham, R., 1.

Arizona: Galbraith, F. W., 4; Keyes, 55, 110, 133; McKee, E. D., 3, 5.

Arkansas: Branner, G. C., 1, 5; Easton, W. H., 1.

British Columbia: Armstrong, J. E., 1; Lay, D., 2; Rice, H. M. A., 1; Sargent, T. E. H., 2.

Bronson group, Kans.: Keyes, 92.

California: Hinds, N. E. A., 2; Jenkins, O. P., 4, 6; Johnston, W. D., Jr., 1; Miller, J. W., 2; Noble, L. F., 1; Prout, J. W., Jr., 1; Reed, R. D., 3; Seager, G. F., 1; Woodford, A. D., 1.

Canada: Alcock, F. J., 6; Warren, P. S., 1.

Carboniferous-Permian boundary: Moore, R. C., 1.

Cascadia: Schofield, S. J., 2.

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Chert, Nor. Am.: Wetzel, O., 1.

Chester, Illinois Basin: Dana, P. L., 1.

Cimarron red-bed, N. Mex.: Keyes, 95.

Cincinnati Arch area: Weirich, T. E., 1.

Coals, splint, Appalachians: Sprunk, G. C., 1.

Colorado: Burbank, W. S., 1, 3; Butler, R. D., 1; Dorrell, C. V., 1; Heaton, R. L., 1; Kessler, F. C., 1; Singewald, Q. D., 1; Wagner, C. P., 1.

Cross sections, Colorado Springs-Black Hills: Thompson, W. O., 1.

Cross sections, Tex.-N. Mex.: Dickey, R. L., 1; Fritz, W. C., 1; Woods, E. H., 1.

Des Moines beds, Iowa: Cline, L. M., 2.

Doe Run dolomite, Mo.: Keyes, 87.

Forest City basin field, Kans.-Neb.: McClellan, H. W., 1.

Great Plains basin: Kornfeld, J. A., 6.

Illinois: Cady, G. H., 1; Cohée, G. V., 3; Grim, R. E., 5; Keyes, 73; Newton, W. A., 1; Payne, J. N., 1, 1-a; Simons, H. F., 1; Weller, J. M., 1, 2; Workman, L. E., 1.

Indiana, ferruginous layers, weathering: Shrock, R. R., 5.

Iowa: Cline, L. M., 1; Keyes, 77, 125, 130; McHugh, W. E., 1; Wood, L. W., 1.

Kansas: Abernathy, G. E., 1, 3; Frye, J. C., 7; Jewett, J. M., 1, 2, 3, 4; Keyes, 139; Kornfeld, J. A., 4; Lee, W., 1, 2; Lohman, S. W., 3; Moore, R. C., 5, 6; Mull, J. A., 1; Paddelford, J. T., 1; Postley, O. C., 1; Wallace, M. H., 1; Whitla, R. E., 1; Anonymous, 20.

Kansas City group: Keyes, 89.

Kentucky: Dana, P. L., 1; Rhoades, R. F., 1, 5; Stouder, R. E., 1.

Kinderhook fms., Iowa: Keyes, C. R., 2.

Kinderhook unconformities: Keyes, 9.

Massachusetts, Blue Hills quad.: Chute, N. E., 1.

Memorial sh., Okla.: Dott, R. H., 2.

Mexico: González, E. M., 1; King, R. E., 1; Mullerried, F. K. G., 2; Woodford, A. O., 1.

Michigan: Addison, C. C., 1; Bergquist, S. G., 1; Bishop, M. S., 1; Hale, L., 1; Tarbell, E., 1.

Mississippi: Morse, W. C., 1.

Mississippian border, E.-Interior basin: Weller, J. M., 3.

Missouri: Bradley, R. S., 1, 2; Gallagher, R. T., 1; Keyes, 58, 82, 86, 101, 106; McQueen, H. S., 2; Moore, G. E., 1.

Missouri-Illinois section: Kans. G. Soc., 2.

Montana: Blackstone, D. L., Jr., 1; Deiss, C. F., 3, 4; Frenzel, H., 1;

Goddard, E. N., 2; Maravich, M. D., 1.

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- Myalinidae zones: Newell, N. D., 4.
 Navajo coal measures, N. Mex.: Keyes, 90.
 Nebraska, S. W.: Reed, E. C., 1.
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 Nemaha orogeny, Kans., Neb.: Keyes, 99.
 Nevada: Dreyer, R. M., 2; Merriam, C. W., 1.
 New Brunswick: Alcock, F. J., 1.
 New Hampshire: Billings, M. P., 2, 4; Meyers, T. R., 2.
 New Mexico: Baker, C. L., 1, 2; De Ford, R. K., 5; Harley, G. T., 1; Keyes, 18; Laudon, L. R., 2, 4; Needham, C. E., 1; Patton, L. T., 1; Ray, L. L., 2; Smith, J. F., Jr., 5.
 New York: Gillette, T., 1; Richardson, G. B., 2.
 North America, coals: Marshall, C. E., 1; Keyes, 81.
 Mid-continent area: Dott, R. H., 3.
 Mississippian basin: Kornfeld, J. A., 5.
 Ore dists.: Billingsley, P. R., 1.
 Permian volcanism: Wheeler, H. E., 1.
 Taconic disturbances: Kay, G. M., 3.
 North Dakota, deep-well records: Laird, W. M., 3.
 Nova Scotia: Bell, W. A., 1; Douglas, G. V., 3; Flynn, A. E., 1; MacLean, J. H., 1.
 Ohio: Foreman, F., 1; Ver Steeg, K., 2; Williams, A. B., 1.
 Oklahoma: Bass, N. W., 2, 3; Borden, J. L., 1; Boyd, W. B., 1; Dawson, E. A., 1; Dillard, W. R., 1; Frost, V. L., 1; Goodrich, H. B., 1; Hendricks, T. A., 1; Kennedy, L. E., 1, 3; Kirk, C. T., 1; Merritt, C. A., 2; Moore, C. A., 1; Oakes, M. C., 1, 3, 4; Paschal, E. A., 1; Raasch, G. O., 2.
 Oregon: Allen, J. E., 2; Goodspeed, G. E., 6; Merriam, C. W., 2; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4.
 Paleozoic nor. Miss., Ala.: Mellen, F. F., 3.
 Palo Pinto beds, Tex.: Daniel, O. A., 1.
 Pawnee lms., Kans.: Keyes, 83.
 Pennsylvania: Ashley, G. H., 1; Cleaves, A. B., 1; Darton, N. H., 1; Dickey, P. A., 1; Fettke, C. R., 2, 3, 4; Foote, R. M., 1, 2; Hickok, W. O., IV, 1; Laird, W. M., 1, 2; Lohman, S. W., 4; Seaman, D. M., 3; Seltzer, G. S., 1; Sherril, R. E., 2; Willard, B., 4.
 Pennsylvania sands, Okla., Kans.: Bartram, J. G., 4.
 Pennsylvanian void, Kans.: Keyes, 98.
 Permian: Schenck, H. G., 8.
 Arizona-Utah basin: McKee, E. D., 2.
 Classification: Tomlinson, C. W., 1.
 Problems: DeFord, R. K., 4.
 Rocky Mts.-Colo. plateau area: Baker, A. A., 1.

Carboniferous—Continued.

- Permian-Pennsylvanian, Colo.-S. Dak.: Thompson, W. O., 2.
 Permian-Triassic: Newell, N. D., 2, 5, 6.
 Phosphate, U. S.: Mansfield, G. R., 4.
 Quebec, Gaspé: Jones, I. W., 1.
 Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
 Redwall fm., Ariz.: Keyes, 17.
 Rex chert, origin: Keller, W. D., 2.
 Riley lms., Kans., Tex.: Keyes, 84.
 Rocky Mt. area: Bartram, J. G., 1.
 San Andres group, Okla., N. Mex., Tex.: Clifton, R. L., 1; Lewis, F. E., 1.
 South Dakota: Gries, J. P., 1; Smith, W. C., 1.
 South Dakota-Wyoming section: Kans. G. Soc., 1.
 Stratigraphy, insol. res.: Hamblin, R. H., 1.
 Tennessee: Martin, G. C., Jr., 1; Rose, N. A., 1; Whitlatch, G. I., 1; Wilson, C. W., Jr., 1.
 Tennessee Valley region: Eckel, E. C., 2.
 Texas: Adams, J. E., 1; A'britton, C. C., Jr., 1; Baker, C. L., 3; Cheney, M. G., 1; Clark, G. C., 1; Cole, T., 1; DeFord, R. K., 1, 5; Geol. Soc. A., 1; Germond, K. W., 1; Giesey, S. C., 1; Gill, J. P., 1; Hillswick, W. J., 1; Huffington, R. M., 3; King, P. B., 2, 3; Leuenberger, B., 1; McSpadden, W., 1; Maxwell, R. A., 1; Nelson, L. A., 1; Page, L. R., 1; Plummer, F. B., 3, 5; Powers, E. H., 1; Ross, C. P., 4; Schneider, W. T., 1; Sidwell, R. G., 2; Skinner, J. W., 1; Smith, J. F., Jr., 4; White, W. N., 2; Wilson, G. M., 2.
 Traverse, Mo.-Iowa: Cline, L. M., 2.
 United States, Permian correls.: Dunbar, C. O., 1.
 Utah: Bacon, C. S., Jr., 1; Gregory, H. E., 1; McKnight, E. T., 1; Schoff, S. L., 2; Stringham, B., 1; Williams, N. C., 1.
 Utah-Arizona, Hurricane fault: Gardner, L. S., 1.
 Virginia: Cooper, B. N., 1; Roberts, J. K., 2.
 Washington, Colville batholith: Waters, A. C., 2.
 West Texas-New Mexico area: DeFord, R. K., 2.
 Whitehorse ss.: Newell, N. D., 1.
 Wyoming: Beckwith, R. H., 1; Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Rouse, J. T., 1; Thomas, H. D., 1.
 Wyoming-South Dakota: Bartram, J. G., 2; Condra, G. E., 1.
 Carboniferous period: Keyes, 80.
 Carolina bays, origin: Johnson, D. W., 4.

Cartography.

Aerial photography and photos. in geol. mapping: Bruce, H. T., 1; Loel, W., 1.

Air mapping: Meyer, W. H., Jr., 1.

Interpretation, geol. maps and aerial photos.: Eardley, A. J., 3.

Iowa. Red-Oak fault mapping: Keybs, 126.

Oklahoma, mapping fms. from aerial photos.: Desjardins, L., 1.

Photogeology: Rea, H. C., 2.

Seismic reflection data, computation: Widess, M. B., 1.

Submarine valleys. Atlantic Coast, mapping: Veatch, A. C., 1.

Surface feature representation: Straw, H. T., 1.

Tennessee, highland rim plateau: Straw, H. T., 1.

U. S., relief map: Atwood, W. W., Jr., 1.

Virginia mapping: Glenn, L. C., 1; Singewald, J. T., Jr., 1.

Cascadia: Schofield, S. J., 2.

Cassiterite.

South Dakota, Tinton dist.: Smith, W. C., 1.

Washington: Dake, H. C., 5; Fernquist, C. O., 2.

Catalogue Nor. Am. Tert. Coastal Plain fossils: Stenzel, H. B., 12.

Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 4.

Caves.

Alabama, Guntersville dam: Ross, R. M., 1.

Bermuda: Allen, C. M., 1.

Ground-water flow and solution pattern: Rhoades, R. F., 6.

Idaho, Shoshone ice caves: Baxter, W. T., 1.

Illinois, Joliet lms.: Bretz, J. H., 2.

Kentucky, cavern drainage: Malott, C. A., 1.

Mexico: Wittich, E. L. M. E., 1.

Missouri-Illinois sec.: Kans. G. S., 2.

Pennsylvania: Keller, F., Jr., 1; Miller, R. L., 2; Stone, R. W., 1; Anonymous, 5.

South Dakota, Black Hills: Neighbor, F., 1.

Tennessee: Eckel, E. C., 3; Fox, P. P., 1;

Laurence, R. A., 1; McGavock, C. B., Jr., 1; Simpson, G. G., 10.

Tennessee Valley subriver solution: Moneymaker, B. C., 4.

Texas: Geol. S. A., 1; Ross, C. P., 4.

Virginia: Anonymous, 7.

Wisconsin, Pokerville: Fischer, A. G., 1.

Celadonite, composition, origin: Hendricks, S. B., 1.

Celestite.

California: Murdock, J., 1.

Kansas: Carpenter, A. C., 2.

Central America. See also Costa Rica, Guatemala, etc.

Physical geology.

Volcanoes: Müllerried, F. K., 1.

Centrifuge tube for heavy mineral work: Bertholf, W. E., Jr., 1.

Cephalopoda. See also Mollusca.

Actinoceras, apical end: Flower, R. H., 1.

Actinoceroidea, N. Y., Quebec: Flower, R. H., 2.

Alabama, Montevallo-Columbiana quads.: Butts, C., 1.

Alaska, Seward Penin.: Flower, R. H., 8.

Alberta, sou. plains: Landes, R. W., 1; Russell, L. S., 1.

Ammonites, Cuba: Corral y Alemán, 3; Jaworski, E., 1.

Texas, Dallas Co.: Dallas Petroleum Geologists, 1.

Types and cycles: Haas, O., 1.

Ammonoid sutures, representation: Furnish, W. M., 1.

Ammonoids, Carboniferous, Nor. Am.: Miller, A. K., 3.

Cretaceous, Tex.: Scott, G., 3.

Permian, Nor. Am.: Miller, A. K., 1, 2, 5, 6.

Triassic, Nor. Am.: Johnston, F. N., 1; McLearn, F. H., 2, 5.

Anevda for Advena: Palmer, K. E. H. V. W., 1.

Bolomite, Greenland: Fischer, A., 2.

Belemnosella floweri for Advena floweri: Stenzel, H. B., 11.

Blastocera for Blastoceras: Flower, R. H., 3.

British Columbia: McLearn, F. H., 3, 4. California: Hanna, G. D., 1; Taff, J. A., 1.

Cretaceous, sou.-cent. U. S.: Scott, G., 2. Cryptochorda, Gulf Coast: Stenzel, H. B., 4.

Discosoroidea (Nautiloidea): Flower, R. H., 4.

Eurysiphonata, N. Y.: Flower, R. H., 7.

Fauna, Cambridge lms., Pa.: Seaman, D. M., 3.

Cretaceous, Alberta, British Columbia: Warren, P. S., 2.

Cuba: Corral y Alemán, 3; Imlay, R. W., 6.

Frobisher Bay, Arc. Am.: Roy, S. K., 1. Jurassic: Imlay, R. W., 4, 6.

Hyatt's cephalopod genera, publication: Shrock, R. R., 4.

Leurocyloceras, Nor. Am.: Flower, R. H., 5.

Lipparia, Gulf Coast: Stenzel, H. B., 4.

Mexico: Humphrey, W. E., 1; Imlay, R. W., 2.

Midway fauna, west Gulf prov.: Gardner, J. A., 4.

Minnesota, S. E.: Stauffer, C. R., 3.

Mississippi: Stephenson, L. W., 1.

Mixochaoites: Flower, R. H., 6.

Cephalopoda—Continued.

- Naedyceras, Sphyradoceras, relations:
 Flower, R. H., 9.
 Nautilicones, Nor. Am.: Ulrich, E. O., 1.
 Nautiloid, Ala.: McGlamery, W., 1.
 Nautiloids, Gulf Coast: Stenzel, H. B., 3.
 Navarro group, Tex.: Stephenson, L. W., 3.
 New Mexico, Penn.: Young, J. A., Jr., 1.
 Niagaran, Ohio-Ind.: Busch, D. A., 1.
 Ontario, Toronto-Hamilton area: Caley, J. F., 1.
 Oregon, Wallowa Mts.: Smith, W. D., 4.
 Pennsylvania, Ames lms.: Seaman, D. M., 1.
 Permian, Chiapas, Mex.: Müllerried, F. K. G., 2.
 Rapdolph quad., Utah-Wyo.: Richardson, G. B., 3.
 Sphyradoceras, Naedyceras, relations:
 Flower, R. H., 9.
 Texas, Permian: Stainbrook, M. A., 8.
 Pyrite faunas: Scott, G., 4.
 Triangular coiling: Cronels, C. G., 7.
 Utah, Confusion, Conger Ranges: Bacon, C. S., Jr., 1.
 Wisconsin, Door Co.: Shrock, R. R., 1.
 Cerite, Colorado: Goddard, E. N., 3; Hanson, R. A., 1.
 Cetacea. See Mammalia.
 Chabazite, Pennsylvania: Haerberle, W. F., 1.
 Chalcadony.
 Colorado, Specimen Mt.: Wahlstrom, E. E., 3.
 Cuba, Madruga: Anónymous, 22.
 Florida, pseudomorphs after coral: Manchester, J. G., 2.
 Idaho, Almanden mine: Anderson, A. L., 5.
 Oregon, filling spherulites: Ross, C. S., 2.
 Chalcanthite, Montana: Smith, P. A., 1.
 Chalcoite.
 General: Buerger, N. W., 1.
 Montana, Butte area: Smith, P. A., 1.
 Chalcopyrite.
 Colorado, La Plata Mts.: Galbraith, F. W., 5.
 Montana, Butte area: Smith, P. A., 1.
 New York, Gailor quarry: Zodac, P., 4.
 North Carolina: Hafer, C., 1.
 Chalk, Kansas, Castle Rock: Robertson, G. M., 1.
 Chalmersite, Cuba: San Martín y Saenz, R., 3.
 Changes of level. See also Beaches; Shore lines; Terraces.
 Arctic America, Ellesmere I.: Bentham, R., 1.
 Bay of Fundy: Koons, E. D., 1.
 Bermuda: Knox, A. S., 1.
 California, Ventura area: Putnam, W. C., 3.
 Cuba, active syncline: Palmer, R. H., 1.
 Florida, mangroves, geol. role: Davis, J. H., Jr., 1.

Changes of level—Continued.

- Greenland, Holstensborg dist.: Belknap, R. L., 1.
 Guam: Stearns, H. T., 8.
 Hawaii: Stearns, H. T., 2, 3, 4, 8.
 Isostatic control of sea level: Lawson, A. C., 1, 2.
 Maryland: Miller, C. A., Jr., 1.
 Massachusetts: Chute, N. E., 2; Mather, K. F., 1.
 Mississippi River: Russell, R. J., 2.
 New England, late-glacial: Lougee, R. J., 5.
 Newfoundland, Quat.: Flint, R. F., 3.
 New Mexico, San Juan basin: Sears, J. D., 1.
 Oklahoma, red beds: Anderson, G. E., 1.
 Ontario, eastern: Chapman, L. J., 1.
 Sea level, criteria: Hoffmeister, J. E., 3.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Wisconsin, Door Co.: Shrock, R. R., 1.
 Channel adjustment in erodible material:
 Lassen, L., 1.
 Charophyta, Rocky Mts.: Peck, R. E., 2.
 Chelonia. See also Reptilia.
 California, Kettleman Hills oil field:
 Woodring, W. P., 1.
 Syllomus, W. Va.: Berry, C. T., 4.
 Chert.
 Alabama: Zodac, P., 2.
 Kentucky: Young, D. M., 1.
 North America, micropaleontology: Wetzel, O., 1.
 Ontario, in Grenville marble: Tarr, W. A., 1.
 Petrography, Rex chert: Keller, W. D., 2.
 Rex chert, origin: Keller, W. D., 2.
 Texas, Ellenburger fm.: Cole, T., 2.
 Chlorite, hardness: Switzer, G., 1.
 Chondrodite, New York: Pegau, A. A., 3.
 Chromite.
 California: Allen, J. E., 3; Hawkes, H. E., Jr., 2; Rynearson, G. A., 1; Wells, F. G., 2, 5.
 Geophysical prosp. for ore: Lee, F. W., 3.
 Montana, Stillwater complex: Peoples, J. W., 1.
 North America, ore dists.: Billingsley, P. R., 1.
 Oregon: Allen, J. E., 1; Thayer, T. P., 1, 2; Wells, F. G., 3.
 Texas: Barnes, V. E., 11.
 Washington, Twin Sisters Mts.: Bennett, W. A. G., 1.
 Wyoming, Casper Mt.: Stephenson, E. L., 2.
 Chromium, Oregon, Grants Pass quad.: Wells, F. G., 1.
 Cirques, Utah, Wasatch Plateau: Spieker, E. M., 1.
 Cirripedia. See also Crustacea.
 Balanus, Calif.: Rothwell, W. T., Jr., 1.

Classification.

- Coal, physical constitution: Dapples, E. C., 3.
 Crinoidea, Paleozoic, revision; Moore, R. C., 15.
 Decimal system for geophys. prosp.: Heiland, C. A., 2.
 Eupachyrinus, etc., Missn.: Sutton, A. H., 3.
 Land forms: Howard, A. D., 3.
 Marmaton group, Kans.: Jewett, J. M., 3.
 Permian: Tomlinson, C. W., 1.
 Plesiosaurs: White, T. E., 1.
 Sand dunes: Melton, F. A., 3.
 Shorelines: Johnson, D. W., 2.
 Wave-formed ripple marks: Evans, O. F., 2.
 Clastics, California, Temblor Range: Hudson, F. S., 1.
 Claiborne vs. Moodys: Harris, G. D., 1.
 Clay.
 Acid clay, weathering agent: Graham, E. R., 1.
 Alabama: Bowles, E. O., 2; Bramlette, M. N., 3, 4; Butts, C., 1.
 Arkansas, Polk Co.: Branner, G. C., 1.
 Bentonite and unconformities: Whitcomb, L., 4.
 Bleaching clays: Schroter, G. A., 1.
 Bonding clays: Grim, R. E., 3.
 British Columbia: Rice, H. M. A., 1.
 California: Allen, V. T., 2; Bradley, W. W., 2; Dietrich, W. F., 1; Forbes, H., 1.
 Colloidal dispersions: Nutting, P. G., 1.
 Composition of: Norton, F. H., 2.
 Connecticut, Trias.: Krynine, P. D., 12.
 Cristobalite in: Gruner, J. W., 2.
 Dams, and modern clay researches: Winterkorn, H. F., 1.
 Florida, bleaching: Bay, H. X., 4.
 Fossil magnetism: McNish, A. G., 1.
 General: Grim, R. E., 1.
 Georgia: Bay, H. X., 3; Bradley, W. F., 1; Crickmay, G. W., 8; Kesler, T. L., 1.
 Hawaii, ceramic: Wentworth, C. K., 1.
 Illite, montmorillonite: Grim, R. E., 4.
 Iowa, loess: Cuthbert, F. L., 1.
 Kansas: Jewett, J. M., 4; Robertson, G. M., 4; Smith, H. T. U., 9.
 Kentucky: Bramlett, M. N., 2; Young, D. M., 1.
 Laboratory formation: Norton, F. H., 1.
 Lattice structure, properties: Hendricks, S. B., 2.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
 Maryland: Gray, W. B., III, 1.
 Massachusetts: Chute, N. E., 2; Hough, J. L., 1.
 Materials of: Grim, R. E., 6.
 Mexico: Gonzalez, E. M., 1.
 Minerals of, significance: Grim, R. E., 7.

Clay—Continued.

- Mississippi: Bay, H. X., 2; Conant, L. C., 1; Foster, V. M., 1, 2; Melten, F. F., 1, 4.
 Missouri: Bradley, R. S., 1, 2; Davis, W. E., 1.
 Molding sands: Grim, R. E., 2.
 Nebraska: Cadý, R. C., 2.
 Nevada, pinitized deposits: Kerr, P. F., 1.
 New Hampshire: Bannerman, H. M., 2; Meyers, T. R., 1.
 New Jersey: Lewis, J. V., 1.
 North America, ceramic: Hueckel, H. J., 1.
 North Carolina: Burchfiel, B. M., 1; Hunter, C. E., 2; Anonymous, 30.
 Nova Scotia: Bell, W. A., 1.
 Ohio: Stout, W. E., 1; Williams, A. B., 1.
 Ontario: Chapman, L. J., 1.
 Oregon: Oregon St. Bd., 1.
 Pennsylvania: Ashley, G. H., 1; Hickok, W. O., IV, 1; Leighton, H., 1.
 Quebec: Ambrose, J. W., 2; MacKenzie, G. S., 1.
 Rain prints: Blackwelder, E., 6.
 Sediments, recent marine: Dietz, R. S., 1.
 South Carolina: Bay, H. X., 1; Calhoun, F. H. H., 1; Lang, W. T. B., 1.
 South Dakota, bentonite: Spivey, R. S., 1; Wing, M. E., 1.
 Tennessee: Bramlette, M. N., 2; Fox, P. P., 1; Whitlatch, G. I., 2.
 Texas: Dallas Petroleum Geologists, 1; King, P. B., 1; Leuenberger, B., 1.
 United States, sou.: Mansfield, G. R., 1, 2.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Washington: Frenquist, C. O., 2; Glover, S. L., 4.
 Clay balls, Kans.: Robertson, G. M., 4.
 Clays, fossiliferous, and clays on eskers: Lougee, R. J., 6.
 Clay researches: Kelley, W. P., 1.
 Cleavage.
 California, Mt. Lyell-Mt. Whitney: Mayo, E. B., 1.
 Folding, rock flowage, foliate structures: Mead, W. J., 1.
 New Hampshire, Mt. Washington: Billings, M. P., 2.
 Shales, calcareous: Lammers, E. C. H., 1.
 Climate, geologic. See Paleoclimatology.
 Climatic cycles.
 Iowa: Keyes, 79.
 90-year precipitation cycle: Moseley, E. L., 1.
 Prospective dry years: Gillette, H. P., 4.
 Climate and geomorphology: Visher, S. S., 1.
 Climatic inversions: Gillette, H. P., 3.
 Clinobarrandite: McConnell, D., 2.
 Clinocllore, New York: Trauer, J., 2.

Coal. See also **Lignite.**

- Alabama: Bowles, E. O., 2; Butts, C., 1.
 Alaska R. R. area: Capps, S. R., 1.
 Alberta, Redcliff area: Stewart, J. S., 2.
 Appalachian fields: Wanless, H. R., 1.
 Arkansas, Polk Co.: Branner, G. C., 1.
 British Columbia: Canada G. S., 1;
 Kindie, E. D., 1.
 California: Anderson, C. A., 1; Clark, R.
 W., 2.
 Canada, reserves: Campbell, C. M., 1.
 Carbohydrates in formation: Berl, E., 1.
 Colorado, Cody area: Pierce, W. G., 1.
 Fossil classification from macerated
 coal: Schopf, J. M., 1.
 General: Cady, G. H., 3; Moore, E. S.,
 1; Stutzer, O., 1.
 Illinois: Cady, G. H., 1, 2; Parks, B. C.,
 1; Payne, J. N., 2.
 Indiana: Switzer, J. E., 1.
 Iowa: Keyes, 77, 125.
 Kansas: Whitla, R. E., 1.
 Maryland: Gray, W. B., III, 1.
 Mexico: González, E. M., 1.
 Missouri: Gallagher, R. T., 1.
 North America, Carb.: Marshall, C. E.,
 1.
 Nova Scotia: Bell, W. A., 1; MacLean,
 J. H., 1.
 Ohio, Meigs Co.: Stout, W. E., 4; Wil-
 son, L. R., 5.
 Oklahoma, Washington Co.: Oakes, M.
 C., 1.
 Origin: Plotts, W., 1.
 Paleobotany: Darrah, W. C., 9; Thies-
 sen, R., 1.
 Paleozoic, nor. Miss., Ala.: Mellen, F. F.,
 3.
 Pennsylvania: Ashley, G. H., 1; Dar-
 ton, N. H., 1; Foose, R. M., 2;
 Hickok, W. O., IV, 1; Willard, B., 2.
 Physical constitution: Cady, G. H., 4;
 Dapples, E. C., 3; Lowry, H. H., 1;
 Sprunk, G. C., 2.
 Plants, Eocene, Wyo.: Wilson, L. R., 6.
 Sediments, study methods: Twenhofel,
 W. H., 6.
 Thermodynamics and coal formation:
 Fuchs, W., 1.
 United States, lignite: Lavine, I., 1, 2.
 Vegetable constituents: Darrah, W. C.,
 7.
 Washington, metasomatism: Goodspeed,
 G. E., 5.
 West Virginia, Devonian: Heck, E. T.,
 1.

Coal Balls.

- Cordaitanthus, Iowa: Darrah, W. C., 2.
 Ferns, Penn.: Darrah, W. C., 5.
 Illinois, Richland Co.: Schopf, J. M., 3.
 Lepidodendrales, Ill.: Reed, F. D., 1.
 North America, floras: Darrah, W. C.,
 4.
 Plant embryos in, Iowa: Darrah, W. C.,
 10.
 Psaronius, Ill.: Moon, G., 1.

Coal Balls—Continued.

- Stigmarian, appendages in: Stewart, W.
 N., 1.
 Coal Measures. See **Carboniferous.**
 Coast, Calif., sediment shifting: Grant,
 U. S., IV., 4.
 Cobalt and nickel in meteoric iron: Hender-
 son, E. P., 1.
 Cobbles, Virginia, York-James Penin.: Snif-
 fen, E. W., 1.
 Cocoliths, deep-sea cores, Atlantic: Bram-
 lette, M. N., 1.
 Coelenterata. See also **Anthozoa**; **Hydro-**
zoa; **Invertebrates (general)**.
 Aguayovina prob. Coelenterata: Bermú-
 dez y Hernández, P. J., 1.
 Fauna, Frobisher Bay, Arc. Am.: Roy,
 S. K., 1.
 Jellyfish, pre-Camb., Ariz.: Bassler,
 R. S., 4.
 Laotiroid, Camb., Wyo.: Caster, K. E.,
 3.
 Mississippi: Stephenson, L. W., 1.
 Pennsylvania, Ames lms. fauna: Sea-
 man, D. M., 1.

Collections.

- Catalogue of types, Royal Ontario Mus.
 Pal.: Fritz, M. A., 4.
 North Carolina minerals: Seaman, D.
 M., 2.
 Rowe minerals, Rutgers Univ.: Wilker-
 son, A. S., 1.
 U. S. Nat. Museum: Bassler, R. S., 3.

Color as guide to continental Tert.: Wood,
 H. E., 2d, 3.

Color slides, aid in geology: Wanless, H. R.,
 2.

Coloring, types in minerals: Kennard, T. G.,
 1.

Colorado.*Areas described.*

- Boulder Co. tungsten area: Lovering,
 T. S., 1.
 Cody area: Pierce, W. G., 1.
 Gold Hill: Goddard, E. N., 1.
 Horseshoe-Sacramento: Butler, R. D., 1.
 London fault: Singewald, Q. D., 1.
 Sacramento-Horseshoe: Butler, R. D., 1.
 San Juan Mts.: Burbank, W. S., 3.

Economic geology.

- Boulder Falls ore deposits: Rubright,
 R. D., 1.
 Cody area: Pierce, W. G., 1.
 Conger mine: McKenna, J. W., 1.
 Gold Hill mines: Goddard, E. N., 1.
 Horseshoe-Sacramento areas: Butler,
 R. D., 1.
 Manganese, Leadville: Hedges, J. H., 1.
 Nickel: Goddard, E. N., 4; Anonymous,
 28.
 Ore deposits: Galbright, F. W., 5;
 Singewald, Q. D., 1; Wahlstrom,
 E. E., 1.

Colorado—Continued.

Paleontology—Continued.

Paragenesis, Leadville: Chapman, E. P., 1.

Paragenesis, Cripple Creek: Loughlin, G. F., 1.

Pipes, ore-bearing, Tarryall Range: Butler, R. D., 2.

San Juan Mts., ore deposits: Burbank, W. S., 3.

Tungsten, Boulder Co.: Lovering, T. S., 1, 2.

Turquoise: Pearl, R. M., 5.

Uncompahgre area: Burbank, W. S., 1.

Vanadium-uranium deposits: Kelly, S. F., 1.

Wellington oil field: Wilson, J. H., 1.

Historical geology.

Audubon-Albion stock: Wahlstrom, E. E., 2.

Big-Thompson project: Heaton, R. L., 1.

Boulder County, tungsten area: Lovering, T. S., 1.

Camp Albion area: Wahlstrom, E. E., 1.

Cody area: Pierce, W. G., 1.

Conger mine: McKenna, J. W., 1.

Correlations: Condra, G. E., 2; Osborne, H. W., 1.

Cross sec. Colorado Springs-Black Hills: Thompson, W. O., 1.

Gold Hill area: Goddard, E. N., 1.

Green Ridge pegmatite: Ives, R. L., 5.

Greenhorn lms.: Keyes, 4.

Horseshoe-Sacramento areas: Butler, R. D., 1.

Indian Creek plutons: Boos, M. F., 1.

La Plata ss. correl.: Goldman, M. I., 2.

Lindenmeier site, age: Bryan, K., 3.

London fault area: Singewald, Q. D., 1.

Lykins fm.: Dorrell, C. V., 1.

Lyons area: Wagner, C. P., 1.

Marsland fm.: Schultz, C. B., 4.

Metamorphism, Idaho Springs fm.: Dings, M., 2.

Middle Park area: Ives, R. I., 1.

Morrison, Summerville fms.: Holt, E. L., 1.

Ouray lms.: Keyes, 38.

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Pitchblende, lead-uranium ratio: Muench, O. B., 1.

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Purgatoire fm.: Keyes, 57.

San Juan Mts.: Burbank, W. S., 3.

South Park: Behre, C. H., Jr., 2; Stark, J. T., 1.

Stony Mt. stock: Dings, M., 1.

Timpas lms., Cret.: Keyes, 128.

Tungsten ores, Boulder Co.: Lovering, T. S., 2.

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Vallejo fm., Tert.: Upson, J. E., 1.

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Cuprobismutite, a mixture: Palache, C., 3.

Gems, gem minerals: Pearl, R. M., 4, 7.

Gold Hill area: Goddard, E. N., 1.

Green Ridge pegmatite: Ives, R. L., 5.

Horseshoe-Sacramento areas: Butler, R. D., 1.

Hydrothermal deposits, Specimen Mt.: Wahlstrom, E. E., 3.

Igneous rocks, Jamestown: Bray, J. M., 1.

Manganese: Hedges, J. H., 1.

Minerals, St. Peter's dome: Pearl, R. M., 6.

Minerals, Turret: Pearl, R. M., 3.

Nickel, Gold Hill: Anonymous, 28.

Ore deposits, Camp Albion: Wahlstrom, E. E., 1.

London fault area: Singewald, Q. D., 1.

La Plata Mts.: Galbraith, F. W., 5.

Paragenesis, Cripple Creek: Loughlin, G. F., 1.

Leadville: Chapman, E. P., 1.

Pipes, ore-bearing: Butler, R. D., 2.

Pitchblende: Muench, O. B., 1.

Radioactive aureoles around ore deposits: Keevil, N. B., 4.

San Juan Mts., ores: Burbank, W. S., 3.

Spessartite in pegmatite: Pearl, R. M., 1.

Tellurides: Galbraith, F. W., 1.

Topaz, Devil's Head: Pearl, R. M., 8.

Tungsten, Boulder Co.: Lovering, T. S., 2.

Turquoise: Pearl, R. M., 2, 5.

Uncompahgre area: Burbank, W. S., 1.

Vanadium-uranium deposits: Kelly, S. F., 1.

Zoning in spherulites: Howard, A. D., 2.

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Algae, calcareous: Johnson, J. H., 3.

Charophyta, Rocky Mts.: Peck, R. E., 1.

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Fauna, Morrison, Summerville fms.: Holt, E. L., 1.

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Middle Park fm.: Burnhart, C. H., 2.
Folsom complex, Lindenmeier site: Roberts, F. H. H., Jr., 2.

Hallopus, Juras.: Chapman, F., 1.

Hymenoptera, Tert.: Cockerell, T. D. A., 2.

Lepidodendron, Penn.: Arnold, C. A., 3.

Lindenmeier site: Bryan, K., 3; Roberts, F. H. H., Jr., 1, 2.

Mammalia, Paleocene: Gazin, C. L., 3.

Microfauna, Niobrara, Benton fms.: Toepelman, W. C., 1.

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- Microfossils, Cret., Rocky Mts.: Peck, R. E., 2.
- Ostracoda, Rocky Mt. fms.: Peck, R. E., 1.
- Pennsylvanian calcareous algae: Johnson, J. H., 3.
- Plants, Mesaverde Cret.: Dorf, E., 5.
- Plants, Tert., cf. to-day, Creede Valley: Stewart, B. K., 2.
- Wood, fossil, localities: Kleeman, T. H., 1.

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- Audubon-Albion stock: Wahlstrom, E. E., 2.
- Green Ridge pegmatite: Ives, R. L., 5.
- Heavy minerals in laccolith: Dapples, E. C., 2.
- Horseshoe-Sacramento areas: Butler, R. D., 1.
- Igneous rocks, Jamestown: Bray, J. M., 1.
- Indian Creek plutons: Boos, M. F., 1.
- Metamorphism, Idaho Springs fm.: Dings, M., 2.
- Ore deposits, Camp Albion: Wahlstrom, E. E., 1.
- Specimen Mt. volcanics: Wahlstrom, E. E., 3.
- Stony Mt. stock: Dings, M., 1.
- Uncompahgre area: Burbank, W. S., 1.

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- Audubon-Albion stock: Wahlstrom, E. E., 2.
- Boulder County: Lovering, T. S., 1.
- Boulder Falls area: Rubright, R. D., 1.
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- Cody area: Pierce, W. G., 1.
- Conger mine area: McKenna, J. W., 1.
- Faulting, Pleist., recent: Upson, R. H., 2.
- Horseshoe-Sacramento areas: Butler, R. D., 1.
- Hydrothermal deposits, Specimen Mt.: Wahlstrom, E. E., 3.
- Indian Creek plutons: Boos, M. F., 1.
- Leadville, area: Chapman, E. P., 1.
- London fault area: Singewald, Q. D., 1.
- Lyons area: Wagner, C. P., 1.
- Metamorphism, Idaho Springs fm.: Dings, M., 2.
- Middle Park area: Ives, R. L., 1.
- Pseudo-landslide area: Burbank, W. S., 2.
- Radioactive aureoles around ore deposits: Keevil, N. B., 4.
- Rock glaciers, Front Range: Ives, R. L., 3.
- San Juan Mts.: Burbank, W. S., 3.
- South Park: Stark, J. T., 1.
- Stony Mt. stock: Dings, M., 1.
- Thrust faulting, Crater Lake area: Ives, R. L., 8.
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- Grand Canyon: Morris, T. G., 1.
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- London fault area: Singewald, Q. D., 1.
- Middle Park area: Ives, R. L., 1.
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- Colorado, Specimen Mt.: Wahlstrom, E. E., 3.
- Louisiana, Grant-LaSalle Parishes: Maher, J. C., 2.
- Nebraska: Cady, R. C., 2; Schultz, C. B., 5.
- Ohio, Dev. Callixylon: Hoskins, J. H., 1.
- Ontario, Thunder Lake: Pettijohn, F. J., 3.
- Oregon, central: Lupher, R. L., 2.
- Texas, Dallas Co.: Dallas Petroleum Geologists, 1.
- Wyoming, Ariksee fm.: Schultz, C. B., 5.

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- Kansas, Chairton: Wallace M. H., 1.
- Mexico, Durango: Terrones Langone, A., 1.
- Minnesota, Knife Lake: Gruner, J. W., 3.
- Ontario, Uchi-Slate Lakes: Bateman, J. D., 1.
- Ontario, Omega mine area: Jenney, C. P., 1; Moore, E. S., 2.
- Pennsylvania: Krynine, P. D., 9; Whitcomb, L., 2.
- Quebec: Flaherty, G. F., 1; Gunning, H. C., 2.
- Saskatchewan, Amisk Lake: Tanton, T. L., 2.
- Texas, Llano region: Geol. S. A., 1.
- Virginia, Max Meadows: Cooper, B. N., 1.
- Washington, Hood River: Warren, C. R., 1.

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- Circulation of: Lane, A. C., 6.
- Kansas, oil-wells: Runyon, E., 1.
- West Virginia: Heck, E. T., 4.
- Wyoming, oil-fields: Crawford, J. G., 1.

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Alaska R. R. region: Capps, S. R., 1.

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Montana, Butte area: Smith, P. A., 1.

Nevada, Churchill Co.: Vanderberg, W. O., 1.

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- Arizona, Basin Ranges: Wilson, E. D., 1.
- Arizona-Nevada, Camb.: Wheeler, H. E., 3.
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- California: Clark, B. L., 3; DeLong, J. H., Jr., 1; Eaton, J. E., 1, 3; Ferguson, G. C., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Goudkoff, P. P., 1; Jenkins, O. P., 4; Laiming, B., 1, 2, 3; Taft, J. A., 1; Wissler, S. G., 2.
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- Deep-sea cores, north Atlantic: Bramlette, M. N., 1.
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- Kentucky: Dana, P. L., 1; Freeman, L. B., 1; Stouder, R. E., 1.
- Lake Superior area: Tyler, S. A., 1.
- Latah beds, Idaho-Wash.: Upson, R. H., 1.
- Louisiana: Barry, J. O., 1; Bates, F. W., 1; Frink, J. W., 1; Packard, S. A., 1.
- Maine, Lewiston area: Fisher, L. W., 1.
- Mammalia, Tert., Europe and Nor. Am.: Pilgrim, G. E., 1.
- Martie overthrust, Md.-Pa.: Cloos, E., 4.
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- Nevada, Roberts Mts.: Merriam, C. W., 1.
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- New Hampshire, Mt. Washington: Billings, M. P., 2.
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- New Jersey: Graecen, K. F., 1; Lewis, J. V., 1; Woollard, G. P., 7.
- New Jersey-Alabama, Eocene: Toulmin, L. D., Jr., 3.
- New Mexico: DeFord, R. K., 5; Denny, C. S., 1; Needham, C. E., 1; Ray, L. L., 2.
- New York, S. E. metasediments: Miller, R. L., 3.
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- Ohio, Prout lms.-Plum Brook sh.: Stumm, E. C., 1.
- Oklahoma: Decker, C. E., 6; Oakes, M. C., 1.
- Oklahoma-Wisconsin, Trilobita: Frederickson, E. A., Jr., 1.
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- Permian, Mexico-Texas: Miller, A. K., 1.
- Rocky Mts.-Colo., plateau area: Baker, A. A., 1.
- United States with foreign: Dunbar, C. O., 1.
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- Quebec, Appalachians: Laverdière, J.-W., 1.
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- Schistosity and tectonic theory: De Lury, J. S., 1.
- Sea-cow, Miocene, Calif.: VanderHoof, V. L., 2.
- Silurian, lower Miss. River basin: Ball, J. R., 1.
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- Tertiary, Europe-Nor. Am.: Pilgrim, G. E., 1.
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 Vermont: Chapman, R. W., 1; Currier, L. W., 2.
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55; Kuhn, T. H., 1.

Arkansas: Imlay, R. W., 1; Trager, H.

H., 1; Weeks, W. B., 1.

Barbados, Paleogene: Senn, A., 1.

Barberian, Kans.: Keyes, 48.

Benton sh., Mont.: Keyes, 146.

Bermuda: Denison, A. R., 1.

British Columbia: Armstrong, J. E., 1;

Hedley, M. S., 2; Lang, A. H., 1;

McLearn, F. H., 1, 3.

California: Anderson, C. A., 1; Ander-

son, F. M., 1, 2; Clark, B. L., 4;

Clark, S. G., 1; Eaton, J. E., 1, 3;

Eckel, E. B., 2; Emery, K. O., 5;

Huey, A. S., 1; Jenkins, O. P., 3,

4, 6, 8; Johnson, H. R., 1; John-

ston, W. D., Jr., 1; Kirby, J. M., 1;

Lakin, H. W., 1; Lemmon, D. M., 1;

MacDonald, G. A., 5; Nicol, A., 1;

Payne, M. B., 1; Popenoe, W. P., 2,

3; Reed, R. D., 2, 3; Reinhardt, P.

W., 1; Ross, C. P., 1; Taff, J. A., 1;

Tallafarro, N. L., 2, 3; Tolman,

C. F., 1; Weaver, C. E., 2; Wilson,

I. F., 1; Wissler, S. G., 1; Wood-

ford, A. O., 1.

Canada, Cordilleran geosyncline: War-

ren, P. S., 1.

Cascadia: Schofield, S. J., 2.

Chico series: Anderson, F. M., 3.

Cincinnati Arch: Weirich, T. E., 1.

Colorado: Burbank, W. S., 1; Goddard,

E. N., 1; Heaton, R. L., 1; Kessler,

F. C., 1; Keyes, 128; Pierce, W. G.,

1; Wagner, C. P., 1.

Cordilleran shales: Keyes, 103.

Cuba: Albear, J. F. de, 1; Brodermann,

J., 1; Corral y Alemán, J. I., 1, 3.

Florida: Campbell, R. B., 2; Cole, W. S.,

2.

Great Plains basin: Kornfeld, J. A., 6.

Gulf Coast chart: Roy, C. J., 3.

Illinois: Weller, J. M., 1, 2.

Iowa: Keyes, 79; Wood, L. W., 1.

Jamaica, Kingston area: Matley, C. A., 1.

Cretaceous—Continued.

Kansas: Frye, J. C., 6; Jewett, J. M.,

4; Keyes, 121, 139; Latta, B. F., 1;

Lohman, S. W., 3; McLaughlin, T.

G., 3; Moore, R. C., 5, 6; Postley,

O. C., 1; Smith, H. T. U., 9.

Kentucky, post-Appalachian: Rhoades,

R. F., 1, 5.

Lloydminster fields, Alberta-Saskatche-

wan: Hume, G. S., 5.

Louisiana: Bornhauser, M., 1; Russell,

R. D., 3.

Mexico: Gálvez, V., 1; González, E. M.,

1; Humpbrey, W. E., 1; Imlay, R.

W., 2, 5; Kellum, L. B., 1, 2; King,

R. E., 1; Robinson, W. I., 1; Stone,

J. B., 1; Terrones Langone, A., 1;

Woodford, A. O., 1.

Minnesota: Stauffer, C. R., 3; Thiel,

G. A., 2.

Mississippi: Conant, L. C., 1; Hughes,

U. B., 1; Kornfeld, J. A., 3; Mellen,

F. F., 3; Miss, G. S., 4; Monroe,

W. H., 1; Morse, W. C., 1; Stephen-

son, L. W., 1; Toler, H. N., 1.

Missouri: Keyes, 82, 106.

Montana: Blackstone, D. L., Jr., 1; Delss,

C. F., 3, 4; Larsen, E. S., 3; Mara-

vich, M. D., 1; Pecora, W. T., 1, 3.

Nebraska, Keith Co.: Wenzel, L. K., 2.

Nebraska-Wyoming-South Dakota—Colo-

rado, correls.: Condra, G. E., 2.

Nevada, Muddy Mt.: Longwell, C. R., 10.

New Brunswick: Alcock, F. J., 1.

New Jersey: Chaffee, R. G., 1; Greacen,

K. F., 1; Lewis, J. V., 1.

New Mexico: Harley, G. T., 1; Keyes, 50;

Ray, L. L., 2; Sears, J. D., 1.

North America, ore dists.: Billingsley,

P. R., 1.

Mid-continent area: Dott, R. H., 3.

North Dakota: Laird, W. M., 3; Tisdale,

E. E., 1.

Northwest Territories: Lord, C. S., 2.

Oklahoma, S. E.: Hendricks, T. A., 3.

Oregon: Anderson, F. M., 1; Oregon St.

Bd., 1; Packward, E. L., 1; Wells,

F. G., 1; Wilkinson, W. D., 1.

Oregon-Philippines, correl.: Smith, W. D.,

1.

Pierre fm., Kans.: Keyes, 143.

Purgatoire fm., Colo.: Keyes, 57.

Quebec, Beattie mine: Banfield, A. F., 1.

Randolph quad., Utah-Wyo.: Richardson,

G. B., 3.

Rocky Mt. area: Bartram, J. G., 1.

Santa Domingo: Weyl, R., 1.

Saskatchewan: Furnival, G. M., 2;

Hume, G. S., 5; Wickenden,

R. T. D., 2.

Selenium soils, origin: Lakin, H. W., 1.

South Carolina, bleaching clays: Bay, H.

X., 1.

South Dakota: Gries, J. P., 1, 2; Wing,

M. E., 2.

Cretaceous—Continued.

- South Dakota-Wyoming sec.: Kans. G. S., 1.
 Standard of system: Muller, S. W., 1.
 Tennessee: Born, K. E., 1; Rose, N. A., 1; Whitlatch, G. I., 2.
 Tennessee Valley region: Eckel, E. C., 2; Rhoades, R. F., 4.
 Texas: Adams, J. E., 1; Albritton, C. C., Jr., 1; Bacon, C. S., Jr., 2; Baker, C. L., 3; Barnes, V. E., 10; Dallas Petroleum Geologists, 1; Geol. S. A., 1; Germond, K. W., 1; Giesey, S. C., 1; Gill, J. P., 1; Hilseweck, W. J., 1; Huffing, R. M., 3; Ives, R. L., 7; Johnson, E. H., 1; King, P. B., 1, 2; Kornfeld, J. A., 2; Lonsdale, J. T., 1; McLellan, H. J., 1; Maxwell, R. A., 1; Mills, B., 1; Morgan, A., 1; Perry, L., Jr., 1; Ross, C. P., 1; Scott, G., 1, 5; Smith, J. F., Jr., 2, 3, 4; White, W. N., 2; Wilson, G. M., 2.
 United States, southern: Mansfield, G. R., 2.
 Utah: Gregory, H. E., 1; McKnight, E. T., 1; Schoff, S. L., 2; Spieker, E. M., 1.
 Utah-Ariz., Hurricane fault: Gardner, L. S., 1.
 Virgin Islands, St. Croix: Cederstrom, D. J., 2, 3.
 Virginia, Coastal Plain: Cederstrom, D. J., 1, 4.
 Washington, Cascade Mts.: Wash. P. C., 1.
 West Indies, Cuban geosyncline: Corral y Alemán, J. I., 1.
 Wiskanian, Colo.-Kans.: Keyes, C. R., 97.
 Wyoming: Beckwith, R. H., 1; Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Dobrovolny, E., 1; Dockery, W. L., 1; Knight, S. H., 1; Pierce, W. G., 2.
 Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.
 Yorkian sedimental cycle: Keyes, 25.

Crinoidea. See also Echinodermata.

- Allagecrinidae, Okla., Mo.: Moore, R. C., 7.
 Anartiocrinus, Ohio, Ky.: Kirk, E., 2.
 Blastoids, early stages: Moore, R. C., 8.
 Carboniferous, Kans., Okla.: Moore, R. C., 2; Strimple, H. L., 2.
 Cestocrinus, Miss., Ind.: Kirk, E., 1.
 Delocrinus tegmental structure: Moore, R. C., 13.
 Devonian, Ohio: Stewart, G. A., 1.
 Dinotocrinus, Ala.: Kirk, E., 1.
 Eupachycrinus, etc., Miss.: Sutton, A. H., 3.
 Fauna, Cambridge lms., Pa.: Seaman, D. M., 3.
 Frobisher Bay, Arc. Am.: Roy S. K., 1.
 Inadunata, Carb., U. S.: Kirk, E., 3.
 Iowa: Beane, B. H., 1; Kirk, E., 4.
 Microcrinoids: Moore, R. C., 8; Peck, R. E., 3.

Crinoidea—Continued.

- Michigan, Onaway dist.: Kelly, W. A., 1.
 Minnesota, S. E.: Stauffer, C. R., 3.
 Nevada, Roberts Mts.: Merriam, C. W., 1.
 New Mexico, Sacramento Mts.: Laudon, L. R., 4.
 Niagaran, Ohio-Ind.: Busch, D. A., 1.
 Ohio, Devonian: Wells, J. W., 5.
 Oklahoma: Laudon, L. R., 3; Strimple, H. L., 1.
 Ontario: Caley, J. F., 1; Okulitch, V. J., 2.
 Paleozoic, revised classn.: Moore, R. C., 15.
 Pennsylvania, Ames lms.: Seaman, D. M., 1.
 Pennsylvanian, Kans., Okla., Tex.: More, R. C., 4.
 Permian, Mex.: Müllerried, F. K. G., 2.
 Stellarocrinus, Okla.: Strimple, H. L., 3.
 Symbathocrinus, Tex.: Moore, R. C., 10.
 Symbols, crinoid parts: Moore, R. C., 14.
 Texas: Geol. S. A., 1; Moore, R. C., 3, 10.
 Utah, Confusion, Conger Ranges: Bacon, C. S., Jr., 1.
 Virginia, Burkes Garden fossils: Perry, G. G., 1.

Cristobalite.

- Clays containing: Gruner, J. W., 2.
 Wyoming: Gruner, J. W., 1.

Crocodiles. See Reptilia.

Crustacea. See also Cirripedia; Ostracoda;

- Trilobita.
 Arizona, Grand Canyon: Resser, C. E., 4.
 Belcher I., Canada: Richards, H. G., 1.
 California: DeLong, J. H., Jr., 1; Eaton, J. E., 3; Woodring, W. P., 1.
 New Jersey, Vincentown fm.: Greacen, K. F., 1.
 Ohio, Cleveland area: Williams, A. B., 1.
 Pleistocene, marine, Newfoundland: Richards, H. G., 2.
 Texas, Dallas Co.: Dallas Petroleum Geologists, 1.

Cryolite, Colorado: Pearl, R. M., 6.

Cryptograms. See Paleobotany.

Crystal models, making: Fisher, D. J., 4.

Crystalline species, defs.: Peacock, M. A., 6.

Crystallographic procedures: Wolfe, C. W., 2.

Crystallography. See also Mineralogy.

Aragonite, Wyo.: Goldring, E. D., 1.

Augite: Haef, J. C., 2.

Biotites: Hall, A. J., 2.

Bornite-klaprotholite, Mex.: Krieger, P., 1.

Brookite: Donnay, J. D. H., 6.

Cahnite: Palache, C., 7.

Calcite: Lucas, E. L., 1; Toothaker, C. R., 1.

Cleavage flakes: Taylor, E. D., 8.

Columbite: Taylor, E. D., 1.

Crystalline species, defs.: Peacock, M. A., 6.

Crystallography—Continued.

- Crystallographic procedures: Wolfe, C. W., 2.
 Danburite: Donnay, J. D. H., 4.
 Diamond, distorted: Kraus, E. H., 3.
 Elements, minor, in crystals: Frondel, C., 7.
 Flow direction: Newhouse, W. H., 3.
 Garnet in muscovite: Frondel, C., 1.
 General: Adams, L. H., 1.
 Geodes: Palmer, E. J., 1.
 Gillespite: Pabst, A., 2.
 Gill's concept of unique diameters: Burfoot, J. D., Jr., 1.
 Gnomonic projection: Ramsdell, L. S., 1.
 Helictites, Va.: Barker, W., 1.
 Hornblende: Haff, J. C., 2.
 Interference figures: Donnay, J. D. H., 7.
 Jamesonite: Berry, L. G., 2.
 Jordanite: Fisher, D. J., 1.
 Manasseite: Frondel, C., 8.
 Microlite: Donnay, J. D. H., 9.
 New Jersey, Sterling Hill: Palache, C., 9.
 Orthopyroxenes: Hess, H. H., 2.
 Projection protractor: Fisher, D. J., 2.
 Pseudowollastonite-akermanite-gehlenite system: Osborn, E. F., 1.
 Pyroaurite: Frondel, C., 8.
 Pyroxenes: Hess, H. H., 5.
 Samsonite: Frondel, C., 5.
 Seamanite: McConnell, D., 3.
 Seligmanite: Frondel, C., 5.
 Shortite: Richmond, W. E., Jr., 1.
 Sjörgrenite group: Frondel, C., 8.
 Sodium fluoride: Frondel, C., 2.
 Space symmetry: Donnay, J. D. H., 1, 2.
 Staurolite in muscovite: Frondel, C., 1.
 Stolizite: Palache, C., 7.
 Tables: Donnay, J. D. H., 3.
 Twinning, mechanical: Bell, J. F., 1.
 Ulexite: Murdoch, J., 2.
 Unit cell constants: Wolfe, C. W., 3.
 Valentinite, Calif.: Murdoch, J., 4.
 Vrbaitite: Frondel, C., 5.
 Width, albite-twinning lamellae: Donnay, J. D. H., 5.
 X-ray controlled temperature tech.: Buerger, N. W., 2.
 X-ray goniometer: Wendling, A. V., 1.
 Zincite: Palache, C., 7.
 Zircon: Frondel, C., 1; Morgan, J. H., 1.

Cuba. See also West Indies.

Gravity survey: Dickerson, R. E., 1.

Areas described.

Vento Valley: Brodermann, J., 1.

Economic geology.

Manganese: Norcross, F. S., Jr., 1, 2.

Historical geology.

General: Corral y Alemán, 3.

Geosyncline: Corral y Alemán, J. I., 1.

Prov. of Habana soils: Albear, J. F. de, 1.

Union with continent: Corral y Alemán, J. I., 1.

Vento Valley: Brodermann, J., 1.

Cuba—Continued.

Mineralogy.

Chalcedony: Anonymous, 22.

Chalmersite vs. cubanite: San Martín y Sáenz, R., 3.

Manganese: Norcross, F. S., Jr., 1, 2.

Quartz: San Martín y Sáenz, R., 1.

Paleontology.

Ammonites, Juras.: Jaworski, E., 1.

Corals, Cret.: Wells, J. W., 4.

Fauna, Viñales lms.: Imlay, R. W., 6.

Foraminifera: Cushman, J. A., 5; Palmer, D. B. K., 1.

Gypsina, Miocene: Rutten, H. G., 1.

Sthenorythis, Tert.: Bartsch, P., 1.

Vento Valley: Brodermann, J., 1.

Petrology.

Prov. of Habana soils: Albear, J. F. de, 1.

Physical geology.

Diastrophism: Corral y Alemán, 3.

Geosyncline: Corral y Alemán, J. I., 1.

Syncline, active: Palmer, R. H., 1.

Union with continent: Corral y Alemán, J. I., 1.

Vento Valley: Brodermann, J., 1.

Physiographic geology.

Geosyncline: Corral y Alemán, J. I., 1.

Vento Valley: Brodermann, J., 1.

Underground water.

Prov. of Habana: Albear, J. F. de, 1.

Vento Valley: Brodermann, J., 1.

Cuprobismutite, invalid name: Palache, C., 8.

Current penetration in prospecting: Muskat, M., 2.

Curriculum, arts and science in geophysics: Macelwane, J. B., 4.

Cusps. See Shore lines.

Cycads. See Paleobotany.

Cytheridea (Clithrocytheridea) wilcoxensis: Stephenson, M. B., 2.

Cystoidea.

Arctic America, Frobisher Bay: Roy, S. K., 1.

Arizona, Grand Canyon: Resser, C. E., 4.
 Eumorphocystis, Okla.: Branson, E. B., 2.

Minnesota, S. E.: Stauffer, C. R., 3.

Ontario, Toronto-Hamilton area: Caley, J. F., 1.

Strobilocystites, Iowa: Stainbrook, M. A., 9.

Dahlite, Montana: Salo, O. J., 1.

Dams.

Alabama, Wheeler dam: Spain, E. L., Jr., 1.

Clay researches: Winterkorn, H. F., 1.

Core drill, large for geol. explor.: Mon-eymaker, B. C., 3.

Damsites surveyed by seismograph: Wood, A. E., 1.

Geophysical prosp. for bed rock: Spicer, H. C., 1.

Dams—Continued.

- Kentucky, Tenn. River area: Rhoades, R. F., 1.
 Montana, Kootenai Falls and Tunnel No. 8 dam sites: Erdmann, C. E., 2.
 New York, Delaware aqueduct: Fluhr, T. W., 6.
 North Carolina, Hiwassee dam: Ward, J. B., 1.
 Pennsylvania, Youghiogheny: Philbrick, S. S., 3.
 Tennessee, Chickamauga dam: Fox, P. P., 1.
 Coulter Shoals dam: Laurence, R. A., 1.
 Norris dam: Eckel, E. C., 3.
 Pickwick Landing dam site: Rose, N. A., 1.
 Watts Bar dam: Moneymaker, B. C., 1, 2.
 Tennessee River Valley area: Eckel, E. C., 1, 2.
 Washington, Cascade dam sites: Mackin, J. H., 5.
 Dana on volcanoes and coral islands: Hoffmeister, J. E., 1.
 Dana's mineralogy: San Martín y Sáenz, R., 2.
 Datolite, New York: Trainer, J. N., 2.
 Decapoda, Minnesota: Stauffer, C. R., 3.
 Deep-sea cores, North Atlantic: Bradley, W. H., 2.
 Deep structure gravitational determinations: Swick, C. H., 1.
 Deep wells. See Borings.
 Defense, geol. engineering: Straley, H. W., III, 1.

Deformation.

- Appalachians, Pa., Md.: Cloos, E., 2.
 Arizona, Dragoon Mts.: Gilluly, J., 2.
 British Columbia: Hedley, M. S., 2.
 California: Farmin, R., 1; Louderback, G. D., 2; Mayo, E. B., 1; Merriam, R. H., 1; Noble, L. F., 1.
 Canada, Magdalen, I.: Alcock, F. J., 6.
 Colorado: Burbank, W. S., 1; Pierce, W. G., 1.
 Dolomite orientation: Fairbairn, H. W., 5.
 Elastic, in earth movements: De Lury, J. S., 2.
 Flow cleavage, *folded beds*: Swanson, C. O., 2.
 Flow in stressed solids: Goranson, R. W., 2.
 Flow of rocks, exper.: Griggs, D. T., 2.
 Folding, rock flowage, foliate structures: Mead, W. J., 1.
 Glacier ice: Demorest, M. H., 4.
 Gneisses, banded, Pa., N. J.: Armstrong, E., 1.
 Idaho, Almaden mine: Anderson, A. L., 5.
 Maine, Cape Neddick dikes: Haff, J. C., 3.

Deformation—Continued.

- Marble, exp. invest.: Balsley, J. R., 1.
 Michigan: Fairbairn, H. W., 4; McLachlan, D. B., 1.
 Montana, Kootenai Falls and Tunnel No. 8 dam sites: Erdmann, C. E., 2.
 Nevada, Muddy Mt.: Longwell, C. R., 10.
 New Hampshire, Rumney quad.: Page, L. R., 2.
 New Mexico: Denny, C. S., 1, 5; Ray, L. L., 2.
 New York, Willsboro quad.: Buddington, A. F., 1.
 North America, ore dists.: Billingsley, P. R., 1.
 North Carolina, Hiwassee dam: Ward, J. B., 1.
 Oklahoma, Billings field: Hoffman, M. G., 2.
 Ontario: MacLachlan, D. B., 1; Quirke, T. T., 2; Tarr, W. A., 1.
 Ore deposition, fissure veins: McKinstry, H. E., 1.
 Oregon: Lupper, R. L., 2; Merriam, C. W., 2; Smith, W. D., 4; Thayer, T. P., 1; Wells, F. G., 1.
 Pennsylvania, Cove Mt.: Seltzer, G. S., 1.
 Plastodynamics shown by structure: Washbourne, C. W., 1.
 Quebec Beattie mine: Banfield, A. F., 1.
 Texas: King, P. B., 2; Sheldon, W., 1.
 Vein formation process: Roberts, H. M., 1.
 Washington: Campbell, C. D., 5; Glover, S. L., 1; Warren, C. R., 2.
 Wyoming, Elk Mt. dist.: Beckwith, R. H., 1.
 Deformation of rocks in laboratory: Griggs, D. T., 1.

Delaware.

Palaeontology.

- Wood, Cret.: Penny, J. S., 1.

Deltas.

- Louisiana: Fisk, H. N., 1; Frink, J. W., 1; Russell, R. J., 1, 2; Shaw, A. M., 1.
 Massachusetts, Blue Hills quad: Chute, N. E., 1.
 Midway-Wilcox, La., Miss.: Fisk, H. N., 2.
 Mississippi River: Russell, R. J., 1, 2; Shaw, A. M., 1.
 New England, deglaciation: Lougee, R. J., 2.
 New York, Clyde, Sodus Bay quads: Gillette, T., 1.
 Ontario, eastern: Chapman, L. J., 1.
 Pennsylvania, Bradford oil field: Krynine, P. D., 4.
 United States, Gulf Coast: Brace, O. L., 4.

Dendrites.

- Maryland: Hawkins, A. C., 1.
 Montana: Parker, M. C., 2.

- Densities, molten rocks and minerals: Dane, E. B., Jr., 1.

- Density effect on seismic reflection: West, S. S., 1.
- Density of earth, variations: Bullen, K. E., 1.
- Denudation. See Desert; Erosion.
- Depth determination by earth resistivity: Longacre, W. A., 1.
- Deposition. See Sedimentation.
- Deserts, floods: Blackwelder, E., 2.
- Device for sampling lake sediments: Wilson, I. T., 1.
- Devonian. See also Paleontology, Devonian.
- Alabama: Bowles, E. O., 2; Jones, W. B., 1; Mellen, F. F., 3; Ross, R. M., 1.
- Alaska: Capps, S. R., 1; Moffit, F. H., 1.
- Alberta: Ball, M. W., 2; Hage, C. O., 2; Russell, L. S., 1, 2.
- Appalachia: Nelson, W. A., 1.
- Appalachian geosyncline, central: Laferty, R. C., Jr., 2.
- Arctic America, Ellesmere I.: Bentham, R., 1.
- Arizona: Galbraith, F. W., 4; Keyes, 55, 133.
- Arkansas, Polk Co.: Branner, G. C., 1.
- Bradford Sand, N. Y.-Pa.: Krynine, P. D., 2.
- California: Hinds, N. E. A., 2; Jenkins, O. P., 4, 6; Johnston, W. D., Jr., 1; Noble, L. F., 1; Reed, R. D., 3; Seager, G. F., 1.
- Canada, Cordilleran geosyncline: Warren, P. S., 1.
- Catskill front, Pa.-N. Y.: Cooper, G. A., 5.
- Cedar Valley lms., N. Y.: Stainbrook, M. A., 7.
- Chert, Nor. Am.: Wetzel, O., 1.
- Colorado: Burbank, W. S., 1, 3; Butler, R. D., 1; Kessler, F. C., 1; Singewald, Q. D., 1.
- Connecticut, eastern: Keppel, D., 2.
- Cross sec. Tex.-N. Mex.: Fritz, W. C., 1.
- Forest City Basin, Kans.-Neb.: McClellan, H. W., 1.
- Formation names: Cooper, G. A., 4.
- Great Plains Basin: Kornfeld, J. A., 6.
- Hannibal shs., Iowa: Keyes, 3.
- Illinois: Cady, G. H., 1; Carlton, J. L., 1; Cohee, G. V., 3; Hoover, W. F., 1; Keyes, 123; Weller, J. M., 1, 2; Workman, L. E., 2, 3.
- Indiana: Harris, J. R., 1.
- Iowa: Cline, L. M., 1; Keyes, 44, 72-b, 79; McHugh, W. E., 1; Scobey, E. H., 1; Stainbrook, M. A., 5; Wood, L. W., 1.
- Kansas: Jewett, J. M., 4; Keyes, 139; Postley, O. C., 1.
- Kentucky: Freeman, L. B., 1; Rhoades, R. F., 1, 5; Stouder, R. E., 1.
- Kinderhook fms., Iowa: Keyes, 2.
- Maine: Philbrick, S. S., 2; White, W. S., 2.
- Massachusetts: Balk, R., 2; Chute, N. E., 1.
- Devonian—Continued.
- Michigan: Addison, C. C., 1; Bergquist, S. G., 1; Bishop, M. S., 1; Kelly, W. A., 1; Tarbell, E., 1.
- Minnesota, S. E.: Stauffer, C. R., 3; Thiel, G. A., 2.
- Mississippi: Mellen, F. F., 3; Morse, W. C., 1.
- Missouri: Branson, E. B., 10; Keyes, 85, 82, 106; McQueen, H. S., 2.
- Missouri-Illinois sec.: Kans. G. S., 2.
- Montana: Deiss, C. F., 3, 4; Goddard, E. N., 2.
- Nebraska, S. W.: Reed, E. C., 1.
- Nevada: Merriam, C. W., 1; Sharp, R. P., 6.
- New Brunswick: Alcock, F. J., 1.
- New Hampshire: Billings, K. F. L., 1, 2; Billings, M. P., 2, 4; Chapman, C. A., 1, 2; Goldthwait, R. P., 3; Hadley, J. B., 2; Quinn, A. W., 6.
- New Jersey: Lewis, J. V., 1.
- New Mexico: Laudon, L. R., 4; Stevenson, F. V., 1.
- New stratigraphic names: Cooper, G. A., 3.
- New York: Fluhr, T. W., 6; Gillette, T., 1; Keyes, 120; Payne, T. G., 1; Richardson, G. B., 2.
- North America, Mid-continent area: Dott, R. H., 3.
- Taconic disturbances: Kay, G. M., 3.
- North Dakota, deep-well records: Laird, W. M., 3.
- Northwest Territories: Lord, C. S., 2.
- Nova Scotia, Gore area: Douglas, G. V., 3, 4, 8, 10.
- Ohio: Stout, W. E., 3; Stumm, E. C., 1; Ver Steeg, K., 2; Williams, A. B., 1.
- Oklahoma: Bass, N. W., 2; Cram, I. H., 2; Dillard, W. R., 1; Frost, V. L., 1; Kirk, C. T., 1.
- Ontario, Brantford area: Caley, J. F., 1, 3.
- Paleozoic, nor. Miss., Ala.: Mellen, F. F., 3.
- Pennsylvania: Brown, E. A., 1; Caster, K. E., 1; Cleaves, A. B., 1; Dickey, P. A., 1; Fettke, C. R., 1, 2, 3, 4; Foose, R. M., 1; Hickok, W. O., IV, 1; Laird, W. M., 1, 2; Lohman, S. W., 4; O'Neill, W. F., 1; Seltzer, G. S., 1; Swartz, C. K., 2; Willard, B., 4, 5.
- Quebec: Douglas, G. V., 11; Faessler, C., 2; Laverdière, J.-W., 1.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- St. John River Valley: Nylander, O. O., 1.
- St. Laurents lms., Mo.: Keyes, 93.
- South Dakota-Wyoming sec.: Kans. G. S., 1.
- Tennessee: Eckel, E. C., 3; Rose, N. A., 1; Whitlatch, G. I., 1.
- Tennessee Valley region: Eckel, E. C., 2.

Dikes—Continued.

- Texas: Maxwell, R. A., 1; Nelson, L. A., 1; Powers, E. H., 1; Ross, C. P., 4.
 Texas-New Mexico area: DeFord, R. K., 2.
 Utah, Wasatch Mts.: Williams, N. C., 1.
 Vermont, Memphremagog quad.: Doll, C. G., 1.
 Virginia: Cooper, B. N., 1; Edmundson, R. S., 1, 3; Roberts, J. K., 2.
 West Virginia: Heck, E. T., 1; Price, P. H., 1; Woodward, H. P., 1.
 Wyoming: Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Rouse, J. T., 1.

Diabase.

- Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
 Maine, Cape Neddick dikes: Haff, J. C., 3.
 New York, Willsboro quad.: Buddington, A. F., 1.

Diaboleite, Arizona: Palache, C., 8.**Diamonds. See also Precious stones.**

- Cutting, for industry: Kraus, E. H., 2.
 Distorted: Kraus, E. H., 3.
 General: Hershey, J. W., 1.
 Industrial, harness and structure: Kraus, E. H., 4.

Diastrophism.

- Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.
 California: Taliaferro, N. L., 3; Woodford, A. O., 1.
 Cuba: Corral y Alemán, 3.
 Electron basis: Gillette, H. P., 1.
 Mexico, Sierra Madre Occidental: King, R. E., 1; Terrones Langone, A., 1; Woodford, A. O., 1.
 Montana, Yellowstone Valley: Horberg, L., 1.
 New York, pre-Appalachian: Fluhr, T. W., 3.

Diatomaceae. See also Diatomaceous earth.

- Atlantic deep-sea cores: Lohman, K. E., 2.
 California: Hanna, G. D., 1; Woodring, W. P., 1.
 Cretaceous, U. S.: Rampi, L., 1.
 Deep-sea cores, N. Atlantic: Bramlette, M. N., 1.
 Ecology: Ladd, H. S., 1; Lohman, K. E., 1.
 Kansas: Frye, J. C., 8.
 Marine organisms in sediments: Natland, M. L., 2.
 Oregon: Dole, H. M., 1.
 Peleocology: Lohman, K. E., 1.
 Sediments, accumulations: Fleming, R. H., 1.
 Washington, Pleist.: Fernquist, C. O., 4.
- Diatomaceous earth.**
 Maryland: Gray, W. B., III, 1.
 New Hampshire: McNair, A. H., 2.
 New Jersey: Lewis, J. V., 1.

Diatomite.

- British Columbia: Lay, D., 2.
 New Hampshire: Meyers, T. R., 1.
 Oregon: Oregon St. Bd., 1.

Dickinsonite, Maine: Wolfe, C. W., 4.**Dictionary, geological terms: Rice, C. M., 1.****Dictionary of petroleum: Porter, H. P., 1.****Differentiation and connate waters: Lane, A. C., 4.****Differentiation of sediments: Krynine, P. D., 5.****Dihydrate, Michigan: Ayres, V. L., 1.****Dikes. See also Intrusions.****Alaska, Tetling River area: Moffit, F. H., 1.****British Columbia: Armstrong, J. E., 1; Billingsley, P. R., 3; Maconachie, R. J., 1; Rice, H. M. A., 1.****California: Farmin, R., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Johnston, W. D., Jr., 1; Lemmon, D. M., 1; MacDonald, G. A., 5; Mayo, E. B., 1; Merriam, R. H., 2; Miller, W. J., 2; Prout, J. W., Jr., 1; White, D. E., 2; Woodford, A. O., 4.****Canadian Shield: Moore, E. S., 3.****Colorado: Burbank, W. S., 3; Boos, M. F., 1; Dings, M., 1; Goddard, E. N., 1; Pearl, R. M., 7; Pierce, W. G., 1; Singewald, Q. D., 1; Wahlstrom, E. E., 2.****Georgia: Hunter, C. E., 3.****Hawaii: MacDonald, G. A., 2; Stearns, H. T., 2, 3; Wentworth, C. K., 1.****Idaho: Anderson, A. L., 1, 2, 3; Erdmann, C. E., 2; Scheid, V. E., 2; White, D. E., 1.****Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.****Maine: Fisher, L. W., 1; Trefethen, J. M., 4.****Migration barriers, oil and gas: Filmer, E. A., 1.****Missouri, Ironton quad.: Robertson, F., 1.****Montana: Bule, B. F., 1; Burgess, C. H., 1; Larsen, E. S., 4; Pecora, W. T., 1; Peoples, J. W., 1.****Nevada: Hardy, R. A., 1; Roberts, R. J., 1.****New Hampshire, Merymeeting Lake area: Meyers, T. R., 2; Quinn, A. W., 3, 6.****New York, Whitestone bridge site: Fluhr, T. W., 4.****North America, ore dists.: Billingsley, P. R., 1.****North Carolina: Hunter, C. E., 3; Johnson, W. R., 1.****Northwest Territories: Henderson, J. F., 3; Jolliffe, A. W., 1; Richland, G. C., 1; Wilson, J. T., 2.****Nova Scotia, Lake Charlotte: Douglas, G. V., 5.**

Dikes—Continued.

- Oklahoma, Wichita Mts.: Merritt, C. A., 3.
- Ontario: Bateman, J. D., 2, 3, 5; Butterfield, H. M., 1; Horwood, H. C., 1; Jenney, C. P., 1; Moore, E. S., 2; Quirke, T. T., 1.
- Oregon: Goodspeed, G. E., 6; Smith, W. D., 4; Tanton, T. L., 4; Wells, F. G., 1, 3.
- Pacific Northwest: Goodspeed, G. E., 1.
- Pegamatite, N. C.: Johnson, W. R., 1.
- Pennsylvania: Hickok, W. O., IV, 1; Russell, G. C., Jr., 1; Tomlinson, W. H., 1.
- Quebec: Ambrose, J. W., 2; Douglas, G. V., 11; Gunning, H. C., 1, 2; Longley, W. W., 1; MacKenzie, G. S., 1, 2; McMurchy, R. C., 1; Norman, G. W. H., 3; Tolman, C., 1; Wilson, M. E., 3.
- Rhode Island: Quinn, A. W., 4.
- South Dakota, Tinton dist.: Smith, W. C., 1.
- Structural control of ig. rocks: Loughlin, G. F., 3.
- Texas: Geol. S. A., 1; Ives, R. L., 7; Keppel, D., 1; Lonsdale, J. T., 1; Smith, J. F., Jr., 4.
- Trinidad: Wilson, C. C., 1.
- Utah, crystallines: Eardley, A. J., 1.
- Virginia: Cooper, B. N., 1; Moore, C. H., Jr., 1; Overstreet, W. C., 1.
- Washington: Campbell, C. D., 2.
- Wyoming: McLaughlin, T. G., 1; Rouse, J. T., 1.
- Dinosauria. See also reptilia.
- Texas: Berry, E. W., 5.
- Diopbase, Arizona: Galbraith, F. W., 3.
- Diorite.
- California, Crestmore quarry: Woodford, A. O., 4.
- Colorado, Stony Mt. stock: Dings, M., 1.
- Quebec: Gunning, H. C., 2; Wilson, M. E., 3.
- Washington, Okanogan Valley: Krauskopf, K. B., 1.
- Dip data computation: Waters, K. H., 1.
- Dip and strike calculations, hidden beds: Stein, H. A., 1.
- Dislocations. See Faulting.
- Dissertations.
- Flora, Middle Park fm., Colo.: Barnhart, C. H., 2.
- Ore deposits, Boulder Falls, Colo.: Rubright, R. D., 1.
- Thrust faulting investigation: Atherton, E., 1.
- District of Columbia.
- Historical geology.*
- Nat. Zool. Pk.: Bassler, R. S., 1.
- Mineralogy.*
- Mineral collections: Ulke, T., 1.

Dolomite.

- Alabama, Montevallo-Columbiana quads: Butts, C., 1.
- Bonnetterre fm. zones: Ohle, E., Jr., 1.
- Iowa: Wood, L. W., 2.
- Metamorphism, progressive: Bowen, N. L., 2.
- Missouri, Bonnetterre fm. alteration: Ohle, E., Jr., 1.
- New York: Trainer, J. N., 1; Zodac, P., 4.
- Oklahoma: Beach, J. O., 1.
- Orientation, deformed rocks: Fairbairn, H. W., 5.
- Petrofabric analysis: Fairbairn, H. W., 2.
- Texas: Geol. S. A., 1; Leuenberger, B., 1.
- Washington: Roberts, F. B., 1.
- Domes. See also Salt domes.
- Louisiana, Eola field: Bates, F. W., 1.
- New Hampshire, Mt. Washington area: Billings, M. P., 2.
- Oklahoma: Bass, N. W., 2; Dillard, W. R., 1; Hoffman, M. G., 2; Kirk, C. T., 1.
- Ontario, deep-zone dome-basin structure: Quirke, T. T., 2.
- Tennessee, Nashville dome: Wilson, C. W., Jr., 1.
- Texas: Adams, J. E., 1; Ives, R. L., 7; Lonsdale, J. T., 1.
- Dominican Republic.
- Paleontology.*
- Foraminifera, Miocene: Cushman, J. A., 4.
- Drainage changes. See also Glacial geology; Physiographic geology (general).
- Arizona, plateau stages: Reiche, P., 2.
- British Columbia: Hedley, M. S., 2; Holland, S. C., 1; Lay, D., 2.
- California: Forbes, H., 1; Louderback, G. D., 2; Tolman, C. F., 1.
- Hawaii: Stearns, H. T., 2, 3.
- Illinois: Weller, J. M., 2; Willman, H. B., 1.
- Iowa: Kay, G. F., 2; Leverett, F., 1.
- Kansas: Frye, J. C., 6, 8; Mull, J. A., 1; Smith, H. T. U., 1, 9.
- Kentucky: Malott, C. A., 1; Rhoades, R. F., 1.
- Louisiana: Fisk, H. N., 1; Russell, R. J., 1.
- Massachusetts, Lowell quad.: Currier, L. W., 1.
- Minnesota, S. E.: Stauffer, C. R., 3.
- Mississippi River: Flint, R. F., 9; Russell, R. J., 1, 2; Trowbridge, A. C., 2.
- Mussel distribution showing: Johnson, D. W., 5.
- Nevada, Ruby-East Humboldt Range: Sharp, R. P., 1.
- New Hampshire: Billings, K. F. L., 2.
- New Jersey: Lewis, J. V., 1; Lucke, J. B., 1, 2, 4.

Drainage changes—Continued.

- New Mexico: Denny, C. S., 2, 5; Ray, L. L., 2.
- New York, Clyde, Sodus Bay quads.: Gillette, T., 1.
- Ohio: Donner, H. F., 1; Frye, J. C., 1; Ireland, H. A., 1; Williams, A. B., 1.
- Ontario: Chapman, L. J., 1; Stanley, G. M., 1.
- Pennsylvania: Ashley, G. H., 1; Mackin, J. H., 2.
- Piedmont soils and surfaces: Eargle, D. H., 1.
- Quebec, Beupre coast: Faessler, C., 2.
- Stream profiles, reconstruction: Baulig, H., 1.
- Tennessee, Sequatchie Valley: Martin, G. C., Jr., 1.
- Texas: Dallas Petroleum Geologists, 1; Ham, W. O., Jr., 1; Baker, C. L., 3; Price, W. A., 3.
- Upper Mississippi River Valley: Trewartha, G. T., 1.
- Utah: Gregory, H. E., 1; Stagner, W. L., 1.
- Virgin Islands, St. Croix: Cederstrom, D. J., 3.
- Virginia, Catoclin belt: Ver Steeg, K., 5.
- Washington: Freeman, O. W., 1; Warren, C. R., 2.
- Watergaps by solution and piracy: Fridley, H. M., 1.
- Watergaps, not formed by solution and stream piracy: Ver Steeg, K., 1.
- Wisconsin: Mathiesen, J. T., 1.
- Drift deposits. See also Glacial geology; Ice ages (ancient); Drumlins.
- Newfoundland, Wisconsin glaciation: MacClintock, P., 2.
- Drillholes, hidden bed locations: Fisher, D. J., 3.
- Dunes.
- Arizona, Navajo country: Hack, J. T., 1; Smith, H. T. U., 6.
- Bermuda: Denison, A. R., 1.
- Classification: Melton, F. A., 3.
- Hawaii, Lanai: Stearns, H. T., 3.
- Kansas: Smith, H. T. U., 2, 9.
- Lake Michigan shores: Evans, O. F., 1.
- Layers of plant material in: Lutz, H. J., 1.
- Massachusetts, western Cape Cod: Mather, K. F., 1.
- Michigan: Calver, J. L., 1; Smith, H. T. U., 3.
- New Mexico, Sierra San Andrés: Baker, C. L., 2.
- Oregon, Lake County: Allison, I. S., 3.
- Sand, size distribution: Keller, W. D., 3.
- South Carolina, elliptical bays origin: Cooke, C. W., 1.
- Texas, High Plains aeolian sands: Hufington, R. M., 1.
- Wisconsin, Door Co.: Shrock, R. R., 1.
- Dunite, British Columbia: Armstrong, J. E., 1.

Dust storms.

- Kansas: Latta, B. F., 1; Smith, H. T. U., 9.
- United States, 1939: Martin, R. J., 1.
- Dynamic geology. See Physical geology.
- Dynamic metamorphism, experiments: Griggs, D. T., 4.
- Dynamic ore control: Wisser, E. H., 2.
- Dynamics, water erosion: Schiff, L., 1.
- Dynamics of streams: Straub, L. G., 1.
- Dynamics of wind erosion: Malina, F. J., 1.
- Dyscrasite.
- General: Peacock, M. A., 2.
- Ontario: Peacock, M. A., 2.

Earth.

- Biography: Gamow, G., 1.
- Strength and structure: Daly, R. A., 1; Longwell, C. R., 7; Rubey, W. W., 2.
- Strength of the earth: Jeffreys, H., 1.
- Thermal history: Adams, L. H., 2.
- Thermal state: Jeffreys, H., 2.

Age.

- Allanite as index: Marble, J. P., 2.
- Analyses for by lead ratios: Muench, O. B., 3.
- General: Lane, A. C., 1.
- Geologic record and helium time scale: Morris, F. K., 1.
- Geothermal estimating: Van Orstrand, C. E., 2.
- Helium in rocks: Keevil, N. B., 1.
- Helium time scale: Hurley, P. M., 4.
- New York, McLearn pegmatite: Schaub, B. M., 1.
- Radio-active data on: Starik, I. E., 1.
- Salt in sea: Hills, G. F. S., 1.
- Time-scale of universe: Russell, H. N., 1.

Crust.

- Appalachians, Pa., Md., shortening: Cloos, E., 2.
- Biography of earth: Gamow, G., 1.
- California, Grass Valley geothermal gradient: Spicer, H. C., 3.
- Cooling: Slichter, L. B., 2.
- Copper, concentration, distrib.: White, C. H., 2.
- Crustal layers: Birch, F., 3.
- Crustal structure: Longwell, C. R., 2.
- Cyclic convection currents: Brooks, H., 1.
- Deep structure: Swick, C. H., 1.
- Earth, biography: Gamow, G., 1.
- Equilibrium, isostatic: Heiskanen, W., 1.
- Eruptive and mt. bldg.: Willis, B., 2.
- Geology vs. geophys. explor.: Longwell, 2.
- Geophysics, gen.: Merwin, H. E., 1.
- Guatemala, volcanic areas: McNish, A. G., 2.
- Land forms, origin: Perrine, C. D., 1.
- Magnetic anomalies: Jenny, W. R., 1.
- Magnetic crust: Vacquier, V., 1.
- Mountain-bldg. cycle: Bucher, W. H., 2.

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- Pacific area : Heck, N. H., 6.
- Periodicity, terrestrial processes : Umbro-
grove, J. H. F., 1.
- Polar control theory : Grabau, A. W., 1.
- Seismic contributions to knowledge :
Heck, N. H., 3.
- Shiftings, sea floors, coast lines : Bowen,
N. L., 5.
- Strength and structure : Daly, R. A., 1 ;
Longwell, C. R., 7 ; Rubey, W. W., 2.
- Strength of the earth : Jeffreys, H., 1.
- Structures, deep : Woollard, G. P., 2.
- Thermal history : Adams, L. H., 2.
- Thermal measurements, crustal prob-
lems : Benfield, A. F., 1.
- This living world : Clark, C. C., 1.

Interior.

- Biography : Gamow, G., 1.
- Cooling of the earth : Slichter, L. B., 2.
- Correlation, schistosity and tectonic
theory : De Lury, J. S., 1.
- Density variations : Bullen, K. E., 1.
- Eruptivity and mt. bldg. : Willis, B., 2.
- General : Bates, R. L., 1 ; Daly, R. A., 2.
- Geologic temperature recorders : Bowen,
N. L., 4.
- Greenland, east : Wager, L. R., 1.
- Heat, internal : Slichter, L. B., 1.
- Mobility of : Gutenberg, B., 2.
- Polar control theory : Grabau, A. W., 1.
- State of earth's core : Lynch, J. J., 3.
- Strength and structure : Daly, R. A., 1 ;
Longwell, C. R., 7 ; Rubey, W. W., 2.
- Strength of the earth : Jeffreys, H., 1.
- Structure, probable : Veinberg, B. P., 1.
- Temperatures, oil fields : Van Orstrand,
C. E., 3.
- Temperature and structure relations :
Van Orstrand, C. E., 1.
- Thermal history : Adams, L. H., 2.
- Thermal measurements, crustal prob-
lems : Benfield, A. E., 1.

Temperature.

- California, Grass Valley : Spicer, H. C., 3.
- Deep oil well : French, R. W., 1 ;
Travis, C. B., 1.
- Cooling of the earth : Slichter, L. B., 2.
- Crustal layers : Birch, F., 3.
- Cyclic convection currents : Brooks,
H., 1.
- Geologic temperature recorders : Bowen,
N. L., 4.
- Geothermal gradients in Calif. oil wells :
French, R. W., 1 ; Travis, C. B., 1.
- Hypogene ore deposits, temperature,
depth : Dougherty, E. Y., 1.
- Temperature and structural relations :
Van Orstrand, C. E., 1.
- Temperatures, oil fields : Van Orstrand,
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- Thermal conductivity, exper. invest. :
Clark, H., 1.
- Thermal history : Adams, L. H., 2.

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- Thermal measurements, crustal prob-
lems : Benfield, A. F., 1.
- Earth, diary : Mitchell, R. H., 2.
- Earth movements. See Changes of level ;
Landslides.
- Earth resistivity interpretation : Roman,
I., 2.
- Earth sciences : Bretz, J. H., 1.
- Earth sediments, geochem. calculations :
Kuenen, Ph. H., 1.
- Earth tides and crustal studies : Stet-
son, H. T., 1.
- Earth and its resources : Finch, V. G., 1.
- Earthflow, California, Ventura area : Put-
nam, W. C., 1.
- Earthflow and soil-creep, Ohio : Sharpe,
C. F. S., 2.
- Earthquakes. See also Seismology.
- Alaska : Adkins, J. N., 1 ; Mukherjee,
S. M., 1.
- Ames, Ill., 1939 : McClure, S. M., 1.
- Arkansas, Sept. 17, 1938 : Walter,
E. J., 1.
- Atlantic Coastal Plain : Heck, N. H., 1.
- Borger, Tex., June 19, 1936 : Sellards,
E. H., 2.
- California : Byerly, P., 1 ; Heizer, R. F.,
1 ; La Rocque, G. A., Jr., 1 ; Wood,
H. O., 1, 2.
- Causes : Monges López, R., 1.
- Chattanooga, Tenn., 1940 : Brill, K. G.,
Jr., 1.
- Chelmsford, Mass., 1938 : Linehan, D., 1.
- Crustal layers, identification : Birch,
F., 3.
- Deep-focus quakes, origin : Lynch, J., 2.
- Earthquake, Nov. 23, 1939, Ill., Mo. ;
Birkenhauer, H. F., 2.
- Epicenter determination : Birkenbauer,
H. F., 1.
- Focal depth estimation : Blake, A., 1.
- General : Earthquake Notes, 1 ; Lynch,
J. J., 1.
- Ground-water fluctuations : Thomas,
H. E., 1.
- Illinois, 1934, 1938 : Fryxell, F. M., 1.
- Imperial Valley, Calif., May 1940 : Bu-
walda, J. P., 1 ; Heck, N. H., 2 ;
Neuman, F., 4 ; Ulrich, F. P., 2.
- Iowa, 1934, 1938 : Fryxell, F. M., 1.
- Jackson, Hole, Wyo. : Gale, B. T., 1.
- Mexico : Camp, G. D., 1 ; Flores, T., 2.
- Missouri, seismic history : Heinrich,
R. R., 1.
- Moodus, Conn., March 1940 : Perry,
E. L., 1.
- Nevada : Wood, H. O., 2.
- New England, cause of : Perry, E. L., 1.
- New Hampshire, Dec. 1940 : Devlin,
J. J., 1.

Earthquakes—Continued.

- New Madrid craters: Morse, W. C., 2.
 New York City: Lynch, W. A., 1.
 North America, deep-focus earthquakes: Gutenberg, B., 4.
 East-central travel times: Walter, E. J., 3.
 Pacific region: Byerly, P., 5; Richter, C. F., 1.
 North Carolina: Godbey, A. H., 1; Stechschulte, V. C., 1.
 Ohio, March 1937: Westland, A. J., 1.
 Ossipee Mts., N. H., Dec. 1940: Leet, L. D., 4.
 Pacific Coast, U. S.: Byerly, P., 2; Ulrich, F. P., 1.
 Pacific Northwest: Treasher, R. C., 2.
 Periodicity and time series study: Blake, A., 3.
 Pressure changes, seasonal: Landsberg, H., 1.
 Puerto Rico, 1918: Neumann, F., 3.
 Salvador, December 1936: Levin, S. B., 1.
 Sea-level changes as trigger forces: Leyppoldt, H., 1.
 Seismicity of earth: Gutenberg, B., 3.
 Seismology (general): Gutenberg, B., 1.
 Tectonic processes now in action: Gutenberg, B., 6.
 United States: Bodle, R. R., 3; Neumann, F., 1, 2; Ulrich, F. P., 4.
 Washington, Nov. 12, 1939: Barksdale, J. D., 1.
 West Indies: Linehan, D., 2.

Echinodermata. See also Asteroidea; Blastoida; Crinoidea; Echinoidea; Invertebrates (general).

- California: Hanna, G. D., 1; Woodring, W. P., 1.
 Fauna, Frobisher Bay, Arc. Am.: Roy, S. K., 11.
 Mississippi: Stephenson, L. W., 1.
 Navarro group, Tex.: Stephenson, L. W., 3.
 New Jersey, Vincentown fm.: Greacen, K. F., 1.

Orientations, symmetries: Croneis, C. G., 6.

Pelmatozoa, Paleozoic: Bassler, R. S., 2.

Echinoidea.

- Astrodapsis evolution: Clark, B. L., 2.
 California: Eaton, J. E., 3; Woodring, W. P., 1.
 Cretaceous, Tex.: Ikins, W. C., 1.
 Ecology of: Ladd, H. S., 1.
 Fauna, Edwards fm., Tex.: Ikins, W. C., 2.

Maryland, Miocene colony: Schoonover, L. M., 1.

Sea urchins, Miocene, Md.: Benn, J. H., 1.

South Carolina, Pamlico: Berry, E. W., 4.

Echinoidea—Continued.

- Texas: Dallas Petroleum Geologists, 1; Ikins, W. C., 1, 2.
 United States, west., Cenozoic: Cooke, C. W., 2.

Ecology of marine organisms: Ladd, H. S., 1.

Economic geology (general). For areal see under the various States. See also Ore deposits, origin, and the particular products.

Albite: Bruce, E. L., 1; Gallagher, D., 1; Wisser, E. H., 3.

Applied geology: Anderson, J. C., 1.

Applied paleontology: Schenck, H. G., 4.

Applied sedimentology: Rea, H. C., 1.

Autoradiography of ores: Goodman, C., 4.

Band, layer, kindred terms: Calkins, F. C., 1.

Bonding clays: Grim, R. E., 3.

Carbohydrates, origin of coal, oil, etc.: Berl, E., 1.

Cataclastic gold quartz veins: Goodspeed, G. E., 8.

Clays: Grim, R. E., 1, 3, 6, 7; Gruner, J. W., 2; Norton, F. H., 2; Schroter, G. A., 1.

Coal: Moore, E. S., 1; Plotts, W., 1; Sprunk, G. C., 2; Stutzer, O., 1.

Copper: White, C. H., 2.

Core analysis: ANONYMOUS, 18.

Core orientation: Lynton, E. D., 1; Webb, E. R., 1.

Correlation by velocity stratification: Beers, R. F., 1.

Cristobalite in clays: Gruner, J. W., 2.
 Cupeiform fragments show fault breccia: White, C. H., 1.

Dip needle, structure mapping: Swanson, C. O., 1.

Dip-strike calculations, hidden beds: Stein, H. A., 1.

Dipping strata effect: Jameson, M. H., 1.

Drillholes, hidden beds: Fisher, D. J., 3.

Dynamic ore control: Wisser, E. H., 2.

Ecologic factors in correl.: Eaton, J. E., 2.

Electric well logs, interp.: Norton, R. W., 1.

Electrical prosp.: Rust, W. M., Jr., 1.

Estimating oil reserves: Lahee, F. H., 3.

Exploration for petroleum: Rosalre, E. E., 2.

Exploratory geophysics: Barton, D. C., 1; Elau, L. W., 1; Jakosky, J. J., 1.

Field geology: Russell, R. D., 2.

Flow direction, mineralizing solutions: Newhouse, W. H., 3.

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 Openings along fault: McKeechie, N. M., 1; Newhouse, W. H., 1.
 Ore deposition, fissure veins: McKinstry, H. E., 1.
 Oregon: Allen, J. E., 2; Goodspeed, G. E., 4; Hodge, E. T., 5, 6; Lupton, R. L., 2; Oregon St. Bd., 1; Smith, W. D., 4; Wells, F. G., 1, 6; Wilkinson, W. D., 1.
 Ouachita Mts., Okla.-Ark.: Hendricks, T. A., 4.
 Pennsylvania: Armstrong, E., 2; Brown, E. A., 1; Hickok, W. O., IV, 1; O'Neill, W. F., 1; Postel, A. W., 2, 3; Seltzer, G. S., 1.
 Petroleum development, Gulf Coast: Vetter, J. M., 1.
 Plastodynamics shown by structure: Washbourne, C. W., 1.
 Quebec: Ambrose, J. W., 2; Bannerman, H. M., 1; Flaherty, G. F., 1; Gunning, E. C., 1, 2; Kindie, E. D., 2; Laverdière, J.-W., 1; MacKenzie, G. S., 1; McMurphy, R. C., 1; Norman, G. W. H., 2; Tolman, C., 1; Wilson, M. E., 3.

G. B., 3.

Reverse vs. thrust faults: Forrester, J. D., 1.

Rocky Mts.: Beckwith, R. H., 2.
 Salt domes: Kornfeld, M. M., 1.

Santo Domingo: Weyl, R., 1.

South Dakota-Wyoming sec.: Kans. G. S., 1.

Taconic allochthon and Martin thrust:

Kay, G. M., 4.

Faulting—Continued.

- Tennessee: Fox, P. P., 1; Laurence, R. A., 1; McGavock, C. B., Jr., 1; Martin, G. C., Jr., 1; Money-maker, B. C., 1; Rose, N. A., 1.
 Tennessee Valley region: Eckel, E. C., 2.
 Teton Range, Wyo.-Idaho: Fryxell, F. M., 3.
 Texas: Baker, C. L., 3; Dallas Petroleum Geologists, 1; Fisher, B., 1; Geol. S. A., 1; Huffington, R. M., 3; Ives, R. L., 7; King, P. B., 2; Lonsdale, J. T., 1; McLellan, H. J., 1; Maxwell, R. A., 1; Morgan, A., 1; Nelson, L. A., 1; O'Byrne, (Sister) M. E., 1; Perry, L., Jr., 1; Ross, C. P., 1; Sheldon, W., 1; Smith, J. F., Jr., 2, 4; White, W. N., 2.
 Trinidad, Los Bajos fault: Wilson, C. C., 1.
 Thrust fault invest.: Atherton, E., 1.
 United States, S. W.: Laudon, L. R., 1.
 Utah: Gregory, H. E., 1; McKnight, E. T., 1; Schoff, S. L., 2; Spieker, E. M., 1; Williams, N. C., 1.
 Utah-Arizona, Hurricane fault: Gardner, L. S., 1.
 Vein formation process: Robert, H. M., 1.
 Vermont: Cady, W. M., 1; Currier, L. W., 2; Doll, C. G., 1; Hawkes, H. E., Jr., 1; Jacobs, E. C., 1.
 Virgin Islands, St. Croix: Cedarstrom, D. J., 2.
 Virginia: Bloomer, R. O., 1, 3, 4, 5; Cooper, B. N., 1; Edmundson, R. S., 1, 2, 3; Roberts, J. K., 2.
 Wasatch Range, Utah, Idaho: Eardley, A. J., 4.
 Washington: Bennett, W. A. G., 2; Waters, A. C., 2.
 Wilcox trend fields, La., Tex.: Todd, J. D., 4.
 Wyoming: Beckwith, R. H., 1; Bertagnolli, A. J., Jr., 1; Demorest, M. H., 2; Espach, R. H., 1; Horberg, L., 2; Love, J. D., 1, 2; Pierce, W. G., 2.
 Funglomerates, California: Hudson, F. S., 1; Noble, L. F., 1.

Fayalite, California: Murdoch, J., 1.

Feldspars.

- California: Bradley, W. W., 2.
 Chemical formulae, plagioclase: Parrish, C. E., 2.
 Colorado, Green Ridge pegmatite: Ives, R. L., 5.
 Decomposition by water: Armstrong, L. C., 1.
 Fossils replaced by: Stringham, B., 1.
 Hawaii: MacDonald, G. A., 2; Wentworth, C. K., 4.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
 Maine, Black Mt. area: Verrow, H. J., 3.

Feldspars—Continued.

- Montana, Highwood Mts.: Larsen, E. S., 5.
 New Hampshire: Bannerman, H. M., 2; Meyers, T. R., 1.
 North Carolina, Spruce Pine dist.: Maurice, C. S., 1.
 Ontario, Tremee Lake area: Satterly, J., 1.
 Pennsylvania, Reading Hills: Fraser, D. M., 2.
 Virginia: Mathews, A. A. L., 3; Overstreet, W. C., 1.
 Washington, Kettle Falls: Campbell, C. D., 3.

Felsites, Missouri: Robertson, F., 1.

Ferberite, Colorado: McKenna, J. W., 1.

Field geology: Lahee, F. H., 2; Russell, R. D., 2.

Field tests, common metals: Fansett, G. R., 1.

Field work: Lahee, F. H., 2.

Flords, Greenland, Holstensborg dist.: Belknap, R. L., 1.

Fire clay.

Missouri: Bradley, R. S., 2.

Pennsylvania, Fayette Co.: Hickok, W. O., IV., 1.

Fishes. See Pisces.

Fissures. See Faulting.

Floating sand: McKelvey, V. E., 2.

Florida.

4th Bien. Report, 1940-41: Gunter, H., 1.

Economic geology.

Clays, bleaching: Bay, H. X., 4.

Phosphate invest.: Roundy, P. V., 1.

Historical geology.

Gulf Coast correl. chart: Roy, C. J., 3.

Niceville well area: Smith, R. H., 1.

Peninsula Florida: Campbell, R. B., 2.

Pleistocene currents: Dickerson, R. E., 2.

Wells, studies of: Cole, W. S., 2.

Mineralogy.

Clays, bleaching: Bay, H. X., 4.

Paleontology.

Bolivina: Cushman, J. A., 4.

Cytherida, sub-genera: Stephenson, M. B., 1.

Felsinotherium, Tert.: Gregory, J. T., 2.

Goniodelphis: Allen, G. M., 1.

Helisoma: Baker, F. C., 1.

Mammalia, Tert.: White, T. E., 2, 3.

Man, Pleist.: Cooke, C. W., 4.

Megatherium: White, T. E., 5.

Mollusca, Tert.: Smith, M., 1; Stubbs, A., 1.

Niceville well area: Smith, R. H., 1.

Noetinae, Tert.: MacNeil, F. S., 1.

Squirrel-fish: Conrad, G. M., 1.

Stensiolina: Cushman, J. A., 4.

Tertiary shells: McGinty, T. L., 1.

Vertebrata, Miocene: White, T. E., 4.

Wells, studies of: Cole, W. S., 2.

Florida—Continued.

Petrology.

Chalcedony pseudomorphs after coral:

Manchester, J. G., 2.

Physiographic geology.

Florida scenery: Campbell, R. B., 1.

Mangroves, ecology and geologic role:

Davis, J. H., Jr., 1.

Underground water.

Artesian water: Stringfield, V. T., 1.

Flotation erosion by ice: Rose, C. W., 1.

Flow cleavage, folded beds: Swanson, C. O., 2.

Flow, stressed solids: Goranson, R. W., 2.

Flow of rocks, exper.: Griggs, D. T., 2.

Flowage and cleavage: Cloos, E., 3.

Fluorescence.

Calcite: Northup, M. A., 1.

Cause of: Nichols, J. B., 2.

Colorado desert minerals: Eaton, A. L., 1.

Drill cores, analysis: De Ment, J. A., 5.

General: Keith, B. A., 1.

Hackmanite, Ark: Miser, H. D., 3.

Mineral: Hatcher, J. S., 1.

Sodalite, Ark: Miser, H. D., 3.

Texas, Big Bend minerals: Miles, F. A., 1.

Visible and invisible: De Ment, J. A., 5.

Zircon: De Ment, J. A., 7.

Fluorine.

Rocks and ocean-bottom samples: Shepherd, E. S., 1.

U. S., phosphate formed by: Mansfield, G. R., 5.

Fluorite.

New York, Tilly Foster mine: Trainer, J. N., 1.

United States: Hughes, H. H., 1.

Fluorspar, Ontario: Emery, C. L., 1.

Fluting and faceting, rock fragments: Maxson, J. H., 1.

Folding.

Alaska, Tetling River area: Moffit, F. H., 1.

Alberta: Hage, C. O., 1; Hake, B. F., 1;

Hume, G. S., 4, 8; MacKay, B. R.,

7; Russell, L. S., 1, 2.

Appalachian area: Cloos, E., 2; Lafferty,

R. C., Jr., 1; Nettleton, L. L., 2;

Sherrill, R. E., 1.

Arctic America, Ellesmere I.: Bentham, R., 1.

Arkansas, sou.: Imlay, R. W., 1.

Atlantic, Gulf Coastal Plains: Leet, L. D., 1.

Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.

British Columbia: Armstrong, J. E., 1;

Bancroft, M. F., 1; Billingsley, P.

R., 3; Cairnes, C. E., 1; Hedley, M.

S., 2; McLearn, F. H., 3; Rice, H.

M. A., 1.

Folding—Continued.

- California: Durrell, C., 1; Eaton, J. E., 3; Erwin, H. D., 1; Farmin, R., 1; Hinds, N. E. A., 2; Jenkins, O. P., 6; Lemmon, D. M., 3; Locke, A., 1; MacDonald, G. A., 5; Mayo, E. B., 1; Merriam, R. H., 1; Noble, L. F., 1; White, D. E., 2; Wilson, I. F., 1.
- Cascadia: Schofield, S. J., 2.
- Colorado: Boos, M. F., 1; Burbank, W. S., 1; Butler, R. D., 1; Pierce, W. G., 1; Singewald, Q. D., 1; Wagner, C. P., 1.
- Connecticut, eastern: Keppel, D., 2.
- Cyclic convection currents: Brooks, H., 1.
- Flow cleavage, folded beds: Swanson, C. O., 2.
- Foliate structures, rock flowage: Mead, W. J., 1.
- Georgia, Cartersville area: Kesler, T. L., 1.
- Greenland: Carlson, W. S., 1.
- Idaho: Anderson, A. L., 1, 5; Erdmann, C. E., 2.
- Iowa, sou.: Cline, L. M., 1.
- Kansas: Frye, J. C., 8; Lee, W., 1.
- Maine, Lewiston area: Fisher, L. W., 1.
- Manitoba, R'ce Lake-Beresford Lake: Stockwell, C. H., 1.
- Martic overthrust, Md.-Pa.: Cloos, E., 4.
- Massachusetts: Bain, G. W., 5; Chute, N. E., 1.
- Mexico: Anderson, C. A., 5; Kellum, L. B., 2; King, R. E., 1; Robinson, W. L., 1; Stone, J. B., 1.
- Minnesota: Gruner, J. W., 3; Stauffer, C. R., 3.
- Missouri, Lincoln fold: McQueen, H. S., 2.
- Missouri-Illinois sec.: Kans. G. S., 2.
- Montana: Blackstone, D. L., Jr., 1; Deiss, C. F., 4; Erdmann, C. E., 2; Maravich, M. D., 1.
- Nevada, Bottle Creek dist.: Roberts, R. J., 1.
- New Brunswick: Alcock, F. J., 1.
- New Hampshire: Billings, K. F. L., 1, 2; Billings, M. P., 2; Hadley, J. B., 2; Meyers, T. R., 2.
- New Jersey: Appleby, A. N., 1; Lewis, J. V., 1; Ludlum, J. C., 1.
- New Mexico: Baker, C. L., 2; Harley, G. T., 1; Lasky, S. G., 1; Ray, L. L., 2.
- New York: Bird, P. H., 1; Buddington, A. F., 1; Fluehr, T. W., 1, 2; Ingham, A. L., 1; Richardson, G. B., 2.
- North America, ore dists.: Billingsley, P. R., 1.
- North Carolina: Maurice, C. S., 1; Ward, J. B., 1.
- Northwest Territories: Jolliffe, A. W., 1.
- Nova Scotia: Bell, W. A., 1; Cameron, H. L., 1; Douglas, G. V., 1, 2, 3, 4, 5, 6, 7, 8, 10; Hedley, P. M., 1.
- Oklahoma: Goodrich, H. B., 1; Hoffman, M. G., 2; Paschal, E. A., 1.

Folding—Continued.

- Ontario: Bartley, M. W., 1; Bateman, J. D., 1, 2; Butterfield, H. M., 1; Horwood, H. C., 1, 2; Jenney, C. P., 1; Langford, G. B., 1; Frest, V. K., 1.
- Ore deposition, fissure veins: McKinstry, H. E., 1.
- Oregon: Allen, J. E., 2; Hodge, E. T., 5, 6; Luper, R. L., 2; Merriam, C. W., 2; Oregon St. Bd., 1; Smith, W. D., 4; Wells, F. G., 1, 6.
- Ouachita Mts., Okla.-Ark.: Hendricks, T. A., 4.
- Parallel, strat. measurements: Mertie, J. B., Jr., 3.
- Pennsylvania: Foote, R. M., 1; Krynine, P. D., 10; O'Neill, W. F., 1; Postel, A. W., 3.
- Plastodynamics shown by structure: Washbourne, C. W., 1.
- Quebec: Ambrose, J. W., 2; Bannerman, H. M., 1; Douglas, G. V., 11; Flaherty, G. F., 1; Gunning, H. C., 1, 2; Laverdière, J.-W., 1; Putman, H. M., 1; Tolman, C., 1.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- Saskatchewan, Sulphide Lake: Mawdsley, J. B., 1.
- South Dakota-Wyoming sec.: Kans. G. S., 1.
- Stratigraphic measurements, parallel folds: Mertie, J. B., Jr., 3.
- Structure, Illinois Basin: Cohee, G. V., 2-a.
- Tennessee: Fox, P. P., 1; Martin, G. C., Jr., 1; Moneymaker, B. C., 1.
- Teton Range, Wyo.-Idaho: Fryxell, F. M., 3.
- Texas: Baker, C. L., 3; Geol. S. A., 1; Giesey, S. C., 1; Lonsdale, J. T., 1; Maxwell, R. A., 1; Perry, L., Jr., 1; Ross, C. P., 1; Sheldon, W., 1; Smith, J. F., Jr., 2, 4.
- Utah: Bacon, C. S., Jr., 1; McKnight, E. T., 1.
- Utah-Arizona, Hurricane fault: Gardner, L. S., 1.
- Vermont: Carrier, L. W., 2; Doll, C. G., 1; Hawkes, H. E., Jr., 1.
- Virgin Islands, St. Croix: Cedarstrom, D. J., 2, 3.
- Virginia: Edmundson, R. S., 1, 2; Roberts, J. K., 2.
- Wasatch Range, Utah-Idaho: Bardsley, A. J., 4.
- Washington: Bennett, W. A. G., 2; Wash. P. C., 1; Waters, A. C., 2.
- Wyoming: Beckwith, R. H., 1; Branson, E. B., 7; Horberg, L., 2; Love, J. D., 2.
- Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.

Footprints. See Tracks and Trails.

Foraminifera.

- Alabama: Cushman, J. A., 4; Garrett, J. B., Jr., 1; Toulmin, L. D., Jr., 4.
 Alaska: Cushman, J. A., 4.
 Antigua: Trechmann, C. T., 1.
 Antillean-Caribbean area: Senn, A., 1.
 Applied paleontology: Schenck, H. G., 4.
Asterigerina tombigbeensis for *A. alabamensis*: Cushman, J. A., 4.
 Barbados, Paleogene: Senn, A., 1.
 Bartlett Deep cores, Cuba, Jamaica: Cushman, J. A., 5.
 Bibliography, new forms, 1937-38: Thalmann, H. E., 1.
 Bolivina, Fla.: Cushman, J. A., 4.
 Brevaxina, Perm.: Schenck, H. G., 5.
 California: Adams, B. C., 1; Crume, R. W., 1; Eaton, J. E., 3; Ferguson, G. C., 1; Goudkoff, P. P., 1; Hanna, G. D., 1; Israelsky, M. C., 2; Jenkins, O. P., 4; Laiming, B., 1, 2, 3; Marks, J. G., 1; Natland, M. L., 1; Wissler, S. G., 1; Woodring, W. P., 1.
 Cambridge, lms., Pa.: Seaman, D. M., 3.
 Catalogue: Ellis, B. F., 1.
 Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 4.
 Cibicides, Calif.: Leroy, L. W., 1.
 Cojimar, Cuba: Palmer, D. B. K., 1.
 Cretaceous: Loeblich, H. T., 1.
 Cuba, Vento Valley: Brodermann, J., 1.
 Deep-sea cores, North Atlantic: Bramlette, M. N., 1; Cushman, J. A., 2; Piggot, C. S., 1.
 Dentalium, Cret.: Cushman, J. A., 4.
 Description of new species, method: Leroy, L. W., 1.
 Dominican Republic: Cushman, J. A., 4.
 Ecology of marine organisms: Ladd, H. S., 1.
 Edwards fm., Tex.: Ikens, W. C., 2.
 Eocene, Miss.: Gravell, D. W., 1.
 Florida: Cole, W. S., 2; Smith, R. H., 1.
 Fusulinidae: Anderson, R. A., 1; Frenzel, H., 1; Johnson, C. H., 1; Thompson, M. L., 1, 2, 3, 4.
 General: Cronels, C. G., 3; Cushman, J. A., 1; Plummer, H. J., 1.
 Globigerina, Barbados: Crickmay, G. W., 2.
 Grayson Cret., Tex.: Tappan, H. N., 1.
 Gypsina, Cuba: Rutten, M. G., 1.
 Haiti: Coryell, H. N., 1.
 Lagenidae, Tex., Okla.: Loeblich, A. R., Jr., 3.
 Lituola, Miss.: Mellen, F. F., 2.
 Louisiana: Ellison, A. C., 1.
 Marine organisms in sediments: Natland, M. L., 2.
 Maryland, Miocene: Clapp, A. D., 1.
 Microfauna, Cret., Colo.: Toepelman, W. C., 1.
 Midway, La.: Murray, G. E., Jr., 1.
 Microfossils, economically important: Schenck, H. G., 2.
 Micropaleontology of chert, Nor. Am.: Wetzel, O., 1.

Foraminifera—Continued.

- Micropaleontology and petroleum: Cronels, C. G., 8.
 Minnesota, S. E.: Stauffer, C. R., 3.
 Miocene, Calif. types: Chapman, F., 2.
 Misellina, Perm.: Schenck, H. G., 5.
 Mississippi: Garrett, J. B., Jr., 1; Gravell, D. W., 1; Mincher, A. R., 1.
 Missouri, statistical analysis, fusulinids: Burma, B. H., 1.
 New Jersey, Vincentown fm.: Greacen, K. F., 1.
 Niagaran, Ind., Ohio: Stewart, G. A., 2.
 Nodosaria, Cret.: Cushman, J. A., 4.
 North Atlantic cores: Phleger, F. B., Jr., 2.
 North Carolina, Natural Well area: Huddle, J. W., 1.
 North Dakota, Cannonball marine: Fox, S. K., Jr., 1.
 Paleogeology: Cushman, J. A., 6.
 Pascagoula fm., Miss.: Mincher, A. R., 1.
 Permian, Chiapas, Mex.: Müllerried, F. K. G., 2.
 Petroleum industry: Driver, H. L., 1.
 Porcellaneous forms: Cushman, J. A., 4.
 Puerto Rico, Tert.: Caldwell, E. T., 1; Galloway, J. J., 1.
 Quantitative data in microstratigraphy: Tromp, S. W., 1.
 Robulus, Cret., Nor. Am.: Cushman, J. A., 4.
 Siphonides, Tex.: Feray, D. E., 1.
 Soap, preparing samples: Howe, H. V. W., 2.
 Soldado Rock: Vaughan, T. W., 2.
 Stensioina, Cret.: Cushman, J. A., 4.
 Texas: Dallas Petroleum Geologists, 1; Davis, F. E., 1; Lozo, F. E., 1; Tappan, H. N., 2; Vieaux, D. G., 1.
 Textularia, Tex.: Davis, F. E., 1.
 Trinidad: Vaughan, T. W., 2.
 Uvigerina, Miocene, Nor. Am.: Cushman, J. A., 4.
 Washington, Oligocene: Cushman, J. A., 4.
 Forests, Tert., and continental history: Chaney, R. W., 2, 3.
 Formations. See Geologic formations.
 Forsterite.
 Georgia: Hunter, C. E., 3.
 North Carolina: Hunter, C. E., 3.
 Fossil classification from macerated coal: Schopf, J. M., 1.
 Fossil forests. See Petrified forests.
 Fossil imprints, unknown origin, Mont.: Vokes, H. E., 2.
 Fossils. See Paleontology.
 Frontiers, sed. petrology-mineralogy: Twenhofel, W. H., 10.
 Fuchsite, North Carolina: Hafer, C., 1.
 Fucoids, Virginia: Perry, G. G., 1.
 Fullers earth, U. S., sou.: Mansfield, G. R., 2.

- Fumaroles, Mt. St. Helens, Mt. Adams, Oreg.: Phillips, K. N., 1.
- Future oil supplies: Levorsen, A. I., 2.
- Gabbros.
California, Sierra Nevada: MacDonald, G. A., 5.
Colorado, Stony Mt. stock: Dings, M., 1.
Ontario, Tremee Lake: Satterly, J., 1.
Quebec, Sept-Iles: Faessler, C., 4.
- Galena.
California, Blind Spring Hill: Ransome, A. L., 2.
Colorado, La Plata Mts.: Galbraith, F. W., 5.
Montana, Butte: Smith, P. A., 1.
North Carolina: Hafer, C., 1.
Ohio, sed. rocks: Ver Steeg, K., 4.
Sulphides, metallic, Miss. Valley: Van Tuyl, F. M., 2.
- Galenobismutite.
British Columbia: Warren, H. V., 1.
General: Berry, L. G., 1.
- Gallium, Virginia: Mathews, A. A. L., 3.
- Ganister, Alabama: Bowles, E. O., 2.
- Garnet.
California: Murdoch, J., 1.
Colorado: Ives, R. L., 5; Pearl, R. M., 3.
Cordierite with: Folinsbee, R. E., 1.
Greenland: Belknap, R. L., 1.
New Hampshire, Alstead mine: Bartsch, R. C. B., 1.
New York, Willsboro quad.: Buddington, A. F., 1.
Source rocks, weathering: Dryden, A. L., Jr., 4.
Texas, Big Bend: Miles, F. A., 1.
Washington: Fernquist, C. O., 1.
- Gas. See Natural gas.
- Gas pits, non-marine sediments: Maxon, J. H., 2.
- Gases, vertical migration: Nisle, R. G., 1.
- Gastroliths.
Kansas: Carpenter, A. C., 1.
Sea-mammals: Emery, K. O., 3.
- Gastropoda.
Alabama, Montevallo-Columbiana quads.: Butts, C., 1.
Alabina, Calif.: Willett, G., 1.
Alberta: Landes, R. W., 1; Russell, L. S., 1, 2, 9.
Amphineura, Atlantic Coastal Plain: Berry, C. T., 1.
Arctic America, Frobisher Bay: Roy, S. K., 1.
Belcher I., Canada: Richards, H. G., 1.
California: DeLong, J. H., Jr., 1; Eaton, J. E., 3; Hanna, G. D., 1; Woodring, W. P., 1.
Cambridge, lms., Pa.: Seaman, D. M., 3.
Cantharus bentsonae for C. cowlitzensis: Turner, F. E., 2.
Chickasawhay marl, Ala.-Miss.: Mansfield, W. C., 1.
- Gastropoda—Continued.
Conularia, genotype: Sinclair, G. W., 1.
Cuba, Vento Valley: Brodermann, J., 1.
Cypraea, Costa Rica: Ingram, W. M., 1.
Edwards fm., Tex.: Ikins, W. C., 2.
Euphemites, Tex.: King, R. H., 1.
Exilia, Tert., Cret., U. S.: Bentson, H., 1.
Fasciolaria, giant, N. C.: Smith, B., 1.
Florida, Tert.: McGinty, T. L., 1.
Genotypes, Paleozoic: Knight, J. B., 2.
Gisortia, Calif.: Ingram, W. M., 2.
Helisoma, Fla.: Baker, F. C., 1.
Jurassic, Ark.-La.-Tex.: Imlay, R. W., 4.
Kansas, Penn.: Moore, R. C., 9, 16.
Louisiana, Midway: LeBlanc, R. J., 1.
Maine, Aroostook Co.: Twenhofel, W. H., 7.
Metaconularia, Sil.-Ord.: Sinclair, G. W., 2.
Mexico, Neocomian: Imlay, R. W., 2.
Midway fauna, west Gulf: Gardner, J. A., 4.
Minnesota, S. E.: Stauffer, C. R., 3.
Miocene, La.: Ellisor, A. C., 1.
Mississippi: Stephenson, L. W., 1.
Mollusca, Calif.: Berry, S. S., 1.
Navarro group, Tex.: Stephenson, L. W., 3.
Nevada, Roberts Mts.: Merriam, C. W., 1.
New Jersey, Vincentown fm.: Greacen, K. F., 1.
New Mexico, Sacramento Mts.: Laudon, L. R., 4.
Niagaran, Ohio-Ind.: Busch, D. A., 1.
Ontario: Caley, J. F., 1.
Ordovician, Mich.: Hussey, R. C., 2.
Oregon: Luper, R. L., 2.
Pennsylvania, Ames lms.: Seaman, D. M., 1.
Permian, Mex., Tex., N. Mex.: Mills, J. M., 1; Mülleried, F. K. G., 2.
Pleistocene, Calif.: Berry, S. S., 1.
Newfoundland: Richards, H. G., 2.
Pliocene, Fla.: Stubbs, S. A., 1.
Prograngerella, Alberta: Russell, L. S., 10.
Pseudoconularia, Ont.: Sinclair, G. W., 3.
Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
Sthenorytis, Cuba: Bartsch, P., 1.
Tennessee: Whitlatch, G. I., 1.
Texas: Dallas Petroleum Geologists, 1; Stainbrook, M. A., 3, 8; Stenzel, H. B., 8.
Tubulostium, West Indies: Rutsch, R. F., 1.
Turitella, Pacific Coast, Nor. Am.: Merriam, C. W., 3.
Turritellidae, Tert., Gulf Coast: Stenzel, H. B., 5.
Virginia Tidewater Miocene: Barclay, G. C., 1.
Whitehorse ss. fauna: Newell, N. D., 1.
Wisconsin, Door Co.: Schrock, R. R., 1.

Gems. See also Precious stones.

- Amethyst, Va.: Sniffen, S. W., 1.
 Chalcedony pseudomorphs after coral,
 Fla.: Manchester, J. G., 2.
 Colorado, Florissant: Pearl, R. M., 7.
 Diamond, distorted: Kraus, E. H., 3.
 Gemology: Barclay, G. C., 2.
 General: Kraus, E. H., 5.
 Jade, Calif.: Rogers, A. F., 2.
 Opal, Nev.: Dake, H. C., 3.
 Pearls, Kans.: Brown, R. W., 2.
 Quartz, Calif.: Symons, H. H., 1.
 Turquoise, Colo.: Pearl, R. M., 2.
 Washington, gem minerals: Fernquist,
 C. O., 1.
 Zircon, Pa.: Dryden, A. L., Jr., 3.
- Gems, story of:** Whitlock, H. P., 1.
- Generic names, corrections in:** Knight, J. B., 1.
- Genesis of ores.** See Ore deposits, origin.
- Geochemical petroleum explor.:** Ransone, W. R., 1.
- Geochemical prosp.:** Baker, W. L., 1; Horvitz, L., 2, 3; Pirson, S. J., 1; Rosaire, E. E., 6.
- Geochemical well logging:** Horvitz, L., 1; Ransone, W. R., 4.

Geochemistry.

- California, petroleum: Rosaire, E. E., 6.
 Colloidal dispersions: Nutting, P. G., 1.
 General: Geol. S. A., 2; Hamm, F. A., 1; Larsen, E. S., 1.
 Geochemical well logging: Ransone, W. R., 4.
 Geology and relation to chemistry: Cohee, G. V., 1.
 Hydrogenation of oil: Heck, E. T., 3.
 Influence, geophysics and geochemistry on geol. training: Krumbein, W. C., 10.
 New York, Saratoga waters: Strock, L. W., 1, 3.
 Petroleum, geochem. explor.: Rosaire, E. E., 3.
 Petroleum explor.: Ransone, W. R., 3.
 Petroleum geology: Levorsen, A. I., 1.
 Petroleum stratigraphic traps: Merriitt, J. W., 2.
 Quicksilver mineralization: Dreyer, R. M., 1; Fahey, J. J., 1.
 Soil analysis: McDermott, E., 1.
 Soil analysis petroleum explor.: Merriitt, J. W., 1; Pirson, S. J., 1.
 Soil physics: Bayer, L. D., 1.
 Texas, Houston-Galveston ground water: Foster, M. D., 1.
 Vein-forming solutions: Garrels, R., 1.
 Water analyses: Collins, W. D., 1.
 West Virginia, connate waters: Heck, E. T., 4.

Geodes.

- California, thunder eggs: Cutler, V. P., 1.
 Florida, chalcedony pseudomorphs after coral: Manchester, J. G., 2.

Geodes—Continued.

- General: Palmer, E. J., 1.
 Illinois, Warsaw fm.: Robertson, P., 2.
 Iowa, Keokuk area: Fleener, F. L., 1.
 Kentucky: Mauntel, H. W., 1.
 Missouri: O'Brien, M. L., 1.
 New Jersey, Sayreville: Giordano, V., 1.
 Ohio: Goodwin, H. R., 1.
 Tennessee: Mauntel, H. W., 1.
 Thunder eggs: Cutler, V. P., 1; Dake, H. C., 2; Redd, M. F., 1.
 Wyoming: Anonymous, 3.
- Geo-electric invest. Penn's Cave, Pa.:** Keller, F., Jr., 1.
- Geoexploration:** Lundberg, H. T. F., 2.
- Geologic age.**
 Manitoba, monazite lead-uranium ratio: Muench, O. B., 2.
 Terminology in work: Keevil, N. B., 3.
- Geologic climate.** See Paleoclimatology.
- Geologic excursion, Quebec, Shawbridge area:** Mailloux, A., 1.
- Geologic explorations, S. W.:** Bryan, K., 1.
- Geologic field experience:** Dunn, D. A., 1.
- Geologic formations, tables.** See also Historical geology.
- Alabama: Adams, G. I., 1; Bowles, E. O., 2; Butts, C., 1; Jones, W. B., 1; Toulmin, L. D., Jr., 4.
 Alberta: Allan, J. A., 2; Ball, M. W., 2; Hare, C. O., 1; MacKenzie, W. D. C., 1; Russell, L. S., 1, 2.
 Arizona: Enlows, H. E., 1; Keyes, 55, 133; Wilson, E. D., 1.
 Arkansas: Branner, G. C., 1, 5; Imlay, R. W., 1; Weeks, W. B., 1.
 Belt series, Mont.-Idaho: Gibson, R., 1.
 Bradford Sand, N. Y.: Pa.: Kryniene, P. D., 2.
 British Columbia: McLearn, F. H., 3; Rice, H. M. A., 1.
 California: Anderson, C. A., 1; Anderson, F. M., 1, 2; Clark, S. G., 1; DeLong, J. H., Jr., 1; Frame, R. G., 1; Gilbert, C. M., 1; Hinds, N. E. A., 2; Jenkins, O. P., 4; Johnston, W. D., Jr., 1; Miller, W. J., 2; Noble, L. F., 1; Partridge, J. F., Jr., 1; Prout, J. W., Jr., 1; Reed, R. D., 3; Taliaferro, N. L., 3; Wissler, S. G., 1; Woodring, W. P., 1.
 Colorado: Burbank, W. S., 1, 3; Butler, R. D., 1; Heaton, R. L., 1; Pierce, W. G., 1; Singewald, Q. D., 1.
 Cuba: Albear, J. F. de, 1; Brodermann, J., 1.
 Georgia: Munyan, A. C., 1.
 Gulf Coast, La.-Tex.: Cogen, W. M., 1.
 Illinois: Cohee, G. V., 3; Keyes, 111; Weller, J. M., 1.
 Iowa: Keyes, 79; McHugh, W. E., 1; Wood, L. W., 1.

Geologic formations—Continued.

- Kansas: Frye, J. C., 8; Jewett, J. M., 4; Keyes, 105, 135, 139; Kornfeld, J. A., 4; Latta, B. F., 1; Lohman, S. W., 3; Smith, H. T. U., 9; Ver Wiebe, W. A., 1.
- Kentucky: Freeman, L. B., 1; Rhoades, R. F., 1; Stouder, R. E., 1.
- Lake Superior area: Tyler, S. A., 1.
- Lloydminster fields, Alberta-Saskatchewan: Hume, G. S., 5.
- Louisiana: Bates, F. W., 1; Fisk, H. N., 1; Maher, J. C., 2.
- Maine, Lewiston area: Fisher, L. W., 1.
- Manitoba, Rice-Beresford Lakes: Stockwell, C. H., 1.
- Martic overthrust, Md.-Pa.: Cloos, E., 4.
- Maryland: Gray, W. B., III 1.
- Massachusetts: Bain, G. W., 5; Chute, N. E., 1; Jahns, R. H., 3; Mather, K. F., 1.
- Michigan, Montmorency Co.: Bergquist, S. G., 1.
- Minnesota: Crowley, A. J., 1; Gruner, J. W., 3; Stauffer, C. R., 3; Thiel, G. A., 2.
- Mississippi: Conant, L. C., 1; Kornfeld, J. A., 3; Mellen, F. F., 1, 4; Morse, W. C., 1; Stephenson, L. W., 1; Todd, J. D., 3.
- Missouri: Keyes, 82, 102, 106; McQueen, H. S., 2; Rhodes, M. L., 1.
- Missouri-Illinois sec.: Kans. G. S., 2.
- Montana: Blackstone, D. L., Jr., 1; Goddard, E. N., 2; Peoples, J. W., 1.
- Nebraska, Pleist.: Lugin, A. L., 3.
- Nebraska-Wyoming-South Dakota-Colorado fms., correl.: Condra, G. E., 2.
- Nevada: Merriam, C. W., 1; Wheeler, H. E., 2.
- Newfoundland, N. W. lowlands: Johnson, H., 2.
- New Jersey: Greacen, K. F., 1; Lewis, J. V., 1.
- New Mexico: Baker, C. L., 1; Harley, G. T., 1; Keyes, 45; Laudon, L. R., 4; Miller, J. C., 1.
- New York: Buddington, A. F., 1; Fluhr, T. W., 6; Gillette, T., 1; Richardson, G. B., 2.
- North America, Mid-continent area: Dott, R. H., 3.
- Western fms.: Hinds, N. E. A., 3.
- Northwest Territories: Jolliffe, A. W., 1; Lord, C. S., 2.
- Nova Scotia: Bell, W. A., 1; Douglas, G. V., 3; Flynn, A. E., 1.
- Ohio, Clinton and Berea fms.: Ver Steeg, K., 2.
- Oklahoma: Kennedy, L. E., 2; Moore, C. A., 1; Oakes, M. C., 1; Shea, E. F., 1.
- Ontario: Bartley, M. W., 1; Bateman, J. D., 1, 3; Caley, J. F., 1, 3; Horwood, H. C., 1, 2; Jenney, C. P., 1; Moore, E. S., 2; Prest, V. K., 1; Wilson, A. E., 2.

Geologic formations—Continued.

- Oregon: Anderson, F. M., 1; Lupper, R. L., 2; Smith, W. D., 4; Wilkinson, W. D., 1.
- Pennsylvania: Ashley, G. H., 1; Cleaves, A. B., 1; Dickey, P. A., 1; Fetteke, C. R., 2; Hickok, W. O., IV, 1; Laird, W. M., 1, 2; O'Neill, W. F., 1; Willard, B., 5.
- Petroleum, future resources: Levorsen, A. I., ed., 5.
- Quebec: Ambrose, J. W., 2; Bannerman, H. M., 1; Douglas, G. V., 11; Gunning, H. C., 1, 2; Laverdière, J.-W., 1; MacKenzie, G. S., 1, 2; Norman, G. W. H., 2; Tolman, C., 1; Wilson, M. E., 3.
- Santo Domingo: Weyl, R., 1.
- Saskatchewan: Furnival, G. M., 1, 2; Wickenden, R. T. D., 2.
- South Dakota, Chamberlain sec.: Wing, M. E., 2.
- South Dakota-Wyoming sec.: Kans. G. S., 1.
- Tennessee: Eckel, E. C., 3; Martin, G. C., Jr., 1; Rose, N. A., 1; Whitlatch, G. I., 2.
- Texas: Cheney, M. G., 1; Dallas Petroleum Geologists, 1; Geol. S. A., 1; Giesey, S. C., 1; Herring, L. B., 1; Houston, G. S., 1; Lonsdale, J. T., 1; Martyn, P. F., 1; Maxwell, R. A., 1; Mills, B., 1; Morgan, A., 1; Ross, C. P., 4; Stephenson, L. W., 3; Whitaker, H. B., 1; White, W. N., 1; Wilson, G. M., 2.
- Trinidad, Los Bajos fault area: Wilson, C. C., 1.
- United States, sou.: Mansfield, G. R., 1, 2.
- Utah: Miller, J. C., 1; Spieker, E. M., 1.
- Vermont: Currier, L. W., 2; Hawkes, H. E., Jr., 1.
- Well logs, oil field data, U. S.: Oil and Gas Journal, 1.
- West Texas-New Mexico: DeFord, R. K., 2.
- Wyoming: Beckwith, R. H., 1; Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Knight, S. H., 1.
- Geologic history. See also Paleoclimatology; Paleogeography.
- Alaska, Kotlik River: Moffit, F. H., 1.
- Arizona: Keyes, 55.
- California: Jenkins, O. P., 4; MacDonald, G. A., 5; Reed, R. D., 3; Taliaferro, N. L., 3.
- Canada, Magdalen Is.: Alcock, F. J., 0.
- Colorado, Uncompahgre area: Burbank, W. S., 1.
- Cuba, geosyncline: Corral y Aleman, J. I., 1.
- Florida, penin.: Campbell, R. B., 2.
- General: Merriam, J. C., 1.
- Hawaii, Kahoolawe: Stearns, H. T., 4.
- Illinois: Powers, W. E., 1; Weller, J. M., 1.

Geologic history—Continued.

- Kansas: Frye, J. C., 6; Kornfeld, J. A., 4.
 Massachusetts, Blue Hills quad.: Chute, N. E., 1.
 Mid-continent area: Cram, I. H., 3.
 Mississippi: Stephenson, L. W., 1.
 Missouri, Lincoln fold: McQueen, H. S., 2.
 Montana: Horberg, L., 1; Peoples, J. W., 1.
 Nevada, Goldbanks dist.: Dreyer, R. M., 2.
 New Brunswick: Alcock, F. J., 1.
 Newfoundland surface: Twenhofel, W. H., 4.
 New Hampshire, Mt. Washington: Billings, M. P., 2.
 New Jersey: Lewis, J. V., 1.
 New Mexico: Keyes, 45.
 North America: Hussey, R. C., 1.
 Oregon: Hodge, E. T., 6; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4.
 Pacific Northwest Tert.: Weaver, C. E., 1.
 Pennsylvania: Willard, B., 2.
 Rock cycle: Locke, A., 3.
 Saskatchewan: Tanton, T. L., 2.
 Silurian corals, Miss. River Basin: Ball, J. R., 1.
 Tennessee: Eckel, E. C., 3; Fox, P. P., 1; Martin, G. C., Jr., 1.
 Texas, Perm. basin: Sheldon, W., 1.
 United States, phosphates: Mansfield, G. R., 4.
 Virginia, Little North Mt.: Edmundson, R. S., 1.
 West Indies, Cuban geosyncline: Corral y Alemán, J. I., 1.
 Wyoming: Branson, E. B., 7; Bertagnoli, A. J., Jr., 1; Love, J. D., 2.
 Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.

Geologic maps.

- Alabama: Adams, G. I., 1; Butts, C., 1; Ross, R. M., 1; Toulmin, L. D., Jr., 2.
 Alaska: Capps, S. R., 1; Mertie, J. B., Jr., 1; Moffit, F. H., 1; Smith, P. S., 8.
 Alberta: Ball, M. W., 2; Beach, H. H., 1; Canada, G. S., 1; Hage, C. O., 1, 2; Hume, G. S., 1, 2, 3, 4, 7, 8; MacKay, B. R., 1, 2, 3, 4, 5, 6; Russell, L. S., 1, 2; Stewart, J. S., 2, 3.
 Appalachian erosion surfaces: Cole, W. S., 1.
 Appalachian geosyncline: Lafferty, R. C., Jr., 2.
 Arizona: Enlows, H. E., 1; Keyes, 13, 55; Kuhn, H., 1; Reiche, P., 2; Strabler, A. N., 1.
 Arkansas: Branner, G. C., 1; Imlay, R. W., 1; Miser, H. D., 3.
 Barbados, Paleogene: Senn, A., 1.
 Bay of Fundy: Koons, E. D., 1.

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- Belt ser., Mont.-Idaho: Gibson, R., 1.
 Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.
 British Columbia: Armstrong, J. E., 1; Billingsley, P. R., 3; Canada, G. S., 1; Hedley, M. S., 1, 2; Holland, S. C., 1; Kindle, E. D., 1; Lang, A. H., 1, 2; Lay, D., 1, 2; McLearn, F. H., 8; Maconachie, R. J., 1; Rice, H. M. A., 1; Sargent, T. E. H., 1, 2; Stevenson, J. S., 2, 3.
 California: Allen, J. E., 3; Anderson, C. A., 1, 3, 4; Bellemin, G. J., 1; Chelickowsky, J. R., 1; Clark, S. G., 1; Dolman, S. G., 1; Durrell, C., 1; Eaton, J. E., 1, 3; Eckel, E. B., 2; Erwin, H. D., 1; Forbes, H., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Hudson, F. S., 1; Johnston, W. D., Jr., 1; Jones, G. H., 1; Lemon, D. M., 1, 2, 3; Locke, A., 1; MacDonald, G. A., 4; Mayo, E. B., 1; Menken, F. A., 2; Miller, W. J., 1, 2; Noble, L. F., 1; Prout, J. W., Jr., 1; Ransome, A. L., 2; Ross, C. P., 1, 2; Ryncarson, G. A., 1; Wells, F. G., 2; White, R. T., 1; Woodford, A. O., 4; Woodring, W. P., 1; Wosk, D., 1.
 Canada, Canadian Shield: Wilson, M. E., 1.
 Eastern: Canada G. S., 2.
 Magdalen Is.: Alcock, F. J., 6.
 Western: Alberta S. P. G., 1.
 Casselman area, Ontario-Quebec: Canada G. S., 1.
 Colorado: Boos, M. F., 1; Burbank, W. S., 1, 3; Butler, R. D., 1; Dings, M., 1, 2; Goddard, E. N., 1; Heaton, R. L., 1; Ives, R. L., 5; Lovering, T. S., 1, 2; Pierce, W. G., 1; Singewald, Q. D., 1; Upson, J. E., 1; Wahlstrom, E. E., 1, 2.
 Cuba: Albear, J. F. de, 1; Brodermann, J., 1; Corral y Alemán, J. I., 1, 3.
 Delaware Water Gap and Easton quads.: Pa.-N. J.: Bayley, W. S., 1.
 Flin Flon, Manitoba-Saskatchewan: Canada G. S., 1.
 Forest City Basin, Kans.-Neb.: McClellan, H. W., 1.
 Georgia: Hunter, C. E., 3; Kesler, T. L., 1; Munyan, A. C., 1.
 Gulf Coast, La.-Tex.: Cogen, W. M., 1.
 Hawaii: MacDonald, G. A., 1; Stearns, H. T., 1, 2, 3; Wentworth, C. K., 1.
 Idaho: Anderson, A. L., 1, 3; Callaghan, E., 1; Capps, S. R., 2, 4; Erdmann, C. E., 2; White, D. E., 1.
 Illinois: Cady, G. H., 1; Payne, J. N., 2; Weller, J. M., 1, 2; Workman, L. E., 1.
 Indiana, Devonian: Harris, J. R., 1.
 Iowa: Keyes, 79, 104; Wood, L. W., 1.

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- Kansas: Jewett, J. M., 1, 4; Latta, B. F., 1; Lee, W., 2; Lohman, S. W., 3; Moore, R. C., 5; Postley, O. C., 1.
- Kentucky: McInteer, B. B., 1; Rhoades, R. F., 1; Stouder, R. E., 1.
- Louisiana, Avoyelles, Rapides Parishes: Fisk, H. N., 1; Maher, J. C., 1, 2, 5.
- Mafeking area, Manitoba-Sask.: Canada G. S., 1.
- Maine: Fisher, L. W., 1; Philbrick, S. S., 2.
- Manitoba: Canada G. S., 1; Stockwell, C. H., 1.
- Martie overthrust, Md.-Pa.: Cloos, E., 4.
- Maryland, Howard Co.: Cloos, E., 1.
- Massachusetts: Bain, G. W., 5; Billings, M. P., 3; Chute, N. E., 1, 2; Keeler, J., 1; Mather, K. F., 1; Wheeler, R. R., 1.
- Mexico: Gálvez, V., 1; King, R. E., 1; Terrones Langone, A., 1; Vaupell, C. W., 1.
- Michigan: Eergquist, S. G., 1; Hale, L., 1; Kelly, W. A., 1.
- Minnesota: Gruner, J. W., 3; Stauffer, C. R., 3; Thiel, G. A., 2.
- Mississippi: Conant, L. C., 1; Foster, V. M., 1, 2; Mellen, F. F., 1; Monroe, W. H., 1; Stephenson, L. W., 1; Todd, J. D., 3.
- Mississippian border, eastern interior basin: Weller, J. M., 3.
- Missouri: Branson, E. B., 10; Heinrich, R. R., 1; Keyes, 106; McQueen, H. S., 2.
- Missouri-Illinois sec.: Kans. G. S., 2.
- Montana: Blackstone, D. L., Jr., 1; Erdmann, C. E., 2; Goddard, E. N., 2; Horberg, L., 1; Larsen, E. S., 1, 3; Maravich, M. D., 1; Newcomb, R. C., 1; Pecora, W. T., 1; Peoples, J. W., 1.
- Nebraska: Kornfeld, J. A., 1; Lugin, A. L., 3; Wenzel, L. K., 2.
- Nevada: Drever, R. M., 2; Kerr, P. F., 3; Merrlam, C. W., 1; Roberts, R. J., 1, 2.
- Nepan area, Ontario-Quebec: Canada G. S., 1.
- Newfoundland: Douglas, G. V., 9; White, D. E., 3.
- New Brunswick: Alcock, F. J., 1, 5; Canada G. S., 1; Henderson, J. A. L., 1.
- New Hampshire: Billings, M. P., 2; Kruger, F. C., 1; Quinn, A. W., 3.
- New Jersey: Lewis, J. V., 1; Ludlum, J. C., 1.
- New Mexico: Denny, C. S., 1, 2, 5; Fries, C., Jr., 1; Harley, G. T., 1; Keyes, 45; Lasky, S. G., 1; Miller, J. C., 1; Ray, L. L., 2; Reiche, P., 1.
- New York: Buddington, A. F., 1; Fluhr, T. W., 2, 6; Gillette, T., 1; Ing-bam, A. I., 1.

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- Niagaran, Ohio-Ind.: Busch, D. A., 1.
- North America, Cordillera: Kerr, P. F., 5.
- Ore dists.: Billingsley, P. R., 1.
- North Carolina: Hunter, C. E., 3; Maurice, C. S., 1; Ward, J. B., 1; Anonymous, 30.
- North Dakota, Heart Butte, quad.: Tisdale, E. E., 1.
- Northwest Territories: Canada G. S., 1; Henderson, J. F., 1, 2, 3; Lord, C. S., 1, 2; Ridland, G. C., 1; Wilson, J. T., 2.
- Nova Scotia: Bell, W. A., 1; Canada G. S., 1; Douglas, G. V., 4, 5; Flynn, A. E., 1; MacLean, J. H., 1; Meservey, J. P., 1.
- Ohio, Cleveland area: Williams, A. B., 1.
- Oklahoma: Goodrich, H. B., 1; Hendricks, T. A., 3; Merritt, C. A., 3, 4; Oakes, M. C., 1; Schoff, S. L., 1.
- Ontario: Bartley, M. W., 1; Bateman, J. D., 1, 2, 3, 4; Butterfield, H. M., 1; Byers, A. R., 1, 2; Caley, J. F., 1, 2, 3; Canada G. S., 1; Chapman, L. J., 1; Horwood, H. C., 2; Jenney, C. P., 1; Langford, G. B., 1; Moore, E. S., 2; Quirke, T. T., 1; Satterly, J., 1; Tanton, T. L., 4.
- Oregon: Goodspeed, G. E., 4; Hodge, E. T., 6; Luper, R. L., 2; Packard, E. L., 1; Pardee, J. T., 2; Smith, W. D., 4; Thayer, T. P., 1; Wells, F. G., 1, 3; Wilkinson, W. D., 1, 3; Williams, H., 2.
- Paleozoic nor. Miss., Ala.: Mellen, F. F., 3.
- Pennsylvania: Armstrong, E., 2; Ashley, G. H., 1; Darton, N. H., 1; Foote, R. M., 1; Hickok, W. O., IV, 1; Leighton, H., 1; Lohman, S. W., 4; Postel, A. W., 2; Willard, B., 2.
- Petroleum, future resources: Levorsen, A. I., ed., 5.
- Puerto Rico: Galloway, J. J., 1.
- Quebec: Ambrose, J. W., 2; Armstrong, P., 1; Bannerman, H. M., 1; Beach, H. H., 2, 3; Canada G. S., 1; Douglas, G. V., 11; Flaherty, G. F., 1; Gunning, H. C., 1, 2; Kindle, E. D., 2; Laverdière, J. W., 1; Longley, W. W., 1; MacKenzie, G. S., 1, 2; Moorhouse, W. W., 1; Norman, G. W. H., 2, 3; Shaw, G., 1, 2; Tolman, C., 1; Wilson, M. E., 3.
- Quicksilver prospects, Nev.-Calif.-Oreg.: Ross, C. P., 3.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- Rocky Mt. area: Dobbin, C. E., 1.
- St. John River Valley: Nylander, O. O., 1.
- Santo Domingo: West, R., 1.
- Saskatchewan: Canada G. S., 1; Furnival, G. M., 1, 2; Tanton, T. L., 2.

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- Schist Lake, Manitoba-Saskatchewan: Canada G. S., 1.
 South Dakota: Allsman, P. T., 1; Rothrock, E. P., 1; Smith, W. C., 1.
 South Dakota-Wyoming sec.: Kans. G. S., 1.
 Stratigraphy: Moore, R. C., 12.
 Structure, Ill. basin: Cohee, G. V., 2-a.
 Surface feature representation: Straw, H. T., 1.
 Tennessee: Fox, P. P., 1; Laurence, R. A., 1, 2; Moneymaker, B. C., 1; Rose, N. A., 1; Whitlatch, G. I., 1, 2.
 Tennessee River Valley: Eckel, E. C., 1, 2.
 Texas: Barnes, V. E., 12; Dallas Petroleum Geologists, 1; Geol. S. A., 1; Giesey, S. C., 1; Ives, R. L., 7; Keppel, D., 1; King, P. B., 1, 2; Lonsdale, J. T., 1; Martyn, P. F., 1; Maxwell, R. A., 1; Smith, J. F., Jr., 2, 4; West Tex. G. S., 1; White, W. N., 1, 2.
 Trinidad, Los Bajos fault: Wilson, C. C., 1.
 United States, east: Appalachian G. S., 2.
 General: Lobeck, A. K., 1.
 Mid-continent area: Tulsa G. Soc., 1.
 Mississippi River Valley: Trewartha, G. T., 1.
 North Central: Longwell, C. R., 1.
 Pacific Coast: Pacific Sec. A. A. P. G., 1.
 Rocky Mt. area: Rocky Mt. Assn., 1.
 Southeastern: Branner, G. C., 4; Miss. G. S., 3.
 Utah: Eardley, A. J., 1; McKnight, E. T., 1; Miller, J. C., 1; Spieker, E. M., 1; Stagner, W. L., 1; Wells, F. G., 4.
 Utah-Arizona, Hurricane fault: Gardner, L. S., 1.
 Vermont: Chapman, R. W., 1; Currier, L. W., 2.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Virginia: Cooper, B. N., 1; Singewald, J. T., Jr., 1; Woollard, G. P., 2.
 Washington: Bennett, W. A. G., 2; Hobbs, S. W., 1; Krauskopf, K. B., 1; Warren, W. C., 1; Waters, A. C., 2.
 Well logs, oil field data, U. S.: Oil and Gas Journal, 1.
 West Indies, Cuban geosyncline: Corral y Alemán, J. I., 1.
 West Texas-New Mexico: DeFord, R. K., 2.
 Wisconsin, Door Co.: Shrock, R. R., 1.
 Wyoming: Beckwith, R. H., 1; Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Diemer, R. A., 1; Dockery, W. L., 1; Dorf, E., 1; Espach, R. H., 1; Knight, S.

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- Wyoming—Continued.
 H., 1; Pierce, W. G., 2; Rouse, J. T., 1.
 Geologic maps and aerial photos: Eardley, A. J., 3.
 Geologic period, length: Gillette, H. P., 2.
 Geologic record and helium time scale: Morris, F. K., 1.
 Geologic temperature recorders: Bowen, N. L., 4.
 Geologic time.
 Age measurements by radioactivity: Goodman, C., 1.
 Allanite as index: Marble, J. P., 2.
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- Geological surveys. See Surveys.
- Geologic terms, dictionary: Rice, C. M., 1.
- Geologists, economic, fields: McLaughlin, D. H., 1.
- Geologists, field experience: Ross, R. B., 1.
- Geologists, petroleum, in nat. defense: Snider, L. C., 1.
- Geology, 1888-1938: Geol. S. A., 2.
- Geology, history of development: Longwell, C. R., 6.
- Geology, place in sci. and teaching: Forrester, J. D., 2.
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- Geology in engineering: Berkey, C. P., 3.
- Geology in Oklahoma: Gould, C. N., 2.
- Geology and allied sciences: Miller, B. L., 2.
- Geology and engineering: Eckel, E. B., 1; Krumbein, W. C., 1; Philbrick, S. S., 1.
- Geology and geophysics in prosp. for oil: Eckhardt, E. A., 1.
- Geology and relation to chemistry: Cobee, G. V., 1.
- Geology and the layman: Kay, G. F., 1.
- Geomorphic aspects, normal, accelerated erosion: Sharpe, C. F. S., 1.
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- Benchlands, Piedmont areas: Terra, H. de, 1.
- Colorado, Cody area: Pierce, W. G., 1.
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- History of development: Longwell, C. R., 6.
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- Overloading and mass-movement: Hacker, W. A., 1.
- Physiography: Bryan, K., 8.
- Retreat of slopes: Bryan, K., 7.
- Walther Penck's contribution: Engeln, O. D. von, 1.
- Geophysical abstracts: Ayvazoglou, W., 1.
- Geophysical education: Macelwane, J. B., 1.
- Geophysical education and eng.: Wantland, D., 1.
- Geophysical Laboratory, Carnegie Inst., history: Day, A. L., 1.
- Geophysical prospecting.**
- Alaska: Joesting, H. R., 1.
- Amplifiers, seismic: Hoover, H., Jr., 1.
- Amplitudes, seismic reflection: Kendall, J. M., 1.
- Appalachia, present position: Ewing, W. M., 1.
- Appalachian area: Nettleton, L. L., 2.
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- Appalachians: Hammer, S. I., 1.
- Arizona, dam sites: Spicer, H. C., 1.
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- Boulder Dam area: Mead, T. C., 1.
- California: Byerly, P., 3; Clark, R. W., 1; Haskell, N. A., 1; Stulken, E. J., 1; Vaughan, F. E., 1.
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- Continents, study of: Thom, W. T., Jr., 1.
- Core orientation: Lynton, E. D., 1.
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- Current penetration in prosp.: Muskat, M., 2.
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- Decimal classification system: Heiland, C. A., 2.
- Density effect on seismic reflection: West, S. S., 1.
- Depth determination by earth resistivity: Longacre, W. A., 1.
- Development: Lee, F. W., 2.
- Dip data computation: Waters, K. H., 1.
- Dipping strata effect: Jameson, M. H., 1.
- Earth resistivity interp.: Roman, I., 2.
- Earth tides and crustal studies: Stetson, H. T., 1.
- Earth's crust investigs.: Macelwane, J. B., 3.
- Electrical logging, interp.: Neumann, L. J., 1.
- Electrical prospecting: Rust, W. M., Jr., 1.
- Exploration, oil and gas areas: Gilchrist, L., 1; Rosaire, E. E., 2.
- Exploration geophysicist, education of: Siotnick, M. M., 2.
- Exploratory geophysics: Barton, D. C., 1; Blau, L. W., 1; Jakosky, J. J., 1.
- Field geology: Russell, R. D., 2.
- General: A. I. M. E., 1; Eckhardt, E. A., 4; Geol. S. A., 2.
- Geochemical exploration: Horvitz, L., 4; Pirson, S. J., 1.
- Geo-electric invest., Penn's Cave, Pa.: Keller, F., Jr., 1.
- Geological seismography: Field, R. M., 1.
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- Geophysical exploration: Heiland, C. A., 1.
- Geophysical study, submarine areas: Shepard, F. P., 4.
- Geophysics, future: Born, W. T., 2.

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- Gravity anomalies and structure: Miller, R. H., 2.
- Gravity interps.: Hudson, J. D., 1.
- Gravity method of prosp.: Eckhardt, E. A., 2; Miller, R. H., 1; Romberg, F., 1.
- Ground-water levels determination: Burwell, E. B., Jr., 1.
- Guatemala: McNish, A. G., 2; Wright, F. E., 1.
- Gulf Coastal Plain: Leet, L. D., 1.
- Gulf Coast, Tex.-La.: Jenny, W. P., 3.
- Gulf gravimeter: Pepper, T. B., 1; Wyckoff, R. D., 1.
- Hawaii: Stearns, H. T., 1, 2; Swartz, J. H., 1, 3, 4.
- History, explor. geophysics: Jakosky, J. J., 2.
- Illinois Basin oil fields: Bell, A. H., 4.
- Interpretation: Billings, M. H., 1; McCready, H. J., 1.
- Louisiana: Bates, F. W., 1; Ferrando, A., 1; Jackson, R. S., 1; Jenny, W. P., 4.
- Magnetometer: Hoyer, M., 1.
- Magnetometer comparisons: Randell, J. T., Jr., 1.
- Magnetic crust: Vacquier, V., 1.
- Magnetic explorations: Shirkie, J. T., 1.
- Massachusetts, Lowell quad.: Lee, F. W., 1.
- Mathematical delineations: Gilchrist, L., 1.
- Meteorites, instrumental search for: La Paz, L., 2.
- Mexico, Durango: Terrones Langone, A., 1.
- Michigan: Newcombe, R. J. B., 1.
- Micromagnetic prosp.: Jenny, W. P., 2.
- Minnesota, Douglas fault: Welch, G. I., 1.
- Montana, Highwood Mts.: Stephenson, E. L., 1.
- New Hampshire, flooded intrusives: Kruger, F. C., 1.
- New Jersey: Woollard, G. P., 5, 7.
- New Mexico, potash area: Spicer, H. C., 2.
- North America, Trans-continental gravitational and magnetic profile: Woollard, G. P., 3.
- Oklahoma, S. E.: Hendricks, T. A., 3.
- Ontario, Steeprock Lake: Brant, A., 1, 2.
- Pegmatite dikes, N. C.: Johnson, W. R., 1.
- Pennsylvania, Paleozoic-Triassic contact: Hersey, J. B., 1.
- Petroleum: Born, W. T., 1; Clute, W. S., 2; Eckhart, E. A., 3, 5; Howard, W. V., 3; Kemp, G., 1; Nettleton, L. L., 1; Ransone, W. R., 3; Rosaire, E. E., 2.
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- Petroleum industry: DeGolyer, E. L., 1.
- Petroleum, stratig. traps: Merritt, J. W., 2.

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- Prospecting methods: Baker, W. L., 1.
- Pyrite, electrical conductivity: Smith, F. G., 1.
- Quebec, Calumet I. Mines: Armstrong, P., 1.
- Radioactive explor.: Rose, R. B., 1.
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- Radioactivity, logging: Green, W. G., 1.
- Reflected refractions: Swartz, C. A., 1.
- Refraction collapse, 1930: Rosaire, E. E., 4.
- Refraction prosp.: Dix, C. H., 1.
- Regional magnetic anomalies, U. S.: Jenny, W. P., 5.
- Resistivity, gas-producing sand, Mo.: Heinicke, H. C., 1.
- Resistivity prospecting: Pekeris, C. L., 1; Swartz, J. H., 2.
- Resolution control, seismic surveys: Beers, R. F., 2.
- Rock crystal quartz thermal expansions: Rosenholtz, J. L., 1.
- Seismic prosp.: Weatherby, B. B., 3.
- Seismic recording attenuators: McDermott, E., 2.
- Seismic reflection data: Muskat, M., 1; Widess, M. B., 1, 2.
- Seismic waves, form and nature: Ricker, N., 1.
- Seismic weathering refraction theory: Banta, H. E., 1.
- Shot-hole characteristic reflections: McCready, H. J., 2.
- Spiral springs with secondary twist: Filmer, E. A., 5.
- South Dakota, magnetic surveys: Jordan, W. H., 1.
- Strata determination: Beers, R. F., 2.
- Structural geology: Reed, R. D., 1.
- Structures, deep, relations: Woollard, G. P., 2.
- Submarine geology: Bullard, E. C., 1.
- Surface geology in petroleum explorations: Owen, E. W., 3.
- Tennessee, Wells Creek Basin: Wilson, C. W., Jr., 2.
- Tertiary sandstones: Haskell, N. A., 1.
- Texas: Campbell, F. F., 1; Casey, S. R., 2; Fisher, B., 1; McLemore, E. W., 1; Mygdal, K. A., 1.
- Trends, petroleum exploration: Jakosky, J. J., 3.
- United States, 1924-39: Macelwane, J. B., 2.
- Vertical velocities: Ransone, W. R., 2.
- Viscosity of shale: Ricker, N., 2.
- Water prospecting: McCollum, E. V., 1.
- Wave delay, weathered layer: Wolf, A., 1.

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- Well logging by radioactivity: Green, W. G., 2; Russell, W. L., 2.
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- Appalachia, present position: Ewing, W. M., 1.
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 Correlation by velocity stratification: Beers, R. F., 1.
 Crustal structure determination: Longwell, C. R., 2.
 Curriculum, arts and science in geophysics: Macelwane, J. B., 4.
 Development: Lee, F. W., 2.
 Exploration geophysicist, education of: Slotnick, M. M., 2.
 Exploration geophysics: Jakosky, J. J., 1.
 Flow in stressed solids: Goranson, R. W., 2.
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 General: Adams, L. H., 1; A. I. M. E., 1; Geol. S. A., 2; Merwin, H. E., 1.
 Geologists, field experience: Ross, R. B., 1.
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Economic geology.

- Bauxite: Branner, G. C., 4.
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- Cartersville area: Kesler, T. L., 1.
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- Attapulgit: Bradley, W. F., 1.
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- Ammonoids, Carb.: Miller, A. K., 3.
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- Forsterite olivine deposits: Hunter, C. E., 3.

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- Cartersville area: Kesler, T. L., 1.

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- Artesian water: Stringfield, V. T., 1.
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- Alaska: Pabst, A., 2.
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 Alberta: Hage, C. O., 1; Jones, W. D., 1; Rutherford, R. L., 1.
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- Canada: Alcock, F. J., 6; Nichols, D. A., 2; Washburn, A. L., 1.
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 Connecticut, stagnation of ice: Lougee, R. J., 1.
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 End moraines of ice sheets: Flint, R. F., 1.
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 Fossil magnetism: McNish, A. G., 1.
 Front, retreating ice sheet: Hobbs, W. H., 1.
 General: Flint, R. F., 5.
 Glacial effect on soils: Mallou, A., 2.
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 Indiana: Swickard, D. A., 1; Switzer, J. E., 1; Thornbury, W. D., 1, 2.
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 Iowa: Cline, L. M., 1; Goshorn, A., 1; Gwynne, C. S., 1, 2; Kay, G. F., 2; Keyes, 43, 72-a, 79, 124, 127; Leverett, F., 1; Wood, L. W., 1.
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 Ohio: Donner, H. F., 1; Frye, J. C., 1; Hubbard, G. D., 2; Ireland, H. A., 1; Williams, A. B., 1.
 Ontario: Chapman, L. J., 1; Satterly, J., 1.
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 Pennsylvania: Crosby, I. B., 1; Dickey, P. A., 1; Lohman, S. W., 4; Mackin, J. H., 2.
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 Vermont: Gordon, C. E., 2; Jacobs, E. C., 1.
 Washington: Allison, I. S., 2; Barksdale, J. D., 2; Fernquist, C. O., 2; Freeman, O. W., 1; Hodge, E. T., 3; Mackin, J. H., 3, 5; Washington Plan. C., 1; Waters, A. C., 2.
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 New York, Clyde and Sodus Bay quads.: Gillette, R., 1.
 Ohio: Donner, H. F., 1; Williams, A. B., 1.
 Oregon, early man: Cressman, L. S., 1.
 Quebec: Banfield, A. F., 1; Kindie, E. D., 2.
 Utah, Wasatch Plateau: Spieker, E. M., 1.
 Washington: Allison, I. S., 2; Mackin, J. H., 3.
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- Alaska: Capps, S. R., 1; Field, W. O., Jr., 1; Washburn, H. B., Jr., 1.
 Arctic America: Bentham, R., 1; Roy, S. K., 1.
 British Columbia, Turnagain-Kechika Rivers: Hedley, M. S., 2.
 Calcium carbonate deposits marginal to glaciers: Ludlum, J. C., 2.
 California: Heald, W. F., 1; Matthes, F. E., 4.
 Canada, Jasper Park: Clarke, H., 1.
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 Melt water in cirque formation: Johnson, D. W., 1.
 Montana, Glacier Nat. Pk.: Bullard, F. M., 3; Dyson, J. L., 1, 3.
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 Washington: Freeman, O. W., 2; Washington Plan. C., 1.
 Wyoming: Delo, D. M., 1; Wilson, L. R., 9.
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- Glass sand, Md.: Gray, W. B., III, 1.
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 Colorado, Idaho Springs fm.: Dings, M., 2.
 Delaware Water Gap and Easton quads., Pa.-N. J.: Bayley, W. S., 1.
 Greenland, Holstensborg dist.: Belknap, R. L., 1.
 Maine, Lake Damariscotta: Willard, B., 6.
 New Hampshire, Mt. Washington: Billings, M. P., 2.
 Ontario, Grenville ser.: Love, W. T., 1.
 Pennsylvania: Armstrong, E., 1, 2; Fraser, D. M., 3.
 Pennsylvania-New Jersey, pre-Camb.: Armstrong, E., 1.
 Quebec, Sept-Îles: Faessler, C., 4.
 Utah, San Rafael swell: Hatch, R. A., 1.
- Gold.
 Alaska: Capps, S. R., 1; Mertie, J. B., Jr., 2; Smith, P. S., 5, 6; Tuck, R., 1.
 Albite and gold: Bruce, E. L., 1; Gallagher, D., 1; Wisser, E. H., 3.
 Alkaline theory of deposition: Smith, F. G., 3.
 Arizona, Iron King mine: Mills, H. F., 1.
 British Columbia: Bancroft, M. F., 1; Billingsley, P. R., 3; Canada G. S., 1; Hedley, M. S., 1, 2; Holland, S. C., 1; Kindie, E. D., 1; Lang, A. H., 1; Lay, D., 1, 2; Maconachie, R. J., 1; Rice, H. M. A., 1; Sargent, T. E. H., 1, 2.

Gold—Continued.

- California: Anderson, C. A., 1; Averill, C. V., 2; Erwin, H. D., 1; Farmin, R., 1; Gardner, D. L., 1; Jenkins, O. P., 5, 6; Johnston, W. D., Jr., 1; Lemmon, D. M., 1; MacDonald, G. A., 5; Prout, J. W., Jr., 1; Ransome, A. L., 2; Seager, G. F., 1.
- Canada: Allan, J. A., 3; Auger, P. E., 1; Moorhouse, W. W., 3.
- Canadian shield: Moore, E. S., 3.
- Cataclastic quartz veins: Goodspeed, G. E., 8.
- Colorado: Burbank, W. S., 1, 3; Galbraith, F. W., 5; Goddard, E. N., 1; Loughlin, G. F., 1; Lovering, T. S., 2; Rubright, R. D., 1; Singewald, Q. D., 1.
- Georgia, Cartersville area: Kesler, T. L., 1.
- Idaho: Capps, S. R., 2, 4; White, D. E., 1.
- Manitoba, Rice Lake-Beresford Lake: Stockwell, C. H., 1.
- Mexico: Flores, T., 1; González, E. M., 1.
- Montana: Newcomb, R. C., 1; Smith, P. A., 1.
- Mother Lode area, Calif.-Oregon: Averill, C. V., 1.
- Nevada: Dreyer, R. M., 2; Hardy, R. A., 1; Vanderberg, W. O., 1.
- New Brunswick: Alcock, F. J., 1.
- New Mexico: Harley, G. T., 1; Wells, E. H., 1.
- North America, ore dists.: Billingsley, P. R., 1.
- North Carolina: Hafer, C., 1.
- Northwest Territories: Jolliffe, A. W., 1; Lord, C. S., 1, 2; Ridland, G. C., 1.
- Nova Scotia: Camoron, H. L., 1; Douglas, G. V., 1, 2, 5, 6, 7, 8; Hedley, P. M., 1.
- Ontario: Bateman, J. D., 1, 2, 3; Butterfield, H. M., 1; Byers, A. R., 1, 2; Hopkins, H., 1; Horwood, H. C., 1; Jenney, C. P., 1; Keys, M. R., 1; Langford, G. B., 1; Moore, E. S., 2; Prest, V. K., 1; Reid, J. A., 1.
- Oregon: Goodspeed, G. E., 4; Oregon St. Bd., 1; Smith, W. D., 4; Wells, F. G., 1.
- Puerto Rico: Ray, H. C., 1, 2.
- Quebec: Ambrose, J. W., 2; Armstrong, P., 1; Banfield, A. F., 1; Bannerman, H. M., 1; Douglas, G. V., 11; Flaherty, G. F., 1; Gunning, H. C., 1, 2; Kindle, E. D., 2; MacKenzie, G. S., 1, 2; McMurchy, R. C., 1; Norman, G. W. H., 3; Tolman, C., 1; Wilson, M. E., 3.
- Saskatchewan: Mawdsley, J. B., 1.
- South Dakota, Black Hills: Allsman, P. T., 1.
- Texas, salt-dome cap rock: Hanna, M. A., 1.

Gold—Continued.

- Virginia, Vaucluse mine: Bass, C. E., 1.
- Washington, Skagit Co.: Hobbs, S. W., 1.
- Goslarite, Mont.: Smith, P. A., 1.
- Grabens.
- California, Mono Lake: Gilbert, C. M., 1.
- New Mexico, San Acacia: Denny, C. S., 1.
- Texas, Llano region: Geol. S. A., 1.
- Graded river concept: Kessell, J. E., 3.
- Grain boundaries, crystalline rocks: Bain, G. W., 4.
- Grain count, petrographic microscope: Carroll, D., 1.
- Grand Canyon. See Arizona.
- Granite.
- British Columbia, Shuswap rocks: Cairnes, C. E., 1.
- California: Gresswell, W. K., 1; Mayo, E. B., 1; Miller, C. J., 1; Noble, L. F., 1.
- Colorado: Boos, M. F., 1; Dings, M., 2.
- Georgia: Crickmay, G. W., 3.
- Maine, Head Harbor: Terzaghi, R. D., 1.
- Massachusetts, Blue Hills quad.: Chute, N. E., 1.
- Missouri, Ironton quad.: Robertson, F., 1.
- Newfoundland, Rencontre area: White, D. E., 3.
- New England, western: Bain, G. W., 2.
- New Hampshire: Billings, M. P., 2; Goldthwait, R. P., 3; Quinn, A. W., 3, 6.
- New York, Willsboro quad.: Buddington, A. F., 1.
- Ontario: Gummer, W. K., 2; Moorhouse, W. W., 2.
- Pennsylvania: Fraser, D. M., 2; Meter, A. E., 1.
- Quebec: Faessler, C., 4; MacKenzie, G. S., 2; Morin, L.-G., 1.
- Texas: Geol. S. A., 1; Goldrich, S. S., 1; Keppel, D., 1.
- Vermont, Memphremagog quad.: Doll, C. G., 1.
- Virginia, Petersburg granite, Piedmont: Pegau, A. A., 1.
- Weather pits, Piedmont, S. Car.: Smith, L. L., 1.
- Granite and ore: Locke, A., 2; McKinstry, H. E., 2.
- Granodiorite.
- Arizona, Copper Creek: Kuhn, T. H., 1.
- New Hampshire, Merrymeeting Lake: Quinn, A. W., 3.
- Pennsylvania, Philadelphia area: Postel, A. W., 2.
- Rhode Island: Quinn, A. W., 4.
- Washington, Okanogan Valley: Krauskopf, K. B., 1.
- Granophyre, Maine: Haff, J. C., 3.

Graphite.

- New Jersey, Sterling Hill: Palache, C., 9.
 Pennsylvania, with jasper and muscovite: Fraser, D. M., 1.
 Texas: Barnes, V. E., 12.

Graptolitoidea.

- Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 4.
 Dichograptids: Bulman, O. M. B., 1.
 Didymograptus, Nor. Am.: Decker, C. E., 7.
 Graptolithina: Decker, C. E., 3.
 Maine, Aroostook Co.: Twenhofel, W. H., 7.
 Mictaw, fauna, Gaspé, Quebec: Northrop, S. A., 1.
 Newfoundland, N. W. lowlands: Johnson, H., 2.
 Oklahoma, Haragan fm.: Decker, C. E., 5.
 Wisconsin, Bromide fm.: Decker, C. E., 4, 8.

Gravel.

- Alaska: Capps, S. R., 1; Moffit, F. H., 1.
 Arkansas, Polk Co.: Branner, G. C., 1.
 British Columbia, Nelson area: Rice, H. M. A., 1.
 California: Erwin, H. D., 1; Gresswell, W. K., 1; Krumbeln, W. C., 3, 12.
 Georgia: Crickmay, G. W., 3.
 Illinois, southern: Weller, J. M., 2.
 Indiana: Switzer, J. E., 1.
 Iowa, Pleist.: Kay, G. F., 2.
 Kansas: Jewett, J. M., 4; Smith, H. T. U., 9.
 Kentucky, Tenn. River: Rhoades, R. F., 1.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
 Louisiana: Frink, J. W., 1; Woodward, T. P., 1.
 Massachusetts: Chute, N. E., 1; Hough, J. L., 1; Mather, K. F., 1; Wheeler, R. R., 1; White, W. S., 1.
 Mississippi, Forest Co.: Foster, V. M., 2.
 Missouri, Lafayette, origin: Robertson, P., 3.
 Montana, Yellowstone Valley: Horberg, L., 1.
 Nevada, Goldbanks dist.: Dreyer, R. M., 2.
 New Hampshire: Bannerman, H. M., 2; Meyers, T. R., 1.
 New Jersey: Lewis, J. V., 1; Lucke, J. B., 1, 2, 4.
 New Mexico: Denny, C. S., 1; Fries, C., Jr., 1.
 New York: Buddington, A. F., 1; Gillette, T., 1.
 NOVA SCOTIA, Inverness area: MacLean, J. H., 1.
 Ohio, Illinoian glacial boundary: Ireland, H. A., 1.
 Oklahoma, Washington Co.: Oakes, M. C., 1.
 Oregon: Hodge, E. T., 6; Oregon St. Bd., 1.

Gravel—Continued.

- Pennsylvania Fayette Co.: Hickok, W. O., IV, 1.
 South Carolina, Coastal Plain: Calhoun, F. H. H., 1.
 Tennessee: Fox, P. P., 1; Moneymaker, B. C., 1.
 Texas: Dallas Petroleum Geologists, 1; Geol. S. A., 1.
 Utah: Gabriel, C., 1; Stagner, W. L., 1.
 Wyoming, Bighorn Mts.: Demorest, M. H., 2.

Gravity anomalies.

- Appalachians: Hammer, S. I., 1; Nettleton, L. L., 2.
 Atlantic Coastal Plain, Cape May: Ewing, W. M., 2.
 Basic gravity data: Garner, C. L., 1.
 Calculation of: Levine, S., 1.
 Cuba: Dickerson, R. E., 1.
 Deep structure determination: Swick, C. H., 1.
 General: Bowie, W., 1.
 Gravity section across Sierra Nevada: Johnston, W. D., Jr., 2.
 Gravity survey, Caribbean: Hess, H. H., 1.
 Guatemala, volcanic areas: McNish, A. G., 2.
 Magnetic crust: Vacquier, V., 1.
 New Jersey, gravitational and magnetic anomalies: Woollard, G. P., 7.
 Oklahoma: Hendricks, T. A., 2, 3.
 Pennsylvania, Paleozoic-Triassic contact: Hersey, J. B., 1.
 Structures, deep, geologic relations: Woollard, G. P., 2.
 Tectonic processes now in action: Gutenberg, B., 6.
 Texas, Crosbyton high: McLemore, E. W., 1.
 United States, isostatic anomalies: Tsuboi, C., 1.

Gravity anomalies and structure: Miller, R. H., 2.

Gravity prospecting: Romberg, F., 1.

Graywackes.

- California: Nicol, A., 1.
 Pennsylvania: Krynlne, P. D., 4, 9.
 Quebec, Bousquet-Joannès area: Gunnings, H. C., 2.
 Significance: Krynlne, P. D., 7.

Greenland.

Historical geology.

- General: Balk, R., 1.
 Uppernivik dist.: Carlson, W. S., 1.

Mineralogy.

- Iron boulder, Oviak: Löfquist, H., 1.
 Lorenzenite=ramsayite: Kraus, O., 1.

Paleontology.

- Ammonoids, Perm.: Miller, A. K., 9.
 Belemnite, Perm.: Fischer, A., 2.
 Caytonia, Juras.: Harris, T. M., 1.
 Flora, Eocene: Seward, A. C. (Sir), 1.

Greenland—Continued.

Paleontology—Continued.

Permian faunas and facies: Dunbar, C. O., 3.

Petrology.

East Greenland: Hawkes, L., 1.
Holstensborg dist.: Belknap, R. L., 1.
Iron boulder, Ovikak: Löfquist, H., 1.
Skaergaard intrus.: Hess, H. H., 3.
Upemvik dist.: Carlson, W. S., 1.

Pysicographic geology.

Glacial anticyclone: Demorest, M. H., 3.
Glaciers, Disco Is.: Jost, W., 1.
Holstensborg dist.: Belknap, R. L., 1.
Unlamako glacier: Waldron, C. W., Jr., 1.

Upemvik dist.: Carlson, W. S., 1.
Western Greenland: Sugden, J. C. G., 1.

Physical geology

East Greenland: Hawkes, L., 1.
Epelrogenic movements: Wager, L. R., 1.
Holstensborg dist.: Belknap, R. L., 1.
Skaergaard intrus.: Hess, H. H., 3.
Upemvik dist.: Carlson, W. S., 1.

Greensand. See Glauconite.

Greenstone, Quebec: Flaherty, G. F., 1.

Ground water. See also Underground water.

Alabama: Ross, R. M., 1; Spain, E. L., Jr., 1.

Arizona: Babcock, H. M., 1; Smith, G. E., P., 1.

Artesian, Tenn. Valley: Rhoades, R. F., 3.

California: Anderson, C. A., 1; Bagby, S., 1; Forbes, H., 1; Gresswell, W. K., 1; Ingerson, I. M., 1; Jones, G. H., 1; Tolman, C. F., 1.

Coastal area, Ga.—Fla.: Stringfield, V. T., 1.

Cuba: Albear, J. F., de 1; Brodermann, J., 1.

Elevation measurements: Johnston, C. N., 1.

Flow and solution pattern: Rhoades, R. F., 6.

Fluctuations during earthquakes: Thomas, H. E., 1.

Gila River Valley, N. Mex.—Ariz.: Turner, S. F., 1.

Hawaii: Stearns, H. T., 1, 2, 3, 4; Swartz, J. H., 4.

Hydraulics of: Meinzer, 2.

Kansas: Abernathy, G. E., 3; Frye, J. C., 2, 6, 7; Jewett, J. M., 4; Latta, B. F., 1; Lohman, S. W., 1, 2, 3, 5; McLaughlin, T. G., 2, 3; Moore, R. C., 5; Runyon, E., 1; Smith, H. T. U., 9; Waite, H. A., 1, 2.

Kentucky, Tenn. Valley: Rhoades, R. F., 3.

Limestone terranes: Swinnerton, A. C., 1.

Louisiana: Maher, J. C., 1, 2, 3, 4, 5.

Meade Basin, Kans.—Okla.: Frye, J. C., 5.

Mexico: Gálvez, V., 1; González, E., M., 1.

Ground water—Continued.

Michigan: McGuinness, C. L., 1.

Missouri, Current River Basin: Doll, W. L., 1.

Montana, Flathead Lake: Cady, R. C., 3.

Motion theory: Hubbert, M. K., 1, 2; Wenzel, L. K., 3.

Nebraska: Cady, R. C., 1; Wenzel, L. K., 1, 2.

Nevada, Las Vegas area: Livingston, P. P., 1.

New Jersey: Lewis, J. V., 1.

New Mexico, Pecos Valley: Morgan, A. M., 1.

New York: Dollen, B. H., 1; Fluhr, T. W., 6; Gillette, T., 1; Hoffmeister, J. E., 2; Jacob, C. E., 2; Strock, L. W., 1, 3; Thompson, D. G., 2.

Ohio: Klaer, F. H., Jr., 1, 2; Thompson, D. G., 1; Anonymous, 23.

Oklahoma: Oakes, M. C., 1; Schoff, S. L., 1.

Ontario, Lake Superior area: Stanley, G. M., 1.

Oregon, Madras quad.: Hodge, E. T., 6.

Pattern, flow and solution: Rhoades, R. F., 6.

Pennsylvania: Ashley, G. H., 1; Hickok, W. O., IV, 1; Lohman, S. W., 4; Miller, R. L., 2; Stone, R. W., 1.

Randolph quad., Utah-Wyo.: Richardson, G. B., 3.

Resistivity studies: Swartz, J. H., 2.

Seismic determination of levels: Burwell, E. B., Jr., 1.

Solution and flow pattern: Rhoades, R. F., 6.

Temperature change, Long Island, N. Y.: Brashears, M. L., Jr., 1.

Tennessee, Chickamauga dam: McGavock, C. B., Jr., 1.

Tennessee Valley, deep solution: Rhoades, R. F., 4.

Texas: Broadhurst, W. G., 1; Foster, M. D., 1; Guyton, W. F., 1; Harp, J. W., 1; O'Byrne, (Sister) M. E., 1; Perry, L., Jr., 1; Sayre, A. N., 1; White, W. N., 1, 2.

Theory of: Krutter, H., 1.

United States: Burleigh, H. P., 1; Meinzer, 1, 3.

Utah, Hurricane fault-zone: Thomas, H. E., 2.

Virgin Islands, St. Croix: Cederstrom, D. J., 2, 3.

Virginia: Cederstrom, D. J., 1, 4; McGill, W. M., 1.

Washington, Cascade Mts.: Washington Plan. C., 1.

Water analyses: Collins, W. D., 1.

Water flow in artesian aquifer: Jacob, C. E., 1.

Water sources: Theis, C. V., 1.

Well effect on nearby stream: Theis, C. V., 2.

Ground water—Continued.

West Virginia, connate waters: Heck, E. T., 4.

Wisconsin: Broughton, W. A., 1; Fischer, A. G., 1.

Wyoming, Horse and Bear Creek Valleys: Dockery, W. L., 1.

Guam.

Historical geology.

General: Stearns, H. T., 6.

Physical geology.

General: Stearns, H. T., 6.

Shore benches: Stearns, H. T., 8.

Physiographic geology.

General: Stearns, H. T., 6.

Guatemala. See also Central America.

Survey, volcanic areas: McNish, A. G., 2.

Mineralogy.

Sands, black beach: Boos, M. F., 2.

Physical geology.

Gravity measurements: Wright, F. E., 1.

Santa Maria volcano: Zies, E. G., 1.

Volcanic areas, surveys: McNish, A. G., 2.

Gudmundite, Northwest Territories: Sampson, E., 1.

Gully gravure, slope retreat method: Bryan, K., 4.

Gypsum.

Canada, Magdalen Is.: Alcock, F. J., 6.

Kansas: Carpenter, A. C., 2.

Mississippi, Vicksburg: Hawkins, A. C., 1.

Missouri, Bevier coal seam: Gallagher, R. T., 1.

New Mexico, Sierra San Andrés: Baker, C. L., 2.

Quebec, Calumet mine: Osborne, F. F., 1.

Utah: Gabriel, C., 1.

Hackmanite, Arkansas: Miser, H. D., 3.

Hail ring to lower ocean level: Fretz, A. H., 1.

Haiti.

Paleontology.

Foraminifera, Miocene: Coryell, H. N., 1; Cushman, J. A., 4.

Halloysite, Michigan: Ayres, V. L., 1.

Hawaiian Islands.

Areas described.

Lanai and Kahoolawe: Stearns, H. T., 2.

Economic geology.

Clay, ceramic: Wentworth, C. K., 1.

Historical geology.

Kahoolawe: Stearns, H. T., 2, 4.

Koolau Range, Oahu: Wentworth, C. K., 1.

Lanai: Stearns, H. T., 2, 3.

Oahu: MacDonald, C. A., 1; Stearns, H. T., 1; Wentworth, C. K., 1.

Waianae Range, Oahu: MacDonald, G. A., 1.

Mineralogy.

Clay, ceramic: Wentworth, C. K., 1.

Kahoolawe: MacDonald, G. A., 2.

Koolau Range, Oahu: Wentworth, C. K., 1.

Hawaiian Islands—Continued.

Petrology.

Clay, ceramic: Wentworth, C. K., 1.

Kahoolawe: MacDonald, G. A., 2; Stearns, H. T., 2.

Koolau Range, Oahu: Wentworth, C. K., 1, 5.

Lanai: MacDonald, G. A., 3; Stearns, H. T., 2.

Oahu: MacDonald, G. A., 1; Stearns, H. T., 1.

Physical geology.

Calderas and their origin: Williams, H., 4.

Haleakala Crater, Maui: Stearns, H. T., 7.

Kahoolawe: Stearns, H. T., 2, 4.

Kilauea crater filling: Finch, R. H., 1.

Koolau Range, Oahu: Wentworth, C. K., 1, 5.

Lanai: Stearns, H. T., 2, 3.

Magmatic gases: Jaggar, T. A., Jr., 1.

Mauna Loa eruption, 1940: Waesch, H. H., 1.

Oahu: Stearns, H. T., 1; Wentworth, C. K., 1.

Rock weathering, soil profiles: Hough, G. J., 1.

Schofield Plateau resistivity survey: Swartz, J. H., 3.

Shore benches: Stearns, H. T., 8; Wentworth, C. K., 3.

Soil avalanches: Wentworth, C. K., 7.

Volcanism, four-phase: Stearns, H. T., 5.

Physiographic geology.

Ablation of snow under vertical sun: Wentworth, C. K., 2.

Lanai and Kahoolawe: Stearns, H. T., 2.

Mauna Kea, multiple glaciation: Wentworth, C. K., 6.

Rainfall and topography: MacCarthy, G. R., 1.

Shore benches, Oahu: Stearns, H. T., 8; Wentworth, C. K., 3.

Underground water.

Kahoolawe: Stearns, H. T., 2, 4.

Lanai: Stearns, H. T., 2, 3; Swartz, J. H., 4.

Oahu: Stearns, H. T., 1.

Heavy minerals.

Bradford Sand, N. Y.-Pa.: Krynlne, P. D., 2.

Centrifuge tube separation: Bertholf, W. E., Jr., 1.

Colorado, laccolith: Dapples, E. C., 2.

Connecticut, Trias.: Krynlne, P. D., 12.

Gulf Coast, La.-Tex.: Bornhauser, M., 2;

Cogen, W. M., 1.

Iowa, Wapsipicon fm.: Scobey, E. H., 1.

Lake Superior area: Tyler, S. A., 1.

Louisiana, Barataria Bay: Caldwell, L. T., 1.

Massachusetts, Buzzards Bay: Hough, J. L., 1.

Minnesota, pre-Camb., Camb.: Crowley, A. J., 1.

Heavy minerals—Continued.

- North Dakota, Heart Butte quad.: Tisdale, E. E., 1.
- New Jersey, Highland area: Tyler, S. A., 1.
- New Mexico, Pecos River: Sidwell, R. G., 3.
- Santa Rosa ss.: Sidwell, R. G., 1.
- North America, Atlantic Coastal Plain: Dryden, A. L., Jr., 2.
- Ohio, Vance well: Stout, W. E., 3.
- Pennsylvania: Dryden, A. L., Jr., 1; Kry-nine, P. D., 1; Tuttle, O. F., 1.
- Persistence and geol. age: Pettijohn, F. J., 4.
- Rhode Island, granodiorite dike: Quinn, A. W., 4.
- Sampling beach sands: Krumbein, W. C., 4.
- Sedimentary rocks: Trask, P. D., 2.
- Separation: Stow, M. H., 1.
- Source rocks, weathering: Dryden, A. L., Jr., 4.
- Texas, beach sands: Bullard, F. M., 2.
- Utah, Uinta Basin: Stagner, W. L., 1.
- Variation in beach sands: Rasmussen, W. C., 1.
- West Gulf Coast, Mid-continent area: Twenhofel, W. H., 10.
- Wisconsin, Camb.: Ostrander, A. R., 1.
- Helictites, Virginia: Barker, W., 1.
- Helium, radioactivity measurements: Goodman, C., 1.
- Helium retentivities of minerals: Keevil, N. B., 2.
- Helium time scale: Hurley, P. M., 4.
- Helvite, New Mexico: Strock, L. W., 2.
- Hematite.
- Alabama: Bowles, E. O., 2; Butts, C., 1.
- Delaware Water Gap and Easton quads., Pa., N. J.: Bayley, W. S., 1.
- Mexico: González, E. M., 1.
- New Jersey, Sayreville: Giordano, V., 1.
- North Carolina: Hafer, C., 1.
- Ontario: Bartley, M. W., 1; Brant, A., 2; Moore, E. S., 2; Tanton, T. L., 4.
- Virginia: Pegau, A. A., 2.
- Heteromorphous varieties and nomenclature: Barroso y Ortega F. 1.
- Hexactinellida, sponges not worm-burrows: Caster, K. E., 2.
- Hexahedrites, Nor. Am.: Henderson, E. P., 3.
- Historical (stratigraphic) geology. For areal see names of States. See also the different systems; Correlation; Geological formations, tables.
- Appalachia, ancient topography: Nelson, W. A., 1.
- Appalachian erosion surfaces: Cole, W. S., 1; Ver Steeg, K., 3.
- Applied paleontology: Schenck, H. G., 4.
- Atlantic, Gulf Coastal Plains: Leet, L. D., 1.

Historical (stratigraphic) geology—Con.

- Band, layer, kindred terms: Calkins, F. C., 1.
- Bentonite and unconformities: Whitcomb, L., 4.
- Cambrian deposits around Pacific Ocean: Resser, C. E., 2.
- Carboniferous: Keyes, 80.
- Cascadia: Schofield, S. J., 2.
- Cincinnati Arch: Weirich, T. E., 1.
- Claiborne vs. Moodys: Harris, G. D., 1.
- Computing stratig. thickness: Secrist, M. H., 1.
- Conodonts, index fossils: Branson, E. B., 1, 6.
- Core analysis: Anonymous, 18.
- Core orientation, polar: Webb, E. R., 1.
- Correlation, Appalachian peneplains: Ver Steeg, K., 3.
- Schistosity and tectonic theory: De Lury, J. S., 1.
- Correlation by velocity stratification: Beers, R. F., 1.
- Cretaceous shales, Cordilleran area: Keyes, 103.
- Cretaceous system: Muller, S. W., 1.
- Crustal structure determination: Longwell, C. R., 2.
- Earth's diary: Mitchell, R. H., 2.
- Ecologic factors in correl.: Eaton, J. E., 2.
- Eparchean interval, Cordillera: Keyes, 71.
- Folds, parallel, stratig. measurements: Mertie, J. B., Jr., 3.
- Formation samples from gun perforators: Richards, J. T., 1.
- Franciscan-Knoxville problem: Tallaferrro, N. L., 1.
- General: Geol. S. A., 2; Morrel, M. M., 1; Schuchert, C., 2.
- Geologic age, terminology: Keevil, N. B., 3.
- Geologic period, length: Gillette, H. P., 2.
- Geological terms, dictionary: Rice, C. M., 1.
- Graywackes, significance: Krynine, P. D., 7.
- Great Plains basin: Kornfeld, J. A., 6.
- Glacial chronology, Rocky Mts.: Ray, L. L., 1.
- Illinois basin structures: Hares, C. J., 1.
- Isopach maps, interpretation: Cuyler, R. H., 1.
- Isostasy theory: Daly, R. A., 3.
- Kinderhook unconformities: Keyes, 9.
- Limits of error concept and time: Bucher, W. H., 5.
- Mississippi River, Pleist.: Towbridge, A. C., 2.
- Missourian ser.: Keyes, 66.
- New Jersey, Hardyston fm.: Ludlum, J. C., 1.

Historical (stratigraphic) geology—Con.

- New York, Clyde, Sodus Bay quads: Gillette, T., 1.
 Observational geology, place: Miller, B. L., 1.
 Ore bodies, environment: Wisser, E. H., 1.
 Outlines: Longwell, C. R., 9.
 Percentage method, stratigraphic dating: Keen, A. M., 3.
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- Kansas coal mining: Whitla, R. E., 1.
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Katka dam site: Erdmann, C. E., 2.

Kootenai County: Anderson, A. L., 1.

Secesh Basin: Capps, S. R., 2.

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Faulting, high placers: Capps, S. R., 4.

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Kootenai County: Anderson, A. L., 1.

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Mining industry 1939: Campbell, A., 1, 2.

Polaris mine, mineralization: Willard, M. E., 1.

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Almaden quicksilver mine: Anderson, A. L., 5.

Antimony deposits, Yellow Pine area: White, D. E., 1.

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Pegmatite, phosphatic: Scheid, V. E., 2.

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Almaden quicksilver mine: Anderson, A. L., 5.

Antimony, Yellow Pine area: White, D. E., 1.

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Creep, rate of: Capps, S. R., 3.

Dilation, replacement dikes: Goodspeed, G. E., 1.

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Shoshone ice caves: Baxter, W. T., 1.

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British Columbia: Armstrong, J. E., 1; Bancroft, M. F., 1; Billingsley, P. R., 3; Cairnes, C. E., 1; Hedley, M. S., 2; Holland, S. C., 1; Lang, A. H., 1; Lay, D., 1, 2; Maconachie, R. J., 1; Rice, H. M. A., 1; Sargent, T. E. H., 1, 2; Schofield, S. J., 1.

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Mexico: Anderson, C. A., 5; Flores, T., 1; Gálvez, V., 1; González, E. M., 1; King, R. E., 1; Woodford, A. O., 1.

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Minnesota: Gruner, J. W., 3; Schwartz, G. M., 1; Stauffer, C. R., 3.

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Montana: Buie, B. F., 1; Burgess, C. H., 1; Erdmann, C. E., 2; Fix, P. F., 1; Goddard, E. N., 2; Horberg, L., 1; Larsen, E. S., 1, 3, 4; Pecora, W. T., 1, 3; Peoples, J. W., 1.

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New Brunswick: Alcock, F. J., 1, 5.

Newfoundland: Howland, A. L., 1; White, D. E., 3.

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- New Mexico: Baker, C. L., 2; Denny, C. S., 1, 5; Fries, C. Jr., 1; Harley, G. T., 1; Powers, W. E., 2; Ray, L. L., 2; Reiche, P., 1; Sidwell, R. G., 3; Stark, J. T., 2.
- New York: Bird, P. H., 1; Buddington, A. F., 1; Fluhr, T. W., 1, 4, 6.
- Nigger Hill dist., Wyo.-S.Dak.: Berg, J. R., 1.
- North America, Cordillera: Kerr, P. F., 5.
- Ore districts: Billingsley, P. R., 1.
- North Carolina: Hunter, C. E., 3; Maurice, C. S., 1.
- Northwest Territories: Henderson, J. F., 3; Jolliffe, A. W., 1; Lord, C. S., 1; Ridland, G. C., 1.
- Nova Scotia: Bell, W. A., 1; Douglas, G. V., 8.
- Ohio, Vance well: Stout, W. E., 3.
- Oklahoma, Wichita Mts.: Merritt, C. A., 3.
- Ontario: Bateman, J. D., 1, 2, 4; Butterfield, H. M., 1; Chayes, F., 1; Gummer, W. K., 2; Horwood, H. C., 1, 3; Jenney, C. P., 1; Langford, G. B., 1; Moore, E. S., 2; Prest, V. K., 1; Quirke, T. T., 1, 2; Satterly, J., 1; Tanton, T. L., 4.
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- Oregon: Goodspeed, G. E., 6; Hodge, E. T., 6; Lupher, R. L., 2; Oregon St. Bd., 1; Packard, E. L., 1; Rogers, A. F., 3; Smith, W. D., 4; Thayer, T. P., 1; Wells, F. G., 1, 3, 6; Wilkinson, W. D., 1.
- Orthomagmatic vs. metasomatic rocks: Goodspeed, G. E., 3.
- Pacific Northwest dikes: Goodspeed, G. E., 1.
- Pennsylvania: Hickok, W. O., IV, 1; Postel, A. W., 1, 2; Russell, G. C., Jr., 1.
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- Quebec: Ambrose, J. W., 1, 2; Armstrong, P., 1; Bannerman, H. M., 1; Banfield, A. F., 1; Brossard, L., 1; Douglas, G. V., 11; Faessler, C., 4; Flaherty, G. F., 1; Gunning, H. C., 1, 2; Kindle, E. D., 2; Lavierdière, J.-W., 1; Longley, W. W., 1; MacKenzie, G. S., 1, 2; McMurphy, R. C., 1; Norman, G. W. H., 3; Tolman, C., 1; Wilson, M. E., 3.
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- Thermal conductivity exp. invest.: Clark, H., 1.
- Utah: Eardley, A. J., 1; Schneider, H., 1.
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- Virginia: Bloomer, R. O., 5; Moore, C. H., Jr., 1; Pegau, A. A., 1.
- Washington: Bennett, W. A. G., 1, 2; Fernquist, C. O., 2; Glover, S. L., 1; Goodspeed, G. E., 5; Krauskopf, K. B., 1, 2; Warren, W. C., 1; Waters A. C., 1, 2.
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- Ames earthquake, 1939: McClure,
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- Alabama, Montevallo-Columbiana quads:
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Applied paleontology: Schenck, H. G., 4.
California: Anderson, F. M., 2; Eaton,
J. E., 1; Jenkins, O. P., 4; Wood-
ring, W. P., 1.
Conodonts: Branson, E. B., 1.
Fauna, Miocene, La.: Ellisor, A. C., 1:
Florida, Foraminifera: Cushman, J. A.,
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Foraminifera: Adams, B. C., 1; Cush-
man, J. A., 1, 4; Driver, H. L., 1;
Lozo, F. E., 1.
Illinois, Woosung quad.: Templeton,
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Lituola, Miss.: Mellen, F. F., 2.
Microfossils, economically important:
Schenck, H. G., 2.
Micropaleontology: Cronels, C. G., 5, 8.
Myalinidae zones: Newell, N. D., 4.
Niagaran, Ohio-Ind.: Busch, D. A., 1.
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C. E., 1.
Ontario, Toronto-Hamilton area: Caley,
J. F., 1.
Pennsylvania, S. W.: Laird, W. M., 2.
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Tromp, S. W., 1.
Tennessee, Chickamauga dam: Fox,
P. P., 1.
Texas, Cook Mt. fm.: Stenzel, H. B., 8.
Guidebook, Gulf Coast fields: Hous-
ton, G. S., 1.
Titusvilliidae: Caster, K. E., 4.
Turitella, Pacific Coast, Nor. Am.:
Merriam, C. W., 3.
Utah, Logan quad.: Williams, J. S., 1.

Index liquids, refractive: Bosazza, V. L., 1.

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- Devonian fms.: Harris, J. R., 1.
Geography and geol. history: Switzer,
J. E., 1.
Mississippian border, eastern interior
basin: Weller, J. M., 3.
Natural gas: Bell, A. H., 1.
Petroleum: Bell, A. H., 1.

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- Chester, Illinois basin: Dana, P. L., 1.
Devonian fms.: Cooper, G. A., 3, 4;
Harris, J. R., 1.
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J. E., 1.
Mississippian E. int. basin: Weller,
J. M., 3.
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Silurian correls.: Cumings, E. R., 2.
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- Cestocrinus: Kirk, E., 1.
Ctenodonta: Shrock, R. R., 8.

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- Eupachyrinus: Sutton, A. H., 3.
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- Calcareous incrustation on monument
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- Ferruginous layers, weathering: Shrock,
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- Climate and geomorphology: Visher,
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- Davispia, Mont.: Cooper, K. W., 1.
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Kansas, Carb.: Carpenter, F. M., 1.
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Insoluble residues.

- Illinois, Iowa series: Payne, J. N., 1.
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Iowa, Wapsipicon fm.: Scobey, E. H.,
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- Interpretation, geol. maps and aerial photos.: Eardley, A. J., 3.
- Introduction to geology: Branson, E. B., 9.
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- Alaska: Capps, S. R., 1; Moffit, F. H., 1. Albite and gold: Bruce, E. L., 1.
- Antigua: Trechmann, C. T., 1.
- Arizona: Enlows, H. E., 1; Kuhn, T. H., 1; Wilson, E. D., 1.
- British Columbia: Armstrong, J. E., 1; Bancroft, M. F., 1; Billingsley, P. R., 3; Cairnes, C. E., 1; Hedley, M. S., 2; Holland, S. C., 1; Lay, D., 1; Maconachie, R. J., 1; Rice, H. M. A., 1; Sargent, T. E. H., 1, 2; Schofield, S. J., 1; Smith, A., 1.
- California: Allen, J. E., 3; Durrell, C., 1; Farmin, R., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Hinds, N. E. A., 2; Jenkins, O. P., 6; Lemmon, D. M., 1; Locke, A., 1; Mayo, E. B., 1; Merriam, R. H., 1, 2; Miller, W. J., 2; Prout, J. W., Jr., 1; Ransome, A. L., 2; Rynearson, G. A., 1; Taliaferro, N. L., 3; Webb, R. W., 1; Wells, F. G., 2; White, D. E., 2; Woodford, A. O., 1, 4.
- Canada, gold mineralization: Moorhouse, W. W., 3.
- Canadian shield: Moore, E. S., 3.
- Colorado: Boos, M. F., 1; Burbank, W. S., 1, 3; Dings, M., 1, 2; Goddard, E. N., 1; Lovering, T. S., 1; Singewald, Q. D., 1; Wagner, C. P., 1; Wahlstrom, E. E., 2, 3.
- Connecticut, eastern: Keppel, D., 2.
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- Greenland: Hawkes, L., 1; Hess, H. H., 3.
- Hawaii: MacDonald, G. A., 2; Stearns, H. T., 2; Wentworth, C. K., 1.
- I Idaho: Anderson, A. L., 1; Edmann, C. E., 2; White, D. E., 1; Whiting, K., 1.
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- Igneous looking rocks from metasomatism: Grout, F. F., 2.
- Magma differentiation and pressures: Emmons, R. C., 1.
- Maine: Fisher, L. W., 1; Haff, J. C., 3; Philbrick, S. S., 2; Trefethen, J. M., 4; Verraw, H. J., 3.
- Manitoba: Brownell, G. M., 1; Stockwell, C. H., 1.
- Maryland, migmatite: Chapman, R. W., 3.
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- Massachusetts: Bain, G. W., 5; Jahns, R. H., 3.
- Mexico: Flores, T., 1; González, E. M., 1; King, R. E., 1; Terrones Lang-one, A., 1; Woodford, A. O., 1.
- Minnesota: Gruner, J. W., 3; Schwartz, G. M., 1.
- Mississippi: Kornfeld, J. A., 3; Todd, J. D., 3.
- Missouri, Ironton quad.: Robertson, F., 1.
- Montana: Buie, B. F., 1; Burgess, C. H., 1; Larsen, E. S., 3, 4; Pecora, W. T., 1, 3; Peoples, J. W., 1; Stephenson, E. L., 1; Vhay, J. S., 1.
- Nevada: Dreyer, R. M., 2; Hardy, R. A., 1; Roberts, R. J., 1; Sharp, R. P., 6.
- New Brunswick: A'cock, F. J., 1.
- New England: Bain, G. W., 2; Billings, M. P., 1.
- Newfoundland, Rencontre area: White, D. E., 3.
- New Hampshire: Billings, K. F. L., 2; Billings, M. P., 2; Chapman, C. A., 1, 2; Goldthwait, R. P., 3; Hadley, J. B., 2; Kruger, F. C., 1; Meyers, T. R., 2; Page, L. R., 2; Quinn, A. W., 1, 2, 3, 5, 6; Roy, C. J., 2.
- New Jersey: Appleby, A. N., 1; Fraser, D. M., 4; Walker, F., 1.
- New Mexico: Ray, L. L., 2; Reiche, P., 1; Stark, J. T., 2.
- New York: Bird, P. H., 1; Buddington, A. F., 1; Shand, S. J., 1.
- North America, Cordillera: Kerr, P. F., 5.
- Ore dists.: Billingsley, P. R., 1.
- North Carolina, Spruce Pine dist.: Maurice, C. S., 1.
- Northwest Territories: Jolliffe, A. W., 1.
- Nova Scotia: Bell, W. A., 1; Douglas, G. V., 8, 10.
- Oklahoma, Wichita Mts.: Merritt, C. A., 3.
- Ontario: Bateman, J. D., 1, 2, 3, 4; Butterfield, H. M., 1; Byers, A. R., 1, 2; Chayes, F., 1; Gummer, W. K., 1, 2; Horwood, H. C., 1, 3; Jenney, C. P., 1; Langford, G. B., 1; Moore, E. S., 2, 4; Quirke, T. T., 1, 2; Satterly, J., 1; Tanton, T. L., 4.
- Ore-forming fluid, nature: Graton, L. C., 1; Ingersoll, F. E., 2.
- Oregon: Allen, J. E., 2; Goodspeed, G. E., 4, 6; Lupter, R. L., 2; Oregon St. Bd., 1; Packard, E. L., 1; Rogers, A. F., 3; Smith, W. D., 4; Wells, F. G., 1, 3.
- Pacific Northwest, dikes: Goodspeed, G. E., 1.
- Pennsylvania: Fraser, D. M., 2; Postel, A. W., 1; Russell, G. C., Jr., 1.

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- Quebec: Ambrose, J. W. 2; Armstrong, P., 1; Banfield, A. F., 1; Bannerman, H. M., 1; Brossard, L., 1; Douglas, G. V., 11; Faessler, C., 1. 4; Gunning, H. C., 1. 2; Longley W. W., 1; MacKenzie, G. S., 1, 2; McMurphy, R. C., 1; Moorhouse, W. W., 15; Norman, G. W. H., 3; Tolman, C., 1; Wilson, M. E., 3.
- Santo Domingo: Weyl, R., 1.
- Saskatchewan: Furnival, G. M., 1; Tanton, T. L., 2.
- South Dakota, Tinton dist.: Smith, W. C., 1.
- Structural control, ig. rocks: Loughlin, G. F., 3.
- Texas: Albritton, C. C., Jr., 1; Baker, C. L., 3; Barnes, V. E., 11; Geol. S. A., 1; Goldrich, S. S., 1; Hufington, R. M., 2; Ives, R. L., 7; Keppel, D., 1; Lonsdale, J. T., 1; Maxwell, R. A., 1; Nelson, L. A., 1; Perry, L., Jr., 1.
- Utah, crystallines: Eardley, A. J., 1.
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- Vermont: Chapman, R. W., 1; Doll, C. G., 1.
- Virginia: Bloomer, R. O., 4; Moore, C. H., Jr., 1.
- Washington: Bennett, W. A. G., 1, 2; Campbell, C. D., 5; Fernquist, C. O., 2; Krauskopf, K. B., 1, 2; Wash. Plan. C., 1; Waters, A. C., 1, 2.
- West Indies, peridotite: Hess, H. H., 4.
- Wyoming, Absaroka Mts.: Rouse, J. T., 1.
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- Alabama, Tert.: Toulmin, L. D., Jr., 2.
- Antillean-Caribbean area: Senn, A., 1.
- Barbados, Paleogene: Senn, A., 1.
- California: Anderson, F. M., 1; Benton, H., 2; Clark, S. G., 1.
- Collecting, Tex., Tenn.: Cooper, G. A., 2.
- Faunas, Emma Creek fm., Kans.: Frye, J. C., 4.
- Morrison, Summerville fms., Colo.: Holt, E. L., 1.
- Southeastern Pennsylvania, Dev., Sil.: Swartz, C. K., 2.
- General: Raymond, P. E., 3.
- Iowa, Independence sh.: Stainbrook, M. A., 5.
- Kansas: Robertson, G. M., 1; Smith, H. T. U., 9.
- Kentucky, Big Clifty quad., Stouder, R. E., 1.
- Louisiana, Eola field: Bates, F. W., 1.
- Maine, fossiliferous esker: Trefethen, J. M., 2.
- Mississippian border, E. int. basin: Weller, J. M., 3.
- Navarro group fauna, Tex.: Stephenson, L. W., 2.
- Nevada, Muddy Mt.: Longwell, C. R., 10.

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- New York, Clyde, Sodus Bay quads.: Gillette, T., 1.
- Willsboro quad: Buddington, A. F., 1.
- North American faunal migrations from Asia: Hatai, K. M., 1.
- North Carolina, Camp Davis Well No. 2: Berry, E. W., 5.
- Oregon, Cret. faunas: Anderson, F. M., 1.
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- Permian: Branson, C. C., 1.
- Pleistocene, Wash.: Fernquist, C. O., 4.
- Quebec: Tremblay, P., 1.
- St. John River Valley: Nylander, O. O., 1.
- Saskatchewan, Bearpaw fm.: Furnival, G. M., 2.
- Texas, fossil localities: Read, W. F., 2; Sellards, E. H., 7.
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- Washington, Oligocene fossil zones: Durham, J. W., 3.
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- Inyote, California: Mordoch, J., 1.
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- Iowa.
- 43d-48th Ann. Reports State Geologist: Trowbridge, A. C., 1.
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- Ammonoids, Carb.: Miller, A. K., 3.
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- Alabama, Montevallo-Columbiana quads.: Butts, C., 1.
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 Georgia, Cartersville area: Kesler, T. L., 1.
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- Alabama, Guntersville dam: Ross, R. M., 1.
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 Kentucky, Tennessee River area: Rhoades, R. F., 1.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
 Marble: Bain, G. W., 1.
 Massachusetts, Blue Hills quad.: Chute, N. E., 1.
 Montana: Bullard, F. M., 3; Erdman, C. E., 2.

Jointing and joints—Continued.

New Hampshire: Billings, K. F., 1;
Chapman, R. W., 2.

New Jersey, Highlands: Appleby, A. N., 1.

New York: Bird, P. H., 1; Buddington, A. F., 1.

North Carolina, Hiwassee dam: Ward, J. B., 1.

Pennsylvania, Fayette Co.: Hickok, W. O., IV, 1.

Quebec, Calumet I.: Moorhouse, W. W., 1.

Regional, N. Y.-Pa.: Parker, J. M., III, 1.

Tennessee: Moneymaker, B. C., 2; Rose, N. A., 1.

Texas: Dallas Petroleum Geologists, 1;
Ham, W. O., Jr., 1; Ross, C. P., 1.

Jolotrichite, Calif.: Vonsen, M., 1.

Joseite, British Columbia: Peacock, M. A., 5; Warren, H. V., 1.

Jurassic. See also Paleontology, Jurassic.

Alaska: Capps, S. R., 1; Moffit, F. H., 1.

Alberta: Mackenzie, W. D. C., 1; Russell, L. S., 1, 2.

Appalachia: Nelson, W. A., 1.

Arizona: Keyes, 55.

Arkansas: Imlay, R. W., 1, 4; Weeks, W. B., 1.

Arkansas-Louisiana-Texas correl.: Imlay, R. W., 4.

Basin Ranges, monadnocks: Keyes, 132.

British Columbia: Armstrong, J. E., 1;
Lang, A. H., 1; McLearn, F. H., 1,

3; Sargent, T. E. H., 2; Schofield, S. J., 1.

California: Allen, J. E., 3; Anderson, F. M., 2; Clark, S. G., 1; Eckel,

E. B., 2; Emery, K. O., 5; Gardner,

D. L., 1; Hinds, N. E. A., 2; Hoots,

H. W., 1; Jenkins, O. P., 4, 6;

Johnston, W. D., Jr., 1; Jones,

G. H., 1; MacDonald, G. A., 5;

Mayo, E. B., 1; Miller, W. J., 2;

Nicol, A., 1; Prout, J. W., Jr., 1;

Ransome, A. L., 2; Reed, R. D.,

3; Rist, R. L., 1; Ross, C. P., 1, 2;

Taliaferro, N. L., 3; Wissler, S. G.,

1.

Canada, Cordilleran geosyncline: Warren, P. S., 1.

Cascadia: Schofield, S. J., 2.

Cincinnati Arch: Weirich, T. E., 1.

Colorado: Burbank, W. S., 1, 3; Gold-

man, M. I., 2; Holt, E. L., 1; Kess-

ler, F. C., 1; Pierce, W. G., 1;

Wagner, C. P., 1.

Correlations, Calif.-Oreg.: Taliaferro,

N. L., 4.

Cuba: Corral y Alemán, 3.

Florida, penin.: Campbell, R. B., 2.

Franciscan-Knoxville problem: Talia-

ferro, N. L., 1.

Hawaii, Koolau Range: Wentworth, C. K., 1.

Kansas: Keyes, 139; Latta, B. F., 1.

Jurassic—Continued.

Mexico: Flores, T., 1; Gálvez, V., 1;
González, E. M., 1; Humphrey,

W. E., 1; Imlay, R. W., 5; King,

R. E., 1.

Missouri: Keyes, 106.

Montana: Blackstone, D. L., Jr., 1;
Deiss, C. F., 3, 4; Maravich, M. D.,

1.

Nebraska-Wyoming-South Dakota-Colo-

rado fms., correl.: Condra, G. E.,

2.

Nevada, Goldbanks dist.: Dreyer, R. N.,

2.

New Jersey: Lewis, J. V., 1.

New Mexico, N. E.; Harley, G. T., 1.

North America, Mid-continent area:

Dott, R. H., 3.

Ore dists.: Billingsley, P. R., 1.

North Dakota, deep-well records: Laird,

W. M., 3.

Oregon: Lupton, R. L., 2; Oregon St.

Bd., 1; Packard, E. L., 1; Wells,

F. G., 1, 3.

Oregon-Philippines, correl.: Smith,

W. D., 1.

Randolph quad., Utah-Wyo.: Richard-

son, G. B., 3.

Rocky Mts.: Bartram, J. G., 1.

Schooley peneplain, age: Stose, G. W.,

1.

South Dakota-Wyoming sec.: Kans.

G. S., 1.

Texas, Rim Rock country: Baker,

C. L., 3.

Utah: Gregory, H. E., 1; McKnight,

E. T., 1; Wells, F. G., 4; Will-

iams, N. C., 1.

Utah-Arizona, Hurricane fault: Gard-

ner, L. S., 1.

Washington, Okanogan Valley: Waters,

A. C., 1.

Wyoming: Beckwith, R. H., 1; Bran-

son, E. B., 7; Dobrovolsky, E., 1;

Pierce, W. G., 2.

Wyoming Black Hills, S. Dak.: Bartram,

J. G., 2.

Kansas.

Areas described.

Castle Rock: Robertson, G. M., 1.

Riley, Geary Cos.: Jewett, J. M., 4.

Southwestern Kansas: Smith, H. T. U.,

9.

Economic geology.

Arbuckle stream-channels: Mull, J. A.,

1.

Asphalt rock: Jewett, J. M., 1.

Chetopa pool: Abernathy, G. E., 2.

Coal: Whitla, R. E., 1.

Crude oils: Bass, N. W., 1.

Exploration, oil and gas: Ver Wiebe, W.

A., 1.

Forest City basin oil field: McClellan,

H. W., 1.

Gas fields: Page, J. H., 1.

Hugoton field fms.: Bartle, G. G., 1, 2.

Kansas—Continued.

Economic geology—Continued.

- Linn Co., oil and gas: Jewett, J. M., 2.
 Mid-continent oil fields, 1940: Koester, E. A., 2.
 Mineralizing solutions, Picher dist.: Stoiber, R. E., 2.
 Mississippian lms.: Lee, W., 1.
 Montgomery Co., oil and gas: Abernathy, G. E., 1.
 Natural gas: Abernathy, G. E., 1; Bartle, G. G., 1, 2; Jewett, J. M., 2; Kennedy, L. E., 3; Koester, E. A., 3; Page, J. H., 1; Postley, O. C., 1; Stephenson, E. A., 1.
 Oils, crude, and stratigraphy: Neumann, L. M., 1.
 Otis gas and oil pool: Stephenson, E. A., 1.
 Pennsylvanian oil and gas: Kennedy, L. E., 3.
 Pennsylvanian sands: Bartram, J. G., 4.
 Petroleum, stratig. traps: Anonymous, 20.
 Petroleum and gas: Koester, E. A., 3; Postley, O. C., 1.
 Riley, Geary Cos.: Jewett, J. M., 4.
 Southwest Kans.: Smith, H. T. U., 9.
 Stratigraphic trap oil: Kornfeld, J. A., 4.
 Well logs, oil field data: Oil and Gas Journal, 1.
 Zenith oil pool: Paddelford, J. T., 1.

Historical geology.

- Asphalt rock: Jewett, J. M., 1.
 Atchison County: Frye, J. C., 7.
 Atchison shales: Keyes, 138, 144.
 Barberian, Cret.: Keyes, 48.
 Bronson group: Keyes, 92, 112.
 Chariton conglomerate: Wallace, M. H., 1.
 Coal resources: Whitla, R. E., 1.
 Emma Creek fm.: Frye, J. C., 4.
 Equus beds: Lohman, S. W., 3.
 Exploration for oil and gas: Ver Wiebe, W. A., 1.
 Forest City basin oil field: McClellan, H. W., 1.
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 Geologic fm. tables: Keyes, 105.
 Gove chalk: Keyes, 141.
 Ground water, Atchison Co.: Frye, J. C., 7.
 Ground-water resources: Moore, R. C., 5.
 Labette shales: Keyes, 104.
 Linn Co., oil and gas: Jewett, J. M., 2.
 Marmaton group: Jewett, J. M., 8; Keyes, 100.
 Meade artesian basin: Frye, J. C., 6, 8.
 Mississippian: Lee, W., 1, 2.
 Montgomery Co.: Abernathy, G. E., 1.
 Morton Co.: McLaughlin, T. G., 3.
 Nemaha orogeny: Keyes, 99.
 Otis gas and oil pool: Stephenson, E. A., 1.
 Pawnee lms.: Keyes, 83.
 Pennsylvanian sands: Bartram, J. G., 4.

Kansas—Continued.

Historical geology—Continued.

- Pennsylvanian void: Keyes, 98.
 Petroleum and gas fields: Postley, O. C., 1.
 Petroleum stratig. traps: Anonymous, 20.
 Pierre shale: Keyes, 103, 143.
 Rexroad fauna, paleoecology, correl.: Hibbard, C. W., 8.
 Riley lms. correl.: Keyes, 84.
 Riley, Geary Cos.: Jewett, J. M., 4.
 Smoky Hill chalk: Keyes, 121.
 Southwest Kans.: Smith, H. T. U., 9.
 Staunton Co.: Latta, B. F., 1.
 Stratigraphic trap oil production: Kornfeld, J. A., 4.
 Stratigraphy: Moore, R. C., 6.
 Synonymic terranial titles: Keyes, 135.
 Wiskanian ser.: Keyes, 97.
 Wyoming-Kansas cross sec.: Jones, C. T., 2.
 Zenith oil pool: Paddelford, J. T., 1.
- Mineralogy.*
 Admire pallasite, inclusions: Buddhue, J. D., 1.
 Asphalt rock: Jewett, J. M., 1.
 Coal resources: Whitla, R. E., 1.
 Garnett aerolite with free copper: Nininger, H. H., 9.
 Mineral localities: Carpenter, A. C., 2.
 Mineralizing solutions, Picher dist.: Stoiber, R. E., 2.
 Pearls, Cret.: Brown, R. W., 2.
 Pyrope garnet vs. ruby spinel: Bagrowski, B. P., 2.
 Rare minerals: Carpenter, A. C., 1.
 Waters, oil-well: Runyon, E., 1.
- Paleontology.*
 Amebelodon: Barbour, E. H., 1.
 Burrows, Perm.: Byrne, F., 1.
 Castle Rock area: Robertson, G. M., 1.
 Cervalces: Hibbard, C. W., 3.
 Coelodus: Hibbard, C. W., 1.
 Conodonts: Ellison, S., 1.
 Corals: Moore, R. C., 11.
 Cratogeomys: Rinker, G. C., 1.
 Crinoidea: Moore, R. C., 4; Strimple, H. L., 2.
 Dichophyllum: Andrews, H. N., Jr., 4.
 Emma Creek fm.: Frye, J. C., 4.
 Fauna, Missn.: Girty, G. H., 1.
 Faunas, Pleist.: Hibbard, C. W., 9.
 Ferns in coal balls: Darrab, W. C., 5.
 Gastropoda: Moore, R. C., 9, 16.
 Insecta: Carpenter, F. M., 1.
 Kakotasuchus: Mehl, 1.
 Lizards, Pliocene: Taylor, E. H., 2.
 Mammalia: Hibbard, C. W., 5, 6.
 Meade basin: Frye, J. C., 8.
 Mississippian: Lee, W., 2.
 Mollusca, Pleist.: Goodrich, C., 1.
 Pearls, Cret.: Brown, R. W., 2.
 Permian corals: Moore, R. C., 11.
 Pycnomicrodon: Hibbard, C. W., 7.
 Rexroad fauna: Hibbard, C. W., 8, 8.
 Salamanders: Taylor, E. H., 3.

Kansas—Continued.

Paleontology—Continued.

Southwestern Kansas: Smith, H. T. U., 9.

Synaptomys: Hibbard, C. W., 1.

Toads: Taylor, E. H., 3.

Petrology.

Castle Rock area: Robertson, G. M., 1.

Marmaton group: Jewett, J. M., 3.

Physical geology.

Castle Rock area: Robertson, G. M., 1.

Clay balls, Smoky Hill River: Robertson, G. M., 4.

Meade artesian basin: Frye, J. C., 6, 8.

Mississippian lms.: Lee, W., 1.

Nemaha orogeny: Keyes, 99.

Physiographic geology.

Arbuckle stream-channels: Mull, J. A., 1.

Changes in stream courses: Smith, H. T. U., 1.

General: Keyes, 139.

Glacial striae: Schoewe, W. H., 1.

Glaciation: Keyes, 118.

Levees, small natural: Frye, J. C., 3.

Meade basin: Frye, J. C., 6, 8.

Ozark Prov. profiles: Cozzens, A. B., 1.

Sand dunes: Smith, H. T. U., 2.

Southwestern Kansas: Smith, H. T. U., 9.

Underground water.

Equus beds: Lohman, S. W., 3.

Ground water: Abernathy, G. E., 3;

Frye, J. C., 2, 7; Lohman, S. W., 1,

2, 5; McLaughlin, T. G., 2; Moore,

R. C., 5; Waite, H. A., 1.

Lawrence area ground water: Lohman, S. W., 5.

Meade artesian basin: Frye, J. C., 2, 5, 6, 7.

Morton Co.: McLaughlin, T. G., 3.

Riley and Geary Cos.: Jewett, J. M., 4.

Scott Co., water-table decline: Waite, H. A., 2.

Southwestern Kansas: Smith, H. T. U., 9.

Staunton Co.: Latta, B. F., 1.

Waters, oil-wells: Runyon, E., 1.

Kaolin. See also Clay.

Bleaching clays: Schroter, G. A., 1.

Maryland: Gray, W. B., III, 1.

Montana, Butte area: Smith, P. A., 1.

New Jersey, Sayreville: Giordano, V., 1.

North Carolina: Hunter, C. E., 2; Maurice, C. S., 1.

South Carolina: Lang, W. T. B., 1.

Karst topography.

Caliche karst: Price, W. A., 1.

Kentucky, cavern drainage: Malott, C. A., 1.

Kentucky.

Plants, woody, and geol. regions: McInteer, B. B., 1.

Economic geology.

Barium in Appalachian brines: Heck, E. T., 2.

Clays: Bramlette, 2; Young, D. M., 1.

Kentucky—Continued.

Economic geology—Continued.

Mississippian border, E. int. basin: Weller, J. M., 3.

Natural gas: Appalachian G. S., 1; Bell, A. H., 1.

Petroleum: Appalachian G. S., 1; Bell, A. H., 1.

Historical geology.

Appalachian coal fields: Wanless, H. R., 1.

Big Clifty quad.: Stouder, R. E., 1.

Chester, Ill. basin: Dana, P. L., 1.

Devonian, Silurian: Freeman, L. B., 1.

Illinois basin, Chester ser.: Dana, P. L., 1.

Mississippian, E. int. basin: Weller, J. M., 3.

Tennessee River area: Eckel, E. C., 1; Rhoades, R. F., 1.

Tennessee Valley region: Eckel, E. C., 2.

Tuscaloosa fm.: Rhoades, R. F., 4.

Mineralogy.

Clays: Bramlette, 2; Young, D. M., 1.

Geodes: Mauntel, H. W., 1.

Paleontology.

Ammonoids: Miller, A. K., 3.

Anartiocrinus: Kirk, E., 2.

Big Clifty quad.: Stouder, R. E., 1.

Eupachyrinus: Sutton, A. H., 3.

Leperditella: Coryell, H. N., 1.

Lepidostrobis: Mathews, G. B., 1.

Mississippian border, E. int. basin: Weller, J. M., 3.

Ostracoda: Scott, H. W., 3.

Wilcox flora: Berry, E. W., 3.

Petrology.

Big Clifty quad.: Stouder, R. E., 1.

Clays: Bramlette, 2; Young, D. M., 1.

Tuscaloosa fm.: Rhoades, R. F., 4.

Physical geology.

Cavern drainage: Malott, C. A., 1.

Faulting, post-Appalachian: Rhoades, R. F., 5.

Subriver solution, Tenn. Valley: Money-maker, B. C., 4; Rhoades, R. F., 4.

Tennessee River area: Eckel, E. C., 2; Rhoades, R. F., 1, 4.

Tennessee Valley region: Eckel, E. C., 2; Rhoades, R. F., 4.

Physiographic geology.

Appalachian erosion surfaces: Cole, W. S., 1.

Big Clifty quad.: Stouder, R. E., 1.

Cavern drainage: Malott, C. A., 1.

Tennessee River area: Rhoades, R. F., 1.

Uplands: McFarlan, A. C., 1.

Underground water.

Artesian conditions, Tenn. Valley: Rhoades, R. F., 3.

Tennessee Valley, deep solution: Money-maker, B. C., 4; Rhoades, R. F., 4.

Klaprotholite, Mexico: Krieger, P., 1.

Knipkpunkte, N. Y.: Engeln, O. D. von, 2.

Kyanite.

- California: Bailey, E. H., 1; Funk, B. G., 1.
 Georgia: Boyd, W. B., 2.
 Virginia: Sawyer, J. P., 1.

Laccoliths. See also Intrusions.

- Colorado, heavy minerals: Dapples, E. C., 2.
 Montana: Larsen, E. S., 3; Pecora, W. T., 1; Stephenson, E. L., 1.
 New Hampshire, Oliverian domes: Chapman, C. A., 2.

Lakes.

- Connecticut, sediment core analyses: Hutchinson, G. E., 1.
 Device for sampling lake sediments: Wilson, I. T., 1.
 Greenland, Holstensborg dist.: Belknap, R. L., 1.
 Oregon, Crater Lake: Williams, H., 1.
 Sediments of: Twenhofel, W. H., 1, 8.
 Wisconsin, Muskellunge moraine area: Broughton, W. A., 1.

Lakes, extinct. See also Glacial lakes.

- British Columbia, Okanagan Valley: Meyer, C., 1.
 California: Blackwelder, E., 5; Clark, R. W., 1; Erwin, H. D., 1; Forbes, H., 1; Gilbert, C. M., 1.
 Canada, Lake Agassiz beaches: Johnston, W. A., 1.
 Illinois, Grays Lake quad.: Powers, W. E., 1.
 Indiana, glacial Lakes Quincy and Eminence: Thornbury, W. D., 1.
 Iowa: Kay, G. F., 2; Keyes, 79; Lev-erett, F., 1.
 Kansas, Meade basin: Frye, J. C., 6.
 Montana, Lake Missoula: Pardee, J. T., 1.
 New England, deglaciation: Lougee, R. J., 2.
 New Mexico: Baker, C. L., 2; Pow-ers, W. E., 2.
 Ohio, Cuyohoga: Donner, H. F., 1.
 Oregon: Cressman, L. S., 1; Dole, H. M., 1.
 Quebec, Beauchastel Twnshp.: Kindle, E. D., 2.
 South Carolina elliptical bays, origin: Cooke, C. W., 1.
 Texas, Llano Estacado: Germond, K. W., 1.
 Utah, Uinta Basin: Stagner, W. L., 1.

Lakes, glacial. See also Glacial Lakes.

- California: Blackwelder, E., 5; Groes-beck, M. J., 1.
 Canada, Lake Agassiz: Johnston, W. A., 1.
 Minnesota, S. E.: Stauffer, C. R., 3.

Lamellibranchiata. See Pelecypoda.**Lamprobolite:** Rogers, A. F., 1.**Land-erosion control:** Lowdermilk, W. C., 1.**Landform types:** Wolfanger, L. A., 1.**Landslides.**

- Arizona, Vermilion and Echo cliffs: Strahler, A. N., 1.
 California: Miller, C. J., 1; Putnam, W. C., 1; Ross, C. P., 1;
 Rynearson, G. A., 1; Simonson, R. R., 1.
 Deep-sea cores, Atlantic: Bramlette, M. N., 1.
 New York, Willsboro quad.: Budding-ton, A. F., 1.
 Ohio: Mitchell, R. H., 1, 3.
 Overloading and mass-movement: Hacker, W. A., 1.
 South Carolina, soils and surface rela-tions: Eargle, D. H., 1.
 Tennessee Valley region: Eckel, E. C., 2.
 Vegetative indicators of solifluction: Ives, R. L., 6.
 Wyoming, La Barge area: Bertagnoli, A. J., Jr., 1.

Last million years: Leighton, M. M., 1.**Lava flows,** Michigan: Roberts, E., 1.**Lavas.** See also Intrusions.

- Alaska, Tetling River area: Moffit, F. H., 1.
 Arizona, Grand Canyon: Campbell, I., 1.
 California: Anderson, C. A., 3; Erwin, H. D., 1; Gardner, D. L., 1; Noble, L. F., 1.
 Ellipsoidal structure: Fuller, R. E., 1.
 Hawaii: MacDonald, G. A., 1, 2, 3;
 Stearns, H. T., 1; Wentworth, C. K., 1.
 Idaho: Anderson, A. L., 5; Nichols, R. L., 1.
 Inland Empire, Wash.-Oreg.: Read, J. C., 1.
 Lava, trees show velocity: Nichols, R. L., 2.
 Massachusetts, Holyoke Range-Conn. Valley structure: Bain, G. W., 5.
 Minnesota, Keweenaw: Fackler, W. C., 1.
 Montana, Boxelder laccolith: Pecora, W. T., 1.
 Nevada, Buckskin Peak: Roberts, R. J., 2.
 New Mexico, Moreno Valley: Ray, L. L., 2.
 Northwest Territories, MacKay Lake area: Henderson, J. F., 3.
 Ontario: Jenney, C. P., 1; Moore, E. S., 2.
 Oregon: Jones, A. E., 1; Lawrence, D. B., 1; Luper, R. L., 2; Nichols, R. L., 3; Oregon St. Bd., 1; Pack-ard, E. L., 1; Smith, W. D., 4.
 Pacific Northwest, dikes: Goodspeed, G. E., 1.
 Quebec: Ambrose, J. W., 1; Banner-man, H. M., 1; Kindle, E. D., 2; Longley, W. W., 1; Norman, G. W. H., 3; Wilson, M. E., 3.

Lavas—Continued.

- Texas: Bacon, C. S., Jr., 2; Baker, C. L., 3; Ives, R. L., 7; Lonsdale, J. T., 1.
 Thunder eggs: Dake, H. C., 2.
 Utah-Arizona, Hurrican fault: Gardner, L. S., 1.
 Washington: Fernquist, C. O., 2; Throssell, W. I., 1.
 Wyoming, Absaroka Mts.: Rouse J. T., 1.
 Lawrenceite, Mt. Elden, Ariz., meteorite: Bud-dhue, J. D., 2.

Lead.

- Arizona: Kubn, T. H., 1; Mills, H. F., 1.
 Arkansas, Polk County: Branner, G. C., 1.
 British Columbia: Canada G. S., 1; Kindle, E. D., 1; Lang, A. H., 1.
 Colorado: Burbank, W. S., 1; Butler, R. D., 1; Galbraith, F. W., 5; Goddard, E. N., 1; Lovering, T. S., 2; Singewald, Q. D., 1; Wahlstrom, E. E., 1.
 Galena lms., Wis.-Ill.: Sardeson, F. W., 1.
 Galena, sed.: Lane, A. C., 5.
 Idaho: Anderson, A. L., 1; Whiting, K., 1.
 Mexico, Durango: Terrones Langone, A., 1.
 Mississippi Valley: Newhouse, W. H., 2.
 Missouri, Ozark mine: Ohle, E., Jr., 1.
 Montana, Granite Co.: Goddard, E. N., 2.
 Nevada, Churchill Co.: Vanderberg, W. O., 1.
 New Mexico: Harley, G. T., 1.
 New York, Shawangunk Mt.: Ingham, A. L., 1.
 North America, Miss. Valley type deposits: Garrels, R. M., 2.
 Ore districts: Billingsley, P. R., 1.
 Northwest Territories: Lord, C. S., 2.
 Picher dist., Kans.-Okla.: Stoiber, R. E., 2.
 Quebec, Calumet Is.: Armstrong, P., 1; Moorhouse, W. W., 1.
 Radioactivity measurements: Goodman, C., 1.
 Replacement deposits in lms.: Brown, J. S., 1.
 Sulphate deposits: Smith, F. G., 2; Van Tuyt, F. M., 2.

Leucite, Mont.: Larsen, E. S., 5.

Leucorhoyllite, N. Hamp.: Quinn, A. W., 3.

Lignite. See also Coal.

New Jersey, Sayreville: Giordano, V., 1.
 United States: Layne, L., 2.

Lillianite: Berry, L. G., 1.

Limits of error concept and time: Bucher, W. H., 5.

Limestone.

Alabama: Butts, C., 1; Spain, E. L., Jr., 1; Toulmin, L. D., Jr., 2.
 Arizona: Keyes, 110; Wiese, J. H., 1.

Limestone—Continued.

- Arkansas, Tert.: Corbin, M. W., 1.
 British Columbia: Hedley, M. S., 2.
 California, Crestmore quarry: Woodford, A. O., 4.
 Delaware Water Gap and Easton quads., Pa.-N. J.: Bayley, W. S., 1.
 Georgia: Crickmay, G. W., 3.
 Illinois: Bretz, J. H., 2; Dapples, E. C., 1; Grogan, R. M., 1.
 Indiana: Switzer, J. E., 1.
 Iowa: Wood, L. W., 2.
 Kansas: Jewett, J. M., 4; Robertson, G. M., 1.
 Lead-zinc replacement deposits: Brown, J. S., 1.
 Maryland: Gray, W. B., III, 1.
 Metamorphism, progressive: Bowen, N. L., 2.
 Mexico: González, E. M., 1.
 Minnesota, S. E.: Stauffer, C. R., 3.
 Mississippi, Warren Co.: Mellen, F. F., 4.
 Missouri, Burlington-Keckuk: Hayes, W., 1.
 New Brunswick: Alcock, F. J., 1.
 New Jersey, columnar from sun-cracking: Chadwick, G. H., 1.
 New York: Buddington, A. F., 1; Zodac, P., 3, 4.
 Oklahoma: Beach, J. O., 1; English, S. G., 1; Oakes, M. C., 1.
 Ontario, Toronto-Hamilton: Caley, J. F., 1.
 Oregon, Grants Pass quad.: Wells, F. G., 1.
 Pennsylvania: Ashley, G. H., 1; Hickok, W. O., IV, 1; Honess, A. P., 1; Miller, R. L., 2; O'Neill, W. F., 2.
 Solution as function of slope: Smith, J. F., Jr., 3.
 South Carolina, Coastal Plain: Calhoun, F. H. H., 1.
 South Dakota, Black Hills caves: Neigh-bor, P., 1.
 Tennessee: Eckel, E. C., 3; Prouty, C. E., 1; Whitlatch, G. I., 3; Wilson, C. W., Jr., 4.
 Texas: Geol. S. A., 1; Leuenberger, B., 1; O'Byrne, (Sister) M. E., 2; Shel-don, W., 1; White, N. W., 2.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Virginia: Bevan, A. C., 1, 6; Prouty, C. E., 1.

Limestone.

- Alabama, Cherokee Co.: Bowles, E. O., 2.
 Delaware Water Gap and Easton quads., Pa.-N. J.: Bayley, W. S., 1.
 Kansas: Carpenter, A. C., 1, 2.
 Mexico: González, E. M., 1.
 North Carolina, pseudomorphs: Neuman, R., 1.
 New Jersey, Sayreville: Giordano, V., 1.
 Virginia: Holden, R. J., 1.

Litchfieldite, Ontario: Fairbairn, H. W., 3.

Lithology. See also Petrology.

Lode deposits, Calif.: Lemmon, D. M., 1.

Loess.

- Alaska, Fairbanks area: Tuck, R., 1.
- Greenland, Holstensborg dist.: Belknap, R. L., 1.
- Illinois, elongate hills: Ball, J. R., 2.
- Indiana, weathered zones and glacial chronology: Thornbury, W. D., 2.
- Iowa: Cuthbert, F. L., 1; Wood, L. W., 1.
- Kansas: Frye, J. C., 8; Smith, H. T. U., 9.
- Massachusetts, Blue Hills quad.: Chute, N. E., 1.
- Mississippi: Mellen, F. F., 1; Needham, C. E., 2.
- North America: Keyes, 134; Russell, R. J., 4.
- Oregon, Portland: Treasher, R. C., 3.
- United States, distribution, stratigraphy: Apfel, E. T., 1.

Logarithmic scale for rock diagrams: Talmage, S. B., 1.

Lorenzenite, Greenland: Kraus, O., 1.

Louisiana.

- Geological Survey Report, 1938-39: Moresi, C. K., 1.
- Geological Survey and its work: Huner, J., Jr., 2.

Economic geology.

- Avoyelles, Rapides Parishes: Fisk, H. N., 1.
- Barataria field: Ferrando, A., 1.
- Bauxite: Branner, G. C., 4.
- Cibachoula oil field: Moresi, C. K., 2.
- Eola oil field: Bates, F. W., 1; Jenny, W. P., 4.
- Gravel: Woodward, T. P., 1.
- Gulf Coast: Jenny, W. P., 3; Malkin, D. S., 1; Oil and Gas J., 2.
- Jennings dome: Roach, C. B., 1.
- Natural gas: Brace, O. L., 3; Halbouty, 3; Purzer, J., 1.
- Neale field: Tygrett, H. V., 1.
- Olla field: Packard, S. A., 1.
- Petroleum: Brace, O. L., 1, 3; Halbouty, M. T., 3; Huner, J., Jr., 1; Jackson, R. S., 1; Kornfeld, M. M., 4; Purzer, J., 1; Vetter, J. M., 2.
- Salt domes, N. E. La.: Bornhauser, M., 1.
- Sand: Woodward, T. P., 1.
- Sedimentation principles and stratig. oil traps: Krumbein, W. C., 11.
- Well logs, oil field data: Oil and Gas Journal, 1.
- Wilcox Eocene: Culbertson, J. A., 1; Todd, J. D., 4.

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- Avoyelles Parish: Fisk, H. N., 1.
- Correlations, faunas: Barry, J. O., 1; Le Blanc, R. J., 2.
- Cretaceous: Russell, R. D., 3.
- Eola oil fields: Bates, F. W., 1; Jenny, W. P., 4.
- Ground water, Grant and La Salle Parishes: Maher, J. C., 5.

Louisiana—Continued.

Historical geology—Continued.

- Gulf Coast cerrel. chart: Roy, C. J., 3.
- Gulf Coast structures: Jenny, W. P., 3.
- Heavy mineral-zones: Cogen, W. M., 1.
- Jennings dome: Roach, C. B., 1.
- Jurassic: Imlay, R. W., 4.
- Midway, Saftine uplift: Murray, G. E., Jr., 2.
- Midway-Wilcox delta: Fisk, H. N., 2.
- Miocene, sou. La.: Ellisor, A. C., 1.
- Natural gas reservoirs, University field: Halbouty, M. T., 3.
- Olla field: Packard, S. A., 1.
- Petroleum development: Huner, J., Jr., 1.
- Petroleum reservoirs, University field: Halbouty, M. T., 3.
- Pleistocene: Lucke, J. B., 3.
- Quaternary: Russell, R. J., 1.
- Rapides Parish: Fisk, H. N., 1; Maher, J. C., 1.
- Salt domes, N. E. La.: Bornhauser, M., 1.
- Sand and gravel deposits: Woodward, T. P., 1.
- Sedimentation, Gulf Coast: Storm, L. W., 2.
- Subsurface Pleist.: Frink, J. W., 1.
- Water fms., Grant-LaSalle Parishes: Maher, J. C., 2.
- Wilcox Eocene: Culbertson, J. A., 1.
- Wilcox trend oil fields: Todd, J. D., 4.
- Yegua problem: Stenzel, H. B., 6.

Mineralogy.

- Heavy mineral-zones: Cogen, W. M., 1.
- Petrified wood with iron oxide: Roberts, L. B., 1.

Paleontology.

- Brachiopoda: Stenzel, H. B., 2.
- Cephalopoda: Scott, G., 2.
- Corals: Vaughan, T. W., 3.
- Correlation faunas: Barry, J. O., 1; LeBlanc, R. J., 2.
- Cryptochorda: Stenzel, H. B., 4.
- Eola oil field: Bates, F. W., 1.
- Fauna, Jurassic: Imlay, R. W., 4.
- Lipparia: Stenzel, H. B., 4.
- Midway fossil localities: LeBlanc, R. J., 1.
- Midway microfauna: Murray, G. E., Jr., 1.
- Miocene, sou. La.: Ellisor, A. C., 1.
- Nautiloids: Stenzel, H. B., 3.
- Petrified wood with iron oxide: Roberts, L. B., 1.
- Rangia: Gardner, J. A., 1.
- Turritellidae: Stenzel, H. B., 5.

Petrology.

- Barataria Bay sediments: Caldwell, L. T., 1.
- Heavy minerals, Gulf Coast: Bornhauser, M., 2.
- Water fms., Grant-LaSalle Parishes: Maher, J. C., 2.

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Physical geology.

- Eola oil field: Bates, F. W., 1.
 Quaternary: Russell, R. J., 1.
 Wilcox trend oil fields: Todd, J. D., 4.

Physiographic geology.

- Avoyelles, Rapides Parishes: Fisk, H. N., 1.
 Mississippi River deltas: Shaw, A. M., 1.
 Physiographic regions: Russell, R. J., 3.
 Quaternary history: Russell, R. J., 1.
 Sedimentation, Gulf Coast: Storm, L. W., 2.
 Subsurface Pleist.: Frink, J. W., 1.

Underground water.

- Ground water: Maher, J. C., 1, 3, 4, 5.
 Rapides Parish, ground-water resources: Maher, J. C., 1.
 Water fms., Grant-LaSalle Parishes: Maher, J. C., 2.

Lows and balls, Lake Michigan: Evans, O. F., 1.

Lower Silurian. See Ordovician.

Magmas and magmatic differentiation. See also Batholiths; Dikes; Igneous and volcanic rocks; Intrusions; Laccoliths; Lavas.

- Albite and gold: Bruce, E. L., 1.
 Arizona, Copper Creek: Kuhn, T. H., 1.
 California: Durrell, C., 1; Johnston, W. D., Jr., 1; Partridge, J. F., Jr., 1.
 Canadian shield: Moore, E. S., 3.
 Colorado: Boos, M. F., 1; Burbank, W. S., 3; Butler, R. D., 1; Lovering, T. S., 2; Singewald, Q. D., 1; Wahlstrom, E. E., 3.
 Copper, Idaho: Anderson, A. L., 6.
 Delaware Water Gap and Easton quads., Pa.-N. J.: Bayley, W. S., 1.
 Ellipsoidal structure: Fuller, R. E., 1.
 Eruptivity and mt. bldg.: Willis, B., 2.
 Granite and ore: Locke, A., 2.
 Greenland: Hawkes, L., 1; Hess, H. H., 3.

Guatemala, gravity measurements: Wright, F. E., 1.

Hawaii: Jaggar, T. A., Jr., 1; MacDonald, G. A., 2.

Idaho: Anderson, A. L., 3, 4, 6; Willard, M. E., 1.

Igneous-looking rocks from metasomatism: Grout, F. F., 2.

Liquidus and solidus: Tanton, T. L., 1.

Magmatic differentiation and pressures: Emmons, R. C., 1.

Maine, Cape Neddick dikes: Haff, J. C., 3.

Maryland, Migmatite: Chapman, R. W., 3.

Mexico: Edelen, A. W., 1; Krieger, P., 1.

Minnesota, diabase sills: Schwartz, G. M., 1.

Mississippi Valley type lead-zinc deposits: Garrels, R. M., 2.

Magmas and magmatic differentiation—Cont.

Montana: Larsen, E. S., 1, 3, 6; Pecora, W. T., 1.

Nevada, Golconda tungsten deposit: Kerr, P. F., 3.

Newfoundland, Rencontre area: White, D. E., 3.

New Hampshire: Billings, K. F. L., 2; Billings, M. P., 2, 4; Page, L. R., 2; Quinn, A. W., 1, 3, 5, 6; Roy, C. J., 2.

New Jersey, Palisade diabase sill: Walker, F., 1.

New York: Ingham, A. I., 1; Shand, S. J., 1.

North America, pyroxenes, mafic magmas: Hess, H. H., 7.

Nova Scotia gold fields: Douglas, G. V., 10.

Ontario: Bateman, J. D., 3; Gummer, W. K., 2; Quirke, T. T., 1.

Ore-forming fluids, nature: Bichan, W. J., 1; Fenner, C. N., 1; Graton, L. C., 1; Ingerson, F. E., 2.

Oregon, Cornucopia gold quartz veins: Goodspeed, G. E., 4.

Pegmatites, Newry, Maine: Shaub, B. M., 2.

Pennsylvania: Fraser, D. M., 2; Moyd, L., 1; Postel, A. W., 2.

Pyroxenes: Hess, H. H., 5.

Quebec: Faessler, C., 4; Moorhouse, W. W., 1.

South Dakota, Tinton dist.: Smith, W. C., 1.

Structural control of ig. rocks: Loughlin, G. F., 3.

System $\text{CO}_2\text{--H}_2\text{O--K}_2\text{O--SiO}_2$: Morey, G. W., 1.

Temperature, depth, hypogene ore deposits: Dougherty, E. Y., 1.

Texas: Goldich, S. S., 1; Keppel, D., 1; Ross, C. P., 4.

Vein-forming solutions: Garrels, R., 1.

Vermont, Ascutney Mt.: Chapman, R. W., 1.

Virginia, Amherst Co.: Moore, C. H., Jr., 1.

Washington, Okanogan Valley: Krauskopf, K. B., 1.

Magnesia.

Forsterite, Ga., N. C.: Hunter, C. E., 3.

Magnesite.

California: Bradley, W. W., 2; Gary, G. L., 4.

Washington: Bennett, W. A. G., 2.

Magnetic anomalies.

Evaluation by scales: Roman, I., 1.

Geophysical explor., oil and gas areas: Gilchrist, L., 1.

Interpretation of: Jenny, W. P., 1.

Mathematical delineations: Gilchrist, L., 1.

Magnetic anomalies—Continued.

- Missouri, sed. rocks: Vannostrand, R. G., 1.
 New Jersey, gravitational, magnetic anomalies: Woollard, G. P., 7.
 North America, continental traverses: Woollard, G. P., 3, 6.
 Tennessee, Wells Creek Basin: Wilson, C. W., Jr., 2.
 United States, cent., sou.: Jenny, W. P., 5.

Magnetic storm Archeozoic areas: Filmer, E. A., 4.

Magnetite. See also Iron.

- Colorado, Green Ridge pegmatite: Ives, R. L., 5.
 Delaware Water Gap and Easton quads., Pa., N. J.: Bayley, W. S., 1.
 Guatemala, black beach sands: Boos, M. F., 2.
 Helium age determination: Hurley, P. M., 3.
 Iron, ores, sed.: Hayes, A. O., 1.
 New Jersey: Fraser, D. M., 4.
 New York: Brown, J. S., 3; Trainer, J. N., 1.
 Nova Scotia: Wilson, G. A., 1.
 Pennsylvania, Kibblehouse quarry: Haeblerle, W. F., 1.
 Quebec, Sept-Iles area: Faessler, C., 4.
 Sulphide ores: Schwartz, G. M., 2, 4.
 Texas: Barnes, V. E., 11.
 Washington, Ellensburg fm.: Coombs, H. A., 1.
 Wyoming, Laramie Range: Diermer, R. A., 1.

Magnetometer comparisons: Randell, J. T., Jr., 1.

Maine.**Historical geology.**

- Aroostook Co.: Twenhofel, W. H., 5, 7;
 White, W. S., 2.
 Katahdin-Squaw Mt. intrusives: Philbrick, S. S., 2.
 Lake Damariscotta area: Willard, B., 6.
 Lewiston area: Fisher, L. W., 1.
 St. John River Valley: Nylander, O. O., 1.
 Silurian: Twenhofel, W. H., 7.

Mineralogy.

- Axinite: Yedlin, L. N., 1.
 Dickinsonite: Wolfe, C. W., 4.
 General: Trefethen, J. M., 1.
 Holmquistite: Anonymous, 16.
 Microlite: Palache, C., 1.
 Newry mine minerals: Verrow, H. J., 1.
 Pegmatites: Schaub, B. M., 2; Verrow, H. J., 3.
 Stibiotantalite: Palache, C., 1.

Palaeontology.

- Esker, fossiliferous: Trefethen, J. M., 2.
 Fauna, Ripogenus Dam: Willard, B., 7.
 St. John River Valley: Nylander, O. O., 1.
 Silurian faunas: Twenhofel, W. H., 7;
 Willard, B., 7.

Maine—Continued.**Petrology.**

- Dickinsonite: Wolfe, C. W., 4.
 Dike, complex, Cape Neddick: Haff, J. C., 8.
 Katahdin-Squaw Mt. intrusives: Philbrick, S. S., 2.
 Lake Damariscotta area: Willard, B., 6.
 Lewiston area: Fisher, L. W., 1.
 Mt. Waldo: Trefethen, J. M., 4.
 Pegmatite minerals: Verrow, H. J., 3.
 Rapakivi, Head Harbor I.: Terzaghi, R. D., 1.

Physical geology.

- Dike, complex, Cape Neddick: Haff, J. C., 8.
 Katahdin-Squaw Mt. intrusives: Philbrick, S. S., 2.
 Lewiston area: Fisher, L. W., 1.
 Mt. Waldo: Trefethen, J. M., 4.
 Pegmatites, Newry, origin: Schaub, B. M., 2.

Physiographic geology.

- Belgrade Lakes area: Bunker, H., 1.
 Esker, fossiliferous: Trefethen, J. M., 2.
 Lake Damariscotta area: Willard, B., 6.
 Malignite, Washington: Krauskopf, K. B., 1.

Mammalia.

- Aelurodon, Tert.: VanderHoof, V. L., 1.
 Ailuraena, Tex.: Stirton, R. A., 3.
 Amebelodon, Kans.: Barbour, E. H., 1.
 Aplodontioidea, S. Dak., Oreg.: McGrew, P. O., 4.
 Artifacts and fossils, Tex.: Sellards, E. H., 3.
 Artiodactyla: Pilgrim, G. E., 2; Scott, W. B., 1.
 Basalts, Wash., fossil-bearing: Beck, G. F., 4.
 Beavers, Nor. Am.: Olson, E. C., 2.
 Bison with artifacts, Tex.: Barbour, E. H., 3.
 British Columbia, Quat.: Cowan, I. M., 1.
 California: Colbert, E. H., 2; Furlong, E. L., 2; Jahns, R. H., 1; Richey, K. A., 1, 2; Woodring, W. P., 1.
 Cats: Colbert, E. H., 2, 3.
 Cervalces, Kans.: Hibbard, C. W., 3.
 Colorado, Paleocene: Gazin, C. L., 3.
 Cratogeomys, Kans.: Rinker, G. C., 1.
 Delphinodon, Va.: Barwick, A. R., 2.
 Delphinus, Md.: Gilmore, C. W., 1.
 Domnina, Mont.: Simpson, G. G., 15.
 Ectoconus, N. Mex.: Simpson, G. G., 16.
 Eohippus: Simpson, G. G., 4.
 Equid brain, phylogeny: Edinger, T., 1.
 Equidae, Nor. Am.: Drescher, A. B., 1;
 Gregory, J. T., 1; Henshaw, P. C., 1; Richey, K. A., 3; Russell, L. S., 11; Scheid, V. E., 1; Stirton, R. A., 2, 4.
 Equus tooth, Idaho: Scheid, V. E., 1.
 Evolution, fish-reptile-mammal: Colbert, E. H., 5.

Mammalia—Continued.

- Fauna, Fort Logan-Deep River, Mont.: Koerner, H. E., 1.
 Optima, Okla.: Savage, D. E., 1.
 Paleocene: Gazin, C. L., 4; Jepsen, G. L., 1.
 Pleistocene: Hibbard, C. W., 9; Olson, E. C., 1; Simpson, G. G., 11.
 Rampart Cave, Ariz.: Wilson, R. W., 4.
 Rexroad Pliocene, Kans.: Hibbard, C. W., 8.
 Felidae, Pleist., Nor. Am.: Simpson, G. G., 11.
 Felsinothierium, Fla.: Gregory, J. T., 2.
 Florida, Tert.: Gregory, J. T., 2; White, T. E., 2, 3.
 Fossil Lake, Oregon: Allison, I. S., 4.
 General: Roemer, A. S., 2.
 Gnathabelodon, Tex.: Sellards, E. H., 4.
 Goniodelphis, Fla.: Allen, G. M., 1.
 Ground sloths, Tex.: McAnulty, W. M., 1.
 Heliscomys, S. Dak.: McGrew, P. O., 3.
 Hemicyon, Neb.: Colbert, E. H., 4.
 Hexobelomeryx, Mexico: Furlong, E. L., 1.
 Honduras, Pliocene: Olson, E. C., 5.
 Horse teeth development: Stirton, R. A., 4.
 Horses: Richey, K. A., 3; Russell, L. S., 11.
 Ichnites: Curry, H. D., 1.
 Kansas: Frye, J. C., 8; Hibbard, C. W., 4, 5, 6.
 Lagomorpha, White River Oligocene: Wood, A. E., 2.
 Land bridges and mammals: Simpson, G. G., 1.
 Lion tracks, Ariz.: Nininger, H. H., 6.
 Lutra, Iowa: Goldman, E. A., 1.
 Macrotarsius, Mont.: Clark, J., 1.
 Mammoths, Ill., Tex.: Willman, H. B., 2; Anonymous, 9.
 Mammoths and men: Colbert, E. H., 1.
 Mammut, W. Va.: Wells, D., 1.
 Manitsha, Oligocene: Simpson, G. G., 6, 13.
 Mastodons, Mich., Tex.: MacAlpin, A., 1; Murray, L. T., 1.
 Megalonyx, Okla.: Stovall, J. W., 1.
 Megatherium, Fla.: White, T. E., 5.
 Mephitis frontata not fossil: Miller, G. S., Jr., 1.
 Merycochoerinae, Tert.: Schultz, C. B., 1.
 Merycoldodon skulls: Phleger, F. B., 4.
 Mesogaulus, Neb.: Cook, H. J., 1.
 Metallurus, Calif.: Richey, K. A., 4.
 Metechinus, Neb.: Meade, G. E., 1.
 Mexico, Durango: Terrones Langone, A., 1.
 Miocene, Calif.: Dougherty, J. F., 2.
 Molar teeth, evolution: Butler, P. M., 1.

Mammalia—Continued.

- Nebraska, Great Plains: Schultz, C. B., 3.
 Nevada, Tert.: Stirton, R. A., 1.
 North America continental Tert.: Wood, H. E., 2d, 1.
 Oregon, Madras quad.: Hodge, E. T., 6.
 Oreolagus, Neb.: McGrew, P. O., 2.
 Parabos, Neb.: Barbour, E. H., 3.
 Paratylopus, Oreg.: Dougherty, J. F., 1.
 Pareumys, Calif.: Wilson, R. W., 3.
 Perissodactyla, White River Oligocene: Scott, W. B., 2.
 Phalocyon, Neb.: McGrew, P. O., 1.
 Pleistocene, Wash.: Fernquist, C. O., 4.
 Pliocyon, Tex.: Johnston, C. S., 1.
 Primates, earliest, Nor. Am.: Simpson, G. G., 3.
 Eocene, Wyo.: Seton, H., 1.
 Relative growth, vertebrate phylogeny: Phleger, F. B., Jr., 1.
 Rexroad fauna, Kans.: Hibbard, C. W., 5, 6.
 Rhinoceros evolution: Wood, H. E., 2d., 2.
 Rodents, Calif.: Wilson, R. W., 1, 2.
 Saber-like canines in Carnivora: Simpson, G. G., 9.
 Sea-cows, Tert., Nor. Am.: VanderHoof, V. L., 2, 3.
 Siphonocetus, Md.: Barwick, A. R., 1.
 Sphenophalus, Neb.: Barbour, E. H., 2.
 Synaptomys, Kans.: Hibbard, C. W., 1.
 Tennessee, Kyle quarry: Simpson, G. G., 10.
 Tertiary correlates, Europe-Nor. Am.: Pilgrim, G. E., 1.
 Texas, Pliocene: Hesse, C. J., 2.
 Ticholeptinae, U. S.: Schultz, C. B., 6.
 Titanotheres, Saskatchewan: Russell, L. S., 6.
 Utah, Cret., Paleocene: Gazin, C. L., 1.
 Virginia, Tidewater Miocene: Barclay, G. C., 1.
 White River Oligocene: Simpson, G. G., 14.
 Man, fossil.
 Agate artifacts: McCann, F. T., 1.
 Alaska, Paleo-Indians: Hibben, F. C., 3.
 Artifacts, Tex.: Evans, G. L., 1.
 Artifacts and fossils, Tex.: Barbour, E. H., 3; Sellards, E. H., 3.
 Bison with artifacts, Tex.: Barbour, E. H., 3.
 California: Bowden, A. O., 1; Lopatkin, I. A., 1.
 Colorado, Lindenmeier site: Bryan, K., 3; Roberts, F. H. H., Jr., 1, 2.
 Early man in America: Sellards, E. H., 1.
 Evolution of: Romer, A. S., 7.
 Florida, Pleist.: Cooke, C. W., 4.
 Folsom and Yuma problem: Howard, E. B., 1.

Man, fossil—Continued.

- Fossil man and origin of races: Howells, W. W., 1.
 General: Geol. S. A., 2; Mather, K. F., 2; Merriam, J. C., 1.
 Geologic explorations, S. W.: Bryan, K., 1.
 Geology vs. archeology, southwest U. S.: Gould, C. N., 1.
 Lindemeier site, Colo.: Bryan, K., 3; Roberts, F. H. H., Jr., 1, 2.
 Mammoths and men: Colbert, E. H., 1.
 Man, ancient: Romer, A. S., 7.
 Man, development: Mather, K. F., 2.
 Man in geology: Hawkins, H. L., 1.
 Mano and metate, American, Pleist.: Ray, C. N., 1.
 Man's development: Mather, K. F., 2.
 Man's first million years: Lucas, J. M., 1.
 Missouri, early man: Adams, R. M., 1.
 New Mexico: Bryan, K., 10; Hibben, F. C., 2; McCann, F. T., 1.
 North America: Contreras, F., 1; Schultz, C. B., 2.
 Geologic age: Bryan, K., 9.
 Prehistoric archeology: Stock, C., 1.
 Oregon, early man: Cressman, L. S., 1.
 Phenanthropus, not man: Ingalls, A. G., 1.
 Pleistocene stone images, Tex.: Sellards, E. H., 6.
 Sandia Mt. cave, N. Mex.: Bryan, K., 10; Hibben, F. C., 1.
 Texas: Barbour, E. H., 3; Evans, G. L., 1; Geol. S. A., 1; Sellards, E. H., 7, 8.
 This living world: Clark, C. C., 1.
 Virginia: Bushnell, D. I., Jr., 1.

Man and minerals: Stuckey, J. L., 3.**Mangroves, geological works: Chapman, V. J., 1.****Manganese.**

- Alabama, Cherokee County: Bowles, E. O., 2.
 Arkansas: Branner, G. C., 1; Miser, F. D., 3.
 California: Gary, G. L., 3; Hadley, J. B., 1.
 Canada, Magdalen Is.: Alcock, F. J., 3, 6.
 Colorado, Leadville: Hedges, J. H., 1.
 Cuba: Norcross, F. S., Jr., 1, 2.
 Georgia: Kesler, T. L., 1.
 Minnesota: Grout, F. F., 3.
 Montana: Goddard, E. N., 2.
 Nevada: Kerr, P. F., 3; Roberts, R. J., 3.
 New Mexico: Lasky, S. G., 1.
 North Carolina: Murdock, T. G., 1.
 North Dakota: Hendricks, T. A., 5; Anonymous, 24.
 Nova Scotia: Flynn, E. A., 1.
 Oklahoma: Merritt, C. A., 4.
 Oregon: Wells, F. G., 1.
 Radioactivity: Mitchell, A. C. G., 1.

Manganese—Continued.

- South Dakota: Gries, J. P., 2.
 Tennessee: Laurence, R. A., 2.
 Utah: McKnight, E. T., 1.
 Manganosite, New Jersey: Frondel, C., 3.
 Manitoba.
Areas described.
 Rice-Beresford Lakes area: Stockwell, C. H., 1.
Economic geology.
 Gold, Rice-Beresford Lakes area: Stockwell, C. H., 1.
Historical geology.
 Falcon Lake stock: Brownell, G. M., 1.
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 Huron claim: Muench, O. B., 2.
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 Rice-Beresford Lakes area: Stockwell, C. H., 1.
 Schist Lake area: Canada G. S., 1.
 Wekusko area: Canada G. S., 1.
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 Gold: Stockwell, C. H., 1.
 Lead-uranium ratio: Muench, O. B., 2.
 Monazite, Huron claim lead-uranium ratio: Muench, O. B., 2.
Paleontology.
 Heliolitidae, Ord.: Leith, E., 1.
Petrology.
 Falcon Lake stock: Brownell, G. M., 1.
Physical geology.
 Falcon Lake stock: Brownell, G. M., 1.
 Rice-Beresford Lakes area: Stockwell, C. H., 1.
 Map making. See Cartography.
 Maps. See Geologic maps; Isopach maps; Relief maps.
 Maps, geomorphic notes: Sharp, H. S., 2.
 Marble.
 California: Bradley, W. W., 2.
 Delaware Water Gap and Easton quads., Pa.—N. J.: Bayley, W. S., 1.
 General: Bain, G. W., 1.
 Georgia: Crickmay, G. W., 3.
 Investigations of deformation: Balsley, J. R., 1.
 Maryland: Bastin, E. S., 2; Gray, W. B., III, 1.
 Ontario, chert in Grenville marble: Tarr, W. A., 1.
 Oregon: Oregon St. Bd., 1; Smith, W. D., 4.
 Puerto Rico: Ray, H. C., 1.
 Stylolites in Potomac marble: Bastin, E. S., 2.
 Marcasite, N. J.: Giordano, V., 1.
 Marine organisms in sediments: Natland, M. L., 2.
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 Mexico: González, E. M., 1.
 Mississippi: Mellen, F. F., 4.
 Ohio: Stout, W. E., 2.

Martite, Virginia: Pegau, A. A., 2.

Maryland.

Economic geology.

Mineral resources: Gray, W. B., III, 1.

Historical geology.

Appalachians: Cloos, E., 2; Nettleton,

L. L., 2; Swartz, C. K., 1.

Howard County: Cloos, E., 1.

Martie overthrust: Cloos, E., 4.

Miocene: Schoonover, L. M., 2.

Pleistocene: Berry, E. W., 4.

Mineralogy.

Dendrite: Hawkins, A. C., 1.

Martie overthrust: Cloos, E., 4.

Mineral resources: Gray, W. B., III, 1.

Minerals: Ostrander, C. W., 1.

Pyroarite, sjögrenite groups: Frondel C., 8.

Paleontology.

Characteristic fossils: French, E. M., Jr., 1.

Echinoids: Schoonover, L. M., 1.

Foraminifera: Clapp, A. D., 1.

Gavia: Wetmore, A., 3.

Libinia: Easton, W. H., 2.

Mollusca: Schoonover, L. M., 2.

Palaeophis: Blake, S. F., 2.

Paralbulia: Blake, S. F., 1.

Pinus: Berry, E. W., 7.

Pleistocene: Berry, E. W., 4.

Quercus: Berry, E. W., 7.

Sea urchins: Benn, J. H., 1.

Siphonocetus: Barwick, A. R., 1.

Vermes, Camb.: Howell, B. F., 8.

Petrology.

Martie overthrust: Cloos, E., 4.

Migmatite, Laurel: Chapman, R. W., 3.

Stylolites, origin: Bastin, E. S., 2.

Physical geology.

Appalachians, nor.: Cloos, E., 2.

Martie overthrust: Cloos, E., 4.

Migmatite, Laurel: Chapman, R. W., 3.

Stylolites, origin: Bastin, E. S., 2.

Physiographic geology.

General: Miller, C. A., Jr., 1.

Massachusetts.

Economic geology.

Granville quad.: White, W. S., 1.

Gravel and sand: Wheeler, R. R., 1.

Historical geology.

Barnardston fm.: Balk, R., 2.

Blue Hills quad.: Chute, N. E., 1.

Cape Cod: Mather, K. F., 1.

Coast, N. E.: Chute, N. E., 2.

Gravel and sand area: Wheeler, R. R., 1.

Holyoke Range-Conn. Valley structure: Bull, G. W., 5.

Lowell-Fitchburg area: Jahns, R. H., 3.

Lowell quad.: Currier, L. W., 1; Lee, F. W., 1.

Pegmatites: Billings, M. P., 3.

Triassic floor, N. of Holyoke Range:

Willard, M. E., 2.

Massachusetts—Continued.

Mineralogy.

Babingtonite: Shaub, B. M., 3.

Broderickite: Dake, H. C., 6.

Buzzards Bay sediments: Hough, J. L., 1.

Paleontology.

Braintreella: Wheeler, R. R., 4.

Fish, Trias.: Dunkle, D. H., 2.

Petrology.

Buzzards Bay sediments: Hough, J. L., 1.

Pegmatites: Billings, M. P., 3.

Phyllite: Keeler, J., 1.

Physical geology.

Blue Hills quad.: Chute, N. E., 1.

Chelmsford earthquake, 1938: Linehan, D., 1.

Holyoke Range-Conn. Valley structure: Bain, G. W., 5.

Lowell-Fitchburg area: Jahns, R. H., 3.

Phyllite, faulted: Keeler, J., 1.

Triassic floor, N. of Holyoke Range: Willard, M. E., 2.

Physiographic geology.

Blue Hills quad.: Chute, N. E., 1.

Cape Cod: Mather, K. F., 1.

Coast, N. E.: Chute, N. E., 2.

Granville quad.: White, W. S., 1.

Ice sheet stagnation, disappearance: Currier, L. W., 3.

Layers of plant material in sand dunes: Lutz, H. J., 1.

Lowell quad.: Currier, L. W., 1; Lee, F. W., 1.

Outwash chronology: Jahns, R. H., 2.

Plum I. shoreline changes: Nichols, R. L., 6.

Tills, eastern: Currier, L. W., 4.

Wisconsin ice retreat: Mather, K. F., 3.

Mathematics in seismology: Blake, A., 1; Byerly, P., 4.

Mean sea-level and sand movements: Leopoldt, H., 3.

Measuring device, extinction angles: Inuzuka, H., 1.

Meek, F. B., as paleontologist: Keyes, C. R., 34.

Megapaleontology, invertebrates: Raymond, P. E., 3.

Mechanical analysis.

Beaches, field sampling errors: Otto, G. H., 1.

Deep-sea cores, North Atlantic: Bramlette, M. N., 1.

Quartz sands: Otto, G. H., 1.

Sediments, clastic, size-grades: Pettijohn, F. J., 1.

Study methods of sediments: Twenhofel, A., 6.

Washington; Ringold fm.: Stevenson, R. G., 1.

- Mechanical polishing with abrasive film: Fuller, J. O., 1.
- Meetings. See also Associations.
- Melanterite, Calif.: Vonsen, M., 1.
- Mercury. See Quicksilver.
- Mesolite, Oregon: McLeod, E., 1; Zodac, P., 6.
- Mesothorium, radioactivity: De Ment, J., 2.
- Mesozoic, Mont., Gallatin Valley: Fix, P. F., 1.
- Metamorphic paleontology: Keyes, 129.
- Metamorphism.
- Adirondack area: Alling, H. L., 1; Brown, J. S., 2.
- Alaska R. R. region: Capps, S. R., 1.
- Appalachians, Pa.-Md., shortening: Cloos, E., 2.
- Arizona, Basin Ranges: Wilson, E. D., 1.
- British Columbia: Armstrong, J. E., 1; Cairnes, C. E., 1; Hedley, M. S., 1; Maconachie, R. J., 1.
- California: Durrell, C., 1; Eckel, E. B., 2; Gardner, D. L., 1; Hinds, N. E. A., 2; Johnston, W. D., Jr., 1; Lemmon, D. M., 1, 2, 3; Locke, A., 1; Lyons, J. B., 1; MacDonald, G. A., 5; Partridge, J. F., Jr., 1; Ransome, A. L., 2; Ryncarson, G. A., 1; Talliaferro, N. L., 3; Wells, F. G., 2; White, D. E., 2; Woodford, A. O., 4.
- Colorado: Burbank, W. S., 1; Dings, M., 2; Wahlstrom, E. E., 2.
- Connecticut, eastern: Keppel, D., 2.
- Dynamic, experiments: Griggs, D. T., 1.
- Georgia: Hunter, C. E., 3; Kesler, T. L., 1.
- Granite and ore: Locke, A., 2; McKinstry, H. E., 2.
- Greenland, Upernivik: Carlson, W. S., 1.
- Idaho batholith: Anderson, A. L., 3, 4.
- Idaho, Yellow Pine area: White, D. E., 1.
- Jamaica, Kingston: Matley, C. A., 1.
- Lead-zinc replacement deposits: Brown, J. S., 1.
- Limestone and dolomite: Bowen, N. L., 2.
- Magmatic differentiation and pressure: Emmons, R. C., 1.
- Maine: Fisher, L. W., 1; Philbrick, S. S., 2.
- Massachusetts, phyllite: Keeler, J., 1.
- Mexico: Flores, T., 1; González, E. M., 1.
- Montana, Highwood Mts.: Larsen, E. S., 4.
- Nevada, Humboldt Range: Kerr, P. F., 4.
- New Brunswick: Cooke, H. C., 1.
- New England: Bain, G. W., 2; Billings, M. P., 1.
- Newfoundland: Howland, A. L., 1.
- Metamorphism—Continued.
- New Hampshire: Billings, K. F. L., 2; Billings, M. P., 2, 4; Chapman, C. A., 1, 2; Goldthwait, R. P., 3; Hadley, J. B., 2; Meyers, T. R., 2; Page, L. R., 2; Quinn, A. W., 2, 3.
- North Carolina: Hunter, C. E., 3; Kesler, T. L., 2; Ward, J. B., 1.
- New York, Willsboro quad.: Buddington, A. F., 1.
- Oklahoma, Wichita Mts.: Merritt, C. A., 3.
- Ontario: Bateman, J. D., 1, 5; Butterfield, H. M., 1; Moore, E. S., 2; Quirk, T. T., 1; Tarr, W. A., 1.
- Oregon: Goodspeed, G. E., 6; Smith, W. D., 4; Wells, F. G., 1, 3.
- Orthomagmatic vs. metasomatic rocks: Goodspeed, G. E., 3.
- Paleozoic, nor. Miss., Ala.: Mellen, F. F., 3.
- Pennsylvania, Philadelphia area: Postel, A. W., 1, 2.
- Quebec: Banfield, A. F., 1; Douglas, G. V., 11; Gunning, H. C., 1; Moorhouse, W. W., 1.
- Retrograde metamorphism: Schwartz, G. M., 3.
- Santo Domingo: Weyl, R., 1.
- Saskatchewan: Furnival, G. M., 1; Howells, W. C., 1.
- Texas, Van Horn area: King, P. B., 2.
- Utah: Eardley, A. J., 1, 2.
- Vermont, Memphremagog quad.: Doll, C. G., 1.
- Virgin Islands, St. Croix: Cedarstrom, D. J., 3.
- Virginia: Bloomer, R. O., 4, 5; Roberts, J. K., 2.
- Washington: Campbell, C. D., 4; Goodspeed, G. E., 5; Krauskopf, K. B., 1, 2; Roberts, F. B., 1.
- Metasomatism.
- Idaho, orbicular rock: Goodspeed, G. E., 2.
- Mexico, Durango: Terrones Langone, A., 1.
- Oregon, Wallowa Mts.: Goodspeed, G. E., 6.
- Orthomagmatic vs. metasomatic rocks: Goodspeed, G. E., 3.
- Saskatchewan, Windrum Lake: Howells, W. C., 1.
- Metavarsicite: McConnell, D., 2.
- Meteorite dust collecting: Buddhue, J. D., 6.
- Meteorites.
- Admire, Kans., pallasite: Buddhue, J. D., 1.
- Aerial concentration of fall: Leonard, F. C., 2.
- Age: Buddhue, J. D., 9.
- Analyses: Henderson, E. P., 2.
- Arizona, nickel iron type: Nininger, H. H., 3.

Meteorites—Continued.

- Bartlett, Tex.: Bullard, F. M., 1.
 Black Moshannon Pk., Pa.: Anonymous, 26.
 Canyon Diablo, Ariz., metal structure: Lord, J. O., 2.
 Chicora, Pa.: Preston, F. W., 1.
 Collecting small particles of: Nininger, H. H., 7.
 Contraterrene: La Paz, L., 4, 5; Nininger, H. H., 8; Wylie, C. C., 1.
 Craters and contraterrene meteorites: La Paz, L., 4.
 Cuero, Tex., stony: Barnes, V. E., 3.
 Density determinations: Foster, J. F. Jr., 1.
 El Burro, Coahuila, Mex.: Henderson, E. P., 4.
 Falls, catalog, Jan. 1939–Oct. 1940: Nininger, A. D., 1.
 Falls, numerical designation: Leonard, F. C., 3.
 Garnett, Kans., aerolite: Nininger, H. H., 9.
 Gas constituents: Buddhue, J. D., 5.
 Glorietta, N. Mex.: Nininger, H. H., 2.
 Goose Lake, Calif.: Leonard, F. C., 1; Linsley, E. G., 1.
 Holbrook, Ariz., aerolites: Leonard, F. C., 5.
 Instrumental search for: La Paz, L., 2.
 Kendleton, Tex.: Fouts, F. F., 1.
 Kimble Co., Tex.: Barnes, V. E., 4.
 Land fms., origin: Perrine, C. D., 1.
 Lubbock, Tex.: Waldschmidt, W. A., 1.
 Luminescence: Buddhue, J. D., 3, 10.
 Meteor Crater, Tex.: Geol. S. A., 1.
 Meteoric dust collecting: Buddhue, J. D., 6.
 Mt. Elden, Ariz., lawrencite: Buddhue, J. D., 2.
 Nickel and cobalt in meteoric iron: Henderson, E. P., 1.
 Nordheim, Tex., iron: Barnes, V. E., 5.
 North America, distribution: La Paz, L., 1.
 Number of: Wilson, B. H., 1.
 Numbering showers of: La Paz, L., 3.
 Odessa, Tex., meteorite: Boon, J. D., 1; Lord, J. O., 2; Sellards, E. H., 5.
 Oklahoma, Chickasha craterlet: Monnig, O. E., 1.
 Research inst., need for: Leonard, F. C., 4; Nininger, H. H., 4.
 Rosamond Dry Lake, Calif., aerolite: Whitney, W. T., 1.
 Rusts: Buddhue, J. D., 4.
 Schertz, Tex., and Canyon Diablo, Ariz., identical: Monnig, O. E., 2.
 Search for, study of: Nininger, H. H., 1.
 Shallowater, Tex.: Foshag, W. F., 3.
 Structure, iron: Lord, J. O., 1.
 Study of: Foshag, W. F., 4.
 Tektites, Tex.: Fenner, C., 1.
 Texas: Barnes, V. E., 2, 6; Boon, J. D., 1; Fenner, C., 1; Geol. S. A., 1.
 Time distribution: Leonard, F. C., 2.

Meteorites—Continued.

- Water-soluble constituents: Buddhue, J. D., 11.
 Waterville, Wash.: McMillan, F. A., 1.
 Mexico
Areas described.
 San Pedro area, Durango: Terrones Langone, A., 1.
Economic geology.
 Bibliography, Hidalgo: Portillo, J. M., 1.
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 Geological investigations, 1935–36: González, E. M., 1.
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 Silver ores, Zacatecas: Bastin, E. S., 3.
 Teziutlan copper-zinc deposit: Edelen, A. W., 1.
Historical geology.
 Alamito coal measures: Keyes, 39.
 Ammonoid fauna, Coahuila: Miller, A. K., 1.
 Baja California, pre-Tert.: Woodford, A. O., 1.
 Bibliography, Hidalgo: Portillo, J. M., 1.
 Cerro Colorado volcano: Wright, H. E., Jr., 1.
 Faunas, Neocomian: Imlay, R. W., 2.
 Fresno dist.: Stone, J. B., 1.
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 Mesozoic paleogeography: Kellum, L. B., 1.
 Mountains east of Saltillo basin: Humphrey, W. E., 1.
 Paragenetic relations, Zacatecas: Bastin, E. S., 3.
 Permian and fauna, Chiapas: Müllerried, F. K. G., 2.
 Quicksilver, Huitzuco: Vaupell, C. W., 1.
 San Luis Potosí: Gálvez, V., 1.
 San Pedro area, Durango: Terrones Langone, A., 1.
 Sierra del Rosario: Kellum, L. B., 2.
 Sierra de Tlahualilo: Robinson, W. I., 1.
 Sierra Madre Occidental: King, R. E., 1.
Mineralogy.
 Bornite-klaprotholite: Krieger, P., 1.
 Calcite crystals, Guanajuato: Toothaker, C. R., 1.
 El Burro, Coahuila meteorite: Henderson, E. P., 4.
 Gems and minerals: Foshag, W. F., 1.
 Geological investigations, 1935–36: González, E. M., 1.
 Gold area, Sonora: Flores, T., 1.
 Jarosite on pyrite ornaments: Pough, F. H., 2.
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Mexico—Continued.

Mineralogy—Continued.

- San Pedro area, Durango: Terrones Langone, A., 1.
 Selenite caves, Naica: Steward, W. O., 1.
 Silver ores, Zacatecas: Bastin, E. S., 3.
 Stephanite morphology: Taylor, E. D., 2.
 Teziutlan copper-zinc deposit: Edelen, A. W., 1.

Paleontology.

- Ammonoids: Miller, A. K., 1, 5.
 Antelope: Furlong, E. L., 1.
 Coragyps: Miller, L. H., 3.
 Faunas, Neocomian: Imlay, R. W., 2.
 Meleagris: Miller, L. H., 1.
 Mountains east of Saltillo basin: Humphrey, W. E., 1.
 Orbitoididae, synopsis: Barker, R. W., 1.
 Pelceypoda, Juras.: Imlay, R. W., 3.
 Permian fauna, Chiapas: Müllerried, F. K. G., 2.
 Polyborus: Howard, H., 1.
 San Pedro area, Durango: Terrones Langone, A., 1.
 Sea-cow: VanderHoof, V. L., 2.
 Sierra del Rosario: Kellum, L. B., 2.
 Stensioina: Cushman, J. A., 4.

Petrology.

- Sand slze, Rio Grande: Rittenhouse, G., 1.
 San Luis Potosí: Gálvez, V., 1.
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Physical geology.

- Baja California, pre-Tert.: Woodford, A. O., 1.
 Caves: Wittich, E. L. M. E., 1.
 Earthquakes: Camp, G. D., 1; Flores, T., 2.
 Fresnillo dist.: Stone, J. B., 1.
 Geological investigations, 1935-36: González, E. M., 1.
 Gold area, Sonora: Flores, T., 1.
 Gulf of California: Anderson, C. A., 5.
 Mesozoic paleogeography: Kellum, L. B., 1.
 Mountains east of Saltillo basin: Humphrey, W. E., 1.
 Popocatepetl: Murillo, G. [Dr. Atl], 1.
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 San Luis Potosí: Gálvez, V., 1.
 San Pedro area, Durango: Terrones Langone, A., 1.
 Sierra del Rosario: Kellum, L. B., 2.
 Sierra de Tlahualilo: Robinson, W. I., 1.
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 Submarine relief, Gulf of Calif.: Shepard, F. P., 9.
 Volcanoes: Müllerried, F. K. G., 1.

Physiographic geology.

- Geological investigations, 1935-36: González, E. M., 1.
 Gold area, Sonora: Flores, T., 1.
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Mexico—Continued.

Physiographic geology—Continued.

- San Pedro area, Durango: Terrones Langone, A., 1.
 Submarine relief, Gulf of Calif.: Shepard, F. P., 9.
Underground water.
 Geological investigations, 1935-36: González, E. M., 1.

Mica.

- Chrome-micas: Whitmore, D. R. E., 1.
 Colorado, Green Ridge: Ives, R. L., 5.
 Hardness, micaceous minerals: Switzer, G., 1.
 Maine, Black Mt.: Verrow, H. J., 3.
 New Hampshire: Meyers, T. R., 1; Olson, J. C., 1.
 North Carolina, Spruce Pine dist.: Maurice, C. S., 1.
 Quebec, Maniwaki: Loranger, R., 1.

Michigan.

Economic geology.

- Buckeye oil field: Addison, C. C., 1.
 Ellsworth Traverse lms. secs.: Bishop, M. S., 1.
 Keweenaw Pt., Lake Superior: Roberts, E., 1.
 Natural gas: Grant, R. P., 1; Newcomb, R. J. B., 1.
 Petroleum: Grant, R. P., 1; Newcomb, R. J. B., 1.
 Shoestring sand gas fields: Ball, M. W., 3.
 Temple oil field: Maebius, J. B., 1.
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 Well logs, oil field data: Oil and Gas Journal, 1.

Historical geology.

- Afton, Onaway dist.: Kelly, W. A., 1.
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 Buckeye oil field: Addison, C. C., 1.
 Devonian fm. names: Cooper, G. A., 4.
 Ellsworth-Traverse lms. sec.: Bishop, M. S., 1.
 Glacial evolution: Bergquist, S. G., 2.
 Lake Superior pre-Cambrian: Tyler, S. A., 1.
 Mississippian, Lower: Hale, L., 1.
 Montmorency Co.: Bergquist, S. G., 1.
 Structure: MacLachlan, D. B., 1.
 Unconformity, pre-Camb.: Pettijohn, 5.
 Walker oil field: Riggs, C. H., 1.

Mineralogy.

- Iron ranges, minerals: Ayres, V. L., 1; Spiroff, K., 1.
 Keweenaw Pt., Lake Superior: Roberts, E., 1.
 Lake Superior pre-Cambrian: Tyler, S. A., 1.
 Minerals, iron area: Ayres, V. L., 1; Spiroff, K., 1.
 Seamanite: McConnell, D., 3.

Paleontology.

- Afton, Onaway dist.: Kelly, W. A., 1.
 Aplodiotus Co.: Hubbs, C. L., 1.

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Paleontology—Continued.

- Fauna, Ord.: Hussey, R. C., 2.
 Forest migration, post-Pleist.: Potzger, J. E., 2.
 Mastodon: MacAlpin, A., 1.

Petrology.

- Ajibik fm., quartz lamellae: Fairbairn, H. W., 4.
 Antrim-Ellsworth-Coldwater shs.: Tarbell, E., 1.
 Keweenaw Pt., Lake Superior: Roberts, E., 1.
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 Sand dunes, grains: Calver, J. L., 1.

Physical geology.

- Ajibik fm., quartz lamellae: Fairbairn, H. W., 4.
 Keweenaw Pt., Lake Superior: Roberts, E., 1.
 Structure: MacLachlan, D. B., 1.
 Ventifacts, Sleeping Bear Pt.: Dow, K. W., 1.
 Weathering: Zirbel, N. N., 1.

Physiographic geology.

- Dunes, Lake Michigan shore: Smith, H. T. U., 3.
 Glacial evolution: Bergquist, S. G., 2.
 Lake Michigan shores: Evans, O. F., 1;
 Smith, H. J. V., 3.
 Layers of plant material in sand dunes: Lutz, H. J., 1.
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Underground water.

- Ground water: McGuinness, C. L., 1.

Microcline, Montana: Larsen, E. S., 5.

Microfilm handling: Smith, H. T. U., 7.

Microлите.

- Crystalline morphology: Donnay, J. D. H., 9.

Maine: Palache, C., 1.

Micromagnetic prospecting: Jenny, W. P., 2.

Micro-mineral mounts: Fox, J. T., 1.

Micropaleontology.

- Invertebrates: Raymond, P. E., 3.
 Past and future: Croneis, C. G., 5.
 Petroleum exploration: Croneis, C. G., 8.
 Soap, preparing samples: Howe, H. V., 2.

Micropertthite, Montana: Larsen, E. S., 5.

Microscopic exam., Permian crude oils: DeFord, R. K., 3.

Migmatite, Maryland: Chapman, R. W., 3.

Military geology, bibliography: Bucher, W. H., 7.

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Mineral grains, abrasion resistance: Thiel, G. A., 1.

Mineral localities: U. S. Bur. Mines, 1.

Mineral resources (general). See also Economic geology under the names of the States.

Alabama: Bowles, E. O., 1.

Alaska: Smith, P. S., 3, 7.

Arizona: Galbraith, F. W., 3d, 6.

Arkansas: Branner, G. C., 1, 2, 3.

British Columbia: Canada G. S., 1; Kindle, E. D., 1.

California: Averill, C. V., 2; Jenkins, O. P., 5, 6; Sampson, R. J., 1.

Canada: Alcock, F. J., 6; Allan, J. A., 3.

Earth and its resources: Finch, V. C., 1.

Georgia: Crickmay, G. W., 3.

Greater Antilles, West Indies: Meyerhoff, 4.

Idaho: Campbell, A., 1, 2; Staley, W. W., 1.

Maine: Trefethen, J. M., 1.

Maryland: Gray, W. B., III, 1; Ostrander, C. W., 1.

Mississippi: Conant, L. C., 1; Foster, V. M., 2; Mellen, F. F., 1, 4.

Nevada, common minerals: Gianella, V. P., 2.

New England: Smith, H. L., 1.

New Hampshire: Bannerman, H. M., 2; White, G. W., 2.

North America, ore dists.: Billingsley, P. R., 1.

North Carolina: Murdock, T. G., 2.

Northwest Territories: Lo. d. C. S., 2.

Nova Scotia: Cameron, A. E., 1, 2.

Oregon: Hodge, E. T., 1; Libbey, F. W., 1; Oregon St. Bd., 1.

Pennsylvania, Fayette Co.: Hickok, W. O., IV, 1.

Puerto Rico: Ray, H. C., 1.

South Dakota: Smith, W. C., 1.

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United States, Northwest: Hodge, E. T., 4.

Southeast: Crickmay, G. W., 4.

Washington: Wash. P. C., 1.

Mineral sequence in hypogene deposits: Hart, L. H., 1.

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Azates: De Ment, J. A., 4.

Albite: Gallagher, D., 1; Wisser, E. H., 3.

Andorite and sundite the same?: Donnay, J. D. H., 8.

Aragonite in pearls: Alexander, A. E., 1.

Asterism in selenite: Rutherford, R. L., 2.

Augite: Haff, J. C., 2.

Beryl: Gary, G. L., 2.

Beryllium: Rowley, E. B., 1.

Biotites: Hall, A. J., 1, 2.

Bleaching clays: Schroter, G. A., 1.

Bonding clays: Grim, R. E., 3.

Bou'angerite: Berry, L. G., 1.

Calcite luminescence: Northup, M. A., 1.

Calcite and dolomite, distinction: Rodgers, J., 1.

Mineralogy (general)—Continued.

- Calcium carbonate deposits marginal to glaciers: Ludlum, J. C., 2.
 Cataclastic gold quartz veins: Goodspeed, G. E., 8.
 Celadonite: Hendricks, S. B., 1.
 Chalcocite problem: Buerger, N. W., 1.
 Classification, $A_2(XO_4)_2 \cdot nH_2O$ types: Wolfe, C. W., 1.
 Clay minerals: Dietz, R. S., 1; Grim, R. E., 7.
 Clay researches: Kelley, W. P., 1.
 Clinobarrandite: McConnell, D., 2.
 Coloring, types in minerals: Kennard, T. G., 1.
 Columbite: Taylor, E. D., 1.
 Copper, concentration, distribution: White, C. H., 2.
 Cordierite: Folinsbee, R. E., 2.
 Cristobalite in clays: Gruner, J. W., 2.
 Crystalline species, definitions: Peacock, M. A., 6.
 Crystallographic procedures: Wolfe, C. W., 2.
 Dana's mineralogy: San Martín y Sáenz, R., 2.
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 Deep-sea cores, North Atlantic: Bramlette, M. N., 1.
 Dichroscope: Thibault, N. W., 1.
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 Epiboulangerite: Berry, L. G., 1.
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 Field identification of minerals: Treasher, R. C., 1.
 Field tests, common metals: Fansett, G. R., 1.
 50 years of mineral collecting: Manchester, J. G., 1.
 Flow direction, mineralizing solutions: Newhouse, W. H., 3.
 Fluorescence: De Ment, J. A., 6; Nichols, J. B., 2.
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 Fluorine: Mansfield, G. R., 5; Shepherd, E. S., 1.
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 General: Fenton, C. L., 1; Geol. S. A., 2; Kraus, E. H., 1.
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 Gold: Gallagher, D., 1; Wisser, E. H., 3.
 Granite and ore: Locke, A., 2.

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 Helium retentivities of minerals: Keevil, N. B., 2.
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 History of development: Longwell, C. R., 6.
 Hornblende: Hafl, J. C., 2.
 Hydrated minerals: Shaub, M. S., 1.
 Hydration: Wilson, B. H., 2.
 Hydrobiotite: Ruthruff, R. F., 1.
 Hypogene deposits, mineral sequence: Bandy, M. C., 1.
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 Illite: Grim, R. E., 4.
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 Jamesonite: Berry, L. G., 2.
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 Maryland: Ostrander, C. W., 1.
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 Nepheline: Winchell, A. N., 2.

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- Opaque minerals, reflectance: Parrish, W., 1.
- Ore bodies, environment: Wisser, E. H., 1.
- Ore-forming fluid, nature: Bichan, W. J., 1; Fenner, C. N., 1.
- Ore deposition, fissure veins: McKinstrey, H. E., 1.
- Ore deposits, origin: Gratton, L. C., 2.
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- Organic tissue, mineralization: Green, J. R., 1.
- Orthopyroxenes: Hess, H. H., 2.
- Paragonite: Schaller, W. T., 1.
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- Petrographic thin-section grinding: Roedder, E., 1.
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- Pollucite: Fleischer, M., 1.
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- Sylvanite: Tunell, G., 1.
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- Tellurides: Galbraith, F. W., 1.
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- Thin-section making: Rankama, K., 1.
- Thunder eggs: Buddhue, J. D., 8; Redd, M. F., 1.

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- Topaz, massive: Stuckey, J. L., 2.
- Ulexite: Murdoch, J., 2.
- Uranium minerals, possible fuels: Dake, H. C., 4.
- Vandiestite: Frondel, C., 4.
- Variscite-metavariscite: McConnell, D., 2.
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- Vein-forming solutions: Garrels, R., 1.
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- Viscosity of shale: Ricker, N., 2.
- Volcanic ash and wood silicification: Murata, K. J., 1, 2.
- West Gulf Coast and Mid-continent area: Twenhofel, W. H., 10.
- Width, albite-twinning lamellae: Donnay, J. D. H., 5.
- Wulff net in mineral determination: Haff, J. C., 1.
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- Ore deposits, origin: Gratton, L. C., 2.
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Minnesota.

Areas described.

Knife Lake area: Gruner, J. W., 3.

Economic geology.

Manganese: Grout, F. F., 3.

Historical geology.

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Knife Lake area: Gruner, J. W., 3.

Lake Superior pre-Camb.: Tyler, S. A., 1.

Paleozoic, S. E.: Thiel, G. A., 2.

Pre-Cambrian and Cambrian: Crowley, A. J., 1.

St. Croixan: Raasch, G. O., 1.

Southeastern Minn.: Stanner, C. H., 10.

Thiel, G. A., 2.

Thomson fm.: Schwartz, G. M., 5.

Minnesota—Continued.

Mineralogy.

- Lake Superior pre-Camb.: Tyler, S. A., 1.
Loess: Needham, C. E., 2.
Manganese: Grout, F. F., 3.

Paleontology.

- Conodonts: Stauffer, C. R., 2.
Ostracoda, Decorah fm.: Kay, G. M., 1.
Plants, Alice mine: Neumann, F. R., 1.
Skolithos: Howell, B. F., 9.
Southeastern Minn.: Stauffer, C. R., 3.

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- Clastic crevice filling: Fackler, W. C., 1.
Diabase sills, Duluth: Schwartz, G. M., 1.

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Ray, L. L., 3.

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Areas described.

- Lauderdale Co.: Foster, V. M., 1.
Tippah Co.: Conant, L. C., 1.

Economic geology.

- Bauxite: Branner, G. C., 4.
Clays, bleaching: Bay, H. X., 2.
Forrest Co. min. res.: Foster, V. M., 2.
Geophysical prosp.: Todd, J. D., 1.
Gulf Coast oil: Malkin, D. S., 1.
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Paleozoic oil poss.: Mellen, F. F., 3.
Petroleum development: Dawson, J., 1;
Hughes, U. B., 2; Kornfeld, J. A., 3.
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Historical geology.

- Chickasawhay marl.: Mansfield, W. C., 1.
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Mississippi—Continued.

Historical geology—Continued.

- Cretaceous fms.: Monroe, W. H., 1;
Stephenson, L. W., 1; Toler, H. N., 1.

Forrest Co.: Foster, V. M., 2.

General: Morse, W. C., 1.

Geophysical prosp. for oil: Todd, J. D., 1.

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Midway-Wilcox delta: Fisk, H. N., 2.

Paleozoic oil poss.: Mellen, F. F., 3.

Petroleum development: Kornfeld, J. A., 3.

Structure: McGlothlin, T., 1.

Structure and oil fields: Todd, J. D., 3.

Subsurface sections: Miss. G. Soc., 4.

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Tippah County: Conant, L. C., 1.

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Wilcox group: Miss. G. Soc., 2.

Yazoo County: Mellen, F. F., 1.

Mineralogy.

- Clays, bleaching: Bay, H. X., 2.
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Gypsum crystals, Vicksburg: Hawkins, A. C., 1.

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- Cretaceous, Upper: Stephenson, L. W., 1.
Cryptochorda: Stenzel, H. B., 4.
Fauna, Pascagoula fm.: Mincher, A. R., 1.

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Lipparia, Eocene: Stenzel, H. G., 4.

Lituola: Mellen, F. F., 2.

Mollusca, Chickasawhay marl: Mansfield, W. C., 1.

Mosasaur tooth: Lougee, R. J., 3.

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Physicographic geology.

Loess: Needham, C. E., 2.

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- Natural gas: Bell, A. H., 1.
- Outlines of geology: Keyes, 106.
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- Porosity, Jackson Co. gas fields: Bartle, G. G., 3.
- Resistivity, gas-producing sand: Heinicke, H. C., 1.
- Historical geology.*
- Atchison shales fm.: Keyes, 144.
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- Cross sec. Ill.-Mo.: Grohskopf, J. G., 1.
- Devonian: Branson, E. B., 10; Keyes, 35, 91.
- Doe Run dolomite: Keyes, 87.
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- Formation names, cent., N. E.: Beebe, B. W., 1.
- Geologic cross sec. Neb.-Ill.: Carmody, R. A., 1.
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- Humansville area: Rhodes, M. L., 1.
- Kansas City group: Keyes, 89.
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- Lansingham ser.: Keyes, 76.
- Lincoln fold: McQueen, H. S., 2.
- Linwood shs.: Keyes, 96.
- Little Saline lm.: Keyes, 28.
- Meramec group: Keyes, 63.
- Mississippian E. int. basin: Weller, J. M., 3.
- Northeastern Missouri-northwestern Illinois: Kans. G. Soc., 2.
- Outlines of geology: Keyes, 106.
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- St. Laurents lms.: Keyes, 93.
- Sub-Bethany unconformity: Keyes, 68.
- Wittenberg shs.: Keyes, 137.
- Mineralogy.*
- Aurichalcite: Keller, W. D., 1.
- Bevier coal, mineral content: Gallagher, R. T., 1.
- Fire clays: Bradley, R. S., 2.
- Missouri—Continued.
- Mineralogy—Continued.*
- Fluorescence: Keith, B. A., 1.
- Geodes: O'Brien, M. L., 1.
- Outlines of geology: Keyes, C. R., 106.
- Phosphorescence: Keith, B. A., 1.
- Paleontology.*
- Allagocrinidae: Moore, R. C., 7.
- Ammonoids: Miller, A. K., 3.
- Conodonts: Branson, E. B., 5, 8, 11; Ellison, S., 1.
- Corals: Ball, J. R., 3.
- Dalmanites: Ball, J. R., 4.
- Early man: Adams, R. M., 1.
- Fauna, Pleist.: Olson, E. C., 1.
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- Leaves, fossil: Duckworth, A. S., 1.
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- Petrology.*
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- Bonnetterre fm. alteration zones: Ohle, E., Jr., 1.
- Physical geology.*
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- Earthquake, Nov. 23, 1939: Birkenbauer, H. F., 2.
- Lincoln fold: McQueen, H. S., 2.
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- Mississippi River, Ozark segment: Flint, R. F., 9.
- New Madrid earthquake craters: Morse, W. C., 2.
- Northeastern Missouri-northwestern Illinois: Kans. G. Soc., 2.
- Outlines of geology: Keyes, 106.
- Seismic history: Heinrich, R. R., 1.
- Seismicity, Miss. Valley: Walter, E. J., 2.
- Sub-Bethany unconformity: Keyes, 58.
- Physiographic geology.*
- Columbia quad.: Moore, G. E., 1.
- Glacial tills, old: Keyes, 109.
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- Nebraskan-Kansas drift boundary: Holmes, C. D., 3.
- Outlines of geology: Keyes, 106.
- Ozark prov. profiles: Cozzens, A. B., 1.
- Underground water.*
- Large springs, Current River Basin: Doll, W. L., 1.
- Models, oil field: Dobbin, C. E., 3.

Molding sand. See also Sand.

- Alabama, Cherokee Co.: Bowles, E. O., 2.
Clay materials: Grim, R. E., 1.
Pennsylvania, Fayette Co.: Hickok, W. O., IV, 1.

Mollusca.

- Alberta, sou.: Russell, L. S., 2.
Antigua: Trechmann, C. T., 1.
California: Keen, A. M., 2; Vokes, H. E., 1.
Cantharus, Calif.: Burch, T., 1.
Chickasawhay marl, Ala.-Miss.: Mansfield, W. C., 1.
Deep-sea cores, Newfoundland to Ireland: Piggot, C. S., 1.
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Florida, Niceville well area: Smith, R. H., 1.
Kansas: Frye, J. C., 8; Goodrich, C., 1.
Maryland: Schoonover, L. M., 2.
Microfossils, economically important: Schenck, H. G., 2.
Mississippi: Stephenson, L. W., 1.
Navarro group, Tex.: Stephenson, L. W., 3.
North America, east coast: Richards, H. G., 3.
Tropical faunal evolution: Rutsch, R. F., 2.
North Carolina, Trent fm.: Richards, H. G., 4.
Oklahoma, Morrow group: Moore, C. A., 1.
Tertiary, Fla.: Smith, M., 1.
Texas: Geol. S. A., 1; Stephenson, L. W., 3.

Molybdenite.

- Arizona, Copper Creek: Kuhn, T. H., 1.
Arkansas: Sleight, V. G., 1.
New Brunswick: Alcock, F. J., 1.
Newfoundland: White, D. E., 3.
Wisconsin: Works, L. P., 1.

Molybdenum.

- British Columbia: Stevenson, J. S., 3.
Texas, Klam prospect: Stenzel, H. B., 7.

Monazite, Manitoba: Muench, O. B., 2.

Monoliths, New Hampshire: Chapman, R. W., 2.

Montana.

Areas described.

- Boxelder laccolith, Bearpaw Mts.: Pecora, W. T., 1.
Granite Co.: Goddard, E. N., 2.

Economic geology.

- Breccia ore body, Highland mine: Newcomb, R. C., 1.
Cut Bank oil fields: Erdmann, C. E., 1.
Great Plains basin: Kornfeld, J. A., 6.
Manganese: Goddard, E. N., 2.
Natural gas: Perry, E. S., 1.
Petroleum: Perry, E. S., 1.
Stillwater complex: Peoples, J. W., 1.
Vermiculite, Libby: Kriegel, W. W., 1.

Montana—Continued.

Historical geology.

- Bearpaw Mts.: Pecora, W. T., 3.
Beartooth Mts.: Vhay, J. S., 1.
Belt series: Gibson, R., 1.
Benton shales: Keyes, 146.
Bighorn Basin: Chamberlin, R. T., 1.
Boxelder laccolith: Pecora, W. T., 1.
Cambrian: Deiss, C. F., 2; Dorf, E., 2.
Freezeout Mt.-Bald Mt. area: Maravich, M. D., 1.
Gallatin Valley: Fix, P. F., 1.
Granite Co.: Goddard, E. N., 2.
Great Plains: Jones, C. T., 1; Kornfeld, J. A., 6.
Highland mine orebody: Newcomb, R. C., 1.
Kootenai Falls and Tunnel No. 8 dam sites: Erdmann, C. E., 2.
Permo-Triassic boundary: Newel, N. D., 2.
Petrographic prov., cent. Mont.: Larsen, E. S., 1.
Phosphoria fm.: Frenzel, H., 1.
Pryor Mts.: Blackstone, D. L., Jr., 1.
Sawtooth Range: Deiss, C. F., 3.
Saypo quad.: Deiss, C. F., 4.
Stillwater complex: Peoples, J. W., 1.
Yellowstone Valley: Horberg, L., 1.

Mineralogy.

- Agates: Murdock, H. E., 1, 2; Reiner, T. A., 1.
Boxelder laccolith, Bearpaw Mts.: Pecora, W. T., 1.
Butte area minerals: Smith, P. A., 1.
Dahlite: Salo, O. J., 1.
Dendrites: Parker, M. C., 2.
Gray quartz breccia ore body, Highland mine: Newcomb, R. C., 1.
Highwood Mts.: Larsen, E. S., 5.
Hydrobiotite: Ruthruff, R. F., 1.
Manganese: Goddard, E. N., 2.
Stauroilite: Parker, M. C., 1.
Stillwater complex: Peoples, J. W., 1.
Vermiculite: Kriegel, W. W., 1; Ruthruff, R. F., 1.

Paleontology.

- Brachiopoda: Bell, W. C., 1.
Charophyta: Peck, R. E., 1.
Davisia: Cooper, K. W., 1.
Domnina: Simpson, G. G., 15.
Fauna, Fort Logan-Deep River fms.: Koerner, H. E., 1.
Foraminifera, correls.: Fox, S. K., Jr., 2.
Fossil imprints, unknown origin: Vokes, H. E., 2.
Fusulinidae: Frenzel, H., 1.
Macrotarsius: Clark, J., 1.
Microfossils, Rocky Mts.: Peck, R. E., 2.
Ostracoda: Peck, R. E., 1; Scott, H. W., 1.
Paleopsephurus: MacAlpin, A., 2.

Petrology.

- Boxelder laccolith, Bearpaw Mts.: Pecora, W. T., 1.
Dolomite orientation: Fairbairn, H. W., 5.

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Petrology—Continued.

Highwood Mts., lg. rocks: Buie, B. F., 1;
Burgess, C. H., 1; Larsen, E. S.,
3, 4, 6.

Iceland spar: Van Amringe, E. V., 2.

Petrographic prov.: Larsen, E. S., 1.

Physical geology.

Bearpaw Mts.: Pecora, W. T., 3.

Beartooth Mts.: Vhay, J. S., 1.

Bighorn Basin: Chamberlin, R. T., 1.

Boxelder laccolith, Bearpaw Mts.: Pecora, W. T., 1.

Freezeout Mt.-Bald Mt. area: Maravich, M. D., 1.

Gallatin Valley: Fix, P. F., 1.

Glacier Nat. Pk.: Bullard, F. M., 3.

Granite Co.: Goddard, E. N., 2.

Highland mine: Newcomb, R. C., 1.

Highwood Mts.: Buie, B. F., 1; Burgess, C. H., 1; Larsen, E. S., 3, 4; Stephenson, E. L., 1.

Kootenai Falls and Tunnel No. 8 dam sites: Erdmann, C. E., 2.

Laccoliths, Highwood Mts.: Stephenson, E. L., 1.

Petrographic prov.: Larsen, E. S., 1.

Pryor Mts.: Blackstone, D. L., Jr., 1.

Sawtooth Range: Deiss, C. F., 3.

Saypo quad.: Deiss, C. F., 4.

Stillwater complex: Peoples, J. W., 1.

Yellowstone Valley: Horberg, L., 1.

Physiographic geology.

Beartooth ice field: Bevan, A. C., 5.

Glacial Lake Missoula ripple marks: Pardee, J. T., 1.

Glacier Nat. Pk.: Bullard, F. M., 3; Dyson, J. L., 1, 3.

Glaciers, recession: Dyson, J. L., 1, 3.

Saypo quad.: Deiss, C. F., 4.

Yellowstone Valley: Horberg, L., 1.

Underground water.

Flathead Lake ground-water levels: Cady, R. C., 2.

Lithia spring, McLeod: Sobotka, H., 1.

Montevallo-Columbiana folio, Ala., no. 226:

Butts, C., 1.

Montgomeryite, Utah: Larsen, E. S., 3d, 1.

Monticellite, Montana: Larsen, E. S., 5.

Montmorillonite: Grim, R. E., 4; Schroter, G. A., 1.

Monzonites.

Montana, Highwood Mts.: Burgess, C. E., 1; Larsen, E. S., 3.

Moraines.

Alaska, Tetling River: Moffit, F. H., 1.

Alberta, age of: Jones, W. D., 1.

Ends of ice sheets: Flint, E. F., 1.

Illinois, Grays Lake quad.: Powers, W. E., 1.

Massachusetts, Cape Cod: Mather, K. F., 1.

Michigan, Montmorency Co.: Bergquist, S. G., 1.

Moraines—Continued.

Nevada, Ruby-East Humboldt Range:

Sharp, R. P., 1.

New Jersey: Lewis, J. V., 1.

Ohio, Cleveland area: Williams, A. B., 1.

Illinoian glacial boundary: Ireland, H. A., 1.

Ontario: Chapman, L. J., 1.

Rocky Mts.: Ray, L. L., 1.

Utah, Wasatch Plateau: Spieker, E. M., 1.

Washington, Snoqualmie-Cedar area: Mackin, J. H., 3.

Wisconsin: Hole, F. D., 1; Mathiesen, J. T., 1.

Mountains. See Orogeny.

Mud balls, armored: Bell, H. S., 1.

Mud cracks.

Overtuned strata: Shenon, P. J., 1.

Pennsylvania, columnar lms.: O'Neill, W. F., 2.

Wisconsin, rectangular: Shrock, R. R., 2.

Mud flows.

Trinidad, Los Bajos fault area: Wilson, C. C., 1.

Washington, mounded fans: Mackin, J. H., 4.

Wyoming, Teton Range: Fryxell, F. M., 2.

Mullite, California: Funk, B. G., 1.

Muscovite.

New York: Frondel, C., 1; Trainer, J. N., 2.

Pennsylvania, with jasper and graphite: Fraser, D. M., 1.

Mussel distribution showing drainage changes: Johnson, D. W., 5.

Mylonite, Ontario: Bateman, J. D., 5.

Mylonization, gneisses, Pa.: Armstrong, E., 2.

Nacolite, California: Foshag, W. F., 2.

National introspection in geology: Woolnough, W. G., 1.

Natrolite, Pennsylvania: Haeberle, W. F., 1.

Natural bridges.

United States Nat. Pks.: Janssen, R. E., 3.

Natural gas.

Alabama, developments: Poor, R. S., 2.

Alberta: Hume, G. S., 4; Mackenzie, W. D. C., 1; Stewart, J. S., 2, 3.

Appalachian area: Appalachian G. S., 1; Lafferty, R. C., Jr., 2; Myers, T. H., 1.

Arkansas: Imlay, R. W., 1; Purzer, J., 1; Trager, H. H., 1.

Barium in Appalachian brines: Heck, E. T., 2.

California: Eaton, J. E., 1; Jenkins, O. P., 4, 5, 6; Johnson, H. R., 1;

Stalder, W., 1; Winterburn, R., 1; Woodring, W. P., 1.

Canada: Alcock, F. J., 4; Edmunds, F. H., 2; Irwin, J. S., 1.

Natural gas—Continued.

- Carbohydrates in fms.: Berl, E., 1.
 Cincinnati Arch area: Weirich, T. E., 1.
 Colorado, Cody area: Pierce, W. G., 1.
 Core studies: Waldschmidt, W. A., 2;
 Anonymous, 18.
 Cross section, Pecos-Winkler Cos., Tex.-
 Roosevelt Co., N. Mex.: Woods, E.
 H., 1.
 Cumberland Plateau poss.: Born, K.
 E., 3.
 Developments: Cohee, G. V., 2.
 Dikes, migration barriers: Filmer,
 E. A., 1.
 Eastern interior basin: Bell, A. H., 1.
 Essentials for pools: Heald, K. C., 1.
 Forest City basin, Kans.-Neb.: McClellan,
 H. W., 1.
 Gases, vertical migration: Nisle, R. G., 1.
 Genesis: McDermott, E., 1.
 Geochemical exploration: Horvitz, L., 4;
 McDermott, E., 1; Pirson, S. J., 1.
 Geochemistry, Appalachian province:
 Price, P. H., 2.
 Geophysical exploration, oil and gas
 areas: Gilchrist, L., 1.
 Granite Ridge pools: Cram, I. H., 1.
 Great Plains basin: Kornfeld, J. A., 6.
 Gulf Coast: Jenny, W. P., 3; Malkin,
 D. S., 1; Oil and Gas J., 2.
 History of explor., Calif.: Stalder, W., 1.
 Hugoton field, Okla., Kans.: Bartle, G.
 G., 1.
 Illinois: Bell, A. H., 2, 3; Cady, G. H.,
 1; Carroll, D. L., 1; Cohee, G. V.,
 3; Payne, J. N., 2; Weller, J. M., 2.
 Indiana: Harris, J. R., 1; Switzer,
 J. E., 1.
 Indications of occurrence: DeGolyer, E.
 L., 1, 2.
 Iowa: Keyes, 42.
 Kansas: Abernathy, G. E., 1; Bartle,
 G. G., 2; Jewett, J. M., 2; Koester,
 E. A., 3; Lee, W., 1; Page, J. H., 1;
 Postley, O. C., 1; Smith, H. T. U.,
 9; Stephenson, E. A., 1; Ver Wiebe,
 W. A., 1.
 Lloydminster fields, Alberta, Saskatche-
 wan: Hume, G. S., 5.
 Louisiana: Halbouty, M. T., 3; Huner,
 J., Jr., 1; Packard, S. A., 1; Purzer,
 J., 1; Tygrett, H. V., 1.
 Michigan: Ball, M. W., 3; Grant, R. P.,
 1; Newcombe, R. J. B., 1.
 Mid-continent fields: Koester, E. A., 1, 2.
 Mississippi: Foster, V. M., 1; Hughes,
 U. B., 2; Mellen, F. F., 4; Todd,
 J. D., 1.
 Mississippian border, E. int. basin: Wel-
 ler, J. M., 3.
 Missouri, Jackson Co.: Bartle, G. G., 3.
 Montana: Perry, E. S., 1.
 New Brunswick: Henderson, J. A. L., 1.
 New Mexico, 1940: Cole, T., 3.
 New York: Filmer, E. A., 1; Gillette,
 T., 1; Richardson, G. B., 2.

Natural gas—Continued.

- North America, Mid-continent area: Dott,
 R. H., 3.
 Mississippian Basin: Kornfeld, J. A.,
 5.
 Northwest Territories: Lord, C. S., 2.
 Ohio: Stout, W. E., 4; Ver Steeg, K., 2;
 Williams, A. B., 1.
 Oklahoma: Bass, N. W., 2; Decker, C. E.,
 6; Dillard, W. R., 1; Frost, V. L., 1;
 Goodrich, H. B., 1; Katz, D. L., 1;
 Kennedy, L. E., 1, 3; Kirk, C. T., 1;
 Oakes, M. C., 1; Paschal, E. A., 1;
 Shea, E. F., 1.
 Ontario: Caley, J. F., 1, 2, 3; Wilson,
 A. E., 2.
 Pennsylvania: Dickey, P. A., 1; Fettke,
 C. R., 1, 2, 3, 4; Hickok, W. O., IV,
 1; Sherrill, R. E., 2.
 Pressure in reservoirs: Stewart, J. S., 1.
 Reserves, recoverable, estimation: Dodge,
 J. F., 1.
 Rocky Mt. area: Dobbin, C. E., 1, 2;
 Krampert, E. W., 4.
 Sandstone core studies: Waldschmidt,
 W. A., 4; Anonymous, 18.
 South Dakota: Gries, J. P., 1; Kans.
 G. S., 1; Wing, M. E., 2.
 Stratigraphic trap exploration: Merritt,
 J. W., 2.
 Structure, Illinois basin: Cohee, G. V.,
 2-a.
 Texas: Casey, S. R., 2; Cheney, M. G., 1;
 Cole, T., 3; Culbertson, J. A., 2;
 Daniel, O. A., 1; Denton, F. R., 1;
 Fisher, B., 1; Geol. S. A., 1; Giesey,
 S. C., 1; Haase, F. M., 1; Herring,
 L. B., 2; Kornfeld, J. A., 2; Korn-
 field, M. M., 3; Martyn, P. F., 1;
 Mills, B., 1; Morgan, A., 1; Mygdal,
 K. A., 1; Poole, J. C., 1, 2; Powers,
 E. H., 1; Sheldon, W., 1; Simpson,
 R. M., 1; Speed, C. D., Jr., 1; Whit-
 aker, H. B., 1.
 Texas guidebook, Gulf Coast fields: Hous-
 ton G. S., 1.
 Texas-Louisiana, developments: Brace,
 O. L., 3.
 Texas-New Mexico: Secor, D. M., 1.
 Unconformities and oil and gas accumu-
 lation: Gardner, F. J., 1.
 United States, S. E., poss.: Poor, R. S., 1.
 United States and Canada, possible fields:
 Howard, W. V., 2.
 West Virginia, Gay-Spencer-Richardson
 trend: Heck, E. T., 5.
 Wildcat drilling, 1940: Lahee, F. H., 4.
 Wyoming: Bertagnolli, A. J., Jr., 1;
 Crawford, J. G., 1; Espach, R. H., 1;
 Krampert, E. W., 1; Taylor, F. B., 1.
 Zones located by mud analysis: Sterrett,
 E., 1.
 Natural gas and nat. defense: McGowen,
 N. C., 1.

Nautiloidea.

- Mixochoanites: Flower, R. H., 6.
 Nomenclature: Teichert, C., 1.
 Pseudorthoceratidae: Miller, A. K., 4.
 United States, Perm.: Unklesbay, A. G., 1.

Nebraska.

Areas described.

- Keith Co.: Wenzel, L. K., 2.

Economic geology.

- Forest City basin oil field: McClellan, H. W., 1.
 Mid-continent oil field: Koester, E. A., 2.
 Petroleum: Kornfeld, J. A., 1; Reed, E. C., 1.
 Well logs, oil field data: Oil and Gas Jour., 1.
 Western, prospecting: Howard, W. V., 4.

Historical geology.

- Atchison shs.: Keyes, 138, 144.
 Box Butte mbr. Sheep Creek fm.: Cady, R. C., 2.
 Correlations: Condra, G. E., 2.
 Dixon chalk: Keyes, 69.
 Forbes lms. title: Keyes, 145.
 Forest City basin oil field: McClellan, H. W., 1.
 Geologic cross section, Neb.-Ill.: Carmody, R. A., 1.
 Great Plains, Tert.-Pleist.: Lugn, A. L., 1.
 Keith Co.: Wenzel, L. K., 2.
 Marsland fm.: Schultz, C. B., 4.
 Nebraskan till: Keyes, 108.
 Nemaha orogeny: Keyes, 99.
 Petroleum: Kornfeld, J. A., 1.
 Petroleum, S. E. Neb.: Reed, E. C., 1.
 Pleistocene history: Lugn, A. L., 3.
 Tertiary prairie changes: Elias, M. K., 1.
 Well logs, oil field data: Oil and Gas Journal, 1.
 Wyoming-Kansas cross sec.: Jones, C. T., 2.

Paleontology.

- Alligator: Schmidt, K. P., 2.
 Daemoneelix, origin: Lugn, A. L., 2.
 Foraminifera corals.: Fox, S. K., Jr., 2.
 Gaviota: Miller, A. H., 3.
 Hemicyon: Colbert, E. H., 4.
 Mesogaulus: Cook, H. J., 1.
 Metechinus: Meade, G. E., 1.
 Oreolagus: McGrew, P. O., 2.
 Parabos: Barbour, E. H., 3.
 Pliaocyon: McGrew, P. O., 1.
 Pliocene-Pleistocene boundary, Great Plains: Schultz, C. B., 3.
 Sphenophalus: Barbour, E. H., 2.

Petrology.

- Concretions, Arikaree fm.: Schultz, C. B., 5.

Physical geology.

- Nemaha orogeny: Keyes, 99.

Physiographic geology.

- Great Plains, Tert.-Pleist. sedimentation; Lugn, A. L., 1.

Nebraska—Continued.

Underground water.

- Ground-water: Cady, R. C., 1; Wenzel, L. K., 1, 2.

Need for field experience: Lahee, F. H., 1.

Need, genetic geol. period: Keyes, 117.

Nelsonite, Virginia: Moore, C. H., Jr., 1.

Neotypes in natural history: Dunbar, C. O., 4.

Nepheline.

General: Winchell, A. N., 2.

Ontario: Fairbairn, H. W., 3.

Nevada.

Areas described.

- Buckskin Peak: Robert, R. J., 2.

Economic geology.

- Barite: Gianella, V. P., 1.
 Churchill Co. mining areas: Vandenberg, W. O., 1.
 Getchell mine: Hardy, R. A., 1.
 Goldbanks mining dist.: Dreyer, R. M., 2.
 Manganese: Roberts, R. J., 3.
 Minerals, common: Gianella, V. P., 2.
 Quicksilver: Dane, C. H., 1; Roberts, R. J., 1, 2; Ross, C. P., 3; Yates, R. G., 1, 2.
 Tin, Lander Co.: Fries, C., Jr., 2.
 Tuff, pinitized: Kerr, P. F., 1.
 Tungsten-manganese, Golconda: Kerr, P. F., 3.

Historical geology.

- Cambrian: Wheeler, H. E., 2, 3.
 Getchell mine: Hardy, R. A., 1.
 Goldbanks mining dist.: Dreyer, R. M., 2.
 Quicksilver areas: Roberts, R. J., 1, 2; Ross, C. P., 3; Yates, R. G., 1, 2.
 Roberts Mts.: Merriam, C. W., 1, 4.
 Ruby-East Humboldt Range: Sharp, R. P., 1.
 Ruby Mts.: Sharp, R. P., 6.
 Tungsten-manganese, Golconda: Kerr, P. F., 3.

Mineralogy.

- Barite: Gianella, V. P., 1.
 Bismoclite: Schaller, W. T., 2.
 Churchill Co. mining areas: Vandenberg, W. O., 1.
 Common minerals: Gianella, V. P., 2.
 Fluorescent minerals: Eaton, A. L., 1.
 Geochemistry, quicksilver: Dreyer, R. M., 1.
 Getchell Mine: Hardy, R. A., 1.
 Goldbanks mining dist.: Dreyer, R. M., 2.
 Minerals, common: Gianella, V. P., 2.
 Opals, Virgin Valley; Dake, H. C., 3.
 Pinite rock, Humboldt Range: Kerr, P. F., 4.
 Propylitization, Comstock Lode: Coats, R. H., 1.
 Quicksilver: Dane, C. H., 1; Dreyer, R. M., 1; Roberts, R. J., 1, 2; Ross, C. P., 3; Yates, R. G., 1, 2.
 Thunder eggs: Dake, H. C., 2.

Nevada—Continued.

Mineralogy—Continued.

- Tin, Lander Co.: Fries, C. Jr., 2.
 Tuff, pinitized: Kerr, P. F., 1.
 Tungsten-manganese, Golconda: Kerr,
 P. F., 3.

Paleontology.

- Ammonoids: Johnston, F. N., 1; Miller,
 A. K., 3.
 Equidae: Henshaw, P. C., 1.
 Esmeralda flora: Axelrod, D. I., 1.
 Floras, Tert.: Axelrod, 2.
 Leptolepis: David, L. R., 4.
 Mammalia, Tert.: Stirton, R. A., 1.
 Miopelodytes: Taylor, E. H., 1.
 Paleozoic fossils: Bridge, J., 1.
 Pelican nesting place: Hall, E. R., 1.
 Receptaculites: Howell, B. F., 7.
 Roberts Mts.: Merriam, C. W., 1.
 Sponges, Ord.: Bassler, R. S., 7.
 Tertiary grasses, herb.: Elias, M. K., 2.
 Trilobites, Ord.: Holliday, S., 1.
 Zittellella: Howell, B. F., 6.

Petrology.

- Bare Mt.: Feitler, S., 1.
 Geochemistry, quicksilver: Dreyer, R. M.,
 1.
 Getchell mine: Hardy, R. A., 1.
 Pinite rock, Humboldt Range: Kerr,
 P. F., 4.
 Propylitization, Comstock Lode: Coats,
 R. R., 1.

Physical geology.

- Bottle Creek dist.: Roberts, R. J., 1.
 Earthquakes: Wood, H. O., 2.
 Getchell mine: Hardy, R. A., 1.
 Muddy Mt. thrusts: Longwell, C. R., 10.
 Pinite rock, Humboldt Range: Kerr,
 P. F., 4.
 Propylitization, Comstock Lode: Coats,
 R. R., 1.
 Roberts Mts.: Merriam, C. W., 1, 4.
 Ruby-East Humboldt Range: Sharp,
 R. P., 1.
 Ruby Mts.: Sharp, R. P., 6.
 Tungsten-manganese, Golconda: Kerr,
 P. F., 3.

Physiographic geology.

- Ruby-East Humboldt Range: Sharp,
 R. P., 1.
 Ruby Mts.: Sharp, R. P., 6.

Underground water.

- Goldbanks mining dist.: Dreyer, R. M.,
 2.
 Underground well leakage, Las Vegas:
 Livingston, P. F., 1.

New Brunswick.

Areas described.

- Jacquet-Tetagouche Rivers: Alcock,
 F. J., 1.

Economic geology.

- Jacques-Tetagouche Rivers area: Alcock,
 F. J., 1.
 Petroleum and gas: Henderson, J. A.
 L., 1.

New Brunswick—Continued.

Historical geology.

- Albert, Albert Co.: Canada G. S., 1.
 Alward Brook area: Canada G. S., 1.
 Hillsborough area: Canada G. S., 1.
 Jacquet River area: Canada G. S., 1.
 Jacquet-Tetagouche Rivers area: Alcock,
 F. J., 1.
 Loch Lomond area: Canada G. S., 1.
 Long Reach area: Alcock, F. J., 5.
 Moncton area: Canada G. S., 1.
 Petitcodiac area: Canada G. S., 1.
 Petroleum, gas areas: Henderson, J. A.
 L., 1.
 St. John area: Canada G. S., 1.
 St. John River Valley: Nylander, O. O.,
 1.
 Salisbury, Westmorland, Albert Cos.:
 Canada G. S., 1.
 Tetagouche River area: Canada G. S., 1.

Mineralogy.

- Salenite, metamorphic origin: Cooke, H.
 C., 1.

Paleontology.

- St. John River Valley: Nylander, O. O., 1.

Petrology.

- Jacquet-Tetagouche Rivers area: Alcock,
 F. J., 1.
 Selenite, origin: Cooke, H. C., 1.

Physical geology.

- Bay of Fundy: Koons, E. D., 1.

Physiographic geology.

- Bay of Fundy: Koons, E. D., 1.

New England.

Economic geology

- Mineral resources: Smith, H. L., 1.

Historical geology.

- Taconic allochthon and Martie thrust:
 Kay, G. M., 4.

Mineralogy.

- Mineral resources: Smith, H. L., 1.

Petrology.

- Granitization: Bain, G. W., 2.
 Paleozoic ig. activity: Billings, M. P., 1.

Physical geology.

- Cause of earthquakes: Perry, E. L., 1.
 Granitization: Bain, G. W., 2.
 Late-glacial uplift: Lougee, R. J., 5.
 Paleozoic ig. activity: Billings, M. P., 1.
 Taconic allochthon and Martie thrust:
 Kay, G. M., 4.

Physiographic geology.

- Buried stagnant ice: Rich, J. L., 2.
 Coastline changing: Shalowitz, A. L., 1.
 Deglaciation: Lougee, R. J., 2.
 Front, retreating ice sheet: Hobbs, W.
 H., 1.
 Hillside channels and Pleist. ice recess-
 sion: Lougee, R. J., 4.
 Late-glacial uplift: Lougee, R. J., 5.

Newfoundland.

Economic geology.

- Copper deposits: Douglas, G. V., 9.
 Molybdenite: White, D. E., 8.

Newfoundland—Continued.

Historical geology—Continued.

- Copper deposits: Douglas, G. V., 9.
- Lowlands, N. W.: Johnson, H., 2.
- Paleozoic, Lower: Johnson, H., 1.
- Recontre area: White, D. E., 3.
- Surface: Twenhofel, W. H., 4.
- Wisconsin glaciation: MacClintock, P., 2.

Mineralogy.

- Albite: Gallagher, D., 1.
- Copper: Douglas, G. V., 9.
- Gold: Gallagher, D., 1.
- Molybdenite: White, D. E., 3.
- Pyrite, oolitic: Jobbins, H. S., 1.
- Specularite-alunite mineralization: Howland, A. L., 1.

Paleontology.

- Fossils, marine Pleist.: Richards, H. G., 2.

- Lowlands, N. W.: Johnson, H., 2.

Physical geology.

- Changes of level, Quat.: Flint, R. F., 3.
- Hickeys Pond area: Howland, A. L., 1.
- Lowlands, N. W.: Johnson, H., 2.
- Recontre area: White, D. E., 3.
- Surface: Twenhofel, W. H., 4.

Physiographic geology.

- Changes of level, Quat.: Flint, R. F., 3.
- Long Range Mts., glaciation: Tanner, V., 1.
- Lowlands, N. W.: Johnson, H., 2.
- Surface: Twenhofel, W. H., 4.
- Wisconsin glaciation: MacClintock, P., 2.

New Hampshire.

Economic geology.

- Diatomaceous earth: McNair, A. H., 2.
- Mica-bearing pegmatites: Olson, J. C., 1.
- Mineral resources: Bannerman, H. M., 2; White, G. W., 2.
- Minerals and mining: Meyers, T. R., 1.
- Peat deposits: White, G. W., 1.

Historical geology.

- Bedrock geology: Billings, M. P., 4.
- Cardigan quad.: Billings, K. F. L., 2.
- Coast, S. E.: Chute, N. E., 2.
- Dover quad.: Meyers, T. R., 2.
- Intrusives, flooded: Kruger, F. C., 1.
- Merrymeeting Lake area: Quinn, A. W., 3.
- Monoliths, White Mts.: Chapman, R. W., 2.
- Mt. Cube area: Hadley, J. B., 2.
- Mount Monadnock: Billings, K. F., 1.
- Mt. Washington area: Billings, M. P., 2.
- Pegmatites, technic signif.: Chapman, C. A., 1.
- Presidential Range: Goldthwait, R. P., 3.
- Winnepesaukee area: Quinn, A. W., 6.

Mineralogy.

- Alstead mine: Bartsch, R. C. B., 1.
- Diatomaceous earth: McNair, A. H., 2.
- Idocrase: Stewart, G. W., 1.
- Mica-bearing pegmatites: Olson, J. C., 1.

New Hampshire—Continued.

Mineralogy—Continued.

- Mineral resources: Bannerman, H. M., 2; White, G. W., 2.
- Minerals and mining: Meyers, T. R., 1.
- Mt. Washington area: Billings, M. P., 2.
- Pegmatites: Chapman, C. A., 1; Verrow, H. J., 2, 4.
- Perthite: Smith, A. P., 1.
- Scapolite: Stewart, G. W., 1.
- Whitlockite: Frondel, C., 6.

Petrology.

- Copple-Crown-Merrymeeting Lake area: Quinn, A. W., 1.
- Dover quad.: Meyers, T. R., 2.
- Igneous rocks, Winnepesaukee area: Quinn, A. W., 2, 5, 6.
- Merrymeeting Lake area ig. rocks: Quinn, A. W., 3.
- Mt. Cube area: Hadley, J. B., 2.
- Mt. Tripyramid rocks: Smith, A. P., 2.
- Mt. Washington area: Billings, M. P., 2.
- Oliverian domes: Chapman, C. A., 2.
- Pawtuckaway Mts.: Roy, C. J., 2.
- Rumney quad.: Page, L. R., 2.
- Winnepesaukee area: Quinn, A. W., 2, 5, 6.

Physical geology.

- Bedrock geology: Billings, M. P., 4.
- Cardigan quad.: Billings, K. F. L., 2.
- Copple-Crown-Merrymeeting Lake area: Quinn, A. W., 1.
- Dover quad.: Meyers, T. R., 2.
- Earthquakes, Dec. 1940: Devlin, J. J., 1; Leet, L. D., 4.
- Intrusives, flooded: Kruger, F. C., 1.
- Merrymeeting Lake area ig. rocks: Quinn, A. W., 3.

Monroe fault: Eric, J. H., 1.

- Mt. Cube area: Hadley, J. B., 2.
- Mount Monadnock: Billings, K. F., 1.
- Mt. Washington area: Billings, M. P., 2.
- Oliverian domes: Chapman, C. A., 2.
- Pegmatites, tectonic signif.: Chapman, C. A., 1.
- Presidential Range: Goldthwait, R. P., 3.
- Rumney quad.: Page, L. R., 2.
- Stone rings on mts.: Denny, C. S., 3.
- Winnepesaukee area: Quinn, A. W., 2, 5, 6.

Physiographic geology.

- Cardigan quad.: Billings, K. F. L., 2.
- Coast, S. E.: Chute, N. E., 2.
- Flood plains of rivers: Goldthwait, R. P., 1.
- Glacial deposits, Canaan area: Denny, C. S., 4.
- Glacial tills: Goldthwait, L., 2.
- Monoliths, White Mts.: Chapman, R. W., 2.
- Presidential Range: Goldthwait, R. P., 2, 3.
- Stone rings on mts.: Denny, C. S., 3.
- Tills, two: Goldthwait, L., 1.

New Jersey.

- Geophysical prosp.: Woollard, G. P., 5.

New Jersey—Continued.

Areas described.

General: Lewis, J. V., 1.

Economic geology.

Delaware Water Gap quad.: Bayley, W. S., 1.

Easton quad.: Bayley, W. S., 1.

General: Lewis, J. V., 1.

Magnetic ores: Fraser, D. M., 4.

Historical geology.

Cape May fm.: MacClintock, P., 3.

Coastal Plain: Johnson, M. E., 1.

Cretaceous shore lines: Chaffee, R. G., 1.

Delaware Water Gap quad.: Bayley, W. S., 1.

Easton quad.: Bayley, W. S., 1.

Eocene correls.: Toulmin, L. D., Jr., 3.

General: Lewis, J. V., 1.

Gravel indications of drainage: Lucke, J. B., 2, 4.

Gravitational and magnetic correls.: Woollard, G. P., 7.

Hardyston fm.: Ludlum, J. C., 1.

Highlands area: Appleby, A. N., 1; Tyler, S. A., 1.

Lincoln Tunnel geology: Fluhr, T. W., 5.

Pre-Cambrian cf. Paleozoic rocks: Broughton, J. G., 1.

Trinity Lake area: Fluhr, T. W., 2.

Vincentown fm.: Greacen, K. F., 1.

Mineralogy.

Cahnite: Palache, C., 7.

Delaware Water Gap quad.: Bayley, W. S., 1.

Easton quad.: Bayley, W. S., 1.

General: Lewis, J. V., 1.

Great North quarry: Sachs, W. P., 1.

Magnetite ores: Fraser, D. M., 4.

Palisade diabase sill: Walker, F., 1.

Pyrite: Giordano, V., 1.

Sterling Hill area: Palache, C., 9.

Stilbite, green: Diegnan, C. F., 1.

Zincite: Frondel, C., 3; Palache, C., 7.

Zircons, Highland area: Tyler, S. A., 1.

Paleontology.

Brachiopoda: Stenzel, H. B., 2.

Fauna, Miocene invertebrate: Richards, H. G., 5.

Flora, Pensauken: Berry, E. W., 1.

General: Lewis, J. V., 1.

Osteopleurus for Coelacanthus newarki Bryant: Schaeffer, B., 2.

Vincentown fm.: Greacen, K. F., 1.

Petrology.

Delaware Water Gap quad.: Bayley, W. S., 1.

Easton quad.: Bayley, W. S., 1.

Hardyston fm.: Ludlum, J. C., 1.

Lincoln Tunnel geology: Fluhr, T. W., 5.

Vincentown fm.: Greacen, K. F., 1.

Weathering of till: MacClintock, P., 1.

Zircons, Highland area: Tyler, S. A., 1.

Physical geology.

Columnar lms. from sun-cracking: Chadwick, G. H., 1.

New Jersey—Continued.

Physical geology.—Continued.

Faulting, Trias.: Hawkins, A. C., 4.

General: Lewis, J. V., 1.

Gneisses, pre-Camb.: Armstrong, E., 1.

Hardyston fm.: Ludlum, J. C., 1.

Highlands area: Appleby, A. N., 1.

Lincoln Tunnel geology: Fluhr, T. W., 5.

Magnetite ores, origin: Fraser, D. M., 4.

Palisade diabase sill: Walker, F., 1.

Pre-Cambrian cf. Paleozoic rocks: Broughton, J. G., 1.

Physiographic geology.

Coastal Plain: Johnson, M. E., 1.

Cretaceous shore lines: Chaffee, R. G., 1.

General: Lewis, J. V., 1.

Gravel indications of drainage: Lucke, J. B., 2, 4.

Hardyston fm.: Ludlum, J. C., 1.

Lincoln Tunnel geology: Fluhr, T. W., 5.

Raritan Valley: Lucke, J. B., 1.

Weathering of till: MacClintock, P., 1.

Ground water.

General: Lewis, J. V., 1.

New Mexico.

Areas described.

Black Range area: Fries, C., Jr., 1.

Northeast: Harley, G. T., 1.

Santa Fe fm. Española Valley: Denny, R. K., 2.

Economic geology.

Carbon dioxide accumulations: Miller, J. C., 1.

Cross sections, Tex.-N. Mex.: Dickey, R. I., 1; Fritz, W. C., 1; Woods, E. H., 1.

Geology, ore deposits: Harley, G. T., 1.

Gold deposits: Wells, E. H., 1.

Helvite-beryllium deposit: Strock, L. W., 2.

Iceland spar: Johnson, J. H., 1.

Manganese: Lasky, S. G., 1.

Natural gas: Cole, T., 3.

Petroleum: Cole, T., 3; Owen, E. W., 1.

Potash area: Spicer, H. C., 2.

Sodium sulphate sources: Lang, W. T. B., 2.

Tin, Black Range: Fries, C., Jr., 1.

West Texas-New Mexico area: DeFord, R. K., 2.

Historical geology.

Barberian ser.: Keyes, 67.

Beartooth ss., Sierra Madre: Keyes, 41.

Berenda lms.: Keyes, 23.

Bernalillian red-beds: Keyes, 20.

Black Range area: Fries, C., Jr., 1.

Caballeros novaculite: Baker, C. L., 1.

Cambrian vs. Ordovician: Keyes, 46.

Cimarron Range: Smith, J. F., Jr., 5.

Cimarron red beds: Keyes, 95.

Cretaceous, San Juan basin: Sears, J. D., 1.

Cross sections, Tex.-N. Mex.: Dickey, R. I., 1; Fritz, W. C., 1; Woods, E. H., 1.

New Mexico—Continued.

Historical geology—Continued.

- General geology: Keyes, 45.
 Geology of ore deposits: Harley, G. T., 1.
 Gym lms.: Keyes, 30.
 Kilbourne hole, origin: Reiche, P., 1.
 Little Florida Mts.: Lasky, S. G., 1.
 Los Pinos Mts.: Stark, J. T., 2.
 Madera lms.: Keyes, 37.
 Magdalene group: Keyes, 31.
 Manzano group: Keyes, 24, 40.
 Mimbres lms.: Keyes, 29.
 Moreno Valley: Ray, L. L., 2.
 Navajo coal measures: Keyes, 90.
 Ouray lms.: Keyes, 38.
 Pennsylvanian correls.: Needham, C. E., 1.
 Percha shales: Keyes, 22.
 Petroleum, nat gas areas: Cole, T., 3.
 Red beds sequence: Keyes, 18.
 Revuelto Cret. fm.: Keyes, 60.
 Sacramento Mts. Missn. fms.: Laudon, L. R., 2, 4.
 San Acacia area: Denny, C. S., 5.
 San Andres group: Lewis, F. E., 1.
 San Augustine plains: Powers, W. E., 2.
 Sandia Cave deposits: Bryan, K., 10.
 Sandia ss.: Keyes, 62.
 Santa Fe fm. Española Valley: Denny, C. S., 2.
 Shandon quartzite: Keyes, 14.
 Sierra San Andrés: Baker, C. L., 2.
 Sly Gap Dev. fm.: Stevenson, F. V., 1.
 Tansill fm.: DeFord, R. K., 5.
 Tertiary, San Acacia area: Denny, C. S., 1.
 Tucumcarian, Cret.: Keyes, 50.
 West Texas-New Mexico area: DeFord, R. K., 2.

Mineralogy.

- Agates: Manning, C. L., 1.
 Geology of ore deposits: Harley, G. T., 1.
 Glorietta meteorite: Nininger, H. H., 2.
 Helvite-beryllium deposit: Strock, L. W., 2.
 Iceland spar: Johnson, J. H., 1, 2; Kelley, V. C., 1.
 Manganese: Lasky, S. G., 1.
 Pecos River sediments: Sidwell, R. G., 3.
 Pojoaque meteorite: Nininger, H. H., 2.
 Santa Fe meteorite: Nininger, H. H., 2.
 Santa Rosa ss.: Sidwell, R. G., 1.
 Sodium sulphate sources: Lang, W. T. B., 2.
 Tin, Black Range: Fries, C., Jr., 1.

Paleontology.

- Brachiopoda: Young, J. A., Jr., 2.
 Cephalopoda: Scott, G., 2; Young, J. A., Jr., 1.
 Cycadeoidea: Wieland, G. R., 1.
 Diadectes, Perm.: Welles, S. P., 1.
 Ectocoonus: Simpson, G. G., 10.
 Fauna megascopic, reefs: Mills, J. M., 1.
 Fossils, Paleozoic: Bridge, J., 1.
 Man, Pleist.: Hibben, F. C., 1, 2.

New Mexico—Continued.

Paleontology—Continued.

- Manzano fauna: Keyes, 26.
 Pennsylvanian correls.: Needham, C. E., 1.
 Sacramento Mts. Missn. fms.: Laudon, L. R., 4.
 Sandia Cave man: Hibben, F. C., 1, 2.
 Scaphopoda, Carb.: Young, J. A., Jr., 1.

Petrology.

- Agate for artifacts: McCann, F. T., 1.
 Artifacts, glassy andesite: Bryan, K., 2.
 Iceland spar: Van Amringe, E. V., 2.
 Pecos River sediments: Sidwell, R. G., 3.
 San Acacia area: Denny, C. S., 1.
 San Augustine plains: Powers, W. E., 2.
 Santa Fe fm. Española Valley: Denny, C. S., 2.
 Santa Rosa ss.: Sidwell, R. G., 1.
 Seven Rivers fm., Rocky Arroyo: Bates, R. L., 2.
 Tansill fm.: DeFord, R. K., 5.
 Tremolite lms.: Patton, L. T., 1.

Physical geology.

- Black Range area: Fries, C., Jr., 1.
 Cerro Colorado volcano: Wright, H. E., Jr., 1.
 Cimarron Range: Smith, J. F., Jr., 5.
 Depth, ground-water solution, Pecos Valley: Morgan, A. M., 1.
 Earth resistivity explor. potash area: Spicer, H. C., 2.
 Fluctuations, ground-water levels during earthquakes: Thomas, H. E., 1.
 General geology: Keyes, 45.
 Geology of ore deposits: Harley, G. T., 1.
 Ice caves: Harrison, C., 1.
 Kilbourne hole, origin: Reiche, P., 1.
 Little Florida Mts.: Lasky, S. G., 1.
 Los Pinos Mts.: Stark, J. T., 2.
 Moreno Valley: Ray, L. L., 2.
 Northeast: Harley, G. T., 1.
 San Acacia area: Denny, C. S., 1, 5.
 San Augustine plains: Powers, W. E., 2.
 Santa Fe fm. Española valley: Denny, C. S., 2.
 Sierra San Andrés: Baker, C. L., 2.

Physiographic geology.

- Caliche karst: Price, W. A., 1.
 Cerro Blanco, southernmost glaciated mt.: Smith, H. T. U., 4.
 Moreno Valley: Ray, L. L., 2.
 San Acacia area: Denny, C. S., 5.
 Sandia Cave deposits: Bryan, K., 10.
 Santa Fe fm. Española Valley: Denny, C. S., 2.
 Sierra San Andrés: Baker, C. L., 2.

Underground water.

- Depth, ground-water solution, Pecos Valley: Morgan, A. M., 1.
 Fluctuations, ground-water levels during earthquakes: Thomas, H. E., 1.
 Ground-water invest., Gila River Valley: Turner, S. F., 1.

New York.

Areas described.

Clyde and Sodus Bay quads.: Gillette, T., 1.

Willsboro quad.: Buddington, A. F., 1.

Economic geology.

Atlas quarry: Zodac, P., 3.

Bradford sand, Third: Dickey, P. A., 2; Krynine, P. D., 2.

Clyde and Sodus Bay quads.: Gillette, T., 1.

Dikes, migration barriers: Filmer, E. A., 1.

Petroleum, nat. gas, Appalachian area: Appalachian G. S., 1.

Saratoga mineral waters: Strock, L. W., 3.

Structure and gas: Richardson, G. B., 2.

Willsboro quad.: Buddington, A. F., 1.

Zinc-lead, Shawangunk Mt.: Ingham, A. I., 1.

Historical geology.

Bradford sand, Third: Dickey, P. A., 2.
Cambro-Ordovician boundary: Wheeler, R. R., 3, 5.

Cedar Valley lms. of Owen: Stainbrook, M. A., 7.

Champlain Valley, Cambro-Ord.: Wheeler, R. R., 5.

Clyde quad.: Gillette, T., 1.

Correlation, metasediments: Miller, R. L., 3.

Delaware aqueduct, geol.: Fluhr, T. W., 6.

Devonian, Catskill front: Cooper, G. A., 5.

Fauna and facies: Payne, T. G., 1.

Formation names: Cooper, G. A., 3, 4.

Gailor lms. quarry: Zodac, P., 4.

Great Catskill delta: Keyes, 25.

Hudson Valley: Bird, P. H., 1.

Kaaterskillian ser. and Devonian: Keyes, 120.

Lincoln Tunnel geol.: Fluhr, T. W., 5.

Queens midtown tunnel: Fluhr, T. W., 1.

Sodus Bay quad.: Gillette, T., 1.

Structure and gas: Richardson, G. B., 2.

Taconic allochthon and Martic thrust: Kay, G. M., 4.

Uraninite, McLear pegmatite age: Shaub, B. M., 1.

Whitestone bridge site: Fluhr, T. W., 4.

Willsboro quad.: Buddington, A. F., 1.

Zinc-lead, Shawangunk Mt.: Ingham, A. I., 1.

Mineralogy.

Atlas quarry: Zodac, P., 3.

Bradford sand, Third: Dickey, P. A., 2; Krynine, P. D., 2.

Bear Mt. minerals: Pegau, A. A., 8.

Emery vein, Peekskill: Zodac, P., 1.

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New York—Continued.

Mineralogy—Continued.

Gailor lms. quarry: Zodac, P., 4.

Lead-zinc replacement deposits: Brown, J. S., 1.

Magnetite: Brown, J. S., 3.

Minerals, Hudson highlands: Bates, J. D., 1.

Pyroaurite group: Frondel, C., 8.

Quartz crystals: Hurley, D., 1.

Saratoga mineral waters: Strock, L. W., 1, 3.

Staurolite, zircon, garnet in muscovite: Frondel, C., 1.

Sjögrenite group: Frondel, C., 8.

Tilly Foster mine: Trainer, J. N., 1, 2.

Tourmaline: Zodac, P., 9.

Uraninite, McLear pegmatite age: Shaub, B. M., 1.

Willemite: Hough, F. H., 1.

Zinc-lead: Ingham, A. I., 1.

Paleontology.

Actinoceroida: Flower, R. H., 2.

Cedar Valley lms. of Owen: Stainbrook, M. A., 7.

Cephalopoda: Flower, R. H., 7.

Clyde quad.: Gillette, T., 1.

Corals, Hamilton rugose: Busch, D. A., 2.

Devonian fauna and facies: Payne, T. G., 1.

Eusthenopteron: Gregory, W. K., 3.

Fish plate, Dev.: Wells, J. W., 7.

Hexactinellida: Caster, K. E., 2.

Machaeracanthus: Wells, J. W., 1.

Nautiloids: Flower, R. H., 6.

Osteolepiscus for Coelacanthus newarki Bryant: Schaeffer, B., 2.

Plants, Dev.: Arnold, C. A., 1.

Saukiinae: Wheeler, R. R., 6.

Scolecodonts: Eller, E. R., 1, 3.

Sodus Bay quad.: Gillette, T., 1.

Sphaerospongia: Wells, J. W., 2.

Sponges, Chazy: Raymond, P. E., 1.

Trilobita: Wheeler, R. R., 3.

Trilobite appendages: Garstang, W., 1.

Willsboro quad.: Buddington, A. F., 1.

Petrology.

Bradford sand, Third: Dickey, P. A., 2; Krynine, P. D., 2.

Cortlandt complex: Shand, S. J., 1.

Delaware aqueduct geol.: Fluhr, T. W., 6.

Lincoln Tunnel geol.: Fluhr, T. W., 5.

Minerals in rocks, Hudson highlands: Bates, J. D., 1.

Paleozoic schists: Bailey, E. B., 1.

Palisade diabase sill: Walker, F., 1.

Palisade dolorite: Bailey, E. B., 1.

Queens midtown tunnel: Fluhr, T. W., 1.

Willsboro quad.: Buddington, A. F., 1.

Physical geology.

Delaware aqueduct geol.: Fluhr, T. W., 6.

Dikes, migration barriers: Filmer, E. A., 1.

Earthquakes: Lynch, W. A., 1.

New York—Continued.

Physical geology—Continued.

- Flotation erosion by ice: Rose, C. W., 1.
 Gaylor lms. quarry: Zodac, P., 4.
 Hudson Valley: Bird, P. H., 1.
 Lincoln Tunnel geol.: Fluhr, T. W., 5.
 Pre-Appalachian diastrophism: Fluhr, T. W., 3.
 Queens midtown tunnel: Fluhr, T. W., 1.
 Regional jointing: Parker, J. M., III, 1.
 Structure, S. W. New York: Richardson, G. B., 2.
 Taconic allochthone and Martic thrust: Kay, G. M., 4.
 Trinity Lake area: Fluhr, T. W., 2.
 Willsboro quad.: Buddington, A. F., 1.
 Zinc-lead, Shawangunk Mt.: Ingham, A. I., 1.

Physiographic geology.

- Appalachian erosion surfaces: Cole, W. S., 1.
 Clyde quad.: Gillette, T., 1.
 Delaware aqueduct geol.: Fluhr, T. W., 6.
 Hudson Valley: Bird, P. H., 1.
 Ice, stagnant, Lake Placid: Gordon, C. E., 1.
 Knickpunkte, Cascadilla Creek: Engeln, O. D. von, 2.
 Land-form regions: Cressey, G. B., 1.
 Lincoln Tunnel geol.: Fluhr, T. W., 5.
 Sodus Bay quad.: Gillette, T., 1.
 Southwestern New York: Hartnagel, C. A., 1.
 Till fabric: Holmes, C. D., 2.
 Willsboro quad.: Buddington, A. F., 1.

Underground water.

- Clyde and Sodus Bay quads.: Dollen, B. H., 1; Gillette, T., 1.
 Delaware aqueduct geol.: Fluhr, T. W., 6.
 Genesee Valley: Hoffmeister, J. E., 2.
 Lloyd sand aquifer, Long I.: Jacob, C. E., 2.
 Recharge of ground water, Long I.: Thompson, D. G., 2.
 Saratoga mineral waters: Strock, L. W., 1, 3.
 Temperature changes, Long I.: Brashears, M. L., Jr., 1.

Nickel.

- Colorado: Goddard, E. N., 1, 4; Anonymous, 23.
 Connecticut, Mt. Prospect deposits: Cameron, E. N., 1.
 Nickel, cobalt in meteoric iron: Henderson, E. P., 1.
 Oregon, Douglas Co.: Pecora, W. T., 2.
 Synthesis of ores: Hawley, J. E., 1.
 Texas: Barnes, V. E., 11.
 Washington: Hobbs, S. W., 1.

Nodules.

- California, thunder eggs: Cutler, V. P., 1.
 Ohio, Greenfield dolomite: Wells, J. W., 6.
 Thunder eggs: Dake, H. C., 2; Redd, M. F., 1.

Nomenclature.

- Agayoina probably Coelenterata: Bermúdez y Hernández, P. J., 1.
 Alamito coal measures, Mex.: Keyes, 39.
 Anartiocrinus for Agassizocrinus of Springer: Kirk, E., 2.
 Anevda for Advena: Palmer, K. E. H. V. W., 1.
 Apache group, Ariz.: Keyes, 49.
 Appalachian erosion surfaces: Cole, W. S., 1.
 Arabellites, preoccupied: Stauffer, C. R., 1.
 Arizona fms.: Keyes, 55.
 Arizona, metamorphics: Keyes, 12.
 Asterigerina tombigbeensis for A. alabamensis: Cushman, J. A., 4.
 Atchison shales: Keyes, 138, 144.
 Aubreyan lms., Ariz.: Keyes, 16.
 Band, layer, kindred terms: Calkins, F. C., 1.
 Barberian, Kans., N. Mex.: Keyes, 48, 67.
 Beartooth ss., N. Mex.: Keyes, 41.
 Belemnosella floweri for Advena floweri: Stenzel, H. B., 11.
 Benton sh., Mont.: Keyes, 146.
 Berenda lms., N. Mex.: Keyes, 23.
 Bernalillan red beds, N. Mex.: Keyes, 20.
 Blastoceras for Blastoceras: Flower, R. H., 3.
 Boon chert, Ark.: Keyes, 68.
 Brevaxina, Perm. Foraminifera: Schenck, H. B., 5.
 Bronson fm., Kans.: Keyes, 112.
 Bronson group, Kans.: Keyes, 92.
 Caliente Range, Calif.: Eaton, J. E., 3.
 Calva Popeonoe, invalid: Popeonoe, W. P., 1.
 Cambridge lms., Pa.: Seaman, D. M., 3.
 Cantharus bensonae for C. cowlitzensis: Turner, F. E., 2.
 Carboniferous period: Keyes, 80.
 Cedar Valley lms., N. Y.: Stainbrook, M. A., 7.
 Chalmersite vs. cubanite: San Martín y Sáenz, R., 3.
 Charette lms., Ill.-Mo.: Keyes, 85, 114.
 Cherokee coal measures, Mo.: Keyes, 113.
 Chetopa sh., Iowa: Keyes, 65.
 Chinle fm., Ariz.: Keyes, 59.
 Cimarron red bed, N. Mex.: Keyes, 95.
 Claiborne vs. Moodys: Harris, G. D., 1.
 Comanche, Tex.: Keyes, 36.
 Conularia, genotype: Sinclair, G. W., 1.
 Coragyps shastensis Miller invalid: Miller, L. H., 3.
 Crocodilian: Mook, C. C., 1.
 Cytheridea (Clithrocytheridea) wilcoxensis: Stephenson, M. B., 2.
 Cytheridea (Haplocytheridea) bastro-pensis for C. subovata: Sutton, A. H., 1.
 Cytheria weichenensis for C. sparrowi: Sutton, A. H., 1.
 Decatur sh., Tenn.: Keyes, 88.

Nomenclature—Continued.

- Derbya arizonensis for D. regularis: McKee, E. D., 4.
 Des Moines coal measures, Ill.: Keyes, 70.
 Devonian stratig. names: Cooper, G. A., 3.
 Dixon chalk, Neb.: Keyes, 69.
 Doe Run dolomite, Mo.: Keyes, 87.
 Dragoon quartzite, Ariz., Tex.: Keyes, 19, 116.
 Elvins fm., Mo.: Keyes, 94.
 English River gritstone, Iowa: Keyes, 15.
 Eupachyrinus, etc., Missn.: Sutton, A. H., 3.
 Faults: Gill, J. E., 1.
 Fenestella Lonsdale vs. Fenestrellina D'Orbigny: Condra, G. E., 4.
 Floras, Tert., U. S.: Brown, R. W., 1.
 Forbes lms.: Keyes, 145.
 Frio: Israelsky, M. C., 1.
 Generic names, corrections in: Knight, J. B., 1.
 Geologic age work, terminology: Keevil, N. B., 3.
 Gove chalk, Kans.: Keyes, 141.
 Greenhorn lms., Colo.: Keyes, 4.
 Gym lms., N. Mex.: Keyes, 30.
 Hannibal shs., Iowa: Keyes, 3.
 Hanoverian ser., Minn., Iowa: Keyes, 78.
 Henrietta coal title: Keyes, 21.
 Heteromorphous varieties: Barroso y Ortega, F., 1.
 Horse teeth: Stirton, R. A., 4.
 Iowa: Keyes, 79.
 Knatterskillian cf. Dev., N. Y.: Keyes, 120.
 Kansas City group: Keyes, 89.
 Kansas, synonymic, bogus titles: Keyes, 135.
 Kinderhook fms., Iowa: Keyes, 2, 130.
 Labette shs., Kans.: Keyes, 104.
 Lanoria quartzite, Tex.: Keyes, 102.
 Lansingham ser., Mo.: Keyes, 76.
 Lesley, J. P.: Whitcomb, L., 1.
 Lesley, Peter: Whitcomb, L., 3.
 Linwood shs., Mo.: Keyes, 96.
 Little Saline lm., Mo.: Keyes, 28.
 Longfellow lms., Ariz.: Keyes, 27.
 McKerney lms., Ill.: Keyes, 7.
 Madera lms., N. Mex.: Keyes, 37.
 Madison ss., Wis.: Keyes, 5.
 Magdalena group, N. Mex.: Keyes, 31.
 Mankato till, Iowa: Keyes, 142.
 Manzano group, N. Mex.: Keyes, 24, 40.
 Maple Mill shs., Iowa: Keyes, 10.
 Marmaton group, Kans.: Jewett, J. M., 3: Keyes, 100.
 Mazatzak qtz., Ariz.: Keyes, 52.
 Memorial sh., Okla.: Dott, R. H., 2.
 Meramec group, Mo., Ill.: Keyes, 63.
 Micrichnus, arthropod: Russell, L. S., 7.
 Mimbres lms., N. Mex.: Keyes, 29.
 Misellina, Perm. Foraminifera: Schenck, H. G., 5.
 Missouri geology: Keyes, 106.
 Missourian series: Keyes, 66.
 Muscatine ss., Iowa: Keyes, 77.

Nomenclature—Continued.

- Myalina, Pelecypoda: Newell, N. D., 3.
 Naiadaites, Pelecypoda: Newell, N. D., 3.
 Nautiloidea: Teichert, C., 1.
 Navajo coal measures, N. Mex.: Keyes, 90.
 Nebraskan till, Neb.: Keyes, 108.
 Neotypes in nat. history: Dunbar, C. O., 4.
 North America, continental Tert.: Wood, H. E., 2d, 1.
 Mid-continent: Dott, R. H., 3.
 Nucula camia for N. amica: Gardner, J. A., 2.
 Oklahoma, Osage, Washington, Nowata Cos.: Oakes, M. C., 3.
 Ore deposits "structural control": Porter, C. A., 1.
 Osage fauna: Keyes, 56.
 Osteoleurus for Coelacanthus newarki Bryant: Schaeffer, B., 2.
 Ouray lms. corals.: Keyes, 38.
 Ozarkian section: Keyes, 75.
 Pahrup ser., Calif.: Hewett, D. F., 1.
 Pawnee lms., Kans.: Keyes, 83.
 Pennsylvanian veld, Kans.: Keyes, 98.
 Percha shs., N. Mex.: Keyes, 22.
 Permian: Schenck, H. G., 8; Tomlinson, C. W., 1.
 Pierre fm., Kans.: Keyes, 103, 143.
 Purgatoire fm., Colo.: Keyes, 57.
 Redwall fm., Ariz.: Keyes, 93.
 Reverse vs. thrust faults: Forrester, J. D., 1.
 Revuelto fm., N. Mex.: Keyes, 60.
 Riley lms., Kans., Tex.: Keyes, 84.
 St. Croixan, Minn.: Raasch, G. O., 1.
 St. Laurents lms., Mo.: Keyes, 93.
 St. Peter is Knox dolomite: Born, K. E., 2.
 Sandia ss., N. Mex.: Keyes, 62.
 Shakopee dolomite, Ill.: Keyes, 119.
 Shandon quartzite, N. Mex.: Keyes, 14.
 Smoky Hill chalk, Kans.: Keyes, 121.
 Stellarocrinus for Whiteocrinus: Strimple, H. L., 3.
 Stratigraphic terminology: Moore, R. C., 12; Schenck, H. G., 7; Tomlinson, C. W., 2.
 Synonymic, bogus title, Kans.: Keyes, 135.
 Taphonomy: Efremov, J. A., 1.
 Texas, stratigraphy: Cheney, M. G., 1; King, P. B., 2; Page, L. R., 1.
 Time and stratigraphic terminology: Sutton, A. H., 2.
 Timpas lms., Colo.: Keyes, 128.
 Tohachi shs., Ariz.: Keyes, 53.
 Tucumcarian ser., N. Mex.: Keyes, 50.
 Types in modern taxonomy: Simpson, G. G., 2.
 Virgil ser., Iowa: Keyes, 61.
 Wassonville lms., Iowa: Keyes, 6.
 West Texas-New Mexico area: DeFord, R. K., 2.
 Wisconsin glacial epoch: Keyes, 122.
 Wiskanian ser., Colo., Kans.: Keyes, 97.

Nomenclature—Continued.

- Wittenberg shs., Ill., Mo.: Keyes, 136, 137.
 Wyoming, Wind River Mts.: Branson, E. B., 7.
 Yaquian, Grand Canyon, Ariz.: Keyes, 51.
 Yegua problem: Stenzel, H. B., 6.
 Yokut ss., Calif.: White, R. T., 1.
 Nontronite, Michigan: Ayres, V. L., 1.
 Normal ice retreat or down-wasting: Johnson, D. W., 1.

North America.

Areas described.

- Structure, ore dists.: Billingsley, P. R., 1.

Economic geology.

- Clays, ceramic: Hueckel, H. J., 1.
 Coals, Carb.: Marshall, C. E., 1.
 Iron deposits, banded, origin: Woolnough, W. G., 2.
 Lead-zinc, Miss. Valley type: Garrels, R. M., 2.
 Manganese: Hendricks, T. A., 5.
 Mid-continent area: Dott, R. H., 3.
 Mississippian basin: Kornfeld, J. A., 5.
 Petroleum possibilities: Howard, W. V., 1.
 Structure, ore dists.: Billingsley, P. R., 1.
 Tungsten, Cordillera: Kerr, P. F., 5.

Historical geology.

- Cambrian, Cordilleran area: Deiss, C., 2.
 Cambrian, around Pacific Ocean: Resser, C. E., 2.
 Cambro-Ordovician correls.: Wheeler, R. R., 2.
 Coal measures: Keyes, 81.
 Cordilleran area, tungsten: Kerr, P. F., 5.
 Geological history: Hussey, R. C., 1.
 Great Plains, post-Paleozoic surface: Perry, E. S., 2.
 Mid-continent area: Dott, R. H., 3.
 Mississippian basin: Kornfeld, J. A., 5.
 Pacific basin structure: Andrews, E. C., 1.
 Permian faunas and facies: Dunbar, C. O., 3.
 Problems: DeFord, R. K., 4.
 Volcanism: Wheeler, H. E., 1.
 Paleocene: Coleman, A. F., 1; Flint, R. F., 8, 12.
 Pre-Cambrian fms., west: Hinds, N. E. A., 3.
 Shore lines: Cooke, C. W., 3; Flint, R. F., 7.
 Structure, ore dists.: Billingsley, P. R., 1.
 Tertiary, continental: Wood, H. E., 2d, 1.
 Correlations, Europe and Nor. Am.: Flugm, G. E., 1.

Mineralogy.

- Heavy minerals, Atlantic Coastal Plain: Dryden, A. L., Jr., 2.
 Hexahedrites: Henderson, E. P., 3.

North America—Continued.

Mineralogy—Continued.

- Iron deposits, banded, origin: Woolnough, W. G., 2.
 Meteorites: La Paz, L., 1; Leonard, F. C., 2; Wilson, B. H., 1.
 Pyroxenes: Hess, H. H., 7.
 Structure, ore dists.: Billingsley, P. R., 1.
 Tungsten: Kerr, P. F., 5.
 Willemite: Pough, F. H., 1.

Paleontology.

- Amphineura, Atlantic Coastal Plain: Berry, C. T., 1.
 Aneurophyton, Dev.: Arnold, C. A., 2.
 Artiodactyla, dispersal: Pilgrim, G. E., 2.
 Atlantic Coast, correls.: MacClintock, P., 5.
 Beavers, cranial foramina: Olson, E. C., 2.
 Birds, fossil, check list: Wetmore, A., 2.
 Brachiopoda, Chazy and related: Ulrich, E. O., 2.
 Campophyllum, revision: Easton, W. H., 3.
 Cambro-Ordovician correls.: Wheeler, R. R., 2.
 Catalogue, Tert. Coastal Plain fossils: Stenzel, H. B., 12.
 Cephalopoda, brevicones: Ulrich, E. O., 3.
 Chione, Tert., west coast: Parker, P. E., 1.
 Dentalium, Nodosaria, Cret.: Cushman, J. A., 4.
 Dichograptids, Camb., Ord.: Bulman, O. M. B., 1.
 Didymograptus protobifidus, Ord.: Decker, C. E., 7.
 Early man: Schultz, C. B., 2; Sellards, E. H., 1.
 Equidae, phylogeny: Stirton, R. A., 2.
 Fauna, movements between Asia and Nor. Am.: Teilhard de Chardin, P., 1.
 Marine, migrations: Hatai, K. M., 1.
 Tropical evolution: Rutsch, R. F., 2.
 Felidae, large, Pleist.: Simpson, G. G., 11.
 Flora, catalogue of Tert.: Dorf, E., 3.
 Coal balls: Darrab, W. C., 4.
 Foraminifera, Atlantic cores: Phleger, F. B., Jr., 2.
 Gastropoda, Paleozoic genotypes: Knight, J. B., 2.
 Lepidocarpaceae: Schopf, J. M., 2.
 Leurocyloceras, revision: Flower, R. H., 5.
 Liriodendron, Miocene: Berry, E. W., 6.
 Man, geol. age: Bryan, K., 9.
 Origin, antiquity: Contreras, F., 1.
 Merycochoerinae, Tert.: Schultz, C. B., 1.
 Metacaularia, sub-Ord.: Sinclair, G. W., 2.
 Micropaleontology of chert: Wetzel, O., 1.
 Mollusca, Pleist., east coast: Richards, H. G., 3.
 Nautilicones, Canadian: Ulrich, E. O., 1.

North America—Continued.

Paleontology—Continued.

- Orbitoididae, synopsis: Barker, R. W., 1.
- Ostracoda, Missn.: Sohn, I. G., 1.
- Pelycosauria, review: Romer, A. S., 1.
- Permian corals: Moore, R. C., 11.
- Permian faunas and facies: Dunbar, C. O., 3.
- Phacopid trilobites: Delo, D. M., 2: Weller, J. M., 4.
- Pleosporgia, Camb.: Okulitch, V. J., 3.
- Pollen profiles, correls.: Smith, P., 1.
- Prehistoric archeology: Stock, C., 1.
- Primates, earliest: Simpson, G. G., 3.
- Psilophyton, Dev.: Arnold, C. A., 2.
- Robulus, Cret.: Cushman, J. A., 4.
- Tertiary, continental: Wood, H. E., 2d, 1.
- Correlations, Europe and Nor. Am.: Pilgrim, G. E., 1.
- Trilobita, phacopid: Delo, D. M., 2; Weller, J. M., 4.
- Trinucleidae, Ord.: Whittington, H. B., 1.
- Turritella, Pacific Coast: Merriam, C. W., 3.
- Uvigerina, Miocene: Cushman, J. A., 4.
- Vertebrata and paleoecology: Camp, C. L., 2.

Petrology.

- Beach sands, Atlantic, Gulf Coasts: Wilbur, R. O., 1.
- Cambrian, Cordilleran area: Deiss, C., 2.
- Coals, Carb.: Marshall, C. E., 1.
- Loess: Keyes, 134.
- Mississippi Valley type lead-zinc: Garrels, R. M., 2.
- Pyroxenes, mafic magmas: Hess, H. H., 7.

Physical geology.

- Calderas, origin: Williams, H., 4.
- Changes in sea level: Gutenberg, B., 2.
- Continental traverses data: Woollard, G. P., 6.
- Deep-focus earthquakes: Gutenberg, B., 4.
- General: Miller, W. J., 4.
- Laramide, later orogeny, Cordillera: Smith, J. F., Jr., 6.
- Mississippi Valley type lead-zinc deposits: Garrels, R. M., 2.
- Pacific basin structure: Andrews, C., 1.
- Pacific region: Byerly, P., 5; Richter, C. F., 1.
- Permian volcanism: Wheeler, H. E., 1.
- Postglacial uplift: Gutenberg, B., 2.
- Pre-Cambrian, western: Hinds, N. E. A., 1, 3.
- Structure, ore dists.: Billingsley, P. R., 1.
- Taonic disturbances: Kay, G. M., 3.
- Trial travel times, N. E. Am.: Leet, L. D., 3.
- Travel times, near earthquakes: Walter, E. J., 3.

North America—Continued.

Physical geology—Continued.

- Triassic troughs: Bain, G. W., 6.
- Tungsten areas, Cordillera: Kerr, P. F., 5.
- Physiographic geology.*
- Atlantic Coast, glacial-marine correls.: MacClintock, P., 5.
- Canada, glacial map: Nichols, D. A., 1.
- Changes in sea level: Gutenberg, B., 2.
- Cordilleran glaciation: Gould, L. M., 1.
- Glacial maps: Flint, R. F., 4, 6, 10; Kay, G. F., 3; Leighton, M. M., 2; Nichols, D. A., 2.
- Glaciers: Matthes, F. E., 3.
- Ice cap, lowland, origin: Keyes, 8.
- Loess: Keyes, 134.
- Mississippi Valley, lower, loess: Russell, R. J., 4.
- Mississippian basin: Kornfeld, J. A., 5.
- Pleistocene: Coleman, A. P., 1; Flint, R. F., 8, 12.
- Pollen profiles, correls., glaciated areas: Smith, P., 1.
- Postglacial uplift: Gutenberg, B., 2.
- Provinces: Atwood, W. W., 1; Howard, A. D., 1.
- Shore lines, Pleist.: Cooke, C. W., 3; Flint, R. F., 7.
- Submarine valleys, nor. Atlantic coast: Bucher, W. H., 1.

North Carolina.

- History of geol. investigs.: Pratt, J. H., 1.

Economic geology.

- Alaskite kaolin: Hunter, C. E., 2.
- Clay, china: Anonymous, 30.
- Flint clays: Burchfiel, B. M., 1.
- Forsterite: Hunter, C. E., 3.
- Manganese: Murdock, T. G., 1.
- National defense resources: Murdock, T. G., 2.
- Soapstone: Stuckey, J. L., 1.
- Spodumene pegmatites: Hess, F. L., 1.
- Tin: Kesler, T. L., 3; Anonymous, 31.

Historical geology.

- Anson Co., Trias.: Berry, E. W., 3.
- Camp Davis Well No. 2: Berry, E. W., 5.
- Clay area: Anonymous, 30.
- Forsterite olivine deposits: Hunter, C. E., 3.
- Hiwassee dam: Ward, J. B., 1.
- Tennessee River area: Eckel, B. C., 1, 2.
- Western N. C.: Crickmay, G. W., 1.

Mineralogy.

- Alaskite kaolin: Hunter, C. E., 2.
- Clay, china: Anonymous, 30.
- Flint clays: Burchfiel, B. M., 1.
- Forsterite: Hunter, C. E., 3.
- Limonite pseudomorphs after pyrite: Neuman, R., 1.
- Mineral localities: Seaman, D. M., 2.
- Pegmatite dikes: Johnson, W. R., 1.

North Carolina—Continued.

Mineralogy—Continued.

- Pegmatites: Hess, F. L., 1; Kesler, T. L., 2.
 Stilbite: Hafer, C., 1.
 Tin: Kesler, T. L., 3.

Paleontology.

- Camp Davis Well No. 2: Berry, E. W., 5.
 Fasciolaria, giant: Smith, B., 1.
 Mollusca, Miocene: Richards, H. G., 4.
 Natural Well area: Huddle, J. W., 1.
 Organic deposits, Cape Fear Penin.: Wells, B. W., 2.
 Peat, Dare Co.: Wells, B. W., 1.
 Spores, Trias.: Berry, E. W., 2.

Petrology.

- Forsterite olivine deposits: Hunter, C. E., 3.
 Pegmatites: Hess, F. L., 1; Kesler, T. L., 2; Maurice, C. S., 1.

Physical geology.

- Earthquake, Dec. 1811: Godbey, A. H., 1.
 Dec. 25, 1940: Stechschulte, V. C., 1.
 Hiwassee dam: Ward, J. B., 1.
 Natural Well area: Huddle, J. W., 1.
 Pegmatites: Kesler, T. L., 2; Maurice, C. S., 1.
 Rock decay, depth, Appalachians: Moneymaker, B. C., 7.
 Tennessee Valley region: Eckel, E. C., 2.
 Western N. C.: Crickmay, G. W., 1.

Physiographic geology.

- Hiwassee dam: Ward, J. B., 1.

North Dakota.

Economic geology.

- Great Plains basin: Kornfeld, J. A., 6.
 Manganese: Anonymous, 24.

Historical geology.

- Cannonball marine, age: Fox, S. K., Jr., 1.
 Deep-well records: Laird, W. M., 3.
 Great Plains: Jones, C. T., 1; Kornfeld, J. A., 6.

Mineralogy.

- Heart Butte squad.: Tisdale, E. E., 1.
 Manganese: Anonymous, 24.

Paleontology.

- Cannonball marine, age by Foraminifera: Fox, S. K., Jr., 1.
 Manlitsha, Oligocene: Simpson, G. G., 13.

Petrology.

- Heart Butte quad.: Tisdale, E. E., 1.

Northwest Territories.

- Mineral industry: Lord, C. S., 2.

Economic geology.

- Ingray Lake area: Lord, C. S., 1.
 Mineral industry: Lord, C. S., 2.
 Negus and Con mines: Ridland, G. C., 1.
 Quyta, Fishing, Prosperous Lakes: Jolliffe, A. W., 1.

Historical geology.

- Beaulieu River area: Canada, G. S., 1.
 Fort Smith dist.: Canada G. S., 1.

Northwest Territories—Continued.

Historical geology—Continued.

- Gordon Lake area: Canada G. S., 1; Henderson, J. F., 1, 2.
 Great Slave-Great Bear Lakes: Canada G. S., 1.
 Ingray Lake area: Lord, C. S., 1.
 MacKay Lake area: Henderson, J. F., 3.
 Mineral industry: Lord, C. S., 2.
 Negus and Con mines: Ridland, G. C., 1.
 Quyta, Fishing, Prosperous Lakes: Jolliffe, A. W., 1.
 Structural features: Wilson, J. T., 1, 2.

Mineralogy.

- Gudmundite: Sampson, E., 1.
 Mineral industry: Lord, C. S., 2.
 Negus and Con mines area: Ridland, G. C., 1.

Physical geology.

- Flow cleavage, folded beds: Swanson, C. O., 2.
 Ingray Lake area: Lord, C. S., 1.
 Negus and Con mines: Ridland, G. C., 1.
 Quyta, Fishing, Prosperous Lakes: Jolliffe, A. W., 1.
 Structural features: Wilson, J. T., 1, 2.

Nova Scotia.

Areas described.

- Pictou coal field: Bell, W. A., 1.

Economic geology.

- Antimony: Douglas, G. V., 3.
 Barytes: Cameron, A. E., 3; Messervey, J. P., 1.
 Coal field, Pictou: Bell, W. A., 1.
 Gold areas: Cameron, H. L., 1; Douglas, G. V., 1, 2, 5, 8, 10.
 Goldenville dist.: Douglas, G. V., 7.
 Guysborough Mines Ltd.: Hedley, P. M., 1.
 Inverness area: MacLean, J. H., 1.
 Manganese: Flynn, E. A., 1.
 Mines annual reports: Cameron, A. E., 1, 2.

- Scheelite: Douglas, G. V., 4.

- Seal Harbor dist.: Douglas, G. V., 6.

Historical geology.

- Corwin gold area: Douglas, G. V., 1.
 Goff area: Douglas, G. V., 4.
 Goldenville dist.: Douglas, G. V., 7.
 Gold fields, S. E.: Douglas, G. V., 2, 5, 8, 10.
 Gore area: Douglas, G. V., 3.
 Inverness area: MacLean, J. H., 1.
 Lake Ainslie area: Messervey, J. P., 1.
 Minas Basin: Flynn, E. A., 1.
 New Glasgow area: Canada G. S., 1.
 Pictou coal field: Bell, W. A., 1.
 Porter gold area: Cameron, H. L., 1.
 Seal Harbor dist.: Douglas, G. V., 6.

Mineralogy.

- Antimony: Douglas, G. V., 3.
 Barytes: Cameron, A. E., 3; Messervey, J. P., 1.
 Gold fields: Cameron, H. L., 1; Douglas, G. V., 1, 2, 5, 8, 10.

Nova Scotia—Continued.

Mineralogy—Continued.

Guysborough Mines Ltd.: Hedley, P. M., 1.

Inverness area: MacLean, J. H., 1.

Manganese: Flynn, A. E., 1.

Mineral localities: Wilson, G. A., 1.

Scheelite: Douglas, G. V., 4.

Seal Harbor dist.: Douglas, G. V., 6.

Paleontology.

Naiadaites, Carb.: Newell, N. D., 3.

Dipnoans, Carb.: Sternberg, R. M., 3.

Pictou coal field: Bell, W. A., 1.

Physical geology.

Bay of Fundy: Koons, E. D., 1.

Coastal subsidence and bogs: Johnson, D. W., 1.

Corwin area: Douglas, G. V., 1.

Goldenville dist.: Douglas, G. V., 7.

Goff area: Douglas, G. V., 4.

Gold districts: Cameron, H. L., 1; Douglas, G. V., 1, 2, 5, 8, 10.

Guysborough Mines Ltd.: Hedley, P. M., 1.

Inverness area: MacLean, J. H., 1.

Lake Charlotte Gold area: Douglas, G. V., 5.

Minas Basin: Flynn, A. E., 1.

Ore shoots, gold fields: Douglas, G. V., 10.

Pictou coal field: Bell, W. A., 1.

Porter area: Cameron, H. L., 1.

Physiographic geology.

Bay of Fundy: Koons, E. D., 1.

Coastal subsidence and bogs: Johnson, D. W., 1.

Glacial deposits: Wickenden, R. T. D., 1.

Lake Charlotte area: Douglas, G. V., 5.

Observational geology, place: Miller, B. L., 1.

Oceanography: Stetson, H. C., 1.

Oceans.

Bartlett Deep, cores: Cushman, J. A., 5.

Clay minerals in sediments: Dietz, R. S., 1.

Continental shelves and slopes: Smith, P. A., 1.

Coring, methods and instruments: Emery, K. O., 4.

Cuba, Jamaica, Foraminifera from: Cushman, J. A., 5.

Crustal adjustments: Anonymous, 12.

Deep-sea cores, North Atlantic: Bradley, W. H., 1, 2; Bramlette, M. N., 1; Lohman, K. E., 2; Piggot, C. S., 1, 2.

Diatomaceae, Atlantic deep-sea cores: Lohman, K. E., 2.

Geophysical study, submarine geol.: Bullard, E. C., 1.

Hail ring to lower ocean level: Fretz, A. H., 1.

Nondepositional environments off Calif. coast: Shepard, F. P., 5, 8.

Oceans—Continued.

North America, Pacific basin: Andrews, E. C., 1.

Oceanography: Stetson, H. C., 1.

Oceanography and submarine geol.: Sverdrup, H. U., 1, 2.

Radio-elements, water and sediments: Urry, W. D., 1.

Radium content, bottom sediments: Sanderman, L. A., 1.

Research on continental borders: Thom, W. T., Jr., 2.

Sediments, radioactivity: Piggot, C. S., 3.

Shiftings, sea floors and coast lines: Bowen, N. L., 5.

Submarine canyons: Smith, P. A., 2.

Submarine geol. and geophys.: Shepard, F. P., 4.

Ochre, Alabama: Bowles, E. O., 2.

Ohio.

Areas described.

Cleveland: Williams, A. B., 1.

Economic geology.

Appalachian geosyncline: Lafferty, R. C., Jr., 2.

Barium in brines: Heck, E. T., 2.

Clay: Stout, W. E., 1.

Cleveland area: Williams, A. B., 1.

Clinton, Berea fms.: Ver Steeg, K., 2.

Marl, tufa bog ore, travertine: Stout, W. E., 2.

Meigs Co.: Stout, W. E., 4.

Natural gas: Appalachian G. S., 1.

Petroleum: Appalachian G. S., 1; O'Rourke, E. V., 1.

Vance well: Stout, W. E., 3.

Historical geology.

Appalachian geosyncline: Lafferty, R. C., Jr., 2.

Cleveland area: Williams, A. B., 1.

Clinton, Berea fms.: Ver Steeg, K., 2.

Devonian stratig. names: Cooper, G. A., 3.

Illinoian glacial boundary: Ireland, H. A., 1.

Meigs Co.: Stout, W. E., 4.

Niagaran strata: Busch, D. A., 1.

Prout lms.-Plum Brook sh.: Stumm, E. C., 1.

Vance well: Stout, W. E., 3.

Mineralogy.

Clay: Stout, W. E., 1.

Geodes: Goodwin, H. R., 1.

Marl, tufa bog ore, travertine: Stout, W. E., 2.

Sphalerite, galena, in sed rocks: Ver Steeg, K., 4.

Vance well: Stout, W. E., 3.

Paleontology.

Anartiocrinus: Kirk, E., 2.

Bone beds: Reutinger, C. A., 1.

Callixylon: Hoskins, J. H., 1; Wells, J. W., 5.

Cleveland area: Williams, A. B., 1.

Ohio—Continued.

Paleontology—Continued.

- Crinoidea: Stewart, G. A., 1; Wells, J. W., 5.
 Fauna, Prout lms.-Plum Brook sh.: Stumm, E. C., 1.
 Foraminifera: Stewart, G. A., 2.
 Gorgonichthys: Dunkle, D. H., 1.
 Niagaran stria: Busch, D. A., 1.
 Peats, Quat.: Wilson, L. R., 4.
 Plants, Mercer coal: Wilson, L. R., 5.
 Tetradium: James, C., 1.

Petrology.

- Berea ss.: Foreman, F., 1.
 Nodules, Greenfield dolomite: Wells, J. W., 6.
 Sands, beach, Lake Erie: Pettijohn, F. J., 6.
 Vance well: Stout, W. E., 3.

Physical geology.

- Appalachian geosyncline: Lafferty, R. C., Jr., 2.
 Earthquakes, March 1937: Westland, A. J., 1.
 Landslide: Mitchell, R. H., 3.
 Slumping and gullying: Mitchell, R. H., 1.

Physiographic geology.

- Appalachian erosion surfaces: Cole, W. S., 1.
 Cleve and area: Williams, A. B., 1.
 Cuyahoga, Rocky Rivers, valleys: Donner, H. F., 1.
 Illinoian glaciation: Hubbard, G. D., 2;
 Ireland, H. A., 1.
 Miami Valley reservoirs: Lane, E. W., 1.
 Muskingum Valley: Frye, J. C., 1; Ireland, H. A., 2.
 Soil-creep and earthflow: Sharpe, C. F. S., 2.

Underground water.

- Ground water, Butler, Hamilton Cos.: Thompson, D. G., 1.
 Cincinnati area: Klaier, F. H., Jr., 1, 2; Anonymous, 23.

Oil. See Petroleum.

- Oil shale. See also Bituminous; Petroleum.
 Texas, San Saba Co.: Plummer, F. B., 5.
 Utah, non-metallies: Gabriel, C., 1.

Oklahoma.

- Biennial report, 1939-40: Dott, R. H., 1.
Areas described.

- Osage County: Kennedy, L. E., 1.
 Washington Co.: Oakes, M. C., 1.

Economic geology.

- Apache oil pool: Arnold, H. B., Jr., 1.
 Billings field: Hoffman, M. G., 2.
 Burbank oil fields: Bass, N. W., 3.
 Copper in red beds: Merritt, C. A., 2.
 Crude oils: Bass, N. W., 1; Neumann, L. M., 1.
 Dolomite, magnesite lms.: Beach, J. O., 1.
 Gulf Coast, oil accumulation: Malkin, D. S., 1.

Oklahoma—Continued.

Economic geology—Continued.

- Hugoton gas field: Bartle, G. G., 1.
 Iron ores: Merritt, C. A., 1.
 Limestone: English, S. G., 1.
 Manganese deposits: Merritt, C. A., 4.
 Mineralizing solutions, Picher dist.: Stoiber, R. E., 2.
 Natural gas: Kennedy, L. E., 3; Shea, E. F., 1.
 Osage County: Dillard, W. R., 1; Goodrich, H. B., 1; Kennedy, L. E., 1; Kirk, C. T., 1.
 Pennsylvanian oil sands: Bartram, J. G., 4; Dawson, E. A., 1; Kennedy, L. E., 3.
 Petroleum, nat. gas: Appalachian G. S., 1; Kennedy, L. E., 3; Shea, E. F., 1.
 Ramsey oil pool: Frost, V. L., 1.
 Simpson group: Decker, C. E., 6.
 Source beds, Oklahoma City pool: Ginter, R. L., 3.
 Tectonic prov., oil, gas fields: Paschal, E. A., 1.
 Townships 23, 24 N., R. 7 E.: Bass, N. W., 2.
 Washington Co.: Oakes, M. C., 1.
 Well logs, oil field data: Oil and Gas Journal, 1.
 Wilcox sand oil recovery: Katz, D. L., 1.

Historical geology.

- Billings field: Hoffman, M. G., 2.
 Burbank oil fields: Bass, N. W., 3.
 Cambrian-Ordovician boundary: Fredrickson, E. A., Jr., 2.
 Canton Reservoir site: Burwell, E. B., Jr., 2.
 Copper in red beds: Merritt, C. A., 2.
 Correlations, Paleozoic, Rocky Mts.-Tex.-Okla.: Osborne, H. W., 1.
 Deepest well, Mid-continent area: Boyd, W. B., 1.
 Gravity anomalies: Hendricks, T. A., 2.
 Manganese deposits: Merritt, C. A., 4.
 Mapping fms. from aerial photographs: Desjardins, L., 1.
 Memorial sh., Penn.: Dott, R. H., 2.

Morrow group, Adair Co.: Moore, C. A., 1.

- Nowata County: Oakes, M. C., 3.
 Osage County: Dillard, W. R., 1; Goodrich, H. B., 1; Kennedy, L. E., 1; Kirk, C. T., 1; Oakes, M. C., 3.
 Ouachita Mts.: Hendricks, T. A., 1, 4.
 Panhandle area: Schoff, S. L., 1.
 Pennsylvanian: Borden, J. L., 1; Oakes, M. C., 4.

- Pennsylvanian sands: Bartram, J. G., 4.
 Petroleum, nat. gas areas: Shea, E. F., 1.
 Ramsey oil pool: Frost, V. L., 1.
 Red beds, color change: Anderson, G. E., 1.

- San Andres group: Clifton, R. L., 1.
 Simpson group: Decker, C. E., 6.
 Structure, S. E. Okla.: Hendricks, T. A., 3.

Oklahoma—Continued.

Historical geology—Continued.

- Tectonic prov., oil, gas fields: Paschal, E. A., 1.
 Townships 23, 24 N., R. 7 E.: Bass, N. W., 2.
 Trilobita, correls.: Frederickson, E. A., Jr., 1.
 Unconformity, Birch Creek lms.: Oakes, M. C., 2.
 Washington Co.: Oakes, M. C., 1, 3.
 Wellington Perm. fm.: Raasch, G. O., 2.
 Wichita Mts.: Cram, I. H., 2; Merritt, C. A., 3.

Mineralogy.

- Copper in red beds: Merritt, C. A., 2.
 Craterlet, Chickasha: Monnig, O. E., 1.
 Iron ores: Merritt, C. A., 1.
 Manganese deposits: Merritt, C. A., 4.
 Mineralizing solutions movement, Picher dist.: Stolber, R. E., 2.
 Washington Co.: Oakes, M. C., 1.

Paleontology.

- Allagecrinidae: Moore, R. C., 7.
 Ammonoids: Miller, A. K., 3.
 Ampyx with spines: Decker, C. E., 1.
 Carnivora: Savage, D. E., 1.
 Conodonts: Branson, E. B., 4, 8, 11; Hass, W. H., 1.
 Corals, Perm.: Moore, R. C., 11.
 Crinoida: Laudon, L. R., 3; Moore, R. C., 2, 4; Strimple, H. L., 1, 2.
 Eumorphocystis: Branson, E. B., 2.
 Fauna, Optima area: Savage, D. E., 1.
 Whitehorse ss.: Newell, N. D., 1.
 Fossils, Paleozoic: Bridge, J., 1.
 Graptolites: Decker, C. E., 5.
 Isotelus: Loeblich, A. R., Jr., 1.
 Lagenidae: Loeblich, A. R., Jr., 3.
 Megalonyx: Stovall, J. W., 1.
 Microcrinoids, blastoids, early stages: Moore, R. C., 8.
 Ostracoda: Harris, R. W., 1.
 Paleozoic fossils: Bridge, J., 1.
 Saurophagus: Ray, G. E., 1.
 Schmidtella: Drake, R. T., 1.
 Sponges, Chazyan: Raymond, P. E., 1.
 Stellarocrinus for Whiteocrinus: Strimple, H. L., 3.
 Trilobita, correls.: Frederickson, E. A., Jr., 1.

Petrology.

- Morrow group, Adair Co.: Moore, C. A., 1.
 Wichita Mts.: Merritt, C. A., 3.

Physical geology.

- Billings field isostasy: Hoffman, M. G., 2.
 Gravity anomalies: Hendricks, T. A., 2.
 Osage Co.: Goodrich, H. B., 1.
 Ouachita Mts.: Hendricks, T. A., 1, 4.
 Red beds: Anderson, G. E., 1.
 Structure, S. E. Okla.: Hendricks, T. A., 3.
 Tectonic provs., oil, gas fields: Paschal, E. A., 1.

Oklahoma—Continued.

Physical geology—Continued.

- Wichita Mts.: Cram, I. H., 2; Merritt, C. A., 3.

Physiographic geology.

- Ozark profiles: Cozzens, A. B., 1.
 Sedimentation, Boomer Creek Reservoir: Harper, H. J., 1.

Underground water.

- Ground water, Panhandle: Schoff, S. L., 1.
 Meade basin solution: Frye, J. C., 5.
 Washington Co.: Oakes, M. C., 1.

Olivine.

- Calif., Sierra Nevada: Webb, R. W., 2.
 Georgia, forsterite deposits: Hunter, C. E., 3.
 Hawaii: MacDonald, G. A., 2; Wentworth, C. K., 4.
 Montana, Highwood Mts.: Larsen, E. S., 5.
 New Hampshire, Mt. Trip pyramid: Smith, A. P., 2.
 North Carolina, forsterite deposits: Hunter, C. E., 3.

Oligocene. See Tertiary.

Ontario.

Areas described.

- Atikokan area: Moore, E. S., 2.
 Brantford area: Caley, J. F., 3.
 Nighthawk Penin.: Byers, A. R., 1.
 Steeprock Lake area: Bartley, M. W., 1.
 Toronto-Hamilton area: Caley, J. F., 1.
 Uchi-Slate Lakes area: Bateman, J. D., 1.

Economic geology.

- Albite: Reid, J. A., 1.
 Atikokan area: Moore, E. S., 2.
 Brantford area: Caley, J. F., 2, 3.
 Cochenour Willans gold mine area: Horwood, H. C., 1.
 Faulting, Wright-Hargreaves mine: Hopkins, H., 1.
 Fluorspar ores: Emery, C. L., 1.
 Geophysical prosp., Steeprock Lake: Brant, A., 1.
 Gold, Nighthawk Penin.: Byers, A. R., 1; Reid, J. A., 1.
 Hematite, Steeprock Lake: Brant, A., 2; Tanton, T. L., 3.
 Hollinger mine, paragenesis: Keys, M. R., 1.
 Iron, Steeprock Lake: Bartley, M. W., 1.
 McIntyre mine, Porcupine area: Langford, G. B., 1.
 Nighthawk Penin. gold mine: Byers, A. R., 2.
 Omega mine, Larder Lake: Jenney, C. P., 1.
 Opkeigen-Fort Hope area: Prest, V. K., 1.
 Preston East Dome gold mine: Butterfield, H. M., 1.
 Rock alteration Uchi gold area: Bateman, J. D., 3.

Ontario—Continued.

Economic geology—Continued.

- Sedimentary basins, oil and gas poss.:
Wilson, A. E., 2.
Steeprock Lake area: Brant, A., 1; Tanton, T. L., 4.
Toronto-Hamilton area: Caley, J. F., 1.
Uchi-Slate Lakes area: Bateman, J. D., 1, 3.

Historical geology.

- Addington Co.: Canada, G. S., 1.
Archean metaconcretions, Thunder Lake: Pettijohn, F. J., 3.
Atikokan area: Moore, E. S., 2.
Birch-Slate Lakes: Bateman, J. D., 4.
Brantford area: Caley, J. F., 2, 3.
Casselman area: Canada G. S., 1.
Cochenour Willans gold mine: Horwood, H. C., 1.
Deep-zone dome-basin structure: Quirke, T. T., 2.
Devonian fm. names: Cooper, G. A., 4.
Eastern Ontario: Chapman, L. J., 1.
Gabbro, Tremere Lake: Satterly, J., 1.
Gold mine, Nighthawk Penin.: Byers, A. R., 1.
Granitization, Killarney: Quirke, T. T., 1.
Hastings Co.: Canada G. S., 1.
J-M Consolidated mine: Bateman, J. C., 2.
Keewatin-Timiskaming unconformity, Red Lake: Horwood, H. C., 2.
Kenora dist.: Canada G. S., 1.
Lennox Co.: Canada G. S., 1.
L'Orignal: Canada G. S., 1.
McIntyre mine, Porcupine area: Langford, G. B., 1.
Madoc Co.: Canada G. S., 1.
Marmora Co.: Canada G. S., 1.
Maxville area: Canada G. S., 1.
Nepean area: Canada G. S., 1.
Northumberland Co.: Canada G. S., 1.
Omega mine, Larder Lake: Jenney, C. P., 1.
Opikolgen-Fort Hope area: Prest, V. K., 1.
Peterborough Co.: Canada G. S., 1.
Port Dover area: Canada G. S., 1.
Pre-Cambrian correls., Sudbury: Cooke, H. C., 2.
Preston East Dome gold mine: Butterfield, H. M., 1.
Quetico area: Canada G. S., 1.
Rainy River dist.: Canada G. S., 1.
Steeprock Lake area: Bartley, M. W., 1; Tanton, T. L., 4.
Structure: MacLachlan, D. B., 1.
Sudbury-Bruce correl.: Fairbairn, H. W., 1.
Sudbury, Bushveld complexes: Moore, E. S., 4.
Toronto-Hamilton area: Caley, J. F., 1; Canada G. S., 1.
Uchi-Slate Lakes area: Bateman, J. D., 1, 3.

Ontario—Continued.

Historical geology—Continued.

- Valleyfield area: Canada G. S., 1.
Watcomb dist.: Canada G. S., 1.
Waterloo area: Canada G. S., 1.
Mineralogy.
Albite: Fairbairn, H. W., 3; Reid, J. A., 1.
Amethyst, Thunder Bay: Corbett, J. F., 1.
Arsenic in well water: Wilson, M. E., 2.
Atikokan area: Moore, E. S., 2.
Batholith, Red Lake: Gummer, W. K., 2.
Chert in Grenville marble: Tarr, W. A., 1.
Cochenour Willans gold mine: Horwood, H. C., 1.
Dyscrasite: Peacock, M. A., 2.
Fluorspar ores: Emery, C. L., 1.
Gabbro, orbicular: Satterly, J., 1.
Geophysical prosp., Steeprock Lake: Brant, A., 1.
Gold: Byers, A. R., 1; Fairbairn, H. W., 3; Reid, J. A., 1.
Hematite: Brant, A., 2; Tanton, T. L., 3.
Hollinger mine: Keys, M. R., 1.
Iron: Bartley, M. W., 1.
J-M Consolidated mine: Bateman, J. D., 2.
Litchfieldite: Fairbairn, H. W., 3.
McIntyre mine: Langford, G. B., 1.
Nepheline: Fairbairn, H. W., 3.
Nighthawk Penin. gold mine: Byers, A. R., 2.
Omega mine: Jenney, C. P., 1.
Opikolgen-Fort Hope area: Prest, V. K., 1.
Pararammelsbergite: Peacock, M. A., 4.
Pyroaurite group: Frondel, C., 8.
Rock alteration, Uchi gold area: Bateman, J. D., 3.
Silver: Peacock, M. A., 2.
Sjögrenite group: Frondel, C., 8.
Steeprock Lake area: Tanton, T. L., 4.
Stephanite: Taylor, E. D., 2.
Tellurides: Galbraith, F. W., 1.
Uchi-Slate Lakes area: Bateman, J. D., 1.

Paleontology.

- Crinoidal marking: Okulitch V. J., 2.
Echinodermata, Rensselaer, L. S., 5.
Metaconularia: Sinclair, G. W., 2.
Peats, Quat.: Wilson, L. R., 4.
Pseudoconularia: Sinclair, G. W., 3.
Toronto-Hamilton area: Caley, J. F., 1.

Petrology.

- Archean metaconcretions: Pettijohn, F. J., 3.
Batholith, Red Lake: Gummer, W. K., 2.
Brantford area: Caley, J. F., 3.
Chert in Grenville marble: Tarr, W. A., 1.
Deep-zone dome-basin structure: Quirke, T. T., 2.

Ontario—Continued.

Petrology—Continued.

Dolomite orientation: Fairbairn, H. W., 5.

Dyscrasite: Peacock, M. A., 2.

Gabbro, orbicular: Satterly, J., 1.

Gneisses, Grenville: Love, W. T., 1.

Gold mine, Nighthawk Penin.: Byers, A. R., 1.

Granitization: Moorhouse, W. W., 2; Quirke, T. T., 1.

Intrusives: Chayes, F., 1; Horwood, H. C., 3.

J-M Consolidated mine: Bateman, J. D., 2.

Mackenzie I. batholith: Gummer, W. K., 1.

Mont. Laurier-Senneterre highway: Faessler, C., 3.

Mylonite, Archean: Bateman, J. D., 5.

Omega mine, Larder Lake: Jenney, C. P., 1.

Steeprock Lake area: Tanton, T. L., 4.

Physical geology.

Atikokan area: Moore, E. S., 2.

Birch-Slate Lakes area: Bateman, J. D., 4.

Border, granite batholith: Gummer, W. K., 2.

Breccia, Sudbury: Fairbairn, H. W., 6.

Chert in Grenville marble: Tarr, W. A., 1.

Cochenour Willans gold mine: Horwood, H. C., 1.

Deep-zone dome-basin structure: Quirke, T. T., 2.

Eastern Ontario: Chapman, L. J., 1.

Faulting, Wright-Hargreaves mine: Hopkins, H., 1.

Fluorspar areas: Emery, C. L., 1.

Gold mine, Nighthawk Penin.: Byers, A. R., 1, 2.

Granitization: Moorhouse, W. W., 2; Quirke, T. T., 1.

Hollinger mine, paragenesis: Keys, M. R., 1.

Intrusives, Bancroft area: Chayes, F., 1.

Red Lake area: Horwood, H. C., 3.

J-M Consolidated mine: Bateman, J. D., 2.

Keewatin-Timiskaming unconformity: Horwood, H. C., 2.

McIntyre mine, Porcupine area: Langford, G. B., 1.

Mackenzie I. batholith: Gummer, W. K., 1.

Mylonite, Archean: Bateman, J. D., 5.

Nighthawk Peninsular gold mine: Byers, A. R., 1, 2.

Omega mine, Larder Lake: Jenney, C. P., 1.

Opikogen-Fort Hope area: Prest, V. K., 1.

Preston East Dome gold mine: Butterfield, H. M., 1.

Ontario—Continued.

Physical geology—Continued.

Rock alteration Uchi gold area: Bateman, J. D., 3.

Steeprock Lake area: Bartley, M. W., 1; Tanton, T. L., 4.

Structure: MacLachlan, D. B., 1.

Sudbury, Bushveld complexes: Moore, E. S., 4.

Uchi-Slate Lakes area: Bateman, J. D., 1.

Physiographic geology.

Atikokan area: Moore, E. S., 2.

Brantford area: Caley, J. F., 3.

Eastern Ontario: Chapman, L. J., 1.

Glaciation, Kenora Dist.: Satterly, J., 1.

Minong beaches, Lake Superior: Stanley, G. M., 1.

Uchi-Slate Lakes area: Bateman, J. D., 1.

Underground water.

Minong beaches, Lake Superior: Stanley, G. M., 1.

Onyx, Colorado: Wahlstrom, E. E., 3.

Oölites: Cloos, E., 3; Krynine, P. D., 8.

Opal.

California: Vonsen, M., 1.

Colorado: Wahlstrom, E. E., 3.

Idaho: Anderson, A. L., 5.

Mineral localities: Hazen, G. D., 1.

Montana: Smith, P. A., 1.

Morrow group, Okla.: Moore, C. A., 1.

Nevada: Dake, H. C., 3.

Oklahoma: Merritt, C. A., 3; Moore, C. A., 1.

Washington: Fernquist, C. O., 1.

Opaque minerals, reflectance: Parrish, W., 1.

Openings along fault: McKechnie, N. M., 1.

Openings, irregular: Newhouse, W. H., 1.

Ophiuroidea, Cret., Tex.: Berry, C. T., 3.

Ordovician. See also Paleontology, Ordovician.

Adirondacks, N. Y.-Vt.: Wheeler, R. R., 3.

Alabama: Adams, G. I., 1; Bowles, E. O., 2; Butts, C., 1; Jones, W. B., 1; Ross, R. M., 1.

Alaska R. R. region: Capps, S. R., 1.

Appalachia: Nelson, W. A., 1.

Appalachian geosyncline, central: Laferty, R. C., Jr., 2.

Arizona: Keyes, 55, 133.

Arkansas: Branner, G. C., 1.

California: Jenkins, O. P., 4, 6; Noble, L. F., 1; Reed, R. D., 3.

Cambrian-Ordovician boundary, Okla.: Frederickson, E. A., Jr., 2.

Canada, Cordilleran geosyncline: Warren, P. S., 1.

Charette lms., Mo.: Keyes, 85.

Chert, Nor. Am.: Wetzel, O., 1.

Cincinnati Arch: Weirich, T. E., 1.

Ordovician—Continued.

- Colorado: Butler, R. D., 1; Kessler, F. C., 1; Singewald, Q. D., 1.
 Cross section Tex.-N. Mex.: Fritz, W. C., 1.
 Forest City basin: McClellan, H. W., 1.
 Great Plains basin: Kornfeld, J. A., 6.
 Illinois: Cady, G. H., 1; Cohee, G. V., 3, 4; Templeton, J. S., 1; Weller, J. M., 1, 2.
 Iowa: Cline, L. M., 1; Keyes, 79; Wood, L. W., 1.
 Kansas: Abernathy, G. E., 1, 3; Jewett, J. M., 2, 4; Kornfeld, J. A., 4; Paddelford, J. T., 1; Postley, O. C., 1; Anonymous, 20.
 Kentucky, Big Clifty quad.: Stouder, R. E., 1.
 Limestones, Va., Tenn.: Prouty, C. E., 1.
 Maine: Fisher, L. W., 1; Twenhofel, W. H., 5; White, W. S., 2.
 Marctic overthrust, Md.-Pa.: Cloos, E., 4.
 Massachusetts, Blue Hills quad.: Chute, N. E., 1.
 Mexico, Sierra Madre Occidental: King, R. E., 1.
 Minnesota: Stauffer, C. R., 3; Thiel, G. A., 2.
 Missouri: Keyes, 82; 106; McQueen, H. S., 2.
 Missouri-Illinois sec.: Kans. G. S., 2.
 Montana, Pryor Mts.: Blackstone, D. L., Jr., 1.
 Nevada: Merriam, C. W., 1, 4; Sharp, R. P., 6.
 New Brunswick: Alcock, F. J., 1.
 Newfoundland: Johnson, H., 1, 2.
 New Hampshire: Billings, M. P., 2, 4; Chapman, C. A., 2; Hadley, J. B., 2.
 New Jersey: Broughton, J. G., 1; Lewis, J. V., 1; Ludlum, J. C., 1.
 New Mexico: Keyes, 46; Laudon, L. R., 4.
 New York: Bird, P. H., 1; Buddington, A. F., 1; Fluhr, T. W., 2, 6; Gillette, T., 1; Richardson, G. B., 2; Wheeler, R. R., 5.
 North America, E., correls.: Wheeler, R. R., 2.
 Mid-continent area: Dott, R. H., 3.
 Ore dists.: Billingsley, P. R., 1.
 Taconic disturbances: Kay, G. M., 3.
 North Dakota, deep-well records: Laird, W. M., 3.
 Northwest Territories: Lord, C. S., 2; Ridland, G. C., 1.
 Nova Scotia: Bell, W. A., 1.
 Ohio, Vance well: Stout, W. E., 3.
 Oklahoma: Bass, N. W., 2; Cram, I. H., 2; Decker, C. E., 6; Dillard, W. R., 1; Frederickson, E. A., Jr., 2; Frost, V. L., 1; Goodrich, H. B., 1; Kennedy, L. E., 1; Kirk, C. T., 1; Oakes, M. C., 1; Paschal, E. A., 1.
 Ontario area: Caley, J. F., 1, 3; Chapman, L. J., 1.

Ordovician—Continued.

- Paleozoic oil poss., Miss., Ala.: Mellen, F. F., 3.
 Pennsylvania: Cleaves, A. B., 1; Craig, L. C., 1; Fettke, C. R., 4; Hickok, W. O., IV, 1; Kay, G. M., 6; Krynine, P. D., 9, 10; Lohman, S. W., 4; Tuttle, O. F., 1; Willard, B., 3, 4, 5.
 Quebec: Douglas, G. V., 11; Faessler, C., 2; Jones, I. W., 1; Leverdière, J.-W., 1.
 Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
 St. John River Valley: Nylander, O. O., 1.
 South Dakota: Gries, J. P., 1; Kans. G. S., 1; Smith, W. C., 1.
 Taconic allochthone and Martic thrust: Kay, G. M., 4.
 Tennessee: Born, K. E., 2; Eckel, E. C., 3; Fox, P. P., 1; Laurence, R. A., 1; McGavock, C. B., Jr., 1; Martin, G. C., Jr., 1; Whitlatch, G. I., 1; Wilson, C. W., Jr., 1.
 Tennessee Valley region: Eckel, E. C., 2.
 Texas: Baker, C. L., 3; Bridge, J., 2; Cheney, M. G., 1; Clark, G. C., 1; Cole, T., 1; Geol. S. A., 1; Gill, J. P., 1; Hendricks, L., 1, 2; Keyes, 64; King, P. B., 2; Maxwell, R. A., 1; Nelson, L. A., 1; North Tex., G. S., 1; Powers, E. H., 1; Ross, C. P., 4; Sheldon, W., 1.
 Trilobita correls.: Frederickson, E. A., Jr., 1.
 United States, sou.: Mansfield, G. R., 2.
 Utah: Wasatch Mts.: Williams, N. C., 1.
 Vermont: Cady, W. M., 1; Currier, L. W., 2; Doll, C. G., 1; Hawkes, H. E., Jr., 1.
 Virginia: Cooper, B. N., 1, 2, 3; Edmundson, R. S., 1, 3, 4; Roberts, J. K., 2.
 West Texas-New Mexico area: DeFord, R. K., 2.
 Wyoming: Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Rouse, J. T., 1.
 Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.
 Ore bodies, environment: Wissler, E. H., 1.
 Ore deposits, origin. For ore deposits in general see Economic geology (general).
 Alabama, barite areas: Adams, G. I., 1.
 Albite and gold: Bruce, E. L., 1; Gallagher, D., 1; Wissler, E. H., 3.
 Applied geology: Anderson, J. C., 1.
 Arizona: Gully, J., 1; Kuhn, T. H., 1; Mills, H. R., 1.
 British Columbia: Billingsley, P. R., 3; Lang, A. H., 1; Smith, A., 1; Stevenson, J. S., 4.

Ore deposits, origin—Continued.

- California: Allen, J. E., 3; Erwin, H. D., 1; Jenkins, O. P., 6; Johnston, W. D., Jr., 1; Lemmon, D. M., 1, 2, 3; Partridge, J. F., Jr., 1; Prout, J. W., Jr., 1; Ransome, A. L., 2; Ross, C. P., 1; Rynearson, G. A., 1; Seager, G. F., 1; Wells, F. G., 2; White, D. E., 2.
- Canada, pyrite, gold deposits: Auger, P. E., 1.
- Canadian shield: Moore, E. S., 3.
- Chromite: Lemmon, D. M., 3; Peoples, J. W., 1; Wells, F. G., 5.
- Colorado: Burbank, W. S., 1, 3; Butler, R. D., 1, 2; Chapman, E. P., 1; Galbraith, F. W., 5; Goddard, E. N., 1; Lovering, T. S., 1, 2; McKenna, J. W., 1; Singewald, Q. D., 1; Wahlstrom, E. E., 1.
- Connecticut, Mt. Prospect deposits: Cameron, E. N., 1.
- Copper, concentration and distribution: White, C. H., 2.
- Copper, Idaho: Anderson, A. L., 6.
- Delaware Water Gap and Easton quads, Pa.-N. J.: Bayley, W. S., 1.
- Dynamic ore control: Wisser, E. H., 2.
- Galena lms., Wis.-Ill.: Sardeson, F. W., 1.
- General: Butler, B. S., 1; Geol. S. A., 2; Schmitt, H. A., 2.
- Georgia, Cartersville area: Kesler, T. L., 1.
- Gold deposition, alkaline theory: Smith, F. G., 3.
- Granite and ore: Locke, A., 2.
- Hypogene deposits, mineral sequence: Bandy, M. C., 1.
- Idaho: Anderson, A. L., 1, 2, 5, 6; Anderson, R. J., 1; McConnel, R. H., 1; White, D. E., 1; Whiting, K., 1; Willard, M. E., 1.
- Iron deposits, banded: Woolnough, W. G., 2.
- Iron-nickel synthesis: Hawley, J. E., 1.
- Lead-zinc: Brown, J. S., 1; Smith, F. G., 2.
- Magnetite in sulphide ores: Schwartz, G. M., 2, 4.
- Manitoba, Rice Lake-Beresford Lake area: Stockwell, C. H., 1.
- Mexico: Bastin, E. S., 3; Edelen, A. W., 1; Flores, T., 1; González, E. M., 1; Krieger, P., 1; Terrones Langone, A., 1; Vaupell, C. W., 1.
- Mineral sequence, hypogene deposits: Hart, L. H., 1.
- Mississippi Valley type lead-zinc deposits: Garrels, R. M., 2.
- Missouri, Ozark lead mine: Ohle, E., Jr., 1.
- Montana: Goddard, E. N., 2; Newcomb, R. C., 1.
- Nevada: Dreyer, R. M., 2; Hardy, R. A., 1; Kerr, P. F., 3; Roberts, R. J., 1.

Ore deposits, origin—Continued.

- Newfoundland, Rencontre area: White, D. E., 3.
- New Jersey magnetites: Fraser, D. M., 4.
- New Mexico: Fries, C., Jr., 1; Lasky, S. G., 1; Strock, L. W., 2.
- New York, Shawangunk Mt.: Ingham, A. L., 1.
- North America, ore dists.: Billingsley, P. R., 1.
- Northwest Territories, Negus, Con mines: Ridland, G. C., 1.
- Nova Scotia: Cameron, H. L., 1; Douglas, G. V., 3, 4, 6, 7, 8, 10; Messervey, J. P., 1.
- Ontario: Bartley, M. W., 1; Bateman, J. D., 2, 3; Butterfield, H. M., 1; Byers, A. R., 1, 2; Emery, C. L., 1; Hopkins, H., 1; Horwood, H. C., 1; Jenney, C. P., 1; Keys, M. R., 1; Langford, G. B., 1; Tanton, T. L., 3.
- Ore bodies, environment: Wisser, E. H., 1.
- Ore deposition, fissure veins: McKinstry, H. E., 1.
- Ore deposits: Graton, L. C., 2, 3; Porter, C. A., 1.
- Ore-forming fluid, nature: Bichan, W. J., 1; Fenner, C. N., 1; Graton, L. C., 1; Ingerson, F. E., 2.
- Oregon, Cornucopia: Goodspeed, G. E., 4.
- Picher dist., Kans.-Okla.: Stoiber, R. E., 2.
- Pre-Cambrian, W. Nor. Am.: Hinds, N. E. A., 1.
- Quebec: Banfield, A. F., 1; Gunning, H. C., 1; McMurchy, R. C., 1; Moorhouse, W. W., 1; Wilson, M. E., 3.
- South Dakota: Gries, J. P., 2; Smith, W. C., 1.
- Sphalerite, minor minerals: Stoiber, R. E., 1.
- Structural control, igneous rocks: Loughlin, G. F., 3.
- System $\text{CO}_2\text{—H}_2\text{O—K}_2\text{O—SiO}_2$, vapor-liquid phases: Morey, G. W., 1.
- Temperature, depth, hypogene deposits: Dougherty, E. Y., 1.
- Texas: McSpadden, W., 1; Ross, C. P., 1.
- Vein-forming solutions: Garrels, R., 1; Roberts, H. M., 1.
- Virginia, titanium deposits: Ross, C. S., 1.
- Washington: Hobbs, S. W., 1; Wash. Plan. C., 1.
- Wyoming: Diemer, R. A., 1; Stephenson, E. L., 2.
- Ore-forming fluid, nature: Bichan, W. J., 1; Fenner, C. N., 1; Graton, L. C., 1; Ingerson, F. E., 2.
- Ore locaters, possibilities: Jensen, W. J., 1.

Oregon.

Oregon scenery: Smith, W. D., 5.
2d bienn. report, 1939-40: Strayer, W. H., 1.

Areas described.

Briggs Creek area: Wells, F. G., 3.
General: Oregon St. Bd., 1.
Grant Co.: Thayer, T. P., 1.
Sourdough or Baldface area: Wells, F. G., 3.
Wallowa Mts.: Smith, W. D., 4.

Economic geology.

Chromite: Allen, J. E., 1; Thayer, T. P., 1, 2; Wells, F. G., 3.
General: Oregon St. Bd., 1.
Gold quartz veins, Cornucopia: Goodspeed, G. E., 4.
Metal mines handbook: Oregon Dept. Geol., 1, 2.
Mineral resources: Hodge, E. T., 1; Libbey, F. W., 1.
Mother Lode prov.: Averill, C. V., 1.
Nickel, Douglas Co.: Pecora, W. T., 2.
Pumice and pumicite: Adams, J. A., 1.
Quicksilver: Ross, C. P., 3, 5; Staples, L. W., 2; Wilkinson, W. D., 2; Yates, R. G., 1, 2.
Round Mt. quad.: Wilkinson, W. D., 1.

Historical geology.

Butte quad. geol. map: Wilkinson, W. D., 3.
Cascades: Hodge, E. T., 5.
Chromite deposits: Allen, J. E., 1; Thayer, T. P., 1; Wells, F. G., 3.
Cornucopia area: Goodspeed, G. E., 4.
Correlations, Jurassic: Taliaferro, N. L., 4.
Pre-Tertiary, Oreg.-Philippines: Smith, W. D., 1.

Crater Lake: Williams, H., 2.

Cretaceous: Anderson, F. M., 1.

Dallas fm.: Chaney, R. W., 4.
General: Oregon St. Bd., 1; Packard, E. L., 1.

Grants Pass quad.: Wells, F. G., 1.

Inland Empire area: Reed, J. C., 1.

Jurassic, cent. Oreg.: Lupher, R. L., 2.
Madras quad.: Hodge, E. T., 6.

Mesozoic volcanic ser.: Wells, F. G., 6.

Paleozoic, cent. Oreg.: Merriam, C. W., 2.

Portland area: Treasher, R. C., 3.

Quicksilver prospects: Ross, C. P., 3.

Round Mt. quad.: Wilkinson, W. D., 1.

Sumpter quad.: Pardee, J. T., 2.

Tertiary, late: Beck, G. F., 3.

Wallowa Mts.: Allen, J. E., 2; Goodspeed, G. E., 6; Smith, W. D., 4.

Mineralogy.

Andesites, Cascades: Bogue, R., 1; Hodge, E. T., 2.

Chromite: Allen, J. E., 1; Thayer, T. P., 1, 2; Wells, F. G., 3.

General: Oregon St. Bd., 1.

Oregon—Continued.

Mineralogy—Continued.

Geochemistry, quicksilver mineralization: Dreyer, R. M., 1.

Gold quartz veins, Cornucopia: Goodspeed, G. E., 4.

Mesolite: McLeod, E., 1; Zodac, P., 6.

Metal mines handbook: Oregon Dept. Geol., 1, 2.

Mineral resources: Hodge, E. T., 1; Libbey, F. W., 1.

Mother Lode prov.: Averill, C. V., 1.

Nickel, Douglas Co.: Pecora, W. T., 2.

Quicksilver: Ross, C. P., 5; Staples, L. W., 2; Wilkinson, W. D., 2.

Spherulites: Ross, C. S., 2.

Thunder eggs: Dake, H. C., 2.

Paleontology.

Ammonoids, Carb.: Miller, A. K., 3.

Apodontoidea: McGrew, P. O., 4.

Cedar, fossil: Beck, G. F., 1.

Cretaceous succession: Anderson, F. M., 1.

Early man: Cressman, L. S., 1.

Floras: Axelrod, 2; Read, C. B., 1; Smith, H. V., 1.

Jurassic, cent. Oreg.: Lupher, R. L., 2.

Mammalia, Fossil Lake: Allison, I. S., 4.

Man, early: Cressman, L. S., 1.

Paleoecology, peat: Hansen, H. P., 8, 9.

Paratylopus, Tert.: Dougherty, J. F., 1.

Psephorus, Miocene: Packard, E. L., 2.

Sweethome Petrified Forest: Dake, H. C., 1.

Tempskya: Anonymous, 11.

Tertiary: Beck, G. F., 3.

Tree rings in lava: Nichols, R. L., 5.

Vertebrata, Astoria fm.: Packard, E. L., 3.

Wallowa Mts.: Smith, W. D., 4.

Petrology.

Andesites, Cascades: Bogue, R., 1.

Basalt studies: Waters, A. C., 3.

Breccia, aplite replacement: Goodspeed, G. E., 7.

Cascades: Bogue, R., 1; Hodge, E. T., 2, 5.

Dilation and replacement dikes: Goodspeed, G. E., 1.

Geochemistry, quicksilver mineralization: Dreyer, R. M., 1.

Gold quartz veins, Cornucopia: Goodspeed, G. E., 4.

Grants Pass quad.: Wells, F. G., 1.

Jurassic, cent. Oreg.: Lupher, R. L., 2.
Lake sediments, Pleist.: Dole, H. M., 1.

Madras quad.: Hodge, E. T., 6.

Mesozoic volcanic ser.: Wells, F. G., 6.

Nepheline: Rogers, A. F., 3.

Syenite: Rogers, A. F., 3.

Tree rings in lava: Nichols, R. L., 5.

Velocity, Newberry Big Obsidian Flow: Nichols, R. L., 4.

Wallowa Mts.: Goodspeed, G. E., 6; Smith, W. D., 4.

Oregon—Continued.

Physical geology.

Breccia, aplite replacement: Goodspeed, G. E., 7.

Cascades: Hodge, E. T., 5.

Chromite deposits: Wells, F. G., 3.

Crater Lake: Williams, H., 2.

Dilation and replacement dikes: Goodspeed, G. E., 1.

Fumaroles, Mt. St. Helens, Mt. Adams: Phillips, K. N., 1.

General: Oregon St. Bd., 1; Packard, E. L., 1.

Gold quartz veins, Cornucopia: Goodspeed, G. E., 4.

Grants Pass quad.: Wells, F. G., 1.

Inland Empire area: Reed, J. C., 1.

Jurassic, cent. Oregon: Lupter, R. L., 2.

Lava fan, Bend: Nichols, R. L., 3.

Lava flow, Mt. St. Helens: Lawrence, D. B., 1.

Madras quad.: Hodge, E. T., 6.

Mesozoic volcanic ser.: Wells, F. G., 6.

Modoc lava surfaces: Jones, A. E., 1.

Mount Mazama and Crater Lake: Williams, H., 1.

Paleozoic, cent. Oreg.: Merriam, C. W., 2.

Portland area: Treasher, R. C., 3.

Round Mt. quad.: Wilkinson, W. D., 1.

Seismicity, Pacific Coast: Byerly, P., 2.

Velocity, Newberry Big Obsidian Flow: Nichols, R. L., 4.

Wallowa Mts.: Allen, J. E., 2; Goodspeed, G. E., 6; Smith, W. D., 4.

Wind work, Lake Co.: Allison, I. S., 3.

Physiographic geology.

Columbia River, lower: Mackin, J. H., 1.

General: Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 2.

Inland Empire area: Reed, J. C., 1.

Quicksilver deposits: Staples, L. W., 2.

Relief map: Raisz, E. J., 1.

Scenery: Smith, W. D., 5.

Shore line: Smith, W. D., 3.

Wallowa Mts.: Smith, W. D., 4.

Wind work, Lake Co.: Allison, I. S., 3.

Underground water.

Madras quad.: Hodge, E. T., 6.

Organic tissue mineralization: Green, J. R., 1.

Orogeny.

Appalachians: Elkins, T. A., 2; Hess, H. H., 6; Krynine, P. D., 3.

Arizona: Enlows, H. E., 1; Wilson, E. D., 1.

Benchlands, Piedmont areas: Terra, H. de, 1.

Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.

Bradford sand, Third, N. Y.-Pa.: Dickey, P. A., 2.

British Columbia, Turnagain-Kechika Rivers area: Hedley, M. S., 2.

Orogeny—Continued.

California: Bailey, T. L., 1; Forbes, H., 1; Gilbert, C. M., 1; Jenkins, O. P., 4, 6; Johnston, W. D., Jr., 1; MacDonald, G. A., 5; Taliaferro, N. L., 3.

Canada, Magdalen Is.: Alcock, F. J., 6.

Cascadia: Schofield, S. J., 2.

Convection currents and mt. bldg.: Griggs, D. T., 3.

Cuba, geosyncline: Corral y Alemán, J. I., 1.

Eruptivity and mt. bldg.: Willis, B., 2.

General: Longwell, C. R., 5.

Graywackes: Krynine, P. D., 7.

Greenland, east: Wager, L. R., 1.

Idaho, western: Capps, S. R., 4.

Iowa: Keyes, 79.

Isostasy in mt. bldg.: Hoffman, M. G., 1.

Metamorphic mechanics: Willis, B., 1.

Mexico: Kellum, L. G., 1; King, R. E., 1; Terrones Langone, A., 1.

Montana: Blackstone, D. L., Jr., 1;

Deiss, C. F., 3, 4; Maravich, M. D., 1; Vhny, J. S., 1.

Mountain-building cycle: Bucher, W. H., 2.

Nemaha, Kans., Neb.: Keyes, 99.

Nevada, Ruby-East Humboldt Range: Sharp, R. P., 1.

New England, Paleozoic: Billings, M. P., 1.

New Hampshire: Billings, K. F. L., 1; Billings, M. P., 2, 4.

New Jersey: Appleby, A. N., 1; Lewis, J. V., 1.

New Mexico: Keyes, 45; Ray, L. L., 2; Smith, J. F., Jr., 5.

North America, Cordillera: Kerr, P. F., 5; Smith, J. F., Jr., 6.

Ore dists.: Billingsley, P. R., 1.

Pacific basin: Andrews, E. C., 1.

Taconic disturbances: Kay, G. M., 3.

Western: Hinds, N. E. A., 1, 3.

Nova Scotia, gold fields: Douglas, G. V., 8.

Oklahoma: Hoffman, M. G., 2; Paschal, E. A., 1.

Oregon: Hodge, E. T., 5; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4.

Ouachita Mts., Okla., Ark.: Hendricks, T. A., 4.

Quantitative mt. bldg. theory: Elkins, T. A., 2.

Quebec, Beupre coast: Faessler, C., 2.

Rocky Mt. area: Bartram, J. G., 1.

Santo Domingo: Weyl, R., 1.

South Dakota-Wyoming sec.: Kans. G. S., 1.

Teton Range, Wyo.-Idaho: Fryxell, F. M., 3.

Texas: Baker, C. L., 3; Ives, R. L., 7; King, P. B., 2; Sheldon, W., 1.

Orogeny—Continued.

- United States, Allegheny synclinalorium:
 Kay, G. M., 5.
 Southwestern: Laudon, L. R., 1.
 Utah, Cedar Hills: Schoff, S. L., 2.
 Vermont, Taconic fault roots: Hawkes,
 H. E., Jr., 1.
 Virginia: Bloomer, R. O., 1; Edmundson,
 R. S., 1, 2.
 Wasatch Range, Utah-Idaho: Eardley,
 A. J., 4.
 West Indies: Corral y Alemán, J. I., 1;
 Gerth, H., 1; Weyl, R., 1.
 Wyoming: Bauer, C. M., 1; Branson,
 E. B., 7; Demorest, M. H., 2; Love,
 J. D., 2.
 Wyoming-Black Hills, S. Dak.: Bartram,
 J. G., 2.

Osage fauna: Keyes, 56.

Oscillation. See Changes of level.

Ostracoda. See also Crustacea.

- California, Kettleman Hills oil field:
 Woodring, W. P., 1.
 Cytheridea: Stephenson, M. B., 1, 2;
 Sutton, A. H., 1.
 Cytheris wechensis for C. spinosa: Sut-
 ton, A. H., 1.
 Decorah fm., Iowa, Minn., Wis.: Kay,
 G. M., 1, 2.
 Deep-sea cores, North Atlantic: Piggot,
 C. S., 1; Tressler, W. L., 1.
 Faunas, Cambridge lms., Pa.: Seaman,
 D. M., 3.
 Frobisher Bay, Arc. Am.: Roy, S. K.,
 1.
 Pascagoula fm., Miss.: Mincher, A. R.,
 1.
 Florida, Niceville well area: Smith, R.
 H., 1.
 Illinois: Cooper, C. L., 1; Scott, H. W.,
 2.
 Kansas, Meade basin: Frye, J. C., 8.
 Kentucky, Penn., muscle scars: Scott,
 H. W., 3.
 Leperditella, Ord., Ky.: Coryell, H. N.,
 1.
 Microfauna, Midway, La.: Murray, G.
 E., Jr., 1.

Microfossils, economically important:

Schenck, H. G., 2.

Microfossils, Rocky Mts., Cret.: Peck,
 R. E., 2.

Minnesota, S. E.: Stauffer, C. R., 3.

Mississippian, Nor. Am.: Sohn, I. G., 1.

Montana, Missn.: Scott, H. W., 1.

North Carolina, Natural Well area:
 Huddle, J. W., 1.

Oklahoma, Simpson fm.: Harris, R. W.,
 1.

Onondaga, Pa.: Swartz, F. M., 1.

Ontario, Toronto-Hamilton area: Caley,
 J. F., 1.

Schmidtella, revised: Drake, R. T., 1.

Soap, preparing samples: Howe, H. V.,
 2.

Ostracoda—Continued.

Tennessee, Dev.: Bassler, R. S., 5.

Texas: Dallas Petroleum Geologists, 1;
 Harris, R. W., 1.

Ostrea, Mississippi: Mincher, A. R., 1.

Overite, Utah: Larsen, E. S., 3d, 1.

Overloading and mass-movement: Hacker, W.
 A., 1.

Overthrusts.

Alberta, Rocky Mt. area: Allan, J. A.,
 5; Hake, B. F., 1.

Arizona, Empire Mts.: Galbraith, F.
 W., 2.

Bighorn Basin, Mont.-Wyo.: Chamber-
 lin, R. T., 1.

California: Hudson, F. S., 1; Mason,
 J. F., 1; Noble, L. F., 1.

Colorado: Ives, R. L., 8; Roy, C. J., 1.

Flow cleavage, folded beds: Swanson,
 C. O., 2.

Montana: Blackstone, D. L., Jr., 1;
 Bullard, F. M., 3; Deiss, C. F., 3;

Fix, P. F., 1.

Nevada: Longwell, C. R., 10; Merriam,
 C. W., 4.

Newfoundland lowlands: Johnson, H., 2.

New Mexico, Los Pinos Mts.: Stark, J.
 T., 2.

North America, Taconic orogeny: Kay,
 G. M., 3.

Ouachita Mts., Okla.-Ark.: Hendricks,
 T. A., 4.

Pennsylvania, Reading area: Stose, G.
 W., 2.

Taconic allochthone and Martie thrust:
 Kay, G. M., 4.

Tennessee, Norris dam: Eckel, E. C., 3.

Texas: King, P. B., 2; Smith, J. F.,
 Jr., 4.

Trinidad, Los Bajos fault: Wilson, C.
 C., 1.

Vermont, Taconic fault roots: Hawkes,
 H. E., Jr., 1.

Virginia: Cooper, B. N., 1; Edmundson,
 R. S., 3.

Wyoming: Beckwith, R. H., 1; Demo-
 rest, M. H., 2; Love, J. D., 1.

Oxalic acid for cleaning calcareous fossils:
 Rasetti, F., 1.

Palagonite, Jamaica: Raw, F., 1.

Paleobotany. See also Paleontology; Pollen
 analysis.

Algae, Colo.: Johnson, J. H., 3.

Ancrophyton, Dev., Nor. Am.: Arnold,
 C. A., 2.

Basalts, Wash., fossil-bearing: Beck, G.
 F., 4.

Bermuda: Knox, A. S., 1.

Bog, Wash., paleoecology: Hansen, H.
 P., 5.

Botanical sci. contrib. to climates:
 Cooper, W. S., 1.

Paleobotany—Continued.

- British Columbia bogs, pollen analysis: Hansen, H. P., 2.
- California, Kettleman Hills oil field: Woodring, W. P., 1.
- Callixylon, Ohio: Hoskins, J. H., 1.
- Caytonia, Greenland: Harris, T. M., 1.
- Cedar, fossil, Oreg.: Beck, G. F., 1.
- Charophyta, Rocky Mt. fms.: Peck, R. E., 1.
- Coals: Darrah, W. C., 7; Sprunk G. C., 1, 2; Stutzer, O., 1; Thiessen, R., 1.
- Coal ball floras, Nor. Am.: Darrah, W. C., 2, 4, 5.
- Colorado, fossil wood: Kleeman, T. H., 1.
- Cordaitanthus from coal balls, Iowa: Darrah, W. C., 2.
- Cordaites, Iowa: Wilson, L. R., 3.
- Cycadeoidea, Black Hills-New Mex.: Wieland, G. R., 1.
- Dactylothea parallela: Radforth, N. W., 1.
- Daemonelix, origin: Lugin, A. L., 2.
- Dichophyllum, Kans.: Andrews, H. N., Jr., 4.
- Dunkard ser., Pa.: Stewart, P. R., 1.
- Ecologic factors in correl.: Eaton, J. E., 2.
- Ecology of marine organisms: Ladd, H. S., 1.
- Eospecies, Tert.: Axelrod, D. I., 5.
- Ferns, coal balls, Iowa-Kans.: Darrah, C. W., 5.
- Frontier fm., Wyo.: Andrews, H. N., Jr., 2.
- Floras, Carb., Oreg.: Read, C. B., 1.
- Creede fm., Colo.: Stewart, B. K., 1.
- Eocene, Colo.: Barnhart, C. H., 2.
- Eocene, Greenland: Seward, A. C., (Sir), 1.
- Eocene, Sierra Nevada, Calif.: MacGinitie, H. D., 1.
- Frontier fm., Wyo.: Andrews, H. N., 3.
- Lance fm. type, Wyo.: Dorf, E., 4.
- Lance Creek and Fort Union, Wyo.: Dorf, E., 1.
- Mint Canyon, Calif.: Axelrod, D. I., 4.
- Miocene, Thorn Creek, Idaho: Smith, H. V., 2.
- Pennsylvanian, Iowa: Wilson, L. R., 1.
- Pensauken, N. J.: Berry, E. W., 1.
- Pliocene, Nev.: Axelrod, D. I., 1.
- Southwest U. S., Carb.: Read, C. B., 2.
- Sucker Creek, Idaho-Oreg.: Smith, H. V., 1.
- Tertiary, Nor. Am.: Brown, R. W., 1; Dorf, E., 3.
- Triassic, Ariz.: Daugherty, L. H., 1.
- Wilcox, Ky.-Tex.: Berry, E. W., 3.
- Floral zones, Appalachians: Read, C. B., 3.
- Fomes, Tert., Idaho: Brown, R. W., 3.

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- Forest migration, post-Pliocene, Ind., Mich.: Potzger, J. E., 2.
- Forests Tert., and continental history: Chaney, R. W., 2, 3.
- Fossil classification from macerated coal: Schopf, J. M., 1.
- Fossil plant types, Ill.: Janssen, R. E., 1.
- Fossil wood: Hazen, G. E., 1.
- Gallatin Petrified Forest, Yell. Nat. Pk.: Young, P. A., 1.
- General: Berry, E. W., 2; Chaney, R. W., 1; Geol. S. A., 2; Merriam, J. C., 1.
- Great Basin Tert. floras: Axelrod, 2.
- Indiana, bog pollen: Hamp, F. A., 1, 2.
- Iowa, micro-fossils in peat: Wilson, L. R., 2.
- Kansas, S. W.: Smith, H. T. U., 9.
- Koninckopora, Canada: Wood, A., 1.
- Latah beds, Idaho, Wash.: Upson, R. H., 1.
- Layers of plant material in sand dunes: Lutz, H. J., 1.
- Leaves, fossil, S. E. Mo.: Duckworth, A. S., 1.
- Lepidocarpaceae: Schopf, J. M., 2.
- Lepidocarpon, Carb., Iowa: Darrah, W. C., 6; Hoskins, J. H., 3.
- Lepidodendrales, Ill.: Reed, F. D., 1.
- Lepidodendron, Colo.: Arnold, C. A., 3.
- Liriodendron, Miocene, Nor. Am. and E. Asia: Berry, E. W., 6.
- Lepidostrobus, Carb.: Hoskins, J. H., 2; Mathews, G. B., 1.
- Lesquereaux's fossil plant types: Janssen, R. E., 2.
- Louisiana, petrified wood with iron oxide: Roberts, L. B., 1.
- Lycopod leaves, Iowa: Wilson, L. R., 7.
- Lyonothamnus, Calif.: Axelrod, D. I., 3.
- Maryland, Pleist.: Berry, E. W., 4.
- Mazocarpon, Ill.: Schopf, J. M., 3.
- Megalomyelon, Mo.: Cribbs, J. E., 1.
- Minnesota, S. E.: Stauffer, C. R., 3.
- Nematophytales, position: Darrah, W. C., 3.
- Nevada, Muddy Mt.: Longwell, C. R., 10.
- New Jersey: Lewis, J. V., 1.
- North Carolina, Cape Fear Penin.: Wells, B. W., 2.
- Nova Scotia, Pictou coal field: Bell, W. A., 1.
- Ohio: Wells, J. W., 5; Williams, A. B., 1; Wilson, L. R., 5.
- Ontario, Toronto-Hamilton area: Caley, J. F., 1.
- Oregon: Hodge, E. T., 6; Nichols, R. L., 5.
- Organic tissue mineralization: Green, J. R., 1.
- Paleoecology, peat, Oreg.: Hansen, H. P., 1, 9.

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- Peat: Hansen, H. P., 1, 9; Wells, B. W., 1; Wilson, L. R., 4.
 Pennsylvania: Willard, B., 2.
 Petrification, changing views of: Darrah, W. C., 8.
 Petrified wood, Ariz.: Mayes, W., 1.
 Pinus, Miocene, Md.: Berry, E. W., 7.
 Pinus pollen identification: Cain, S. A., 1.
 Plant embryos, Iowa coal balls: Darrah, W. C., 10.
 Plants, Alice mine, Minn.: Neumann, F. R., 1.
 Devonian, N. Y.: Arnold, C. A., 1.
 Eocene, Wyo.: Wilson, L. R., 6.
 Mesaverde, Colo., Wyo.: Dorf, E., 5.
 Pollen analysis in peat: Barghoorn, E. S., Jr., 1.
 Pollen, glacial bogs, Ind.: Swickard, D. A., 1.
 Pollen in lake sediments, Ind.-Mich.: Potzger, J. E., 2.
 Pollen profiles, glaciated Nor. Am.: Smith, P., 1.
 Pollen spectra as time markers: Potzger, J. E., 1.
 Problems of: Darrah, W. C., 1.
 Psaronius, Ill.: Moon, G., 1.
 Pseudotsuga, Pleist., Calif.: Mason, H. L., 1.
 Psilophyton, Dev., Nor. Am.: Arnold, C. A., 2.
 Pteridosperms, stelar anatomy: Andrews, N. H., Jr., 1.
 Pycnoxylon, Carb., Mo.: Cribbs, J. E., 2.
 Quercus, Md.: Berry, E. W., 7.
 Sea-level changes, criteria: Hoffmeister, J. E., 3.
 South Dakota, fossil wood; Lee, H. E., 1.
 Sparganium, Cret., Wyo.: Smith, B. R., 1.
 Spores, Trias., N. C.: Berry, E. W., 2.
 Stamen, evolution: Wilson, C. L., 1.
 Stigmaria, appendages in coal balls: Stewart, W. N., 1.
 Sweetbome Petrified Forest, Oreg.: Dake, H. C., 1.
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 Texas, Perm.: Reed, W. F., 1, 2.
 Tree-growth climate indicators: Glock, W. S., 1, 2.
 Utilitarian aspects: Darrah, W. C., 9.
 Vegetable constituents of coal: Darrah, W. C., 7.
 Volcanic ash and silicified wood: Murata, K. J., 1, 2.
 Washington: Fernquist, C. O., 2; Hansen, H. P., 3, 4, 6.
 Washington-Oregon: Beck, G. F., 8.
 Wisconsin: Hansen, H. P., 7; Twenhofel, W. H., 11.
 Wood, fossil: Arnold, C. A., 4; Beck, G. F., 2; Penny, J. S., 1.

Paleoclimatology. See also Geologic history.

- Botanical sci. contribs.: Cooper, W. S., 1.
 Climatic inversions: Gillette, H. P., 3.
 Deep-sea cores, North Atlantic: Bradley, W. H., 1, 2; Bramlette, M. N., 1.
 Pleistocene climate shown by fossil birds: Miller, A. H., 1.
 Prospective dry years: Gillette, H. P., 4.
 Sea-level changes, criteria: Hoffmeister, J. E., 3.
 Southwest U. S. climatic variation: Antevs, E. V., 1.
 Tree-growth climate indicators: Glock, W. S., 1, 2.
 Vertebrata, Nor. Am.: Camp, C. L., 2.

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- Ammonoids, Cret., Tex.: Scott, G., 1.
 British Columbia bogs: Hansen, H. P., 2.
 California, Domingue fauna: Vokes, H. E., 1.
 Colorado, Creede fm. flora: Stewart, B. K., 1.
 Corals: Vaughan, T. W., 4.
 Correlation: Eaton, J. E., 2.
 Diatomaceae: Lohman, K. E., 1.
 Ecology of marine organisms: Ladd, H. S., 1.
 Ecology, Tert. and to-day, Creede Valley, Colo.: Stewart, B. K., 2.
 Ecospecies, Tert.: Axelrod, D. I., 5.
 Flora, Sucker Creek, Idaho-Oreg.: Smith, H. V., 1.
 Florida, mangroves, ecology and geol. role: Davis, J. H., Jr., 1.
 Foraminifera: Cushman, J. A., 6.
 Invertebrates: Raymond, P. E., 3.
 Kansas, Rexroad fauna: Hibbard, C. W., 8.
 Marine ecology, modern and ancient: Vaughan, T. W., 1.
 Marine organisms in seds.: Natland, M. L., 2.
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 Washington: Hansen, H. P., 3, 5.
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Paleogeographic maps.

- Arkansas, sou.: Imlay, R. W., 1.
 California: Eaton, J. E., 3; Jenkins, O. P., 4; Reed, R. D., 2, 3.
 Cuba: Corral y Alemán, J. I., 1.
 Florida, penin.: Campbell, R. B., 2.
 Jurassic, Ark.-La.-Tex.: Imlay, R. W., 4.
 Kansas, stratig. traps: Anonymous, 20.
 Kentucky, Dev.-Sil.: Freeman, L. B., 1.
 Mexico, Neocomian: Imlay, R. W., 2.
 New Jersey: Lewis, J. V., 1.
 New Mexico, San Acacia area: Denny, C. S., 1.
 North America: Howard, W. V., 1.
 Cordilleran area: Deiss, C., 2.

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- Ohio, Cleveland area: Williams, A. B., 1.
- Permian faunas and facies: Dunbar, C. O., 3.
- Texas-Mexico, Cret.: Scott, G., 3.
- West Indies: Corral y Alemán, J. I., 1.

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- Appalachia: Nelson, W. A., 1.
- Arizona, Paleozoic: Stoyanow, A. A., 1.
- Arkoses, significance: Krynine, P. D., 11.
- British Columbia-Alberta area: Deiss, C. F., 1.
- California, oil fields: Reed, R. D., 2.
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- Cambrian, Cordilleran area: Deiss, C. F., 2.
- Cascadia: Schofield, S. J., 2.
- Cuba: Corral y Alemán, 3.
- Graywackes, significance: Krynine, P. D., 7.
- Mammals and land bridges: Simpson, G. G., 1.
- Marine ecology, modern and ancient: Vaughan, T. W., 1.
- Mexico: Inlay, R. W., 5; Kellum, L. B., 1.
- North America, Cordilleran area: Deiss, C., 2.
- Pacific basin: Andrews, E. C., 1.
- Quartzites, sed. significance: Krynine, P. D., 6.
- Salt in sea: Hills, G. F. S., 1.
- Stratigraphy: Moore, R. C., 12.
- Utah, Uinta Basin: Stagner, W. L., 1.

Paleometeorology. See Paleoclimatology.

Paleontology. For. areal see names of States. See also the classes of animals and Invertebrata (general); Evolution; Paleobotany; Problematic organisms; Restorations.

- Applied paleontology: Schenck, H. G., 4.
- Blastoidea, ontogeny: Croneis, C. G., 2.
- California fossil guidebook: Schenck, H. G., 1.
- Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 4.
- Conodont faunas: Branson, E. B., 1, 6.
- Conularia, genotype: Sinclair, G. W., 1.
- Crinoidea, symbols for parts: Moore, R. C., 14.
- Deep-sea cores, North Atlantic: Bramlette, M. N., 1; Piggot, C. S., 1.
- Ecologic factors in correlation: Eaton, J. E., 2.
- Fauna, movements between Asia and Nor. Am.: Teilhard de Chardin, P., 1.
- Foraminifera: Cushman, J. A., 1; Ellis, B. F., 1; Schenck, H. G., 6.

Paleontology—Continued.

- Fossils, their uses: Barnhart, C. H., 1; Cushman, J. A., 3.
- General: Geol. S. A., 2; Merriam, J. C., 1.
- Generic names, corrections in: Knight, J. B., 1; Schenck, H. G., 9.
- Homeomorphy: Cloud, P. E., Jr., 3.
- Horse teeth development: Stirton, R. A., 4.
- Hyatt's Cephalopoda genera publication: Shrock, R. R., 4.
- Indiana, fossil bog pollen: Hamp, F. A., 2.
- Individual, role in evolution: Simpson, G. G., 5.
- Invertebrates: Raymond, P. E., 3.
- Mammals and land bridges: Simpson, G. G., 1.
- Marine organisms in sediments: Natland, M. L., 2.
- Marsh, O. C., pioneer: Schuchert, C., 1.
- Meek, F. B., as paleontologist: Keyes, 34.
- Metamorphic paleontology: Keyes, 129.
- Micropaleontology, development, Calif.: Schenck, H. G., 3.
- Past and future: Croneis, C. G., 5.
- Nautiloid nomenclature: Teichert, C., 1.
- Neotypes in nat. history: Dunbar, C. O., 4.
- North American index fossils, revision: Shimer, H. W., 1.
- Oxalic acid for cleaning calcareous fossils: Rasetti, F., 1.
- Paleontologic methods of investigation: Weller, J. M., 4.
- Percentage method, stratigraphic dating: Keen, A. M., 3.
- Permian crude oil microscopic exam.: Waldschmidt, W. A., 3.
- Petrifaction, changing views of: Darrah, W. C., 8.
- Photographing fossil impressions: McNair, A. H., 1.
- Quantitative data in microstratigraphy: Tromp, S. W., 1.
- Relative growth, vertebrate phylogeny: Phleger, F. B., Jr., 1.
- Renaming primary homonyms: Schenck, H. G., 9.
- Rhipidistian paddle into tetrapod limb: Gregory, W. K., 4.
- Rubber molds and plaster casts: Quinn, J. H., 1.
- Saber-like canines in Carnivora: Simpson, G. G., 9.
- Sea-level changes, criteria: Hoffmeister, J. E., 3.
- Soap for preparing samples: Howe, H. V., 2.
- Taphonomy: Efremov, J. A., 1.
- This living world: Clark, C. C., 1.
- Tribolbita, relative-growth method analyses: Phleger, F. B., Jr., 3.
- Types in modern taxonomy: Simpson, G. G., 2.
- United States, West Coast: Camp, C. L., 3.
- Vertebrata: Romer, A. S., 2.

Paleontology—Continued.

- Vertebrata and paleoecology: Camp, C. L., 2.
Vertebrate paleontology, U. S. Nat. Mus.: Giltmore, C. W., 3.

Cambrian.

- Adirondacks, N. Y.-Vt., Trilobita: Wheeler, R. R., 3.
Alaska, Cephalopoda: Flower, R. H., 8.
Alaskan faunas: Williams, J. S., 3.
Arizona, Grand Canyon fossils: Resser, C. E., 4.
Canada, Pleospongia: Okulitch, V. J., 1.
Maryland, characteristic fossils: French, E. M., Jr., 1.
Vermes: Howell, B. F., 8.
Massachusetts, Braintreella: Wheeler, R. R., 4.
Minnesota, Skolithos: Howell, B. F., 9.
Missouri, pathologic pygidium: Lochman, C., 2.
Montana, Brachiopoda: Bell, W. C., 1.
New York, Saukiinae: Wheeler, R. R., 6.
North America, dichograptids: Bulman, O. M. B., 1.
Eastern corals: Wheeler, R. R., 2.
Pleospongia: Okulitch, V. J., 3.
Pennsylvania, Skolithos, Planolites: Howell, B. F., 4.
Trilobita, Adirondacks: Wheeler, R. R., 3.
Utah, Logan quad.: Williams, J. S., 1.
Wisconsin, graptolites: Decker, C. E., 8.
Wyoming, laetiroid impression: Caster, K. E., 3.
Sponge: Howell, B. F., 1.

Carboniferous.

- Alabama, Dinotocrinus: Kirk, E., 1.
Allagecrinidae, Okla.-Mo.: Moore, R. C., 7.
Ammonoids, Ky.-Ga.-Okla.-Nev.: Miller, A. K., 3.
Anartioocrinus, Ohio-Ky.: Kirk E., 2.
Archimedes, revision: Condra, G. E., 5.
Arkansas, Bryozoa: Bassler, R. S., 6.
California, fusulinids: Thompson, M. L., 2.
Canada, Koninckopora: Wood, A., 1.
Cephalopoda, triangular coiling: Cronels, C. G., 7.
Coal ball flora, Nor. Am.: Darrah, W. C., 4.
Colorado, calcareous algae: Johnson, J. H., 3.
Lepidodendron: Arnold, C. A., 3.
Crinoidea, Kansas-Oklahoma: Moore, R. C., 4; Strimple, H. L., 2.
Texas: Moore, R. C., 4.
Delocrinus tegminal structure: Moore, R. C., 13.
Euphachyrinus, Missn.: Sutton, A. H., 3.
Fauna, Whitehorse ss.: Newell, N. D., 1.
Floral zones and fms., Appalachians: Read, C. B., 3.
Foraminifera, Perm.: Schenck, H. G., 5.

Paleontology—Continued.

Carboniferous—Continued.

- Greenland, Perm., ammonoids: Miller, A. K., 6.
Belemnite: Fischer, A., 2.
Illinois, fossil plant types: Janssen, R. E., 1.
Lepidodendres: Reed, F. D., 1.
Mazocarpus: Schopf, J. M., 3.
Ostracoda: Cooper, C. L., 1; Scott, H. W., 2.
Indiana, Cestocrinus: Kirk, E., 1.
Lepidostrobus: Hoskins, J. H., 2.
Invertebrata, Tex.-Tenn.: Cooper, G. A., 2.
Iowa, Cordaianthus from coal balls: Darrah, W. C., 2.
Cordaites: Wilson, L. R., 3.
Crinoidea: Kirk, E., 4.
Lepidocarpon: Darrah, W. C., 6; Hoskins, J. H., 3.
Lycopod leaves: Wilson, L. R., 7.
Plant embryos in coal balls: Darrah, W. C., 10.
Pennsylvanian flora: Wilson, L. R., 1.
Iowa-Kans., ferns in coal balls: Darrah, W. C., 5.
Kansas, Dichophyllum: Andrews, H. N., Jr., 4.
Gastropoda: Moore, R. C., 9, 16.
Insects: Carpenter, F. M., 1.
Mississippian: Girty, G. H., 1; Lee, W., 2.
Permian organic burrows: Bryne, F., 1.
Kentucky, Ostracoda, muscle scars: Scott, H. W., 3.
Lepidocarpaceae: Schopf, J. M., 2.
Lepidostrobus, Iowa-Ky.: Mathews, G. B., 1.
Maryland, characteristics fossils: French, E. M., Jr., 1.
Mexico, ammonoids, Perm.: Miller, A. K., 1, 5.
Chiapas, Permian: Müllerried, F. K. G., 2.
Microcrinoids, blastoids, early stages: Moore, R. C., 8.
Micropaleontology of chert, Nor. Am.: Wetzel, O., 1.
Missouri, conodonts: Branson, E. B., 5, 11.
Fusulinids, Penn.: Johnson, C. H., 1.
Megalomylon: Cribbs, J. E., 1.
Pyroxylon: Cribbs, J. E., 2.
Missouri-Kansas, conodonts: Ellison, S., 1.
Montana, Fusulinidae: Frenzel, H., 1.
Ostracoda: Scott, H. W., 1.
Myalina: Newell, N. D., 3, 4.
Naiadaites: Newell, N. D., 3.
New Mexico, Brachiopoda: Young, J. A., Jr., 2.
Cephalopoda: Young, J. A., Jr., 1.
Diadectes: Welles, S. P., 1.
Manzano fauna: Keyes, 26.
Scaphopoda: Young, J. A., Jr., 1.

Paleontology—Continued.

Carboniferous—Continued.

- New York, Hexactinellida : Caster, K. E., 2.
- North America, ammonoids : Miller, A. K., 3.
- Campophyllum revision : Easton, W. H., 3.
- Coal balls : Darrah, W. C., 4.
- Gastropoda genotypes : Knight, J. B., 2.
- Ostracoda, Missn. : Sohn, I. G., 1.
- Nova Scotia, dipnoans : Sternberg, R. M., 3.
- Naiadaites : Newell, N. D., 3.
- Oklahoma, conodonts : Branson, E. B., 4, 11; Hass, W. H., 1.
- Crinoidea : Laudon, L. R., 3; Moore, R. C., 2; Strimple, H. L., 1.
- Stellarocrinus : Strimple, H. L., 3.
- Oregon, flora, Crooked River : Read, C. B., 1.
- Osage fauna : Keyes, 56.
- Pelycosauria, review of : Romer, A. S., 1.
- Pennsylvania, Dunkard ser. : Stewart, P. R., 1.
- Southwestern : Laird, W. M., 2.
- Permian faunas and facies : Dunbar, C. O., 3.
- Permian invertebrates : Branson, C. C., 1.
- Reef fauna, Perm., Tex.-N. Mex. : Mills, J. M., 1.
- Texas, ammonoids : Miller, A. K., 2.
- Amphibia : Romer, A. S., 5.
- Bone pocket, Lueders fm. : Read, W. F., 2.
- Conodonts : Ellison, S., 2; Hass, W. H., 1.
- Crinoidea : Moore, R. C., 3.
- Eryops : Romer, A. S., 4; Sawin, H. J., 1.
- Euphemites : King, R. H., 1.
- Invertebrates, Perm. : Read, W. F., 1.
- Pelecypoda, Perm. : Roth, R. I., 1.
- Permian fauna : Stainbrook, M. A., 8.
- Plants, Perm. : Read, W. F., 1.
- Symbathocrinus : Moore, R. C., 10.
- Trematopsidae : Olson, E. C., 3.
- Vertebrata, Perm. : Olson, E. C., 6; Read, W. F., 1.
- United States, Crinoidea Inadunata : Kirk, E., 3.
- Floras in S. W. : Read, C. B., 2.
- Nautiloids, Perm. : Unklesbay, A. G., 1.
- Reptilia, Perm. : Price, L. I., 1.
- Utah, Confusion, Conger Ranges : Bacon, C. S., Jr., 1.
- Fusulinids : Thompson, M. L., 1.
- Vertebrata and paleoecology : Camp, C. L., 2.
- Washington, Fusulinidae : Anderson, R. A., 1.
- West Virginia, Tetrapoda : Romer, A. S., 3.

Paleontology—Continued.

Carboniferous—Continued.

- Wyoming, fusulinids : Thompson, M. L., 3.
- Cretaceous*.
- Alberta, Ceratopsidae : Sternberg, C. M., 1.
- Edmontonia : Russell, L. S., 3.
- Gastropoda : Russell, L. S., 9.
- Southern plains, faunas : Landes, R. W., 1; Russell, L. S., 1, 2.
- Thescelosaurus : Sternberg, C. M., 2.
- Arkansas, fish : Hussakof, L., 2.
- Podocnemis : Schmidt, K. P., 1.
- Birds, Nor. Am. : Wetmore, A., 2.
- California, characteristic fossils : Hanna, G. D., 1.
- Duckbill dinosaur : Stock, C., 4.
- Mosasaurs : Stock, C., 2.
- Sedimentary succession : Anderson, F. M., 1.
- Vertebrata : Stock, C., 3.
- Calva Popenoe, invalid : Popenoe, W. P., 1.
- Canada, teleosts : Sternberg, R. M., 2.
- Cephalopoda, sou.-cent. U. S. : Scott, G., 2.
- Ceratopsian horn cores : Brown, B., 1.
- Charophyta, Rocky Mts. : Peck, R. E., 1.
- Colorado, Niobrara, Benton microfaunas : Toepelman, W. C., 1.
- Colorado-Wyoming, Mesaverde plants : Dorf, E., 5.
- Cuba, corals : Wells, J. W., 4.
- Delaware, wood : Penny, J. S., 1.
- Dentalium : Cushman, J. A., 4.
- Dinosaurs : Brown, B., 3, 4.
- Dinosaurs, rise : Schlaikjer, E. M., 1.
- Fauna, movements between Asia and Nor. Am. : Teilhard de Chardin, P., 1.
- Faunas, Peace River, Alberta-Brit. Col. : Warren, P. S., 2.
- Flora, Lance Creek, Wyo. : Dorf, E., 1.
- Florida, studies of wells : Cole, W. S., 2.
- Foraminifera, Cody sh., correls. : Fox, S. K., Jr., 2.
- Kansas, Coelodus : Hibbard, C. W., 1.
- Dakotasuchus : Mehl, 1.
- Pearls : Brown, R. W., 2.
- Pycnomicrodon : Hibbard, C. W., 7.
- Lagenidae, Okla.-Tex. : Loeblich, A. R., Jr., 3.
- Mammalian molar teeth, evolution : Butler, P. M., 1.
- Maryland, characteristic fossils : French, E. M., Jr., 1.
- Mexico, Neocomian faunas : Imlay, R. W., 2.
- Midway fauna, west Gulf : Gardner, J. A., 4.
- Mississippi : Stephenson, L. W., 1.
- Lituola : Mellen, F. F., 2.
- Missouri, fossil leaves : Duckworth, A. S., 1.
- Montana, Paleopsephurus : MacAlpin, A., 2.

Paleontology—Continued.

Cretaceous—Continued.

- Nevada, Leptolepis: David, L. R., 4.
 New Jersey: Greacen, K. F., 1; Lewis, J. V., 1.
 New Mexico, Cycadeoidea: Wieland, G. R., 1.
 Nodosaria: Cushman, J. A., 4.
 North America, Amphineura, Atlantic Coastal Plain: Berry, C. T., 1.
 Robulus: Cushman, J. A., 4.
 Turritella, Pacific Coast: Merriam, C. W., 3.
 Ontario, Lambeosaurus: Russell, L. S., 5.
 Oregon, sed. succession: Anderson, F. M., 1.
 Ostracoda, Rocky Mts.: Peck, R. E., 1.
 Rocky Mt. microfossils: Peck, R. E., 2.
 Saskatchewan, Eastend fm. fauna: Russell, L. S., 8.
 South Dakota, Cycadeoidea: Wieland, G. R., 1.
 Stensioina: Cushman, J. A., 4.
 Texas, ammonoids, paleoecology: Scott, G., 3.
 Echinoidea: Ikins, W. C., 1.
 Fauna, Edwards fm.: Ikins, W. C., 2.
 Foraminifera: Loeblich, H. T., 1;
 Lozo, F. E., 1; Tappan, H. N., 1, 2;
 Vieaux, D. G., 1.
 Gastropoda: Stainbrook, M. A., 3.
 Micro-crinoids: Peck, R. E., 3.
 Navarro group fauna: Stephenson, L. W., 2, 3.
 Ophiurans: Berry, C. T., 3.
 Pyrite faunas: Scott, G., 4.
 Trinidad, Foraminifera: Vaughan, T. W., 2.
 United States, Diatomaceae: Rampi, L., 1.
 Exilia: Bentson, H., 1.
 Foraminifera: Cushman, J. A., 4.
 Utah, dinosaurs: Gazin, C. L., 1.
 Lizards: Gilmore, C. W., 2.
 Mammalia: Gazin, C. L., 1.
 Wasp nest: Brown, R. W., 4.
 Vertebrata, Utah-Wyo.: Gazin, C. L., 2.
 Vertebrata and paleoecology: Camp, C. L., 2.
 Wyoming, ferns, Frontier fm.: Andrews, H. N., Jr., 2.
 Flora, type Lance fm.: Dorf, E., 4.
 Frontier fm. flora: Andrews, H. N., 2, 3.
 Myopterygius: Nace, R. L., 1.
 Paleocene faunas: Jepsen, G. L., 1.
 Prodiplocynodon: Mook, C. C., 3.
 Sparganium: Smith, B. R., 1.
 Yellowstone Nat. Pk., Gallatin Petrified Forest: Young, P. A., 1.

Devonian.

- Actinoceroidea, N. Y.-Quebec: Flower, R. H., 2.
 Anthozoa, Columnariidae family: Bassler, R. S., 8.

Paleontology—Continued.

Devonian—Continued.

- Archimedes, revision: Condra, G. E., 5.
 Arizona, fish: Hussakof, L., 1.
 Brachiopoda, terebratuloid: Cloud, P. E., Jr., 2.
 Cedar Valley lms., N. Y.: Stainbrook, M. A., 7.
 Cephalopoda, triangular coiling: Cronels, C. G., 7.
 Iowa, Brachiopoda: Cloud, P. E., 1;
 Stainbrook, M. A., 1.
 Elytha: Stainbrook, M. A., 4.
 Independence sh.: Stainbrook, M. A., 5.
 Prismatophyllum: Stainbrook, M. A., 2.
 Strobilocystites: Stainbrook, M. A., 9.
 Terebratulaceae: Stainbrook, M. A., 6.
 Maryland, characteristic fossils: French, E. M., Jr., 1.
 Michigan, Afton, Onaway dist.: Kelly, W. A., 1.
 Micropaleontology, Nor. Am. chert: Wetzel, O., 1.
 Minnesota, conodonts: Stauffer, C. R., 2.
 Nematophytals: Darrah, W. C., 3.
 Nevada, Roberts Mts.: Merriam, C. W., 1.
 New York, corals, rugose: Busch, D. A., 2.
 Eusthenopteron: Gregory, W. K., 3.
 Fauna and facies: Payne, T. G., 1.
 Fish plate: Wells, J. W., 7.
 Hexactinellida: Caster, K. E., 2.
 Machaeranthus: Wells, J. W., 1.
 Plants: Arnold, C. A., 1.
 Scolecodonts: Eller, E. R., 3.
 Sphaerospongia, Tully fm.: Wells, J. W., 2.
 North America, Aneurophyton: Arnold, C. A., 2.
 Campophyllum revision: Easton, W. H., 3.
 Gastropoda genotypes: Knight, J. B., 2.
 Psilophyton: Arnold, C. A., 2.
 Trilobita, phacopid: Delo, D. M., 2.
 Ohio, Callixylon: Hoskins, J. H., 1;
 Wells, J. W., 5.
 Crinoidea: Stewart, G. A., 1; Wells, J. M., 5.
 Gorgonichthys: Dunkle, D. H., 1.
 Prout lms.-Plum Brook sh. correls.: Stumm, E. C., 1.
 Oklahoma, graptolites: Decker, C. E., 5.
 Pennsylvania, Belinurus: Eller, E. R., 2.
 Onondaga Ostracoda: Swartz, F. M., 1.
 Southwestern: Laird, W. M., 2;
 Swartz, C. K., 2.
 Quebec, Bothriolepis: Denison, R. H., 1.
 Bryozoa: Fritz, M. A., 1.
 Cephalaspis: Robertson, G. M., 3.
 Eusthenopteron: Sternberg, R. M., 1.
 Fenestrellina: Fritz, M. A., 2.
 Tennessee, Ostracoda: Bassler, R. S., 5.
 Texas, Caballos Radiolaria: Aberdeen, E. J., 1.
 Wisconsin, Brachlopoda, color patterns: Cloud, P. E., 1.

Paleontology—Continued.

Jurassic.

- Ammonites, Cuba: Corral y Alemán, 3:
Jaworski, E., 1.
- California, Aucella-bearing beds: Rist,
R. L., 1.
- Characteristic fossils: Hanna, G. D., 1.
- Colorado, Hallopus: Chapman, F., 1.
- Morrison, Summerville fm.: Holt, E.
L., 1.
- Cuba, Viñales lms. fauna: Imlay, R.
W., 6.
- Dinosaurs, rise: Schlaikjer, E. M., 1.
- Sauropod, age: Brown, B., 3.
- Fauna, Ark.-La.-Tex.: Imlay, R. W., 4.
- Greenland, Caytonia: Harris, T. M., 1.
- Mexico, Pelecypoda: Imlay, R. W., 3.
- Oklahoma, Sauropagus: Ray, G. E., 1.
- Oregon, central: Lupper, R. L., 2.
- Rocky Mts., microfossils: Peck, R. E., 2.
- Texas, dinosaur tracks: Bird, R. T., 1.
- Vertebrata and paleoecology: Camp, C.
L., 2.

Ordovician.

- Adirondacks, N. Y.-Vt., Trilobita:
Wheeler, R. R., 3.
- Alaska, Cephalopoda: Flower, R. H., 8.
- Anthozoa, Columnariidae: Bassler, R.
S., 8.
- Arctic America, Frobisher Bay fauna:
Roy, S. K., 1.
- Canada, Solenopora: Fritz, M. A., 5.
- Conodonts, Okla.-Mo.: Branson, E. B.,
8.
- Indiana, Ctenodonta: Shrock, R. R., 3.
- Kentucky, Leperditella: Coryell, H. N., 1.
- Manitoba, Heliolitidae: Leith, E., 1.
- Maryland, characteristic fossils: French,
E. M., Jr., 1.
- Michigan fauna: Hussey, R. C., 2.
- Micropaleontology Nor. Am. chert: Wet-
zel, O., 1.
- Minnesota, conodonts: Stauffer, C. R., 2.
- Nevada, Receptaculites: Howell, B. F., 7.
- Sponges: Bassler, R. S., 7.
- Trilobita: Holliday, S., 1.
- Zittella: Howell, B. F., 6.
- New York, Cephalopoda: Flower, R. H., 7.
- Nautiloids: Flower, R. H., 6.
- North America, Brachiopoda: Ulrich,
E. O., 2.
- Cephalopoda, brevicones: Ulrich, E.
O., 3.
- Diclograptids: Bulman, O. M. B., 1.
- Didymograptus: Decker, C. E., 7.
- Eastern corals: Wheeler, R. R., 2.
- Gastropoda genotypes: Knight, J. B., 2.
- Metacaularia: Sinclair, G. W., 2.
- Nautilicones: Ulrich, E. O., 1.
- Trilobita, phacopid: Delo, D. M., 2.
- Trinucleidae: Whittington, H. B., 1.
- Ohio, Tetradium: James, C., 1.
- Oklahoma, Eumorphocystis: Branson, E.
B., 2.
- Ostracoda: Harris, R. W., 1.
- Schmidtella: Drake, R. T., 1.

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Ordovician—Continued.

- Ontario, crinoidal markings: Okullitch,
V. J., 2.
- Ostracoda, Decorah fm.: Kay, G. M., 1.
- Quebec, Gaspé Mictaw fauna: Northrop,
S. A., 1.
- Hallopora: Fritz, M. A., 3.
- Solenopora: Fritz, M. A., 5.
- Southern Appalachians: Cooper, G. A., 1.
- Sponges, Chazy: Raymond, P. E., 1.
- Texas, Alsataspis: Turner, F. E., 1.
- Conodonts: Graves, R. W., Jr., 1.
- Ostracoda: Harris, R. W., 1.
- Trilobite appendages, N. Y.: Gerstang,
W., 1.
- Virginia, Burkes Garden fossils: Perry,
G. G., 1.
- Trilobita, silicified: Whittington, H.
B., 2.
- Wisconsin, graptolite: Decker, C. E., 4.

Paleocene.

- Alberta, Michrichnus tracks: Russell, L.
S., 7.
- Montana, Davisia: Cooper, K. W., 1.

Paleozoic.

- Crinoida, revised classn.: Moore, R. C.,
15.

Pre-Cambrian.

- Arizona, Grand Canyon jellyfish: Bass-
ler, R. S., 4.
- Life in pre-Cambrian: Berry, E. W., 1.
- Metamorphic paleontology: Keyes, C. R.,
129.
- Micropaleontology Nor. Am. chert: Wet-
zel, O., 1.

Quaternary.

- Alaska, Foraminifera: Cushman, J. A., 4.
- Arizona, lion tracks: Nininger, H. H., 6.
- Rampart Cave fauna: Wilson, R. W., 4.
- Artiodactyla, dispersal: Pilgrim, G. E., 2.
- Amphineura, Atlantic Coastal Plain:
Berry, C. T., 1.
- Aves, Nor. Am.: Wetmore, A., 2.
- British Columbia, Mammalia: Cowan, I.
M., 1.
- California, Alabina: Willett, G., 1.
- Aves: DeMay, I. S., 1, 2, 3; Miller,
L. H., 2.
- Cantharus: Burch, T., 1.
- Characteristic fossils: Hanna, G. D., 1.
- Coragyps Pleist.: Miller, L. H., 3.
- Ichthyosaurs: Camp, C. L., 4.
- Kettleman Hills oil field: Woodring,
W. P., 1.
- Los Angeles fossil man: Lopatkin, I.
A., 1.
- Mollusca, Pleist.: Berry, S. S., 1.
- Pseudotsuga: Mason, H. L., 1.
- Rincon Creek fauna: Cooper, J. C., 1.
- Signal Hill, Long Beach: De Long, J.
H., Jr., 1.
- Stone Man Cave fossils: Furlong, E.
L., 2.
- Uria: Miller, A. M., 2.

Paleontology—Continued.

Quaternary—Continued.

- Canada, Belcher I. fauna: Richards, H. G., 1.
 Diatomaceae, nor. Atlantic deep-sea cores: Lohman, K. E., 2.
 Fauna, movements between Asia and Nor. Am.: Teilhard de Chardin, P., 1.
 Florida, Pleist. man: Cooke, C. W., 4.
 Illinois, mammoth: Willman, H. B., 2.
 Indiana, bog pollen: Hamp, F. A., 1.
 Iowa, Lutra, Pleist.: Goldman, E. A., 1.
 Micro-fossils in peat: Wilson, L. R., 2.
 Kansas, Cervalcres: Hibbard, C. W., 3.
 Cratogeomys: Rinker, G. C., 1.
 Emma Creek fm.: Frye, J. C., 4.
 Mollusca: Goodrich, C., 1.
 Pleistocene fauna: Hibbard, C. W., 4, 9.
 Synaptomys: Hibbard, C. W., 1.
 Maine, fossiliferous esker: Trefethen, J. M., 2.
 Maryland, characteristic fossils: French, E. M., Jr., 1.
 Libinia: Easton, W. H., 2.
 Pleistocene: Berry, E. W., 4.
 Mexico, Coragyps: Miller, L. H., 3.
 Meleagris: Miller, L. H., 1.
 Polyborus: Howard, H., 1.
 Michigan, Aplodinotus: Hubbs, C. L., 1.
 Mastodon remains: MacAlpin, A., 1.
 Minnesota, Alice mine plants: Neuman, F. R., 1.
 Missouri, fauna: Olson, E. C., 1.
 Nebraska, Parabos: Barbour, E. H., 3.
 Newfoundland, fossils: Richards, H. G., 2.
 New Jersey, Pensauken flora: Berry, E. W., 1.
 New Mexico, Sandia Cave man: Hibben, F. C., 1, 2.
 North America, early man: Sellards, E. H., 1.
 Faunal migrations from Asia: Hatal, K. M., 1.
 Felidae: Simpson, G. G., 11.
 Foraminifera, nor. Atlantic cores: Phleger, F. B., Jr., 2.
 Mollusca: Richards, H. G., 3.
 Pacific Coast Turritella: Merriam, C. W., 3.
 North Carolina, Dare Co. peat: Wells, B. W., 1.
 Ohio peats: Wilson, L. R., 4.
 Oklahoma, Megalonyx: Stovall, J. W., 1.
 Ontario peats: Wilson, L. R., 4.
 Oregon, early man: Cressman, L. S., 1.
 Fossil Lake Mammalia: Allison, I. S., 4.
 Pleistocene climate shown by fossil birds: Miller, A. E., 1.
 Rhinoceros evolution: Wood, H. E., 2d, 2.
 Saskatchewan, Pleist. horse: Russell, L. S., 11.
 South Carolina, Pamlico echinoids: Berry, E. W., 4.

Paleontology—Continued.

Quaternary—Continued.

- Texas, artifacts: Evans, G. L., 1; Sellards, E. H., 3.
 Ground sloths: McAnulty, W. N., 1.
 United States, echinoids: Cooke, C. W., 2.
 Washington, interglacial peat: Hansen, H. P., 1.
 Pleistocene fossils: Fernquist, C. O., 4.
 West Virginia, Mammut: Wells, D., 1.
Silurian.
 Anthozoa, Columnariidae: Bassler, R. S., 8.
 Arctic America, Frobisher Bay: Roy, S. K., 1.
 Brachiopoda, terebratuloid: Cloud, P. E., Jr., 2.
 California, Palaeocyclus: McAllister, J. F., 2.
 Fauna, Frobisher Bay, Arc. Am.: Roy, S. K., 1.
 Indiana, Foraminifera: Stewart, G. A., 2.
 Invertebrata, Tex., Tenn.: Cooper, G. A., 2.
 Maine, Aroostook Co.: Twenhofel, W. H., 7.
 Ripogenus Dam fauna: Willard, B., 7.
 Maryland, characteristic fossils: French, E. M., Jr., 1.
 Micropaleontology, Nor. Am. chert: Wetzel, O., 1.
 Missouri, corals: Ball, J. R., 3.
 Dalmanites: Ball, J. R., 4.
 Nematophytales, position: Darrab, W. C., 3.
 New York, scolecodonts: Eller, E. R., 1.
 North America, Gastropoda genotypes: Knight, J. B., 2.
 Leurocyroceras: Flower, R. H., 5.
 Metaconularia: Sinclair, G. W., 2.
 Ohio, Foraminifera: Stewart, G. A., 2.
 Ontario, Pseudococonularia: Sinclair, G. W., 3.
 Pennsylvania, southeastern: Swartz, C. K., 2.
 Tennessee, sponge: Howell, B. F., 3.
Tertiary.
 Aelurodon genus: VanderHoof, V. L., 1.
 Alabama, Brachiopoda: Toulmin, L. D., Jr., 1.
 Corals: Vaughan, T. W., 3.
 Foraminifera: Cushman, J. A., 4; Garrett, J. B., Jr., 1; Toulmin, L. D., Jr., 4.
 Nautiloid: McGlamery, W., 1.
 Alaska, Foraminifera: Cushman, J. A., 4.
 Alberta, Foraminifera: Russell, L. S., 10.
 Southern plains: Russell, L. S., 1, 2.
 Antilean-Caribbean area: Senn, A., 1.
 Apodontoidea, S. Dak.-Oreg.: McGrew, P. O., 4.
 Arizona, lion tracks: Nininger, H. H., 6.
 Artiodactyla, dispersal: Pilgrim, G. E., 2.
 White River Oligocene: Scott, W. B., 1.

Paleontology—Continued.

Tertiary—Continued.

Astrodapsis evolution: Clark, B. L., 2.
Barbados, Globigerina sediments: Crickmay, G. W., 2.

Paleogene: Senn, A., 1.

Birds, Nor. Am.: Wetmore, A., 2.
California, Balanus: Rothwell, W. T., Jr., 1.

Birds: Miller, L. H., 2.

Caliente Range area: Eaton, J. E., 3.

Capay Eocene: Bentson, H., 2.

Characteristic fossils: Hanna, G. D., 1.

Cibicides: LeRoy, L. W., 1.

Coral: Durham, J. W., 2; Wells, J. W., 3.

Equidae: Drescher, A. B., 1; Richey, K. A., 3.

Faunas, Black Hawk Ranch: Richey, K. A., 1.

Domengine: Vokes, H. E., 1.

Rincon Creek: Cooper, J. C., 1.

Tick Canyon: Jahns, R. H., 1.

Fish, Miocene: David, L. R., 1, 2, 3, 5.

Floras, Mint Canyon: Axelrod, D. I., 4.

Sierra Nevada: MacGinitie, H. D., 1.

Foraminifera: Adams, B. C., 1; Chapman F., 2; Crume, R. W., 1; Laiming, B. G., 2, 3; Marks, J. G., 1; Natland, M. L., 1.

Gisortia, Eocene: Ingram, W. M., 2.

Horses: Drescher, A. B., 1; Richey, K. A., 3.

Ichnites, Death Valley: Curry, H. D., 1.

Kettleman Hills oil field: Woodring, W. P., 1.

Lyonothamnus: Axelrod, D. I., 3.

Mammalia: Dougherty, J. F., 2.

Metailurus: Richey, K. A., 4.

Mollusca, marine: Keen, A. M., 2.

Mt. Diablo life-zones: Richey, K. A., 2.

Pareumys: Wilson, R. W., 3.

Pecten: Edwards, K. L., 1.

Puffinus, Miocene: Orr, R. T., 1.

Radiolaria: Campbell, A. S., 1.

Rodents: Wilson, R. W., 1, 2.

Sea-cow: VanderHoof, V. L., 2.

Catalogue, Nor. Am. Coastal Plain fossils: Stenzel, H. B., 12.

Coastal Plain Brachiopoda: Stenzel, H. B., 2.

Colorado, Creede fm. flora: Stewart, B. K., 1, 2.

Eolestes, Eocene: Cockerell, T. D. A., 2.

Flora, Eocene: Barnhart, C. H., 2.

Hymenoptera: Cockerell, T. D. A., 2.

Mammalia, Paleocene: Gazin, C. L., 3.

Correlations, Louisiana, Wilcox faunas: Barry, J. O., 1.

Costa Rica, Cypraea: Ingram, W. M., 1.

Paleontology—Continued.

Tertiary—Continued.

Cuba, Foraminifera: Palmer, D. B. K., 1.

Gypsina: Rutten, M. G., 1.

Sthenorytis: Bartsch, P., 1.

Cytheridea (Clithrocytheridea) wilcoxensis: Stephenson, M. B., 2.

Daemonelix, origin: Lugn, A. L., 2.

Dominican Republic, Foraminifera: Cushman, J. A., 4.

Ecospecies: Axelrod, D. I., 5.

Eohippus: Simpson, G. G., 4.

Fauna, Glendon fm., Ala.: Howe, H. V., 1.

Movements between Asia and Nor.

Am.: Teilhard de Chardin, P., 1.

Flora, Fort Union, Wyo.: Dorf, E., 1.

Sucker Creek, Idaho-Oregon: Smith, H. V., 1.

Florida, Cytheridea (Haplocytheridea): Stephenson, M. B., 1.

Felsinotherium: Gregory, J. T., 2.

Foraminifera: Cushman, J. A., 4.

Goniodelphis: Allen, G. M., 1.

Helisoma: Baker, F. C., 1.

Mammalia: White, T. E., 2, 3.

Megatherium: White, T. E., 5.

Mollusca: Smith, M., 1; Stubbs, S. A., 1.

Niceville well area: Smith, R. H., 1.

Noetinae: MacNeil, F. S., 1.

Shells: McGinty, T. L., 1.

Squirrel-fish: Conrad, G. M., 1.

Studies of wells: Cole, W. S., 2.

Vertebrata: White, T. E., 4.

Foraminifera, Calif.: Israelsky, M. C., 2.

Grasses, herbs, High Plains: Elias, M. K., 2.

Great Basin floras: Axelrod, D. I., 2.

Greenland, Eocene flora: Seward, A. C., (Sir), 1.

Gulf Coast, Cryptochorda: Stenzel, H. B., 4.

Lipparia: Stenzel, H. B., 4.

Nautiloids: Stenzel, H. B., 3.

Turritellidae: Stenzel, H. B., 5.

Haiti, Foraminifera: Coryell, H. N., 1.

Honduras, Mammalia: Olson, E. C., 5.

Idaho, Equus tooth: Scheid, V. E., 1.

Fomes: Brown, R. W., 3.

Thorn Creek flora: Smith, H. V., 2.

Kansas, lizards: Taylor, E. H., 2.

Mammalia: Hibbard, C. W., 5, 6.

Rexroad fauna: Hibbard, C. W., 8.

Toads, salamanders: Taylor, E. H., 3.

Kentucky-Texas, Wilcox flora: Berry, E. W., 3.

Lagomorpha, White River Oligocene: Wood, A. E., 2.

Louisiana, corals: Vaughan, T. W., 3.

Midway microfauna: Murray, G. E., Jr., 1.

Rangia: Gardner, J. A., 1.

Southern Miocene: Ellisor, A. C., 1.

Paleontology—Continued.

Tertiary—Continued.

- Mammalia, White River Oligocene: Simpson, G. G., 14.
 Mammalian molar teeth, evolution: Butler, P. M., 1.
 Maryland, characteristic fossils: French, E. M., Jr., 1.
 Echinoid colony: Schoonover, L. M., 1.
 Foraminifera: Clapp, A. D., 1.
 Gavia: Wetmore, A., 3.
 Mollusca: Schoonover, L. M., 2.
 Palaeophis: Blake, S. F., 2.
 Paralbula: Blake, S. F., 1.
 Pinus, Quercus: Berry, E. W., 7.
 Sea urchins: Benn, J. H., 1.
 Siphonocetus: Barwick, A. R., 1.
 Mexico, antelope: Furlong, E. L., 1.
 Sea-cow: VanderHoof, V. L., 3.
 Midway fauna, Louisiana, correl.: Le Blanc, R. J., 2.
 West Gulf prov.: Gardner, J. A., 4.
 Mississippi, Foraminifera: Gravell, D. W., 1; Mornhinveg, A. R., 1.
 Pascagoula fm. fauna: Mincher, A. R., 1.
 Missouri, S. E., fossil leaves: Duckworth, A. S., 1.
 Montana, Domnina: Simpson, G. G., 15.
 Fort Logan-Deep River fms. fauna: Koerner, H. E., 1.
 Macrotrarsius: Clark, J., 1.
 Nebraska, Alligator: Schmidt, K. P., 2.
 Gaviota: Miller, A. H., 3.
 Hemicyon: Colbert, E. H., 4.
 Mesogaulus: Cook, H. J., 1.
 Metechinus: Meade, G. E., 1.
 Oreolagus: McGrew, P. O., 2.
 Phlaocyon: McGrew, P. O., 1.
 Sphenophalus: Barbour, E. H., 2.
 Nevada, Equidae: Henshaw, P. C., 1.
 Emeralds flora: Axelrod, D. I., 1.
 Mammalia: Stirton, R. A., 1.
 Miopelodytes: Taylor, E. H., 1.
 New Jersey: Lewis, J. V., 1.
 Invertebrate fauna: Richards, H. G., 5.
 Vincentown fm.: Greacen, K. F., 1.
 New Mexico, Ectococcus: Simpson, G. G., 16.
 North America, Amphineura: Berty, C. T., 1.
 Earliest primates: Simpson, G. G., 3.
 Equidae, phylogeny: Stirton, R. A., 2.
 Faunal migrations from Asia: Hatai, K. M., 1.
 Flora, catalogue: Dorf, E., 3.
 Liriodendron: Berry, E. W., 6.
 Mesozoic plants: Schultz, G. E., 3.
 Tropical faunal evolution: Rutsch, R. F., 2.
 Turritella, West Coast: Merriam, C. W., 3.
 West Coast Chione: Parker, P. E., 1.
 North Carolina, Fasciolaria: Smith, B., 1.
 Mollusca: Richards, H. G., 4.
 Natural Well area: Huddle, J. W., 1.

Paleontology—Continued.

Tertiary—Continued.

- North Dakota, Manitsha: Simpson, G. G., 13.
 Oklahoma, Optima fauna: Savage, D. E., 1.
 Oregon, Paratylopus: Dougherty, J. F., 1.
 Psephorus: Packard, E. L., 2.
 Vertebrata: Packard, E. L., 3.
 Perissodactyla, White River Oligocene: Scott, W. B., 2.
 Puerto Rico, Foraminifera: Caldwell, E. T., 1; Galloway, J. J., 1.
 Rhinoceros evolution: Wood, H. E., 2d, 2.
 Saskatchewan, titanotheres: Russell, L. S., 6.
 Soldado Rock Formaninifera: Vaughan, T. W., 2.
 South Dakota, Heliscomys: McGrew, P. O., 3.
 Hoplophoneus: Simpson, G. G., 8.
 Manitsha: Simpson, G. G., 6.
 Tertiary continental sediments: Clark, J., 2.
 Faunas and continental drift, Nor. Am.: Rutsch, R. F., 2.
 Texas, Ailuraena: Stirton, R. A., 3.
 Cook Mt. fm.: Stenzel, H. B., 8.
 Equidae: Gregory, J. T., 1.
 Frio fossil zones: Rolshausen, F. W., 1.
 Gnathabelodon: Sellards, E. H., 4.
 Mammalia: Hesse, C. J., 2.
 Pliocyon: Johnston, C. S., 1.
 Siphonides: Feray, D. E., 1.
 Textularia: Davis, F. E., 1.
 Trinidad, Foraminifera: Vaughan, T. W., 2.
 United States, fossil birds: Wetmore, A., 1.
 Echinoids: Cooke, C. W., 2.
 Exilia: Bentson, H., 1.
 Foraminifera: Cushman, J. A., 4.
 Fossil floras: Brown, R. W., 1.
 Ticholeptinae: Schultz, C. B., 6.
 Utah, dinosaurs: Gazin, C. L., 1.
 Mammalia: Gazin, C. L., 1, 4.
 Vertebrata, Utah-Wyo.: Gazin, C. L., 2.
 Virginia, Delphinodon: Barwick, A. R., 2.
 Tidewater Miocene fauna: Barclay, G. C., 1.
 Washington, corals: Durham, J. W., 1.
 Eopredon: Grant, R. Y., 1.
 Fossil wood: Beck, G. F., 2.
 Oligocene fossil zones: Durham, J. W., 3.
 Washington-Oregon: Beck, G. F., 3.
 Wyoming, Eocene fish: Anonymous, 4.
 Hassiacosuchus: Mook, C. C., 2.
 Lance type flora: Dorf, E., 4.
 Lizards: Gilmore, C. W., 4.
 Paleocene faunas: Jepsen, G. L., 1.
 Plants in coal: Wilson, L. R., 6.
 Primates, Eocene: Seton, H., 1.

Paleontology—Continued.

Triassic.

- Arizona, flora: Daugherty, L. H., 1.
 British Columbia, ammonoids: McLearn, F. H., 5.
 Beattie Hill: McLearn, F. H., 4.
 Peace River foothills: McLearn, F. H., 7.
 Pelecypoda: McLearn, F. H., 5, 6.
 California, characteristic fossils: Hanna, G. D., 1.
 Canada, ammonoids: McLearn, F. H., 2.
 Dinosaurs: Brown, B., 4; Schlaikjer, E. M., 1.
 Maryland, characteristic fossils: French, E. M., Jr., 1.
 Massachusetts, fish: Dunkle, D. H., 2.
 Nevada, ammonoids: Johnston, F. N., 1.
 New Jersey, Osteolepiscus for Coelacanthus newarki: Schaeffer, B., 2.
 New York, Osteolepiscus for Coelacanthus newarki: Schaeffer, B., 2.
 North Carolina, spores: Berry, E. W., 2.
 Pennsylvania, Anchisauripus track: Willard, B., 1.
 Texas, amphibians: Sawin, H. J., 2.
 Buettneria skull: Sternberg, C. W., 1.
 Trilophosaurus: Gregory, J. T., 3.
 Utah, Confusion and Conger Ranges: Bacon, C. S., Jr., 1.
 Vertebrata and paleoecology: Camp, C. L., 2.

Paleozoic undifferentiated.

- Appalachians, Pa.-Md.: Cloos, E., 2.
 Arizona, paleogeography: Stoyanow, A. A., 1.
 California, Coast Ranges: Taliaferro, N. L., 3.
 Klamath Mts.: Hinds, N. E. A., 2.
 Correlations, Rocky Mts.-Tex.-Okla.: Osborne, H. W., 1.
 Ecology of corals: Vaughan, T. W., 4.
 Florida: Campbell, R. B., 2.
 Montana, Gallatin Valley: Fix, P. F., 1.
 Stillwater complex: Peoples, J. W., 1.
 New England, ig. activity: Billings, M. P., 1.
 New Mexico, San Andres Mts.: Baker, C. L., 1.
 North America, ore dists.: Billingsley, P. R., 1.
 North Dakota, deep-well records: Laird, W. M., 3.
 Pennsylvania, contact studies: Hersey, J. B., 1.
 Quebec, Appalachians: Lavediere, J.-W., 1.
 Tennessee: Born, K. E., 1.
 Texas, Lampasas inlier: Plummer, F. B., 1.
 United States, Allegheny synclinorium: Kay, G. M., 5.
 Vermont, central: Jahns, R. H., 4.
 Washington, Stevens Co.: Bennett, W. A. G., 2.

Panama (including Canal Zone).

Paleontology.

- Uvigerina, Miocene: Cushman, J. A., 4.

Physiographic geology.

- Submarine valleys: Terry, R. A., 1.

Paragenesis.

- Albite and gold: Gallagher, D., 1.
 Arizona: Gilluly, J., 1; Kuhn, T. H., 1; Mills, H. F., 1.
 British Columbia, Nickel Plate Mt. mine: Billingsley, P. R., 3.
 California, Big Blue mines: Prout, J. W., Jr., 1.
 Chromite deposits: Allen, J. E., 3.
 Crestmore quarry: Woodford, A. O., 4.
 Grass Valley: Johnston, W. D., Jr., 1.
 Host-rock inflation: Farmin, R., 1.
 Tungsten deposits: Partridge, J. F., Jr., 1.
 Canada, pyrite of gold deposits: Auger, P. E., 1.
 Canadian shield: Moore, E. S., 3.
 Colorado, Boulder Co.: Lovering, T. S., 2.
 Camp Albion deposits: Wahlstrom, E. E., 1.
 Cripple Creek ores: Loughlin, G. F., 1.
 Gold Hill area: Goddard, E. N., 1.
 Horseshoe-Sacramento areas: Butler, R. D., 1.
 La Plata Mts. ores: Galbraith, F. W., 5.
 Leadville: Chapman, E. P., 1.
 London fault area: Singewald, Q. D., 1.
 Specimen Mt.: Wahlstrom, E. E., 3.
 Uncompahgre area: Burbank, W. S., 1.
 Connecticut, Mt. Prospect deposits: Cameron, E. N., 1.
 Cooper, Idaho: Anderson, A. L., 6.
 Gold and albite: Gallagher, D., 1.
 Greenland, east: Hawkes, L., 1.
 Gudmundite, Northwest Territories: Sampson, E., 1.
 Hypogene deposits, mineral sequence: Bandy, M. C., 1.
 Idaho batholith: Anderson, A. L., 4.
 Idaho, Kootenai Co.: Willard, M. E., 1.
 St. Louis mine: Anderson, A. L., 2.
 Sunshine mine: Anderson, R. J., 1.
 Yellow Pine area: White, D. E., 1.
 Iron-nickel synthesis: Hawley, J. E., 1.
 Liquidus and solidus: Tanton, T. L., 1.
 Magmatic differentiation and pressures: Emmons, R. C., 1.
 Magnetite in sulphide ores: Schwartz, G. M., 2, 4.
 Maine, Black Mt. area: Verron, H. J., 3.
 Mexico, Concepción del Oro area: Krieger, P., 1.
 Geological invest. 1935-36: González, E. M., 1.
 Zacatecas silver ores: Bastin, E. S., 3.
 Mineral sequence, hypogene deposits: Hart, L. H., 1.

Paragenesis—Continued.

- Mississippi Valley type, lead-zinc: Garrels, R. M., 2.
- Missouri, Bevier coal seam: Gallagher, R. T., 1.
- Montana, Boxelder laccolith: Pecora, W. T., 1.
- Highland mine: Newcomb, R. C., 1.
- Nevada, Getchell mine: Hardy, R. A., 1.
- Golconda tungsten deposit: Kerr, P. F., 3.
- Newfoundland, Rencontre area: White, D. E., 3.
- New Hampshire, Mt. Washington: Billings, M. P., 2.
- Palermo quarry: Verrow, H. J., 4.
- New York, Shawangunk Mt.: Ingham, A. I., 1.
- North America, ore dists.: Billingsley, P. R., 1.
- North Carolina, Spruce Pine dist.: Maurice, C. S., 1.
- Northwest Territories, Negus, Con mines: Ridland, G. C., 1.
- Nova Scotia, Guysborough Mines Ltd.: Hedley, P. M., 1.
- Oklahoma, Wichita Mts.: Merritt, C. A., 3.
- Ontario, Hollinger mine: Keys, M. R., 1.
- J-M Consolidated mine: Bateman, J. D., 2.
- McIntyre mine: Langford, G. B., 1.
- Nighthawk Penin.: Byers, A. R., 1, 2.
- Uchi-Slate Lakes: Bateman, J. D., 1.
- Ore deposits, origin: Graton, L. C., 2.
- Ore-forming fluid nature: Bichan, W. J., 1; Fenner, C. N., 1; Graton, L. C., 1; Ingerson, F. E., 2.
- Oregon, Cornucopia gold quartz veins: Goodspeed, G. E., 4.
- Quebec, Calumet I.: Moorhouse, W. W., 1.
- Sept-Iles area: Faessler, C., 4.
- Quicksilver mineralization: Dreyer, R. M., 1; Fabey, J. J., 1.
- Saskatchewan, Sulphide Lake, Mawdsley, J. B., 1.
- South Dakota, Tinton dist.: Smith, W. C., 1.
- Temperature, depth, hypogene deposits: Dougherty, E. Y., 1.
- Vein formation process: Roberts, H. M., 1.
- Vitriolite, titanium deposits: Ross, C. S., 1.
- Willemite, Balmat, N. Y.: Hough, F. H., 1.
- Paragonite, validity of: Schaller, W. T., 1.
- Paramelaconite, Arizona: Frondel, C., 3.
- Pararammelsbergite, Ontario: Peacock, M. A., 4.
- Pearls, Cret., Kans: Brown, R. W., 2.
- Peat.
- Alaska: Dachnowski-Stokes, A. P., 1.
- Bermuda: Knox, A. S., 1.
- British Columbia bogs: Hansen, H. P., 2.

Peat—Continued.

- Iowa, interglacial: Lane, G. H., 1.
- Mangroves, geol. work: Chapman, V. J., 1.
- New Hampshire: White, G. W., 1.
- Ohio, Quat.: Wilson, L. R., 4.
- Ontario, Quat.: Wilson, L. R., 4.
- Oregon, paleoecology of bogs: Hansen, H. P., 8, 9.
- Paleobotany, utilitarian aspects: Darrah, W. C., 9.
- Pollen analysis, N. C.: Wells, B. W., 1.
- Texas: Plummer, F. B., 6.
- Washington, Bonaparte Lake: Hansen, H. P., 3.
- Interglacial: Hansen, H. P., 1.
- Olympic Penin. bog: Hansen, H. P., 5.
- Wisconsin, montane deposit: Hansen, H. P., 7.
- Pebbles.
- Concave facets on: Treasher, R. C., 4.
- Gastroliths, sea-mammals: Emery, K. O., 3.
- Ontario, Omega mine area: Jenney, C. P., 1.
- Shape and roundness of particles: Krumbein, W. C., 8.
- Size and shape study: Krumbein, W. C., 9.
- Texas, dreikanterers: Barnes, V. E., 7.
- Pedestals and pediments, miniature: Bradley, W. H., 3.
- Pediments.
- Bibliography: Trask, P. D., 2.
- Mexico, Sonora: Flores, T., 1.
- Nevada, Ruby-East Humboldt Range: Sharp, R. P., 1.
- New Mexico, Moreno Valley: Ray, L. L., 2.
- San Acacia area: Denny, C. S., 5.
- Rocky Mt. area: Howard, A. D., 5.
- Pediments and pedestals, miniature: Bradley, W. H., 3.
- Pegmatites.
- British Columbia: Cairnes, C. E., 1; Hedley, M. S., 2; Stevenson, J. S., 4.
- California: Partridge, J. F., Jr., 1; Woodford, A. O., 4.
- Colorado: Ives, R. L., 5; Pearl, R. M., 1, 7.
- Connecticut, Andrews, quarry: Zodiac, P., 8.
- Dikes, N. C. tracing: Johnson, W. R., 1.
- General: Landes, K. K., 1.
- Idaho, Latah Co.: Scheid, V. E., 2.
- Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
- Maine: Schaub, B. M., 2; Verrow, H. J., 3.
- Massachusetts: Billings, M. P., 3.
- Montana, Highwood Mts.: Burgess, C. H., 1.
- New Hampshire: Chapman, C. A., 1; Olson, J. C., 1; Verrow, H. J., 2, 4.

Pegmatites—Continued.

- New Jersey, Highland area: Tyler, S. A., 1.
 New York, McLearn pegmatite: Shaub, B. M., 1.
 North Carolina: Hess, F. L., 1; Kesler, T. L., 2; Maurice, C. S., 1.
 Ontario, Omega mine: Jenney, C. P., 1.
 South Dakota, Tinton dist.: Smith, W. C., 1.
 Virginia, Amherst Co.: Moore, C. H., Jr., 1.
 Washington, Kettle Falls: Campbell, C. D., 2.
 Wyoming, Bridger Mts. dikes: McLaughlin, T. G., 1.

Pelecypoda. See also Mollusca; Invertebrata.

- Alberta, sou. plains, faunas: Landes, R. W., 1; Russell, L. S., 1, 2.
 Arctic America, Frobisher Bay: Roy, S. K., 1.
 Aucella-bearing beds, Calif.: Rist, R. L., 1.
 Belcher I. fauna, Canada: Richard, H. G., 1.
 British Columbia, Beattie Hill: McLearn, F. H., 4.
 Peace River foothills: McLearn, F. H., 3, 7.
 Triassic: McLearn, F. H., 5, 6.
 California, Caliente Range area: Eaton, J. E., 3.
 Characteristic fossils: Hanna, G. D., 1.
 Chico fm. fossils: Taff, J. A., 1.
 Kettleman Hills oil field: Woodring, W. P., 1.
 Pecten santaecruzensis: Edwards, K. L., 1.
 Pleistocene: Berry, S. S., 1.
 Rincon Creek: Cooper, J. C., 1.
 Signal Hill, Long Beach: DeLong, J. H., Jr., 1.
 Calva Popenoe, invalid: Popenoe, W. P., 1.
 Chickasawhay marl, Ala-Miss.: Mansfield, W. C., 1.
 Chione, Tert., Nor. Am.: Parker, P. E., 1.
 Ctenodonta, Ind.: Shrock, R. R., 3.
 Cuba, Vento valley: Brodermann, J., 1.
 Eastend fm. fauna, Sask.: Russell, L. S., 8.
 Faunas, Cretaceous, Alberta-Brit. Col.: Warren, P. S., 2.
 Jurassic, Ark.-La.-Tex.: Imlay, R. W., 4.
 Whitehorse ss.: Newell, N. D., 1.
 Florida, Pliocene: Stubbs, S. A., 1.
 Louisiana, Midway localities: LeBlanc, R. J., 1.
 Rangia, Miocene: Gardner, J. A., 1.
 Maine, Aroostock Co.: Twenhofel, W. H., 7.

Pelecypoda—Continued.

- Maryland, Miocene: Schoonover, L. M., 2.
 Mexico, Jurassic: Imlay, R. W., 3.
 Neocomian faunas: Imlay, R. W., 2.
 Permian, Chiapas: Müllerried, F. K. G., 2.
 Michigan, Ord.: Hussey, R. C., 2.
 Midway fauna, west Gulf: Gardner, J. A., 4.
 Minnesota, S. E.: Stauffer, C. R., 3.
 Mississippi, Pascagoula fm.: Mincher, A. R., 1.
 Cretaceous: Stephenson, L. W., 1.
 Myalina: Newell, N. D., 3.
 Naiadaites: Newell, N. D., 3.
 Navarro group, Tex.: Stephenson, L. W., 3.
 Newfoundland, Pleist.: Richards, H. G., 2.
 New Jersey, Vincentown fm.: Greacen, K. F., 1.
 New Mexico, Sacramento Mts.: Laudon, L. R., 4.
 Noetinae, Tert., Fla.: MacNeil, F. S., 1.
 Nucula camia for N. amica: Gardner, J. A., 2.
 Ontario, Toronto-Hamilton area: Caley, J. F., 1.
 Oregon, central: Lupper, R. L., 2.
 Pennsylvania, Ames lms. fauna: Seaman, D. M., 1.
 Cambridge lms.: Seaman, D. M., 3.
 Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
 Saskatchewan, Eastend fm.: Russell, L. S., 8.
 Tennessee: Whitlatch, G. I., 1.
 Texas, Cook Mt. fm.: Stenzel, H. B., 8.
 Dallas Co.: Dallas Petroleum Geologists, 1.
 Permian: Roth, R. I., 1; Stainbrook, M. A., 8.
 Virginia, Tidewater Miocene: Barclay, G. C., 1.
- Penepelains.
- Appalachian, correlations: Ver Steeg, K., 3.
 Arizona: Keyes, 32, 133; Sharp, R. P., 3.
 Illinois, Nemo arch: Keyes, 73.
 Making of: Keyes, 131.
 Maryland: Miller, C. A., Jr., 1.
 Newfoundland: Twenhofel, W. H., 4.
 New Jersey: Lewis, J. V., 1.
 Rocky Mt. area: Howard, A. D., 5.
 Schooley, age: Stose, G. W., 1.
 United States, nor. Rocky Mts.: Atwood, W. W., 2.
 Upper Mississippi basin: Keyes, 74; Trewartha, G. T., 1.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
 Virginia, Catocfin belt: Ver Steeg, K., 5.
 Monterey, Staunton, Harrisonburg quads.: Thompson, H. D., 1.

Pennsylvania.

Areas described.

- Curwensville quad.: Ashley, G. H., 1.
Fayette Co.: Hickock, W. O., IV, 1.

Economic geology.

- Appalachian geosyncline: Lafferty, R. C., Jr., 2.
Barium: Heck, E. T., 2.
Bradford sand, Third: Dickey, P. A., 2;
Krynine, 2.
Brookville coal: Foose, R. M., 2.
Clay and shale: Leighton, H., 1.
Coal basin, anthracite: Darton, N. H., 1.
Curwensville quad.: Ashley, G. H., 1.
Delaware Water Gap and Easton quads.:
Bayley, W. S., 1.
Fayette Co.: Hickok, W. O., IV, 1.
Franklin quad., oil and gas: Sherrill, R. E., 2.
General: Willard, B., 2.
Music Mt., other oil pools: Fettke, C. R., 3.
Natural gas: Appalachian G. S., 1;
Fettke, C. R., 1.
Petroleum: Appalachian G. S., 1; Fettke, C. R., 1.
Subsurface sections, west Pa.: Fettke, C. R., 4.
Summit gas pool: Fettke, C. R., 2.
Titusville quad.: Dickey, P. A., 1.

Historical geology.

- Appalachians: Cloos, E., 2; Lafferty, R. C., Jr., 2; Nettleton, L. L., 2.
Bradford sand, Third: Dickey, P. A., 2;
Krynine, 2.
Brookville coal: Foose, R. M., 2.
Cambridge lms.: Seaman, D. M., 3.
Chambersburg area: Craig, L. C., 1.
Clay and shale resources: Leighton, H., 1.
Coal basin, anthracite: Darton, N. H., 1.
Cove Mt. area: Seltzer, G. S., 1.
Cross syncline Lock Haven: Foose, R. M., 1.
Curwensville quad.: Ashley, G. H., 1.
Delaware Water Gap and Easton quads.:
Bayley, W. S., 1.
Devonian: Caster, K. E., 1; Laird, W. M., 1, 2; Swartz, C. K., 2.
Faults, Bowmans area: Brown, E. A., 1.
Fayette Co.: Hickok, W. O., IV, 1.
Franklin quad.: Sherrill, R. E., 2.
General: Willard, B., 2.
Godfrey Ridge: O'Neill, W. F., 1.
Granodiorite, Philadelphia: Postel, A. W., 2.
Ground-water resources: Lohman, S. W., 4.
Harrisburg axis: Willard, B., 5.
Heavy minerals: Krynine, P. D., 1.
Limestones, columnar: O'Neill, W. F., 2.
Martic overthrust: Cloos, E., 4.
Martinsburg sequence, Lehigh Co.: Willard, B., 3.
Mississippian: Laird, W. M., 2.
Music Mt., other oil pools: Fettke, C. R., 3.

Pennsylvania—Continued.

Historical geology—Continued.

- Ordovician, Middle: Kay, G. M., 6.
Paleozoic-Triassic contact: Hersey, J. B., 1.
Petroleum, gas, deep exploration: Fettke, C. R., 1.
Reading overthrust: Miller, B. L., 3.
Recurrent Paleozoic continental facies: Willard, B., 4.
Silurian: Swartz, C. K., 2.
Spitzenberg conglomerate: Whitcomb, L., 2.
Subsurface secs., West Pa.: Fettke, C. R., 4.
Summit gas pool: Fettke, C. R., 2.
Titusville quad.: Dickey, P. A., 1.
Turnpike geology: Claves, A. B., 1.
Youghiogheny Dam: Philbrick, S. S., 3.

Mineralogy.

- Albite, Lowville lms.: Honess, A. P., 1.
Black Moshannon Park meteorite: Anonymous, 26.
Bradford sand, Third: Dickey, P. A., 2;
Krynine, 2.
Chicora meteorite: Preston, F. W., 1.
Coal basin, anthracite: Darton, N. H., 1.
Curwensville quad.: Ashley, G. H., 1.
Delaware Water Gap and Easton quads.:
Bayley, W. S., 1.
Fayette Co.: Hickok, W. O., IV, 1.
Gap Nickel mine: Moyd, L., 1.
Heavy minerals: Dryden, A. L., Jr., 1;
Krynine, 1; Tuttle, O. F., 1.
Jasper? Fraser, D. M., 1; Myers, R. E., 1.
Kibblehouse quarry: Haeberle, W. F., 1.
Martic overthrust: Cloos, E., 4.
Mylonization, Philadelphia: Armstrong, E., 2.
Reading Hills: Fraser, D. M., 2.

Paleontology.

- Ames lms.: Seaman, D. M., 1.
Anchisauripus track: Willard, B., 1.
Belinurus: Eller, E. R., 2.
Cambridge lms.: Seaman, D. M., 3.
Devonian: Laird, W. M., 2; Swartz, C. K., 2.
Dunkard set.: Stewart, P. R., 1.
General: Willard, B., 2.
Mississippian: Laird, W. M., 2.
Ostracoda: Swartz, C. K., 1.
Planolites: Howell, B. F., 4.
Silurian: Swartz, C. K., 2.
Skolithos: Howell, B. F., 4.

Petrology.

- Albite, Lowville lms.: Honess, A. P., 1.
Appalachian orogeny and sedimentation: Krynine, P. D., 3.
Bellefonte ss.: Krynine, P. D., 10.
Bradford sand, Third: Dickey, P. A., 2;
Krynine, 2, 4.
Cambridge lms.: Seaman, D. M., 3.
Delaware Water Gap and Easton quads.:
Bayley, W. S., 1.
Devonian lms.: Swartz, C. K., 2.

Pennsylvania—Continued.

Petrology—Continued.

- Dike, hydrothermal alteration: Russell, G. C., Jr., 1.
 Fayette Co.: Hickok, W. O., IV, 1.
 Gap Nickel mine: Moyd, L., 1.
 Gneisses: Fraser, D. M., 3.
 Granite: Meier, A. E., 1.
 Granitic rocks, Philadelphia: Postel, A. W., 1.
 Granodiorite: Postel, A. W., 2, 3.
 Limestones, columnar: O'Neill, W. F., 2.
 Martie overthrust: Cloos, E., 4.
 Music Mt., other oil pools: Fettke, C. R., 3.
 Mylonization, Philadelphia: Armstrong, E., 2.
 Oölitcs, siliceous: Krynine, P. D., 8.
 Ordovician-Silurian boundary: Krynine, P. D., 9.
 Reading Hills: Fraser, D. M., 2.
 Serpentine: Meier, A. E., 1.
 Silurian fms.: Swartz, C. K., 2.
 Titusville quad.: Dickey, P. A., 1.
 Zircon, hyacinth: Dryden, A. L., Jr., 3.
- Physical geology.*
 Appalachian geosyncline: Lafferty, R. C., Jr., 2.
 Appalachian orogeny, sedimentation: Krynine, P. D., 3.
 Appalachians, nor.: Cloos, E., 2.
 Bellefonte ss.: Krynine, P. D., 10.
 Cove Mt. area: Seltzer, G. S., 1.
 Cross syncline, Lock Haven: Foose, R. M., 1.
 Crystal, Onyx Caves: Miller, R. L., 2.
 Dike, hydrothermal alteration: Russell, G. C., Jr., 1.
 Faults, Bowmans area: Brown, E. A., 1.
 Fayette Co.: Hickok, W. O., IV, 1.
 General: Willard, B., 2.
 Gneisses, banded: Armstrong, E., 1.
 Godfrey Ridge: O'Neill, W. F., 1.
 Granite: Meier, A. E., 1.
 Granitic rocks, Philadelphia: Postel, A. W., 1.
 Granodiorite: Postel, A. W., 2, 3.
 Lincoln Caverns: Anonymous, 5.
 Martie overthrust: Bailey, E. B., 1; Cloos, E., 4.
 Mylonization, Philadelphia: Armstrong, E., 2.
 Paleozoic-Triassic contact: Hersey, J. B., 1.
 Reading Hills: Fraser, D. M., 2.
 Reading overthrust: Stose, G. W., 2.
 Regional jointing: Parker, J. M., III, 1.
 Serpentine: Meier, A. E., 1.
 Triassic dikes, Safe Harbor: Tomlinson, W. H., 1.

Physiographic geology.

- Appalachian erosion surfaces: Cole, W. S., 1.
 Bradford oil field: Krynine, P. D., 4.
 Curwensville quad.: Ashley, G. H., 1.
 Fayette Co.: Hickok, W. O., IV, 1.
 General: Willard, B., 2.

Pennsylvania—Continued.

Physiographic geology—Continued.

- Ground-water resources: Lohman, S. W., 4.
 Recurrent Paleozoic continental facies: Willard, B., 4.
 Titusville quad.: Dickey, P. A., 1.
 Wind Gap area: Mackin, J. H., 2.
 Wyoming Valley: Crosby, I. B., 1.
 Youghogheny Dam: Philbrick, S. S., 3.
- Underground water.*
 Curwensville quad.: Ashley, G. H., 1.
 Fayette Co.: Hickok, W. O., IV, 1.
 Ground-water resources: Lohman, S. W., 4; Stone, R. W., 1.
- Pennsylvanian. See Carboniferous.
 Pentremites. See Blastoidea.
 Percentage method, stratig. dating: Keen, A. M., 3.
- Peridotite.
 Appalachians: Hess, H. H., 6.
 Georgia, forsterite deposits: Hunter, C. E., 3.
 North Carolina, forsterite deposits: Hunter, C. E., 3.
 West Indies: Hess, H. H., 4.
- Periglacial features, Wisconsin driftless area: Smith, H. T. U., 8.
- Periodicity, terrestrial processes: Umbgrove, J. H. F., 1.
- Permian. See also Carboniferous.
 General: Schenck, H. G., 8.
 Kansas: Frye, J. C., 6; Latta, B. F., 1; Smith, H. T. U., 9.
 Problems of: DeFord, R. K., 4.
- Perspectograph: Bain, G. W., 3.
- Perthite, New Hampshire: Smith, A. P., 1.
- Petrifaction, changing view of: Darrah, W. C., 8.
- Petrofabrics.
 California, Mt. Lyell-Mt. Whitney interval: Mayo, E. B., 1.
 Sierra Nevada: Locke, A., 1.
 Correlation, schistosity and tectonic theory: De Lury, J. S., 1.
 Dolomite: Fairbairn, H. W., 2, 5.
 Flow cleavage, folded beds: Swanson C. O., 2.
 Flowage, cleavage, Appalachian folding: Cloos, E., 3.
 Martie overthrust, Md.-Pa.: Cloos, E., 4.
 Michigan, Ajibik quartzite: Fairbairn, H. W., 4.
 Montana, Boxelder laccolith: Pecora, W. T., 1.
 New York, till fabric: Holmes, C. D., 2.
 Ontario, litchfieldite: Fairbairn, H. W., 3.
 Quartz grain orientation: Rowland, R. A., 1.
 Ripple marks, pseudo-ripple marks, criteria: Ingerson, F. E., 1.
 Washington, Colville batholith: Waters, A. C., 2.

- Petrogenesis, Montana: Larsen, E. S., 6.
- Petrographic thin sections, final grinding: Roedder, E., 1.
- Petroleum. See also Bituminous rocks and sands; Oil shales.
- Alabama, developments: Poor, R. S., 2.
- Alaska, future provinces: Smith, P. S., 8.
- Alberta: Ball, M. W., 2; Hume, G. S., 4; Mackenzie, W. D. C., 1; Stewart, J. S., 3.
- Appalachian area: Appalachian G. S., 1; Lafferty, R. C., Jr., 2; Myers, T. H., 1.
- Applied paleontology: Schenck, H. G., 4.
- Applied sedimentology: Rea, H. C., 1.
- Arkansas: Imlay, R. W., 1; Purzer, J., 1; Trager, H. H., 1; Weeks, W. B., 1.
- Barium in Appalachian brines: Heck, E. T., 2.
- Bibliography on origin: Skelton, A. G., 1.
- Bradford sand, Third, N. Y.-Pa.: Dickey, P. A., 2; Krynine, 2.
- California: Atwill, E. R., 1; Ayars, R. N., 1; Bailey, W. C., 1, 2; Barnes, R. M., 1; Clark, R. W., 1; Dolman, S. G., 1, 2; Eaton, J. E., 1; Eckis, R., 1; Ferguson, G. C., 1; Frame, R. G., 1; French, R. W., 1; Galliher, E. W., 1; Goudkoff, P. P., 1; Hoots, H. W., 1; Jenkins, O. P., 4, 5, 6; Loel, W., 2; Menken, F. A., 1, 2; Noble, E. B., 1; Reed, R. D., 2; Rosaire, E. E., 6; Sherman, R. W., 1; Stalder, W., 1; Tarbet, L. A., 1; Travis, C. B., 1; Vallat, E. H., 1; Vaughan, F. E., 1; Willis, R., 1; Winterburn, R., 1; Wissler, S. G., 1, 2; Woodring, W. P., 1; Woodward, A. F., 1; Wosk, D., 1.
- Canada: Alberta S. P. G., 1; Alcock, F. J., 4; Allan, J. A., 3; Canada, G. S., 2; Edmunds, F. H., 2; Hume, G. S., 6; Irwin, J. S., 1.
- Carbohydrates in formation: Berl, E., 1.
- Cincinnati Arch area: Weirich, T. E., 1.
- Coastal Plain, Tex.-La., Wilcox Eocene: Culbertson, J. A., 1.
- Colorado: Pierce, W. G., 1; Wilson, J. H., 1.
- Composition of: Wilde, H. D., 1.
- Coral reefs as sources: Bergmann, W., 1.
- Core studies, Rocky Mts.: Waldschmidt, W. A., 2; Anonymous, 18.
- Cross sections, Tex.-N. Mex.: Dickey, R. I., 1; Fritz, W. C., 1; Woods, D. H., 1.
- Crude oil correls.: Barton, D. C., 2.
- Crude oils, relationship: Bass, N. W., 1.
- Cuba, geosyncline: Corral y Alemán, J. I., 1.
- Cumberland Plateau poss.: Born, K. E., 3.
- Current penetration in prosp.: Muskat, M., 2.
- Petroleum—Continued.
- Decimal system for geophys. prosp.: Heiland, C. A., 2.
- Density effect on seismic reflection: West, S. S., 1.
- Deposition, free oil in salt water: Poirier, O. A., 1.
- Developments, oil and gas: Cohee, G. V., 2.
- Dictionary: Porter, H. P., 1.
- Dip data computation: Waters, K. H., 1.
- Discovery and development: Kimble, J. C., 1.
- Eastern interior basin: Bell, A. H., 1.
- Electrical logging methods: Neumann, L. J., 1; Norton, R. W., 1; Stick, J. C., Jr., 1.
- Electrical prospecting: Rust, W. M., Jr., 1.
- Engineering in exploration: Millikan, C. V., 1.
- Essentials for pools: Heald, K. C., 1.
- Estimating oil reserves: Jones, P. J., 1; Lahee, F. H., 3.
- Exploration chemistry: Fitzgerald, P. E., 1.
- Exploration for: Rosaire, E. E., 2.
- Exploration geophysics: Jakosky, J. J., 1.
- Exploration methods: Howard, W. V., 3; Levorsen, A. I., 1; Ransone, W. R., 3.
- Exploration and discoveries: Monnett, V. E., 1.
- Fluorescent analysis of drill cores: De Ment, J. A., 5.
- Foraminifera in oil industry: Driver, H. L., 1.
- Forest City basin field, Kans.-Nebr.: McClellan, H. W., 1.
- Formation of oil fields: Ball, M. W., 1.
- Formation samples from gun perforators: Richards, J. T., 1.
- Future oil provinces, U. S.-Canada: Levorsen, A. I., 6.
- Future oil supplies: Levorsen, A. I., 2.
- Gases, vertical migration: Nisle, R. G., 1.
- General: Born, W. T., 1; Geol. S. A., 2; Heroy, W. B., 1.
- Genesis: McDermott, E., 1.
- Geochemical exploration: Horvitz, L., 3, 4; McDermott, E., 1; Pirson, S. J., 1; Ransone, W. R., 1; Rosaire, E. E., 3; Sanderson, R. T., 1.
- Geochemical well logging: Horvitz, L., 1; Ransone, W. R., 4.
- Geologic field experience: Dunn, D. A., 1; Ross, R. B., 1.
- Geologists in nat. defense: Snider, L. C., 1.
- Geology in industry: Pratt, W. E., 2.
- Geology and geophysics in prosp.: Eckhardt, E. A., 1.

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- Geophysical prospecting: Eby, J. B., 1; Eckhardt, E. A., 5; Gilchrist, L., 1; Heiland, C. A., 1; Kemp, G., 1; Macelwane, J. B., 2; Nettleton, L. L., 1.
- Geophysics, future: Born, W. T., 2; Lundberg, H., 1.
- Geophysics in exploration: Eckhardt, E. A., 3.
- Georgia: Munyan, A. C., 1.
- Granite Ridge pools: Cram, I. H., 1.
- Gravimetric, seismic exploration: Slotnick, M. M., 1.
- Gravity anomalies and structure: Miller, R. H., 2.
- Gravity interpretations: Hudson, J. D., 1.
- Gravity method of prospecting: Eckhardt, E. A., 2; Miller, R. H., 1.
- Great Plains basin: Kornfeld, J. A., 6.
- Ground water and accumulation: Plummer, F. B., 4.
- Gulf Coast fields: Jenny, W. P., 3; Jung, D. A., 1; Malkin, D. S., 1; Oil and Gas J., 2; Vetter, J. M., 1.
- Gulf gravimeter: Pepper, T. B., 1; Wycoff, R. D., 1.
- Hackberry zone, Gulf Coast: Kornfeld, M. M., 2.
- History, exploration geophysics: Jakosky, J. J., 2.
- Hydrocarbons in seds.: Horvitz, L., 2.
- Hydrogenation of oil: Heck, E. T., 3.
- Identification, oil-core minerals: Tanner, W. F., 2.
- Illinois: Bell, A. H., 2, 3; Cady, G. H., 1; Carroll, D. L., 1; Carlton, J. L., 1; Cobee, G. V., 3, 4; Hoover, W. F., 1; Newton, W. A., 1; Payne, J. N., 2; Piersol, R. J., 1; Randall, D. C., 1; Simons, H. F., 1; Weller, J. M., 2; Workman, L. E., 1.
- Illinois basin oil fields: Bell, A. H., 4; Hares, C. J., 1; Riggs, R. J., 1.
- Indiana: Harris, J. R., 1; Switzer, J. E., 1.
- Indications of occurrence: DeGolyer, E. L., 1, 2.
- Interpretations of seismograms: McCready, H. J., 1.
- Iowa: Keyes, 42; McHugh, W. E., 1.
- Kansas: Abernathy, G. E., 1, 2; Jewett, J. M., 2; Koester, E. A., 3; Kornfeld, J. A., 4; Lee, W., 1; Mull, J. A., 1; Neumann, L. M., 1; Paddleford, J. T., 1; Postley, O. C., 1; Runyon, E., 1; Smith, H. T. U., 9; Stephenson, E. A., 1; Ver Wiebe, W. A., 1; Anonymous, 20.
- Lake sediments, as source: Twenhofel, W. H., 1.
- Lloydminster fields, Alberta-Saskatchewan: Hume, G. S., 5.

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- Louisiana fields: Bates, F. W., 1; Fer-rando, A., 1; Fisk, H. N., 1; Hal-bouty, M. T., 3; Huner, J., Jr., 1; Jenny, W. P., 4; Kornfeld, M. M., 4; Moresi, C. K., 2; Packard, S. A., 1; Purzer, J., 1; Roach, C. B., 1; Ty-grett, H. V., 1.
- Michigan: Addison, C. C., 1; Bishop, M. S., 1; Grant, R. P., 1; Maebius, J. B., 1; Newcombe, R. J. B., 1; Riggs, C. H., 1.
- Micromagnetic prospecting: Jenny, W. P., 2.
- Micropaleontology: Croneis, C. G., 5, 8; Schenck, H. G., 3.
- Microscopic examination, Permian crude-oils: DeFord, R. K., 3.
- Mid-continent fields: Koester, E. A., 1, 2.
- Mississippi fields: Brehm, C. E., 1; Daw-son, J., 1; Foster, V. M., 1; Hal-bouty, M. T., 2; Hughes, U. B., 2; Kornfeld, J. A., 3; Mellen, F. F., 4; Todd, J. D., 1, 3.
- Mississippian border, E. int. basin: Wel-ler, J. M., 3.
- Models, oil-field: Dobbin, C. E., 3.
- Montana fields: Erdmann, C. E., 1; Perry, E. S., 1.
- Nebraska: Howard, W. V., 4; Korn-feld, J. A., 1; Reed, E. C., 1.
- Need for field experience: Lahee, F. H., 1.
- New Brunswick: Henderson, J. A. L., 1.
- New Mexico, 1940: Cole, T., 3.
- New York, dikes, migration barriers: Filmer, E. A., 1.
- North America: Howard, W. V., 1.
- Mid-continent area: Dott, R. H., 3.
- Mississippian Basin: Kornfeld, J. A., 5.
- Northwest Territories: Lord, C. S., 2.
- Occurrence and exploration for: Clute, W. S., 2.
- Ohio: O'Rourke, E. V., 1; Stout, W. E., 3, 4; Ver Steeg, K., 2; Williams, A. B., 1.
- Oklahoma fields: Arnold, H. H., Jr., 1; Bass, N. W., 2, 3; Boyd, W. B., 1; Dawson, E. A., 1; Decker, C. E., 6; Dillard, W. R., 1; Frost, V. L., 1; Ginter, R. L., 3; Goodrich, H. B., 1; Hoffman, M. G., 2; Katz, D. L., 1; Kennedy, L. E., 1, 3; Kirk, C. T., 1; Neumann, L. M., 1; Oakes, M. C., 1; Paschal, E. A., 1; Shea, E. F., 1.
- Ontario: Caley, J. F., 3; Wilson, A. E., 2.
- Origin: Ginter, R. L., 2; Levorsen, A. I., 9; Relfer, W. A., 1; Wright, R., 2.
- Paleobotany, utilitarian aspects: Darrah, W. C., 9.

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- Paleozoic nor. Miss.-Ala.: Mellen, F. F., 3.
 Pennsylvania: Dickey, P. A., 1; Fettke, C. R., 1, 3, 4; Hickok, W. O., IV, 1; Sherrill, R. E., 2.
 Pennsylvanian sands, Okla.-Kans.: Bart-ram, J. G., 4.
 Permian crude oil microscopic exam.: Waldschmidt, W. A., 3.
 Pressure in reservoirs: Stewart, J. S., 1.
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Cats, origin: Colbert, E. H., 3.

Fish-reptile-mammal evolution: Colbert, E. H., 5.

Gems, story of: Whitlock, H. P., 1.

Historical geology: Morrel, M. M., 1.

Inland Empire area, Wash.-Oregon: Reed, J. C., 1.

Story of our earth: Miller, W. J., 5.

Tar pit tiger: Colbert, E. H., 2.

Wonders of oil: Jackson, A., 1.

Porifera. See also Spongiae.

Ontario, Toronto-Hamilton area: Caley, J. F., 1.

Porphyry, California: Woodford, A. O., 4.

Potash.

Cross section, Tex.-N. Mex.: Woods E. H., 1.

New Mexico, Carlsbad area: Spicer, H. C., 2.

North Carolina, Spruce Pine dist.: Maurice, C. S., 1.

Utah, non-metallics: Gabriel, C., 1.

Pot holes, Ohio: Williams, A. B., 1.

Powellite, Idaho: Cannon, R. S., Jr., 1.

Pre-Cambrian. See also Paleontology, pre-Cambrian.

Anadama, Montevallo-Columbiana quads.: Butts, C., 1.

Alaska R. R. region: Capps, S. R., 1.

Alberta: Ball, M. W., 2; Hage, C. O., 2.

Appalachia: Nelson, W. A., 1.

Appalachians, Pa., Md.: Cloos, E., 2.

Archean sedimentation: Pettijohn, F. J., 2.

Arctic America, Ellesmere I.: Bentham, R., 1.

Arizona: Enlows, H. E., 1; Keyes, 12, 13, 55, 115, 133; Sharp, R. P., 3; Wilson, E. D., 1.

Belt series, Mont.-Idaho: Gibson, R., 1.

Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.

British Columbia: Rice, H. M. A., 1; Schofield, S. J., 1.

California: Gardner, D. L., 1; Jenkins, O. P., 4, 6; Lemmon, D. M., 1;

Mason, J. R., 1; Noble, L. F., 1; Reed, R. D., 3; Taliaferro, N. L., 3;

White, D. E., 2; Woodford, A. O., 1.

Canada: Bruce, E. L., 3; Warren, P. S., 1; Wilson, M. E., 1.

Canadian shield: Moore, E. S., 3.

Cascadia: Schofield, S. J., 2.

Chert, Nor. Am.: Wetzel, O., 1.

Colorado: Boos, M. F., 1; Burbank, W. S., 1, 3; Butler, R. D., 1; Dings, M., 1;

Goddard, E. N., 1; Ives, R. L., 5; Kessler, F. C., 1; Singewald, Q. D., 1; Wagner, C. P., 1; Wahlstrom, E. E., 1, 2, 3.

Correlations, western U. S.: Condra, G. E., 2.

Cross sections, Tex.-N. Mex.: Fritz, W. C., 1; Woods, E. H., 1.

Delaware Water Gap and Easton quads, Pa.-N. J.: Bayley, W. S., 1.

Forest City basin, Kans.-Neb.: McClellan, H. W., 1.

General: Geol. S. A., 2.

Gneisses, banded, Pa.-N. J.: Armstrong, E., 1.

Greenland, Holstensborg dist.: Belknap, R. L., 1.

Idaho: Anderson, A. L., 1; Erdmann, C. E., 2; Whiting, K., 1; Willard, M. E., 1.

Illinois, Woosung quad.: Templeton, J. S., 1.

Iowa: Keyes, 79.

Kansas: Abernathy, G. E., 1; Jewett, J. M., 4; Kornfeld, J. A., 4; Moore, R. C., 6; Postley, O. C., 1.

Lake Superior area: Tyler, S. A., 1.

Manitoba: Brownell, G. M., 1; Stockwell, C. H., 1.

Martic overthrust, Md.-Pa.: Cloos, E., 4.

Mexico, Baja Calif.: Woodford, A. O., 1.

Michigan, unconformity, Menominee iron range: Pettijohn, F. J., 5.

Pre-Cambrian—Continued.

- Minnesota: Crowley, A. J., 1; Fackler, W. C., 1; Gruner, J. W., 3; Schwartz, G. M., 1; Stauffer, C. R., 3; Thiel, G. A., 2.
- Missouri: Keyes, 82, 106; Robertson, F., 1.
- Missouri-Illinois sec.: Kans. G. S., 2.
- Montana: Blackstone, D. L., Jr., 1; Deiss, C. F., 4; Erdmann, C. E., 2; Fix, P. F., 1; Goddard, E. N., 2; Horberg, L., 1; Peoples, J. W., 1.
- Newfoundland: Howland, A. L., 1; Johnson, H., 2.
- New Hampshire, Dover quad.: Myers, T. R., 2.
- New Jersey: Appleby, A. N., 1; Broughton, J. G., 1; Lewis, J. V., 1; Ludlum, J. C., 1; Tyler, S. A., 1.
- New Mexico: Baker, C. L., 2; Harley, G. T., 1; Johnson, J. H., 1; Ray, L. L., 2; Smith, J. F., Jr., 5; Stark, J. T., 2.
- New York: Buddington, A. F., 1; Fluhr, T. W., 1, 2, 4, 6; Gillette, T., 1; Miller, R. L., 3; Richardson, G. B., 2; Zodac, P., 3.
- North America, Cordilleran area: Deiss, C., 2.
- Mid-continent area: Dott, R. H., 3.
- Ore dists.: Billingsley, P. R., 1.
- Western: Hinds, N. E. A., 1, 3.
- North Carolina, Spruce Pine dist.: Maurice, C. S., 1.
- North Dakota, Deep-well records: Laird, W. M., 3.
- Northwest Territories: Canada G. S., 1; Henderson, J. F., 3; Jolliffe, A. W., 1; Lord, C. S., 1, 2; Ridland, G. C., 1; Wilson, J. T., 2.
- Nova Scotia: Douglas, G. V., 1, 2, 3, 4, 8, 10; Hedley, P. M., 1; MacLean, J. H., 1; Messervey, J. P., 1.
- Ohio, Vance well: Stout, W. E., 3.
- Oklahoma: Dillard, W. R., 1; Kirk, C. T., 1; Merritt, C. A., 3; Oakes, M. C., 1.
- Ontario: Bartley, M. W., 1; Bateman, J. D., 1, 3, 4, 5; Butterfield, H. M., 1; Byers, A. R., 1, 2; Chapman, L. J., 1; Cooke, H. C., 2; Emery, C. L., 1; Horwood, H. C., 1, 2, 3; Jenney, C. P., 1; Langford, G. B., 1; Moore, E. S., 2; Pettijohn, F. J., 3; Prest, V. K., 1; Quirke, T. T., 2; Tanton, T. L., 4; Tarr, W. A., 1.
- Oregon: Oregon St. Bd., 1; Packard, E. L., 1.
- Pennsylvania: Armstrong, E., 2; Fraser, D. M., 2; Hersey, J. B., 1; Hickok, W. O., IV, 1; Lohman, S. W., 4.
- Quebec: Ambrose, J. W., 2; Armstrong, P., 1; Banfield, A. F., 1; Bannerman, H. M., 1; Faessler, C., 2, 4; Gunning, H. C., 1, 2; Longley, W. W., 1; MacKenzie, G. S., 1, 2; Norman, G. W. H., 1, 2, 3; Tolman, C., 1; Wilson, M. E., 3.

Pre-Cambrian—Continued.

- Rocky Mt. area: Bartram, J. G., 1.
- Saskatchewan: Furnival, G. M., 1; Howells, W. C., 1; Tanton, T. L., 2.
- South Dakota: Gries, J. P., 1; Kans. G. S., 1; Smith, W. C., 1.
- Tennessee Valley region: Eckel, E. C., 2.
- Texas: Baker, C. L., 3; Geol. S. A., 1; Keyes, 64; King, P. B., 2; Maxwell, R. A., 1; Nelson, L. A., 1.
- Texas-New Mexico area: DeFord, R. K., 2.
- Utah: Eardley, A. J., 1, 2; Hatch, R. A., 1; Williams, N. C., 1.
- Vermont, Taconic fault roots: Hawkes, H. E., Jr., 1.
- Virginia: Brown, W. R., 1; Moore, C. H., Jr., 1; Roberts, J. K., 2.
- Wakefield Canton age: Morin, L.-G., 1.
- Washington, Spokane area: Fernquist, C. O., 2.
- Wisconsin, buried: Thwaites, F. T., 1.
- Wyoming: Beckwith, R. H., 1; Demorest, M. H., 2; McLaughlin, T. G., 1.
- Wyoming-Black Hills, S. Dak.: Bartram, J. G., 2.

Precious stones. See also Gems.

- Diamonds: Hershey, J. W., 1.
- Gemology: Barclay, G. C., 2.
- Gems, story of: Whitlock, H. P., 1.
- Prehnite, New York: Trainer, J. N., 2.
- Projection protractor: Fisher, D. J., 2.
- Projection sphericity, sedimentary particles: Riley, N. A., 2.
- Prospecting effectiveness: Rosaire, E. E., 5; Ross, R. B., 1.
- Prospecting methods: Baker, W. L., 1.
- Pseudolite, Montana: Larsen, E. S., 5.
- Pseudomorphs.

Colorado, Specimen Mt.: Wahlstrom, E. E., 3.

Florida, chalcedony after coral: Manchester, J. G., 2.

Glauconite after opiburan plates: Berry, C. T., 2.

Kansas, rare minerals: Carpenter, A. C., 1.

New York, Tilly Foster mine: Trainer, J. N., 1, 2.

North Carolina, limonite after pyrite: Neuman, R., 1.

Pseudotachylyte, Texas, in meteorites: Barnes, V. E., 6.

Pseudowollastonite - akermanite - gehlenite system: Osborn, E. F., 1.

Psilomelane, Montana: Smith, P. A., 1.

Pteropoda, New Mexico, Sacramento Mts.: Laudon, L. R., 4.

Puerto Rico.

Economic geology.

Gold: Ray, H. C., 2.

Mineral resources: Ray, H. C., 1.

Historical geology.

Geologic map: Galloway, J. J., 1.

Puerto Rico—Continued.

Mineralogy

Gold: Ray, H. C., 2.

Mineral resources: Ray, H. C., 1.

Palaeontology

Foraminifera, Tert.: Caldwell, E. T., 1;

Galloway, J. J., 1.

Physical geology

Vieques earthquake, 1918: Neumann, F., 3.

Pumice, Oregon: Adams, J. A., 1; Dole, H. M., 1.

Pyrite.

California: Pabst, A., 1.

Canada, gold deposits: Auger, P. E., 1.

Colorado, La Plata Mts.: Galbraith, F. W., 5.

Electrical conductivity: Smith, F. G., 1.

Idaho, Polaris mine: Willard, M. E., 1.

Mexico, ancient ornaments: Pough, F. H., 2.

Missouri, Bevier coal seam: Gallagher, R. T., 1.

Montana, Butte area: Smith, P. A., 1.

Newfoundland, Wabana: Jobbins, H. S., 1.

New Jersey: Giordano, V., 1; Palache, C., 9.

New York, Tilly Foster mine: Trainer, J. N., 1.

North Carolina: Hafer, C., 1; Neuman, R., 1.

Nova Scotia: Wilson, G. A., 1.

Pennsylvania, Kibblehouse quarry: Haeberle, W. F., 1.

Pyrolusite, Montana: Smith, P. A., 1.

Pyrope garnet, Kansas: Bagrowski, B. P., 2.

Pyrophyllite, Canada: Spence, H. S., 1.

Pyrostitpnite, California: Murdoch, J., 3.

Pyroxene.

Crystallization: Hess, H. H., 5.

Hawaii, Kahoolawe: MacDonald, G. A., 2.

Montana, Highwood Mts.: Larsen, E. S., 5.

New Hampshire, Mt. Tripyramid: Smith, A. P., 2.

New York, Tilly Foster mine: Trainer, J. N., 1.

North America, mafic magmas: Hess, H. H., 7.

Virginia, diabase minerals: Overstreet, W. C., 1.

Quantitative mountain-bldg. theory: Elkins, T. A., 2.

Quartz.

California: Ingerson, F. E., 3; Symons, H. H., 1; Webb, R. W., 2.

Colorado: Pearl, R. M., 3, 7.

Cuba, cuboid: San Martín y Sáenz, R., 1.

Michigan, Ajibik fm.: Fairbairn, H. W., 4.

Quartz—Continued.

Montana: Larsen, E. S., 3; Newcomb, R. C., 1; Smith, P. A., 1.

New York, Middleville: Hurley, D., 1.

North Carolina: Hafer, C., 1.

Pennsylvania, Reading Hills: Fraser, D. M., 2.

Petrofabrics, grain orientation: Rowland, R. A., 1.

South Dakota, rose: Scott, E. M., 1.

Washington, gem: Frenquist, C. O., 1.

West Virginia, Berkeley Springs: Hawkins, A. C., 2.

Wyoming, geode: Anonymous, 3.

Quartzite.

Maine, Lake Damariscotta: Willard, B., 6.

New Hampshire, Dover quad.: Meyers, T. R., 2.

Pennsylvania, Ord.-Sil. boundary: Krynine, P. D., 9.

Sedimentary, significance: Krynine, P. D., 6.

Texas, Franklin Mts.: Keyes, 47.

Washington, Kettle Falls: Campbell, C. D., 3.

Quaternary. See also Glacial geology; Paleontology, Quarternary.

Alabama, Montevallo-Columbiana quads.: Butts, C., 1.

Alaska, Fairbanks area: Tuck, R., 1.

Alberta, Wildcat Hills: Hage, C. O., 1.

Appalachia: Nelson, W. A., 1.

Arizona: Keyes, 55.

British Columbia, Peace River foothills: McLearn, F. H., 3.

California: Ayars, R. N., 1; Bailey, T. L., 1; Bode, F. D., 1; Bruff, S. C., 1; Clark, R. W., 1; Clark, S. G., 1; DeLong, J. H., Jr., 1; Dolman, S. G., 1; Eaton, J. E., 3, 4; Ferguson, G. C., 1; Forbes, H., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Goudkoff, P. P., 1; Hinds, N. E. A., 2; Hoots, H. W., 1; Hudson, F. S., 1; Jenkins, O. P., 4, 6; Johnston, W. D., Jr., 1; Jones, G. H., 1; Kessell, J. E., 2; Lemmon, D. M., 1; Miller, W. J., 2; Noble, L. F., 1; Prout, J. W., Jr., 1; Putnam, W. C., 2; Reed, R. D., 3; Taliaferro, N. L., 3; Wissler, S. G., 1, 2; Woodring, W. P., 1.

Canada, Madgalen Is.: Alcock, F. J., 6.

Cincinnati Arch area: Welrich, T. E., 1. Colorado: Kessler, F. C., 1; Pierce, W. G., 1; Singewald, Q. D., 1.

Cuba: Albear, J. F. de, 1; Corral y Alemán, 3.

Front, retreating ice sheet: Hobbs, W. H., -1.

Gulf Coast correl. chart: Roy, C. J., 3. Heavy minerals, Gulf Coast: Bornhauser, M., 2.

Quaternary—Continued.

- Hawaii: MacDonald, G. A., 1, 2; Stearns, H. T., 2, 3, 4.
- Idaho: Anderson, A. L., 1; Erdmann, C. E., 2.
- Illinois: Cady, G. H., 1; Cohee, G. V., 3; Templeton, J. S., 1; Weller, J. M., 1, 2.
- Iowa: Kay, G. F., 2; Keyes, 79; McHugh, W. E., 1; Wood, L. W., 1.
- Kansas: Frye, J. C., 4, 6, 7, 8; Jewett, J. M., 1, 4; Keyes, 139; Latta, B. F., 1; Lohman, S. W., 3; Moore, R. C., 6; Smith, H. T. U., 9.
- Kentucky, Tenn. River area: Rhoades, R. F., 1.
- Louisiana: Bornhauser, M., 1; Fisk, H. N., 1; Frink, J. W., 1; Lucke, J. B., 3; Maher, J. C., 2, 5; Russell, R. J., 1; Woodward, T. P., 1.
- Massachusetts, Blue Hills quad.: Chute, N. E., 1.
- Mexico: Anderson, C. A., 5; Gálvez, V., 1.
- Minnesota: Gruner, J. W., 3; Stauffer, C. R., 3; Thiel, G. A., 2.
- Mississippi: Conant, L. C., 1; Mellen, F. F., 4; Miss. G. Soc., 1; Robertson, P., 1.
- Missouri geology: Keyes, 82, 106.
- Montana: Blackstone, D. L., Jr., 1; Deiss, C. F., 4; Fix, P. F., 1; Horberg, L., 1; Maravich, M. D., 1; Newcomb, R. C., 1; Peoples, J. W., 1.
- Nebraska: Lugin, A. L., 1, 3; Schultz, C. B., 3; Wenzel, L. K., 2.
- Nevada: Dreyer, R. M., 2; Roberts, R. J., 2; Sharp, R. P., 1.
- New Brunswick, Jacquet-Tetagouche Rivers area: Alcock, F. J., 1.
- Newfoundland: Flint, R. F., 3; Johnson, H., 2; MacClintock, P., 2.
- New Jersey: Lewis, J. V., 1; MacClintock, P., 3.
- New Mexico: Denny, C. S., 2, 5; Harley, G. T., 1; Ray, L. L., 2.
- New York: Buddington, A. F., 1; Fluhr, T. W., 6; Gillette, T., 1.
- North America, ore dists.: Billingsley, P. R., 1.
- Pleistocene: Coleman, A. F., 1.
- North Carolina, Camp Davis Well no. 2: Berry, E. W., 5.
- North Dakota, deep-well records: Laird, W. M., 3.
- Nova Scotia: Douglas, G. V., 3; MacLean, J. H., 1.
- Ohio, Muskingum valley: Frye, J. C., 1.
- Oklahoma, Washington Co.: Oakes, M. C., 1.
- Ontario: Bartley, M. W., 1; Bateman, J. D., 1; Chapman, L. J., 1; Moore, E. S., 2.

Quaternary—Continued.

- Oregon: Dole, H. M., 1; Lupper, R. L., 2; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4; Wells, F. G., 1; Wilkinson, W. D., 1.
- Pennsylvania: Fayette Co.: Hickok, W. O., IV, 1.
- Quebec: Bannerman, H. M., 1; Douglas, G. V., 11; Gunning, H. C., 2; Lavendière, J.-W., 1; MacKenzie, G. S., 2; Tolman, C., 1.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- Santo Domingo: Weyl, R., 1.
- Tennessee: Moneymaker, B. C., 1; Rose, N. A., 1; Whitlach, G. I., 2.
- Tennessee Valley region: Eckel, E. C., 2.
- Texas: Geol. S. A., 1; Giesey, S. C., 1; Huffington, R. M., 1; Ives, R. L., 7; King, P. B., 2; Maxwell, R. A., 1; Metcalf, R. J., 1; Perry, L., Jr., 1; Smith, J. F., Jr., 2; White, W. N., 1; Wilson, G. M., 2.
- United States, Atlantic Coastal Plain: Flint, R. F., 2.
- Middle west: Bryan, K., 11.
- Northern Rocky Mts.: Atwood, W. W., 2.
- Utah-Arizona, Hurricane fault: Gardner, L. S., 1.
- Virgin Islands, St. Croix: Cederstrom, D. J., 3.
- Washington: Mackin, J. H., 3; Waters, A. C., 2.
- Wisconsin: Hole, F. D., 1; Mathiesen, J. T., 1; Shrock, R. R., 1.
- Wyoming: Bertagnolli, A. J., Jr., 1; Branson, E. B., 7.

Quebec.

Areas described.

- Appalachians: Lavendière, J.-W., 1.
- Eustis mine area: Douglas, G. V., 11.
- Fortune Lake area: MacKenzie, G. S., 1.
- Halliwell mine area: MacKenzie, G. S., 2.
- Lépine Lake area: Bannerman, H. M., 1.
- Malartic area: Gunning, H. C., 1.
- Noranda dist.: Wilson, M. E., 3.
- Vauquelin Township: Tolman, C., 1.
- Wasa Lake area: MacKenzie, G. S., 1.

Economic geology.

- Albite: Reid, J. A., 1.
- Beattie Gold Mine area: Banfield, A. F., 1.
- Bousquet-Joannès area: Gunning, H. C., 2.
- Cadillac-Malartic structures: Flaherty, G. F., 1.
- Calumet I. mine area: Armstrong, P., 1; Moorhouse, W. W., 1.
- Cléry-L. Pause map areas: Ambrose, J. W., 2.
- Eustis mine area: Douglas, G. V., 11.
- Fortune-Wasa Lakes area: MacKenzie, G. S., 1.
- Gaspé area: Jones, I. W., 1.

Quebec—Continued.

Economic geology—Continued.

- Gold : Reid, J. A., 1.
- Halliwell mine area : MacKenzie, G. S., 2.
- Lépine Lake : Bannerman, H. M., 1.
- Malartic area : Gunning, H. C., 1.
- Noranda dist. : Wilson, M. E., 3.
- Petroleum, Gaspé : Boileau, H., 1.
- Powell mine : McMurchy, R. C., 1.
- Titaniferous magnetites : Faessler, C., 4.
- Vassan-Dubuisson : Norman, G. W. H., 3.
- Vauquelin Township : Tolman, C., 1.

Historical geology.

- Appalachians, Rivière-du-Loup-Matane : Laverdière, J.-W., 1.
- Assinica Lake : Shaw, G., 1.
- Beattie Gold Mine area : Banfield, A. F., 1.
- Beauchastel Twnshp. : Kindle, E. D., 2.
- Beaupre coast : Faessler, C., 2.
- Bousquet-Joannès area : Canada G. S., 1 ; Gunning, H. C., 2.
- Cadillac-Malartic structures : Flaherty, G. F., 1.
- Cadillac Twnshp., geol. map : Canada G. S., 1.
- Calumet I. : Armstrong, P., 1 ; Moorhouse, W. W., 1.
- Casselman area : Canada G. S., 1.
- Cléricy-La Pause map areas : Ambrose, J. W., 2.
- Eustis mine area : Douglas, G. V., 11.
- Fortune-Wasa Lakes area : MacKenzie, G. S., 1.
- Fournière Twnshp. : Canada G. S., 1.
- Gale River area : Canada G. S., 1.
- Halliwell mine area : MacKenzie, G. S., 2.
- Keewatin-Timiskaming problem : Norman, G. W. H., 1.
- Kitchigama Lake : Longley, W. W., 1.
- Lépine Lake : Bannerman, H. M., 1.
- Lewis Lake : Canada G. S., 1.
- L'Original area : Canada G. S., 1.
- Malartic Twnshp. : Canada G. S., 1 ; Gunning, H. C., 1.
- Mattagami Lake area : Canada G. S., 1.
- Maxville area : Canada G. S., 1.
- Mechamego Lake : Beach, H. H., 2 ; Canada G. S., 1.
- Michwacho Lake : Beach, H. H., 3 ; Canada G. S., 1.
- Michagomish Lake : Shaw, G., 2.
- Mistassini Lake : Norman, G. W. H., 2.
- Mistawak Lake : Canada G. S., 1.
- Nepean area : Canada G. S., 1.
- Noranda dist. : Wilson, M. E., 3.
- Opawica Lake : Canada G. S., 1.
- Powell mine : McMurchy, R. C., 1.
- Puskitamika Lake : Canada G. S., 1.
- Rochebaucourt area : Canada G. S., 1.
- Shawbridge area geol. excursion : Mailoux, A., 1.
- Sillery fm. : Laverdière, J.-W., 3.
- Sirimaun Twnshp. : Canada G. S., 1.
- Titaniferous magnetite, Sept.-Îles : Faessler, C., 4.

Quebec—Continued.

Historical geology—Continued.

- Valleyfield area : Canada G. S., 1.
- Vassan-Dubuisson : Norman, G. W. H., 3.
- Vauquelin Twnshp. : Tolman, C., 1.
- Waconichi area : Canada G. S., 1.
- Wakefield Canton age : Morin, L.-G., 1.

Mineralogy.

- Albite : Reid, J. A., 1.
- Anhydrite : Osborne, F. F., 1.
- Beattie gold mine : Banfield, A. F., 1.
- Calumet I. mine area : Armstrong, P., 1 ; Moorhouse, W. W., 1.
- Fortune-Wasa Lakes : MacKenzie, G. S., 1.
- Gold : Reid, J. A., 1.
- Gypsum : Osborne, F. F., 1.
- Lead-zinc replacement deposits : Brown, J. S., 1.
- Malartic area : Gunning, H. C., 1.
- Mica, Maniwaki : Loranger, R., 1.
- Noranda dist. : Wilson, M. E., 3.
- Powell mine : McMurchy, R. C., 1.
- Pyroaurite group : Frondel, C., 8.
- Sjögrenite group : Frondel, C., 8.
- Suzarite stock : Faessler, C., 1.
- Thucholite : Spence, H. S., 2.
- Titaniferous magnetites, Sept.-Îles : Faessler, C., 4.
- Uraninite : Spence, H. S., 2.
- Vanadium : Pelletier, P. E., 1.

Paleontology.

- Actinoceroidea : Flower, R. H., 2.
- Bothriolepis : Denison, R. H., 1.
- Bryozoa, Gaspé : Fritz, M. A., 1.
- Cephalaspis : Robertson, G. M., 3.
- Eusthenopteron : Sternberg, R. M., 1.
- Fenestrellina : Fritz, M. A., 2.
- Fossil, exterior morphology : Tremblay, P., 1.
- Hallopora : Fritz, M. A., 3.
- Mictaw fauna, Gaspé : Northrop, S. A., 1.

Petrology.

- Appalachians : Laverdière, J.-W., 1.
- Beaufour mine area : Brossard, L., 1.
- Bousquet-Joannès area : Gunning, H. C., 2.
- Cadillac-Malartic structures : Flaherty, G. F., 1.
- Calumet I. : Moorhouse, W. W., 1.
- Cléricy-La Pause areas : Ambrose, J. W., 2.
- Columnar structure, rhyolite flows : Ambrose, J. W., 1.
- Eustis mine area : Douglas, G. V., 11.
- Fortune-Wasa Lakes : MacKenzie, G. S., 1.
- Granite, La Flèche cavern : Morin, L.-G., 1.
- Lépine Lake : Bannerman, H. M., 1.
- Malartic area : Gunning, H. C., 1.
- Noranda dist. : Wilson, M. E., 3.
- Titaniferous magnetite, Sept.-Îles : Faessler, C., 4.
- Vauquelin Twnshp. : Tolman, C., 1.

Quebec—Continued.

Physical geology.

- Appalachians : Laverdière, J.-W., 1.
 Beauchastel Twnshp. : Kindle, E. D., 2.
 Beaufour mine area : Brossard, L., 1.
 Beupre coast : Faessler, C., 2.
 Bousquet-Joannès area : Gunning, H. C., 2.
 Cadillac-Malartic structures : Flaherty, G. F., 1.
 Calumet I. : Moorhouse, W. W., 1.
 Cléricky-La Pause areas : Ambrose, J. W., 2.
 Columnar structure, rhyolite flows : Ambrose, J. W., 1.
 Eustis mine area : Douglas, G. V., 11.
 Fortune-Wasa Lakes : MacKenzie, G. S., 1.
 Grenville gneiss thrust faulting : Norman, G. W. H., 2.
 Halliwell mine area : MacKenzie, G. S., 2.
 Lépine Lake : Bannerman, H. M., 1.
 Malartic area : Gunning, H. C., 1.
 Noranda dist. : Wilson, M. E., 3.
 Powell mine : McMurphy, R. C., 1.
 Suzuarite stock : Faessler, C., 1.
 Tectonics, Quebec area : Putman, H. M., 1.

Physiographic geology.

- Appalachians : Laverdière, J.-W., 1.
 Beauchastel Twnshp. : Kindle, E. D., 2.
 Beupre coast : Faessler, C., 2.
 Chaudière River Basin : Morin, L., 2.
 Cléricky-La Pause areas : Ambrose, J. W., 2.
 Drainage basins Trois-Pistoles-Matane : Laverdière, J.-W., 2.
 Kitchigama Lake : Longley, W. W., 1.
 Noranda dist. : Wilson, M. E., 3.
 Shawbridge area geol. excursion : Mailoux, A., 1.
 Shickshock Mt., Gaspé : Flint, R. F., 11.

Questas, Mississippi : Foster, V. M., 2.

Quicksilver.

- British Columbia : Stevenson, J. S., 2.
 California : Bailey, E. H., 3; Eckel, E. B., 2, 3, 4; Ransom, A. L., 1; Ross, C. P., 1, 2, 3; Anonymous, 27.
 Cinnabar coloration : Dreyer, R. M., 3.
 Geochemistry, mineralization : Dreyer, R. M., 1.
 Idaho, Almaden mine : Anderson, A. L., 5.
 Mexico, Huasteca : Vaupehl, C. W., 1.
 Mineralization : Dreyer, R. M., 1; Fahey, J. J., 1.
 Nevada : Dane, C. H., 1; Dreyer, R. M., 2; Roberts, R. J., 1, 2; Ross, C. P., 3; Yates, R. G., 1, 2.
 Oregon : Oregon St. Bd., 1; Ross, C. P., 3, 5; Staples, L. W., 2; Wells, F. G., 1; Wilkinson, W. D., 1, 2; Yates, R. G., 1, 2.
 Prospecting for : Staples, L. W., 1.
 Prospects, Nev., Calif., Oregon : Ross, C. P., 3.

Quicksilver—Continued.

- Texas : Maxwell, R. A., 1; Ross, C. P., 1.
 United States : Ross, C. P., 6.

Radioactive exploration : Rose, R. B., 1.

Radioactivity.

- Age measurements : Goodman, C., 1.
 Analyses, oil well samples : Pontecorvo, B., 1.
 Autoradiography of ores : Goodman, C., 4.
 Colorado : Goddard, E. N., 3; Keevil, N. B., 4; Muench, O. B., 1.
 Cooling of the earth : Slichter, L. B., 2.
 Earth, age by geothermal methods : Van Orstrand, C. E., 2.
 General : Evans, R. D., 1.
 Helium retention in rock minerals : Hurley, P. M., 2.
 Logging applications : Barcklow, J. C., 1; Russell, W. L., 1.
 Mesothorium : De Ment, J., 2.
 Mineral grains, determination : Tyler, S. A., 3.
 Mineral sources, radioactive elements : De Ment, J. A., 3.
 Minerals, detection of : Barta, V. P., 1; De Ment, J., 1.
 Ocean sediments : Piggot, C. S., 3.
 Oceans, elements in water and sediments : Urry, W. D., 1.
 Radioactive exploration : Rose, R. B., 1.
 Rocks : Goodman, C., 3.
 Sedimentary rocks, marine : Weaver, P., 1.
 Sedimentary rocks and petroleum : Bell, K. G., 1.
 Strata, logging by : Green, W. G., 1.
 Terrestrial radioactivities measurement : Goodman, C., 1.
 Time-scale of universe : Russell, H. N., 1.
 Uranium : Urry, W. D., 2.
 Well-logging by : Beers, L. C., 1; Green, W. G., 2; Russell, W. L., 2.
 Zircon studies : Morgan, J. H., 1.

Radiolaria.

- California, Miocene : Campbell, A. S., 1.
 Texas, Dev. : Aberdeen, E. J., 1.

Radium.

- Apparatus for determination : Urry, W. D., 3.
 Canada : Allan, J. A., 3.
 Detection in minerals : Barta, V. P., 2; De Ment, J., 1.
 Northwest Territories : Lord, C. S., 2.

Rain prints, significance : Blackwelder, E., 6.
 Receptaculites, Ord., Nev. : Howell, B. F., 7.

Red beds sequence, N. Mex. : Keyes, 18.

Reefs or bioherms.

- Bermuda : Denison, A. R., 1.
 Bernalillan red beds, N. Mex. : Keyes, 20.
 California, sea floor : Shepard, F. P., 1.
 Ecology of marine organisms : Ladd, H. S., 1.
 Fauna, Perm., Tex.-N. Mex. : Mills, J. M., 1.

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- Hawaii : Stearns, H. T., 2, 3; Wentworth, C. K., 3.
 Illinois : Templeton, J. S., 1; Terzaghi, R. A. D., 2.
 Jamaica, Kingston : Matley, C. A., 1.
 New Mexico : Keyes, 18; Laudon, L. R., 4.
 Oregon, central : Lupher, R. L., 2.
 Sea-level changes, criteria : Hoffmeister, J. E., 3.
 Texas, Perm. : King, P. B., 3; Sheldon, W., 1.
 Virgin Islands, St. Croix : Cederstrom, D. J., 3.

Reflected refractions : Swartz, C. A., 1.

Refraction prospecting : Dix, C. H., 1.

Relative growth, vertebrate phylogeny : Phleger, F. B., 1.

Relief maps.

- Aerial photos, in geomorphic studies : Smith, H. T. U., 5.
 California : Anderson, C. A., 1; Eaton, J. E., 3; Hoots, H. W., 1; Woodring, W. P., 1.
 Idaho, Columbia Plateau : Anderson, A. L., 7.
 Interpretation, geol. maps and aerial photos : Eardley, A. J., 3.
 Kansas, S. W. : Smith, H. T. U., 9.
 Maryland : Miller, C. A., Jr., 1.
 Missouri : Keyes, 106.
 New Jersey : Lewis, J. V., 1.
 Ontario, eastern : Chapman, L. J., 1.
 Oregon : Raisz, E. J., 1.
 Pennsylvania : Lehman, S. W., 4; Willard, B., 2.
 Relief model construction : Brown, O. T., 1.
 Texas : Johnson, E. H., 1.
 United States : Atwood, W. W., Jr., 1.
 Atlantic Coast : Vokes, H. E., 3.

Relief model construction : Brown, O. T., 1.

Relief modelling with routing machine : Filmer, E. A., 3.

Reptilia.

- Alberta, sou. plains : Russell, L. S., 2.
 Alligator, Nebr. : Schmidt, K. P., 2.
 Anchisauripus, Pa. : Willard, B., 1.
 Ceratopsidae, Alberta : Sternberg, C. M., 1.
 Ceratopsian horn cores : Brown, B., 1.
 Ceratopsian jaw and mandibles : Brown, B., 2.
 California : Stock, C., 4; Woodring, W. P., 1.
 Crocodilian nomenclature : Mook, C. C., 1.
 Dakotasuchus, Kans. : Mehl, 1.
 Diadectes, N. Mex. : Wells, S. P., 1.
 Dinosaurs : Brown, B., 3, 4; Schlaikjer, E. M., 1; Stock, C., 4.
 Dinosaur tracks, Tex. : Bird, R. T., 1; S—, A., 1.
 Edmontonia, Alberta : Russell, L. S., 3.

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- Evolution, fish-reptile-mammal : Colbert, E. H., 5.
 Fauna, Fort Logan-Deep River, Mont. : Koerner, H. E., 1.
 Optima, Okla. : Savage, D. E., 1.
 Pleistocene, Mo. : Olson, E. C., 1.
 General : Romer, A. S., 2.
 Hallopus, Colo. : Chapman, F., 1.
 Hassiacosuchus, Wyo. : Mook, C. C., 2.
 Ichthyosaurs, Calif. : Camp, C. L., 4.
 Kansas : Frye, J. C., 8; Hibbard, C. W., 4; Taylor, E. H., 3.
 Lambeosaurus, Ont. : Russell, L. S., 5.
 Lizards : Gilmore, C. W., 2, 4; Taylor, E. H., 2.
 Michrichnus probably arthropod : Russell, L. S., 7.
 Minnesota, S. E. : Stauffer, C. R., 3.
 Mosasaurs, Miss. : Lougee, R. J., 3.
 California : Stock, C., 2.
 Myopterygius, Wyo. : Nace, R. L., 1.
 New Jersey, Vincentown fm. : Graecen, K. F., 1.
 Oregon, Madras quad. : Hodge, E. T., 6.
 Palaeophis, Md. : Blake, S. F., 2.
 Pelycosauria : Olson, E. C., 4; Romer, A. S., 1.
 Permian, S. W. United States : Price, L. I., 1.
 Plesiosaurs, classn. : White, T. E., 1.
 Podocnemis, Ark. : Schmidt, K. P., 1.
 Prodiplacynodon, Wyo. : Mook, C. C., 3.
 Psephorus, Oreg. : Packard, E. L., 2.
 Salamanders, Kans. : Taylor, E. H., 3.
 Saurophagus, Okla. : Ray, G. E., 1.
 Tarsus evolution : Schaeffer, B., 3.
 Tennessee, Kyle quarry, bones : Simpson, G. G., 10.
 Texas, Perm. : Olson, E. C., 6.
 Thescelosaurus, Alberta : Sternberg, C. M., 2.
 Toads, Kans. : Taylor, E. H., 3.
 Trilophosaurus, Trias., Tex. : Gregory, J. T., 3.
 Utah, Cret., Paleocene : Gazin, C. L., 1.
 Vertebrata : Camp, C. L., 2; Olson, E. C., 6.
 Research, collaborative, on continental borders : Thom, W. T., Jr., 2.
 Research important, petroleum geology : Van Tuyl, F. M., 1.
 Resistivity studies : Swartz, J. H., 2.
 Resolution control, seismic surveys : Beers, R. F., 2.
 Restorations. See also Paleontology.
 Amphibia : Romer, A. S., 5.
 Dinosaur, duck-billed : Sternberg, C. M., 3.
 Eohippus : Simpson, G. G., 4.
 Ectoconus, N. Mex. : Simpson, G. G., 16.
 Eusthenopteron : Gregory, W. K., 1, 3.
 Thescelosaurus, Alberta : Sternberg, C. M., 2.
 Retreat of slopes : Bryan, K., 7.

- Retrograde metamorphism: Schwartz, G. M., 3.
- Rhenium, Wisconsin: Works, L. P., 1.
- Rhode Island.
- Mineralogy.*
- Heavy minerals, granodiorite dike: Quinn, A. W., 4.
- Rhodochrosite.
- Montana, Butte area: Smith, P. A., 1.
- North Carolina: Hafer, C., 1.
- Rhodonite.
- California: Murdoch, J., 1.
- Montana, Butte area: Smith, P. A., 1.
- Rhyolite.
- California, Mammoth embayment: Chelikowsky, J. R., 1.
- Colorado, Stony Mt. stock: Dings, M., 1.
- Quebec, Noranda dist.: Wilson, M. E., 3.
- Rifles, physiography: Filmer, E. A., 2.
- Rigidity of rocks at high pressure: Birch, F., 2.
- Rip currents: Shepard, F. P., 7.
- Ripple marks.
- Classification, wave formed ripple marks:* Evans, O. F., 2.
- Montana, Glacial Lake Missoula: Pardee, J. T., 1.
- Ohio, Cleveland area: Williams, A. B., 1.
- Overturned strata, recognition: Shehon, P. J., 1.
- Petrofabric criteria: Ingerson, F. E., 1.
- Pseudo-ripple marks, criteria: Ingerson, F. E., 1.
- Rivers.
- Colorado River, Grand Canyon: Maxson, J. H., 3.
- Dynamics of streams: Straub, L. G., 1.
- Kansas, small natural levees: Frye, J. C., 3.
- Mississippi River: Ball, J. R., 1; Flint, R. F., 9; Robertson, P., 1; Russell, R. J., 2; Trowbridge, A. C., 2.
- New Hampshire, flood plains: Goldthwait, R. P., 1.
- Ohio, Cuyahoga, Rocky Rivers, valleys: Donner, H. F., 1.
- Quebec, Chaudière River basin: Morin, L., 2.
- Rifles, physiography: Filmer, E. A., 2.
- Silurian corals., Miss. River basin: Ball, J. R., 1.
- Stream meanders, basic aspects: Mathes, G. H., 1.
- Stream profiles: Baulig, H., 1; Shulits, S., 1.
- Texas, terraces: Fathall, L. G., Jr., 1.
- Washington, Columbia River course: Warren, C. R., 2.
- Road materials.
- Alabama: Bowles, E. O., 2; Zedac, P., 2.
- Iowa: Cuthbert, F. L., 1; Wood, L. W., 2.
- Maryland: Gray, W. B., III, 1.
- Road materials—Continued.
- Massachusetts, Blue Hills quad.: Chute, N. E., 1.
- Mississippi, Lauderdale Co.: Foster, V. M., 1.
- New Brunswick, Jacquet-Tetagouche Rivers area: Alcock, F. J., 1.
- New Jersey: Lewis, J. V., 1.
- Texas: Barnes, V. E., 11; Dallas Petrol. Geol., 1.
- Virginia, stone industry: Bevan, A. C., 6.
- Rock book: Fenton, C. L., 1.
- Rock called ice: Demorest, M. H., 1.
- Rock cycle: Locke, A., 3.
- Rock glaciers.
- California: Kesseli, J. E., 1.
- Colorado: Ives, R. L., 3.
- Rock streams, Sierra Nevada: Kesseli, J. E., 1.
- Rock wool.
- Kansas: Jewett, J. M., 4.
- Ontario: Caley, J. F., 1.
- Rocks. See Igneous and volcanic rocks; Sedimentary rocks.
- Rocks, transport by kelp; Emery, K. O., 1.
- Röntgenographic studies, ore minerals: Peacock, M. A., 3.
- Role of minerals: Leith, C. K., 1.
- Rubber molds and plaster casts in paleontology: Quinn, J. H., 1.
- Rudistidae, Mexico: Kellum, L. B., 2.
- Rutile, Montana: Smith, P. A., 1.
- St Pierre, West Indies.
- Economic geology.*
- Copper: Aubert de la Rue, E., 1.
- Salt.
- British Columbia: Cummings, J. M., 1.
- California, geology and mineral deposits: Jenkins, O. P., 6.
- Cross section, Tex.-N. Mex.: Woods, E. H., 1.
- Louisiana, N. E., salt domes: Bornhauser, M., 1.
- New Mexico, sodium sulphate brines: Lang, W. T. B., 2.
- New York, Clyde and Sodus Bay quads.: Gillette, T., 1.
- Ohio: Stout, W. E., 4; Williams, A. B., 1.
- Texas: Adams, J. E., 1; Campbell, F. F., 1.
- Utah: Gabriel, C., 1; McKnight, E. T., 1.
- Salt in sea: Hills, G. F. S., 1.
- Salt domes.
- Experimental invest. on origin: Dobrin, M. B., 1.
- Faulting in: Kornfeld, M. M., 1.
- General: Weaver, P., 2.
- Guidebook Tex. Gulf Coast fields: Houston G. S., 1.
- Louisiana: Bornhauser, M., 1; Fleck, H. N., 1; Moresch, C. E., 2; Roach, C. B., 1.

Salt domes—Continued.

- Mississippi, structure and oil fields:
 Todd, J. D., 3.
 Texas: Adams, J. E., 1; Campbell, F. F.,
 1; Culbertson, J. A., 2; Hanna, M.
 A., 1; Houston G. S., 1; Morgan,
 A., 1.

Salvador.

Physical geology.

- Earthquake, December 1936: Levin, S.
 B., 1.

Samsonite, crystallography: Frondel, C., 5.

Sand. See also Silica.

- Beaches, firm and soft: Trefethen, J.
 M., 3.
 British Columbia: Cummings, J. M., 2;
 Rice, H. M. A., 1.
 California: Allen, V. T., 2; Gresswell,
 W. K., 1.
 Floating sand: McKelvey, V. E., 2.
 Georgia: Crickmay, G. W., 3; Anony-
 mous, 10.
 Guatemala, black beach sands: Boos, M.
 F., 2.
 Heavy minerals, variation, beach sands:
 Rasmussen, W. C., 1.
 Identification, electrical: Tanner, W.
 F., 1.
 Kansas: Jewett, J. M., 4; Smith, H. T.
 U., 2, 9.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T.
 W., 5.
 Louisiana: Woodward, T. P., 1.
 Maryland: Gray, W. B., III, 1.
 Massachusetts: Chute, N. E., 1; Hough,
 J. L., 1; Wheeler, R. R., 1.
 Michigan, dunes, roundness of grains:
 Calver, J. L., 1.
 Mississippi: Conant, L. C., 1; Foster,
 V. M., 1, 2.
 New Hampshire: Bannerman, H. M., 2;
 Meyers, T. R., 1.
 New Jersey: Lewis, J. V., 1.
 New Mexico, Pecos River sediments:
 Sidwell, R. G., 3.
 New York: Buddington, A. F., 1; Gil-
 lette, T., 1.
 North America, Atlantic and Gulf Coast
 beaches: Wilbur, R. O., 1.
 Ohio: Pettijohn, F. J., 6.
 Oklahoma, Washington Co.: Oakes, M.
 C., 1.
 Oregon: Oregon St. Bd., 1.
 Pennsylvania, Fayette Co.: Hickok, W.
 O., IV, 1.
 Sampling for heavy minerals: Krumbein,
 W. C., 4.
 Size, Rio Grande River, N. Mex.: Ritten-
 house, G., 1.
 South Carolina, Coastal Plain: Calhoun,
 F. H. H., 1.
 Tennessee, Chickamauga dam: Fox, P.
 P., 1.
 Texas: Bullard, F. M., 2; Dallas Petro-
 leum Geologists, 1; Huffington, R.
 M., 1.

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- Utah, non-metallics: Gabriel, C., 1.
 Virginia, Shenandoah River: Sartor, C.
 L., 1.
 Wisconsin, Trout Lake, beach sands:
 McKelvey, V. E., 2.

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- Arizona, Navajo country: Hack, J. T.,
 1; Smith, H. T. U., 6.
 Kansas, S. W.: Smith, H. T. U., 9.
 Layers of plant material in sand dunes:
 Lutz, H. J., 1.

Sandstone.

- Alabama: Hunter, C. E., 1; Penhallegon,
 W. J., 1.
 Alberta, Radcliff area: Stewart, J. S., 2.
 Core studies, Rocky Mts.: Waldschmidt,
 W. A., 2.
 Geophysical prosp. in ss. and sbs.: Has-
 kell, N. A., 1.
 Lincoln Tunnel, N. Y.-N. J.: Fluhr, T.
 W., 5.
 New Mexico, Santa Rosa ss.: Sidwell,
 R. G., 1.
 Ohio: Foreman, F., 1; Williams, A. B., 1.
 Ontario, Toronto-Hamilton area: Caley,
 J. F., 1.
 Pennsylvania: Ashley, G. H., 1; Hickok,
 W. O., IV, 1.
 Stability, minerals in: Bramlette, M.
 N., 5.
 Sand, size distribution: Keller, W. D., 3.
 Utah, Uinta Basin: Stagner, W. L., 1.
 Virginia, Buena Vista: Bloomer, R. O., 2.

Sanidine.

- Montana, Highwood Mts.: Larsen, E.
 S., 5.
 Texas: Ives, R. L., 4.

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Historical geology.

- Structure: Weyl, R., 1.

Physical geology.

- Structure: Weyl, R., 1.

Sapphires, Colorado: Pearl, R. M., 3.

Saskatchewan.

Economic geology.

- Lloydminster gas and oil area: Hume,
 G. S., 5.
 Stony Rapids-Porcupine River area:
 Furnival, G. M., 1.
 Sulphide Lake gold belt: Mawdsley, J.
 B., 1.

Historical geology.

- BearPaw fm. members: Furnival, G. M.,
 2.
 Brustad River area: Canada G. S., 1.
 Clearwater River area: Canada G. S., 1.
 Cretaceous marine: Wickenden, R. T. D.,
 2.
 Etomami River area: Canada G. S., 1.
 Flin Flon area: Canada G. S., 1.
 Gravels, Tert.: Russell, L. S., 4.
 Haultain River area: Canada G. S., 1.
 Intrusives, Torrington I., Amisk Lake:
 Tanton, T. L., 2.

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Historical geology—Continued.

Lloydminster gas and oil area: Hume, G. S., 5.

MacKay Lake: Canada G. S., 1.

Mafeking area: Canada G. S., 1.

Mari Lake: Canada G. S., 1.

Porcupine River area: Canada G. S., 1; Furnival, G. M., 1.

Porter Lake: Canada G. S., 1.

Reindeer Lake: Canada G. S., 1.

Schist Lake: Canada G. S., 1.

Spalding Lake: Canada G. S., 1.

Stony Rapids area: Canada G. S., 1; Furnival, G. M., 1.

Weitzel Lake: Canada G. S., 1.

Windrum Lake: Howells, W. C., 1.

Mineralogy.

Sulphide Lake gold belt: Mawdsley, J. B., 1.

Paleontology.

Bearpaw fm. members: Furnival, G. M., 2.

Fauna, Eästend fm.: Russell, L. S., 8.

Horse, Pleist.: Russell, L. S., 11.

Titanotheres: Russell, L. S., 6.

Petrology.

Sulphide Lake gold belt: Mawdsley, J. B., 1.

Windrum Lake: Howells, W. C., 1.

Physical geology.

Intrusives, Torrington I., Amisk Lake: Tanton, T. L., 2.

Sulphide Lake gold belt: Mawdsley, J. B., 1.

Windrum Lake: Howells, W. C., 1.

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I e recession, Pleist.: Edmunds, F. H., 1.

Saxonites.

Georgia, forsterite deposits: Hunter, C. E., 3.

North Carolina, forsterite deposits: Hunter, C. E., 3.

Scablands, Washington, Flint's hypothesis of origin: Allison, I. S., 2.

Scapolite.

New Hampshire: Stewart, G. W., 1.

New York, Bear Mt.: Pegau, A. A., 3.

Scaphopoda.

California, Signal Hill, Long Beach: DeLong, J. H., Jr., 1.

Midway fauna, west Gulf prov.: Gardner, J. A., 4.

New Mexico, Penn.: Young, J. A., Jr., 1.

Minnesota, S. E.: Stauffer, C. R., 3.

Mississippi: Stephenson, L. W., 1.

Texas, Navarro group: Stephenson, L. W., 3.

Scheelite.

British Columbia: Stevenson, J. S., 1.

California: Dale, N. C., 1; Farmin, R., 2; Partridge, J. F., Jr., 1.

Idaho, Seven Devils dist.: Cannon, R. S., Jr., 1.

Scheelite—Continued.

Nova Scotia: Douglas G. V. 4; Wilson, G. A., 1.

Schists.

Arizona, Basin Ranges: Wilson, E. D., 1.

California: Hinds, N. E. A., 2; MacDonald, G. A., 5; Woodford, A. O., 4.

Greenland, Holstensborg dist.: Belknap, R. L., 1.

Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.

New Hampshire: Billings, M. P., 2; Meyers, T. R., 2; Quinn, A. W., 6.

Quebec, Cadillac-Malartic area: Flaherty, G. F., 1.

South Dakota, Tinton dist.: Smith, W. C., 1.

Science and human prospects: Blackwelder, E., 4.

Scolecodonts.

Arabellites, preoccupied: Stauffer, C. R., 1.

Devonian, N. Y.: Eller, E. R., 3.

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Silurian, N. Y.: Eller, E. R., 1.

Sea floor, Calif.: Shepard, F. P., 1.

Sea-level changes, Miss. River Valley: Russell, R. J., 1.

Sea-level changes, criteria: Hoffmeister, J. E., 3.

Sea-level changes as trigger forces: Leyboldt, H., 1.

Seamanite, Michigan: McConnell, D., 3.

Sediment concentration in streams: Lane, E. W., 2.

Sediment transp. by flowing water: Johnson, J. W., 1.

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Abrasion, effect on rock fragments:

Krumbein, W. C., 6.

Alabama, Monevallo-Columbiana quads: Butts, C., 1.

Alaska R. R. region: Capps, S. R., 1.

Alberta: Hake, B. F., 1; Warren, P. S., 1.

Antigua: Trechmann, C. T., 1.

Appalachians: Krynine, P. D., 3.

Applied sedimentology: Rea, H. C., 1.

Arctic America, Ellesmere I.: Bentham, R., 1.

Arizona: Keyes, 55, 115; Kuhn, T. H., 1; McKee, E. D., 3, 5.

Bradford sand, Third, N. Y.-Pa.: Dickey, P. A., 2; Krynine, P. D., 2.

British Columbia: Hedley, M. S., 2; Hol-

land, S. C., 1; Lang, A. H., 1; Lay,

D., 2; McLearn, F. H., 3; Meyer, C.,

1; Rice, H. M. A., 1; Warren,

P. S., 1.

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- Calcium sulfate deposition from sea water: Posnjak, E., 1.
- California: Anderson, C. A., 1; Anderson, F. M., 1; Bellemin, G. J., 1; Clark, S. G., 1; Durrell, C. 1; Eaton, J. E., 1, 3; Eckel, E. B., 2; Emery, K. O., 5; Ewin, H. D., 1; Forbes, H., 1; Gilbert, C. M., 1; Haskell, N. A., 1; Hudson, F. S., 1; Lakin, H. W., 1; Lemmon, D. M., 1; Louderback, G. D., 1; MacDonald, G. A., 5; Merriam, R. H., 1; Miller, W. J., 2; Prout, J. W., Jr., 1; Ransome, A. L., 2; Webb, R. W., 1.
- Canada: Alcock, F. J., 6; Warren, P. S., 1.
- Classification, wave formed ripple marks: Evans, O. F., 2.
- Clays, fossiliferous, and clays on eskers: Lougee, R. J., 6.
- Colorado: Burbank, W. S., 1, 3; Pierce, W. G., 1; Singewald, Q. D., 1.
- Compaction, lime mud; Terzaghi, R. A. D., 2.
- Connecticut, Trias.: Krynine, P. D., 12.
- Cuba, Prov. of Habana: Albear, J. F. de, 1.
- Differentiation of sediments: Krynine, P. D., 5.
- Earth sediments, geochemical calculations; Kuenen, Ph. H., 1.
- General: Bailey, R. M., 1; Fenton, C. L., 1.
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- Granite and ore: McKinstry, H. E., 2.
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- Hawaii: MacDonald, G. A., 1; Stearns, H. T., 2, 3.
- Heavy minerals: Bornhauser, M., 2; Stow, M. H., 1; Trask, P. D., 2.
- Idaho: Anderson, A. L., 1; Capps, S. R., 2; Erdmann, C. E., 2; White, D. E., 1.
- Iowa: Keyes, 79; Scobey, E. H., 1.
- Kentucky: Rhoades, R. F., 1; Stouder, R. E., 1.
- Lincoln Tunnel, N. Y.-N. J.: Fluhr, T. W., 5.
- Lonsdale Im., Ill.: Dapples, E. C., 1.
- Maine, Katahdin-Squaw Mt.: Philbrick, S. S., 2.
- Marine organisms in sediments: Natland, M. L., 2.
- Massachusetts: Bain, G. W., 5; Currier, L. W., 1.
- Mexico: Flores, T., 1; Gálvez, V., 1; González, E. M., 1; King, R. E., 1.
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- Mineralogy: Trask, P. D., 2.
- Minnesota: Gruner, J. W., 3; Stauffer, C. R., 3.
- Mississippi, structure and oil fields: Todd, J. D., 3.

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- Montana: Erdmann, C. E., 2; Goddard, E. N., 2; Horberg, L., 1; Pecora, W. T., 1; Peoples, J. W., 1.
- Nevada: Dreyer, R. M., 2; Hardy, R. A., 1; Merriam, C. W., 1; Roberts, R. J., 1.
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- New Hampshire, Mt. Cube area: Hadley, J. B., 2.
- New Jersey: Greacen, K. F., 1; Lewis, J. V., 1.
- New Mexico: Bates, R. L., 2; Fries, C., Jr., 1; Harley, G. T., 1; Ray, L. L., 2; Sidwell, R. G., 1, 3.
- New York, Hudson Valley: Bird, P. H., 1.
- North America, Atlantic Coastal Plain: Dryden, A. L., Jr., 2.
- Cordilleran area: Dells, C., 2.
- Ore dists.: Billingsley, P. R., 1.
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- North Dakota, Heart Butte quad.: Tisdale, E. E., 1.
- Northwest Territories: Henderson, J. F., 3; Jolliffe, A. W., 1; Lord, C. S., 1.
- Ohio: Foreman, F., 1; Ver Steeg, K., 4.
- Oklahoma: Hoffman, M. G., 2; Merritt, C. A., 3.
- Ontario: Bateman, J. D., 1, 4; Love, W. T., 1; Prest, V. K., 1; Quirke, T. T., 1.
- Oolites, siliceous and chemical sedimentation: Krynine, P. D., 8.
- Oregon: Anderson, F. M., 1; Dole, H. M., 1; Lupher, R. L., 2; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4; Thayer, T. P., 1; Wells, F. G., 1, 3.
- Organic matter and color: Patnode, H. W., 1.
- Orthomagmatic vs. metasomatic rocks: Goodspeed, G. E., 3.
- Overtuned strata, recognition: Shenon, P. J., 1.
- Pennsylvania: Cleaves, A. B., 1; Hickok, W. O., IV, 1; Honess, A. P., 1; Krynine, P. D., 1, 4.
- Quartzites, sed., significance: Krynine, P. D., 6.
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- Radioactivity: Bell, K. G., 1; Evans, R. D., 1; Goodman, C., 3; Weaver, P., 1.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- Rigidity of rocks at high pressure: Birch, F., 2.
- Rock cycle: Locke, A., 3.

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- Rocks, transport by kelp: Emery, K. O., 1.
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 Tennessee: Eckel, E. C., 3; Laurence, R. A., 1; Martin, G. C., Jr., 1; Moneymaker, B. C., 1; Rose, N. A., 1.
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 Texas: Baker, C. L., 3; Geol. S. A., 1; Ives, R. L., 7; King, P. B., 2, 3; Lonsdale, J. T., 1; Martyn, P. F., 1; Maxwell, R. A., 1; Metcalf, R. J., 1; Nelson, L. A., 1; Smith, J. F., Jr., 2, 4; Stenzel, H. B., 13.
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- Great Plains, Neb., Tert.-Pleist. : Lugen, A. L., 1.
- Gulf Coast : Jung, D. A., 1 ; Malkin, D. S., 1 ; Richardson, C. B., 1 ; Stenzel, H. B., 9 ; Storm, L. W., 1, 2.
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- Illinois, periglacial involutions : Sharp, R. P., 5.
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- Kentucky, Tenn. River area : Rhoades, R. F., 1, 4.
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- Louisiana, Barataria Bay sediments, variations : Caldwell, L. T., 1.
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- Massachusetts, Holyoke Range-Connecticut Valley structure : Bain, G. W., 5.
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- Sands, electrical identification : Tanner, W. F., 1.
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 Canada: Allan, J. A., 3.
 Colorado: Burbank, W. S., 1, 3; Galbraith, F. W., 5; Goddard, E. N., 1; Loughlin, G. F., 1; Singewald, Q. D., 1; Wahlstrom, E. E., 1.
 Idaho: Anderson, A. L., 1, 2; Anderson, R. J., 1; Whiting, K., 1; Willard, M. E., 1.
 Mexico: Bastin, E. S., 3; Stone, J. B., 1.
 Montana: Goddard, E. N., 2; Newcomb, R. C., 1; Smith, P. A., 1.
 Mother Lode area, Calif.-Oreg.: Averill, C. V., 1.
 Nevada, Churchill Co.: Vanderberg, W. O., 1.
 New Mexico, N. E.: Harley, G. T., 1.

Silver—Continued.

- North America, ore dists.: Billingsley, P. R., 1.
 North Carolina: Hafer, C., 1.
 Northwest Territories: Lord, C. S., 2.
 Ontario: Langford, G. B., 1; Peacock, M. A., 2.
 Quebec: Armstrong, P., 1; Banfield, A. F., 1; Douglas, G. V., 11; Tolman, C., 1; Wilson, M. E., 3.
 Texas, salt-dome cap rock: Hanna, M. A., 1.

Sink holes.

- Alabama: Ross, R. M., 1; Spain, E. L., Jr., 1.
 Canada, Magdalen Is.: Alcock, F. J., 6.
 Climate and geomorphology: Visser, S. S., 1.
 Kansas: Frye, J. C., 8; Smith, H. T. U., 9.
 Mead Basin area, Kans.-Okla.: Frye, J. C., 5.
 North Carolina, Natural Well area: Hud-dle, J. W., 1.
 Tennessee: Fox, P. P., 1; Laurence, R. A., 1; Martin, G. C., Jr., 1.
 Texas: Geimond, K. W., 1; Ross, C. P., 4.

Slate.

- Arkansas, Polk Co.: Branner, G. C., 1.
 Georgia, Cartersville area: Kesler, T. L., 1.
 Minnesota, Knife Lake: Gruner, J. W., 3.
 Nova Scotia, Corwin area: Douglas, G. V., 1, 2, 6.
 Ontario, Omega mine area: Jenney, C. P., 1.

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- Alberta, sou. plains: Russell, L. S., 1, 2.
 New York, Willsboro quad.: Buddington, A. F., 1.
 Tennessee, Sequatchie Valley: Martin, G. C., Jr., 1.

Soapstone.

- Canada: Spence, H. S., 1.
 Elastic constants variation: Delaney, J. P., 1.
 North Carolina, Wake Co.: Stuckey, J. L., 1.
 Texas, Gillespie, Blanco Cos.: Barnes, V. E., 11.

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Sodalite.

- Arkansas, Magnet Cove: Miser, H. D., 3.
 Montana, Highwood Mts.: Larsen, E. S., 5.

- Sodium, radioactivity: Mitchell, A. C. G., 1.
 Soil-creep and earthflow, Ohio: Sharpe, C. F. S., 2.

- Soil formation: Jenny, H., 1.

- Soil physics: Bayer, L. D., 1.

- Soldado Rock, Helicostegina: Vaughan, T. W., 2.

- Solids in gases or vapors: Morey, G. W., 2.
- Solids, stressed, fracture and flow: Goranson, R. W., 1.
- Solidification, Greenland: Belknap, R. L., 1.
- Solution, fluting, faceting, rock fragments: Maxson, J. H., 1.
- South Carolina.
- Economic geology.*
- Bleaching clays: Bay, H. X., 1.
- Clays, kaolinitic: Lang, W. T. B., 1.
- Coastal Plain resources: Calhoun, F. H. H., 1.
- Tin: Kesler, T. L., 3; Anonymous, 31.
- Mineralogy.*
- Bleaching clays: Bay, H. X., 1.
- Clays, kaolinitic: Lang, W. T. B., 1.
- Tin: Kesler, T. L., 3; Anonymous, 31.
- Paleontology.*
- Echinoids, Pamlico: Berry, E. W., 4.
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- Soils and surface relations: Eargle, D. H., 1.
- Weather pits, Piedmont granite: Smith, L. L., 1.
- Physiographic geology.*
- Elliptical bays, origin: Cooke, C. W., 1.
- Piedmont soils and surfaces: Eargle, D. H., 1.
- Rotary currents and "Bays": Johnson, D. W., 3.
- Soils and periglacial phenomena: Bryan, K., 5.
- Soils and surface relations: Eargle, D. H., 1.
- South Dakota.
- Magnetic survey: Jordan, W. H., 1.
- Areas described.*
- Missouri Valley: Gries, J. P., 2.
- Stanley Co.: Gries, J. P., 1.
- Economic geology.*
- Bentonites: Spivey, R. S., 1; Wing, M. E., 1.
- Chamberlain sec., Missouri River Valley: Wing, M. E., 2.
- Gold, Black Hills: Allsman, P. T., 1.
- Great Plains Basin: Kornfeld, J. A., 6.
- Magnetic survey: Jordan, W. H., 1.
- Manganese: Gries, J. P., 2.
- Petroleum poss.: Rothrock, E. P., 1.
- Stanley Co.: Gries, J. P., 1.
- Tin-bearing pegmatites: Smith, W. C., 1.
- Well logs, oil field data: Oil and Gas Journal, 1.
- Western South Dakota-eastern Wyoming: Kans. G. S., 1.
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- Black Hills gold area: Allsman, P. T., 1.
- Chamberlain sec., Mo. River Valley: Wing, M. E., 2.
- Correlations: Condra, G. E., 1, 2.
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- Historical geology—Continued.*
- Cross section, Wyo.-Black Hills: Bartram, J. G., 3.
- Colorado Springs-Black Hills: Thompson, W. O., 1.
- East Wyoming-Black Hills: Bartram, J. G., 2.
- Great Plains: Jones, C. T., 1; Kornfeld, J. A., 6.
- Marsland fm.: Schultz, C. B., 4.
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- Petroleum poss.: Rothrock, E. P., 1.
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- Tin-bearing pegmatites: Smith, W. C., 1.
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- Petrology.*
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- Tin-bearing pegmatites: Smith, W. C., 1.
- Physical geology.*
- Caverns, lms., Black Hills: Neighbor, F., 1.
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- Spessartite, Colorado: Pearl, R. M., 1.
- Sphalerite.
- Colorado, La Plata Mts.: Galbraith, F. W., 5.
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- Steatite, Canada: Spence, H. S., 1.
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- Sterrettite, Utah: Larsen, E. S., 3d, 2.
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 - Curriculum, arts, science, in geophysics: Macelwane, J. B., 4.
 - Defense, geol. engineering: Straley, H. W., III, 1.
 - Exploration geophysicist, education of: Slotnick, M. M., 2.
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 Quantitative mountain-bldg. theory: Elkins, T. A., 2.
 Quartz, sands: Otto, G. H., 2.
 Quartz and untwinned feldspar distinguished: Doeglas, D. J., 1.
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 Radioactivity detection: Barta, V. P., 1; Tyler, S. A., 3.
 Radioactivity, well logging: Beers, L. C., 1; Green, W. G., 1; Russell, W. L., 1.
 Radium determination, apparatus: Urry, W. D., 3.
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 Refraction prospecting: Dix, C. H., 1.
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 Relief modeling with routing machine: Filmer, E. A., 3.
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 Sediment coring and instruments: Emery, K. O., 4.
 Sedimentary petrography: Milner, H. B., 1.
 Sediments, study methods: Twenhofel, W. H., 6.
 Seismic prospecting: Weatherby, B. B., 3.
 Seismic recording attenuators: McDermott, E., 2.
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 Seismology, methods and operations: Perry, E. L., 2.
 Shadow-graphic maps: Imbt, R. F., 1.
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 Soap, preparing samples: Howe, H. V., 2.
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 Spectroscope ore finding: Fraser, H. J., 1.
 Stratigraphic nomenclature: Tomlinson, C. W., 2.
 Stratigraphic trap explor.: Merritt, J. W., 2.
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- Subsurface models, construction: Bravinder, K. M., 1.
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 Thin sections, making: Rankama, K., 1.
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 Continents, study of: Thom, W. T., Jr., 1.
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 Teeplette, California: Anonymous, 1.
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 Temperature change, New York, Long I., recharge water: Thompson, D. G., 2.
 Tennantite, Montana: Smith, P. A., 1.

Tennessee.

Economic Geology.

- Bauxite: Branner, G. C., 4.
 Clays: Bramlette, M. N., 2; Whitlatch, G. I., 2.
 Limestone: Whitlatch, G. I., 3.
 Manganese: Laurence, R. A., 2.
 Paleozoic wells: Born, K. E., 1.
 Phosphate deposits: Whitlatch, G. I., 1, 4.
 St. Peter sandy zone: Born, K. E., 2.

Historical geology.

- Bigby, Cannon, Catheys fm.: Wilson, C. W., Jr., 3.
 Chickamauga dam: Fox, P. P., 1; McGavock, C. B., Jr., 1.
 Clays, west Tenn.: Whitlatch, G. I., 2.
 Correlations, Bledsoe-Lego-Decatur lms.: Wilson, C. W., Jr., 4.
 Coulter Shoals dam: Laurence, R. A., 1.
 Decatur shales: Keyes, 88.
 Limestones, Ordovician: Prouty, C. E., 1.
 Manganese: Laurence, R. A., 2.
 Nashville dome area: Wilson, C. W., Jr., 1.
 Norris dam: Eckel, E. C., 3; Money-maker, B. C., 2.
 Paleozoic wells: Born, K. E., 1.
 Pickwick Landing dam: Rose, N. A., 1.
 Phosphate deposits: Whitlatch, G. I., 1.
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 Silurian: Prouty, W. F., 1.
 Tennessee River area: Eckel, E. C., 1.
 Tennessee Valley region: Eckel, E. C., 2.
 Watts Bar dam: Moneymaker, B. C., 1.

Mineralogy.

- Clays: Bramlette, M. N., 2; Whitlatch, G. I., 2.
 Geodes: Mauntel, H. W., 1.
 Manganese: Laurence, R. A., 2.

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- Fauna, Maryville fm.: Resser, C. E., 3.
 Fossil bones, Kyle quarry: Simpson, G. G., 10.
 Invertebrata: Cooper, G. A., 2.
 Limestones, Ordovician: Prouty, C. E., 1.
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 Ostracoda: Bassler, R. S., 5.
 Sponges: Howell, B. F., 3; Raymond, P. E., 1.

Petrology.

- St. Peter sandy zone: Born, K. E., 2.

Physical geology.

- Caves: Simpson, G. G., 10.
 Chattanooga earthquake, Oct. 19, 1940: Brill, K. G., Jr., 1.
 Chickamauga dam: Fox, P. P., 1; McGavock, C. B., Jr., 1.
 Coulter Shoals dam: Laurence, R. A., 1.
 Limestone boulders, solution, Tennessee River: Fox, P. P., 2.

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Physical geology—Continued.

- New Madrid earthquake craters: Morse, W. C., 2.
 Norris dam: Eckel, E. C., 3.
 Phosphate deposits: Whitlatch, G. I., 1.
 Pickwick Landing dam: Rose, N. A., 1.
 Rock decay, depth, Appalachians: Money-maker, B. C., 7.
 Sequatchie Valley: Martin, G. C., Jr., 1.
 Subriver solution, Tenn. Valley: Money-maker, B. C., 4.
 Tennessee Valley region: Eckel, E. C., 2.
 Watts Bar dam: Moneymaker, B. C., 1.
 Wells Creek Basin: Wilson, C. W., Jr., 2.

Physiographic geology.

- Chickamauga dam: Fox, P. P., 1.
 Highland rim plateau: Straw, H. T., 1.
 Norris dam site: Moneymaker, B. C., 2.
 Sequatchie Valley: Martin, G. C., Jr., 1.

Underground water.

- Chickamauga dam: Fox, P. P., 1; McGavock, C. B., Jr., 1.
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 Sequatchie Valley: Martin, G. C., Jr., 1.

- Tennessee Valley, deep solution: Rhoades, R. F., 4.

Terraces. See also Beaches; Changes of level; Glacial lakes; Shore lines.

- Alabama, Coastal Plain: Monroe, W. H., 2.
 Alaska: Capps, S. R., 1; Moffit, F. H., 1.
 Appalachia: Nelson, W. A., 1.
 British Columbia, Okanagan Valley silts: Meyer, C., 1.
 California: Blackwelder, E., 5; Bode, F. D., 1; Forbes, H., 1; Putnam, W. C., 3.
 Colorado, Cody area: Pierce, W. G., 1.
 Greenland, Holstensborg dlist.: Belknap, R. L., 1.
 Hawaii: Stearns, H. T., 2, 3.
 Illinois: Templeton, J. S., 1; Weller, J. M., 2.
 Iowa, Pleist.: Kay, G. F., 2; Keyes, 72-a.
 Jamaica, Kingston area: Matley, C. A., 1.
 Kansas: Frye, J. E., 6; Smith, H. T. U., 9.
 Louisiana: Flisk, H. N., 1; Frink, J. W., 1.
 Mississippi, Forrest Co.: Foster, V. M., 2.
 Mississippi River: Flint, R. F., 9; Robertson, P., 1.
 Montana: Erdmann, C. E., 2; Horberg, L., 1.
 Nevada, Ruby-East Humboldt Ranges: Sharp, R. P., 1.
 New England, deglaciation: Lougee, R. J., 2.
 Newfoundland, Quaternary: Flint, R. F., 3.

Terraces—Continued.

- New Jersey: Lewis, J. V., 1.
 Ohio: Ireland, H. A., 1; Williams, A. B., 1.
 Pennsylvania, Fayette Co.: Hickok, W. O., IV, 1.
 Sea-level changes, criteria: Hoffmeister, J. E., 3.
 Stream profiles, reconstruction: Baulig, H., 1.
 Tennessee, Chickamauga dam: Fox, P. P., 1.
 Texas: Dallas Petroleum Geologists, 1; Geol. S. A., 1; Martyn, P. F., 1; Pattillo, L. G., Jr., 1; Sellards, E. H., 3, 8; Stainbrook, M. A., 10; Weeks, A. W., 1, 2.
 United States, Atlantic Coastal Plain: Flint, R. F., 2.
 Virgin Islands, St. Croix: Cederstrom, D. J., 3.
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 Washington, Methow Valley: Barksdale, J. D., 2.
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Terrestrial radioactivities measurement: Goodman, C., 1.

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- Alabama: Monroe, W. H., 2; Toulmin, L. D., Jr., 2.
 Alaska: Capps, S. R., 1; Maffit, F. H., 1; Tuck, R., 1.
 Alberta: Hage, C. O., 1; Russell, L. S., 1, 2.
 Appalachia: Nelson, W. A., 1.
 Arizona: Keyes, 55.
 Arkansas: Corbin, M. W., 1; Weeks, W. B., 1.
 Barbados, Paleogene: Senn, A., 1.
 Bermuda: Denison, A. R., 1.
 Bighorn Basin, Mont.-Wyo.: Chamberlin, R. T., 1.
 British Columbia: Armstrong, J. E., 1; Billingsley, P. R., 3; Hedley, M. S., 2; Lang, A. H., 1; Lay, D., 1, 2; Schofield, S. J., 1.
 California: Adams, B. C., 1; Allan, J. E., 3; Allen, V. T., 1, 2; Anderson, C. A., 1; Avars, R. N., 1; Bailey, W. C., 1, 2; Bellemin, G. J., 1; Bentson, H., 2; Bode, F. D., 1; Clark, A., 1; Clark, B. L., 3, 4; Clark, R. W., 1, 2; Clark, S. G., 1; Dolman, S. G., 1; Eaton, J. E., 1, 3; Eckel, E. B., 2; Emery, K. O., 5; Erwin, H. D., 1; Ferguson, G. C., 1; Forbes, H., 1; Forrest, L. C., 1; Frame, R. G., 1; Gardner, D. L., 1; Gilbert, C. M., 1; Godkoff, P. P., 1; Grant, U. S. IV, 5; Hinds, N. E. A., 2; Hoots, H. W., 1; Hudson, F. S., 1; Jahns, R. H., 1; Jenkins, O. P., 4, 6; Johnson, H. R.,

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- 1; Johnson, W. D., Jr., 1; Jones, G. H., 1; Kleinpell, R. M., 1; Laiming, B. G., 3; Lemmon, D. M., 1; MacGinitie, H. D., 1; Marks, J. G., 2; Menken, F. A., 2; Miller, W. J., 2; Noble, L. F., 1; Ransome, A. L., 2; Reed, R. D., 2, 3; Ross, C. P., 1, 2; Talliaferro, N. L., 3; Thorup, R. R., 1; Tolman, C. F., 1; Weaver, C. E., 2; White, R. T., 1; Wilson, I. F., 1; Wissler, S. G., 1, 2; Woodring, W. P., 1, 2; Woodward, A. F., 1.

Canada, Cordilleran geosyncline: Warren, P. S., 1.

Cascadia: Schofield, S. J., 2.

Cincinnati Arch area: Weirich, T. E., 1.

Claiborne vs. Moodys: Harris, G. D., 1.

Coastal Plain, Tex.-La.: Wilcox Eocene: Culbertson, J. A., 1.

Costa Rica, sh., Amoura-Uscari area: Porter, W. W., II, 1.

- Colorado: Burbank, W. S., 1, 3; Dings, M., 1; Goddard, E. N., 1; Kessler, F. C., 1; Pierce, W. G., 1; Singewald, Q. D., 1; Upson, J. E., 1; Wahlstrom, E. E., 1, 2.
 Colorado River, Grand Canyon: Maxson, J. H., 3.

Continental sediments: Clark, J., 2.

Cuba: Albear, J. F. de, 1; Brodermann, J., 1; Corral y Alemán, J. L., 1, 3.

- Florida: Campbell, R. B., 2; Cole, W. S., 2; Smith, R. H., 1.
 Geophysical prosp. in ss. and shs.: Haskell, N. A., 1.

Great Plains: Kornfeld, J. A., 6; Lugn, A. L., 1.

- Gulf Coast: Cogen, W. M., 1; Oil and Gas J., 2; Richardson, C. B., 1; Roy, C. J., 3.
 Hawaii: MacDonald, G. A., 1, 2; Stearns, H. T., 2, 3, 4.

Heavy minerals, Gulf Coast: Bornhauser, M., 2.

Idaho: Anderson, A. L., 1, 2, 5; Capps, S. R., 2, 4.

Illinois, Alto Pass, Jonesboro, Thebes quads.: Weller, J. M., 1, 2.

Iowa: Keyes, 79.

Jamaica, Kingston area: Matley, C. A., 1.

- Kansas: Frye, J. C., 6, 7, 8; Jewett, J. M., 4; Keyes, 139; Latta, B. F., 1; Lohman, S. W., 3; McLaughlin,

T. G., 3; Moore, R. C., 5, 6; Smith, H. T. U., 9.

Kentucky, post-Appalachian: Rhoades, R. F., 5.

- Louisiana: Bates, F. W., 1; Bornhauser, M., 1; Ellison, A. C., 1; Fisk, H. N., 1; Huner, J. Jr., 1; Maher, J. C., 2, 5; Murray, G. E. Jr., 2; Packard, S. A., 1; Roach, C. B., 1.

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- Marsland fm. western States: Schultz, C. B., 4.
- Mexico: Anderson, C. A., 5; Gálvez, V., 1; González, E. M., 1; Stone, J. B., 1; Terrones Langone, A., 1.
- Midway-Wilcox, La.-Miss.: Fisk, H. N., 2.
- Mississippi: Conant, L. C., 1; Foster, V. M., 1, 2; Hughes, U. B., 1; Mellen, F. F., 1, 4; Miss. G. Soc., 1, 2, 4; Kornfeld, J. A., 3; Morse, W. C., 1.
- Missouri geology: Keyes, 82, 106.
- Montana: Delss, C. F., 3; Fix, P. F., 1; Goddard, E. N., 2; Horberg, L., 1; Larsen, E. S., 1; Newcomb, R. C., 1; Pecora, W. T., 3.
- Nebraska: Cady, R. C., 2; Elias, M. K., 1; Lugin, A. L., 3; Schultz, C. B., 3, 5; Wenzel, L. K., 2.
- Nevada: Dreyer, R. N., 2; Merriam, C. W., 4; Roberts, R. J., 1, 2; Sharp, R. P., 1.
- New Brunswick, Jacquet-Tetagouche Rivers area: Alcock, F. J., 1.
- New Jersey: Greacen, K. F., 1; Lewis, J. V., 1.
- New Jersey-Alabama correls.: Toulmin, L. D., Jr., 3.
- New Mexico: Denny, C. S., 2; Fries, C., Jr., 1; Harley, G. T., 1; Laskey, S. G., 1; Ray, L. L., 2; Smith, J. F., Jr., 5; Wright H. E. Jr., 1.
- New York Clyde and Sodus Bay quads.: Gillette, T., 1.
- Nigger Hill dist., Wyo.-S. Dak.: Berg, J. R., 1.
- North America, continental: Wood, H. E., 2d, 1.
- Mid-continent area: Dott, R. H., 3.
- Ore dists.: Billingsley, P. R., 1.
- North Carolina: Berry, E. W., 5; Huddle, J. W., 1.
- North Dakota: Laird, W. M., 3; Tisdale, E. E., 1.
- Oregon: Chaney, R. W., 4; Hodge, E. T., 6; Lupton, R. L., 2; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4; Thayer, T. P., 1; Treasurer, R. C., 3; Wells, F. G., 1; Wilkinson, W. D., 1.
- Pennsylvania, Crystal, Onyx Caves: Miller, R. L., 2.
- Phosphate, U. S.: Mansfield, G. R., 4.
- Quebec: Banfield, A. F., 1; Faessler, C., 2.
- Randolph quad., Utah-Wyo.: Richardson, G. B., 3.
- Santo Domingo: Weyl, R., 1.
- Saskatchewan, gravels: Russell, L. S., 4.
- South Carolina, bleaching clays: Bay, H. X., 1.
- South Dakota, Tinton dist.: Smith, W. C., 1.

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- South Dakota-Wyoming sec.: Kans. G. S., 1.
- Tennessee: Fox, P. P., 1; Moneymaker, B. C., 1; Rhoades, R. F., 4; Whitlatch, G. I., 2.
- Tennessee Valley region: Eckel, E. C., 2.
- Texas: Adams, J. E., 1; Bacon, C. S., Jr., 2; Baker, C. L., 3; Casey, S. R., 1, 2; Chambers, W. T., 1; Davis, F. E., 1; Fisher, B., 1; Geol. S. A., 1; Germond, K. W., 1; Huffington, R. M., 2; Ives, R. L., 7; Johnson, E. H., 1; King, P. B., 1; Kornfeld, M. M., 3; McLellan, H. J., 1; Martyn, P. F., 1; Maxwell, R. A., 1; Morgan, A., 1; Nelson, L. A., 1; Perry, L. Jr., 1; Ross, C. P., 1; Scott, G., 5; Sidwell, R. G., 2; Skinner, J. W., 1; Smith, J. F., Jr., 2; Stenzel, H. B., 8, 10, 13; Todd, J. D., 2; Weeks, A. W., 2; Whitaker, H. B., 1; White, W. N., 1, 2; Wilson G. M., 2.
- Trinidad, Los Bajos fault area: Wilson, C. C., 1.
- United States, continental beds, color as guide: Wood, H. E., 2d, 3.
- Gulf Coast: Brace, O. L., 4.
- Northern Rocky Mts.: Atwood, W. W., 2.
- Southern: Mansfield, G. R., 2.
- Utah: Gregory, H. E., 1; McKnight, E. T., 1; Schoff, S. L., 2; Spieker, E. M., 1; Williams, N. C., 1.
- Utah-Arizona, Hurricane fault area: Gardner, L. S., 1.
- Virgin Islands, St. Croix: Cederstrom, D. J., 2, 3.
- Virginia, Coastal Plain, S. E.: Cederstrom, D. J., 1.
- Washington: Fernquist, C. O., 2; Glover, S. L., 2; Krauskopf, K. B., 1; Warren, C. R., 1; Wash. Plan. C., 1; Waters, A. C., 1, 2.
- Washington-Oregon: Beck, G. F., 3.
- West Indies, Cuban geosyncline: Corral y Alemán, J. I., 1.
- Wyoming: Bauer, C. M., 1; Beckwith, R. H., 1; Bertagnoli, A. J., Jr., 1; Branson, E. B., 7; Demorest, M. H., 2; Dockery, W. L., 1; Pierce, W. G., 2; Rouse, J. T., 1; Schultz, C. B., 5; Wood, H. E., 2d, 4.
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- Idaho, Polaris mine: Willard, M. E., 1.

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- Austin area: Geol. S. A., 1.
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 Fault-line oil fields: Geol. S. A., 1.
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- Aspermont field: Haase, F. M., 1.
 Balcones fault zone: Perry, L., Jr., 1.
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 Davis sand lens, Hardin field: Casey, S. R., 1.
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 K. M. A. oil field: Autry, V. E., 1.
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 Natural gas: Brace, O. L., 3; Cole, T., 3; Denton, F. R., 1; Herring, L. B., 2; Mygdal, K. A., 1.
 North-central Tex.: Cheney, M. G., 1.
 North Cowden oil field: Giesey, S. C., 1.
 Oil shale, San Saba Co.: Plummer, F. B., 5.
 Ordovician, Apco area: Cole, T., 1.
 Page field: Simpson, R. M., 1.
 Paluxy-Pettit oil fields: Kornfeld, J. A., 2.
 Peat: Plummer, F. B., 4.
 Permian basin, sou.: Sheldon, W., 1.

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- Petroleum developments: Brace, O. L., 1, 3; Cole, T., 3; Daniel, O. A., 1; Denton, F. R., 1; Herring, L. B., 1, 2; Mygdal, K. A., 1; North Tex. G. S., 1; Smiley, H. F., 1; Vetter, J. M., 2.
 Pittsburg oil field: Vanderpool, H. C., 1.
 Producing coastal horizons: Poole, J. C., 2.
 Production, Smithwick lms.: Donoghue, D., 1.
 Quicksilver: Ross, C. P., 1.
 Reserves, discoveries, oil: Owen, E. W., 1.
 Rogers pool: Clark, G. C., 1.
 Saxet oil and gas field: Poole, J. C., 1.
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 Slaughter oil field: Leuenberger, B., 1; Osborn, W. M., 1; Wilson, G. M., 2.
 South Cotton Lake oil field: Wilson, J. M., 1.
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 Sparta-Wilcox trend: Todd, J. D., 2.
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 Yates area: Adams, J. E., 1.
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 Alpine area: Bacon, C. S., Jr., 2.
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 Artifacts and fossils: Sellards, E. H., 3.
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 Balcones area: White, W. N., 2.
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 Cambrian, Llano uplift: Bridge, J., 3.
 Carboniferous, Llano area: Plummer, F. B., 3.
 Carrizo sand: Stenzel, H. B., 10.
 Channel filling, Austin fm.: Ham, W. O., Jr., 1.
 Chinati Mts.: Skinner, J. W., 1.
 Clays, San Antonio and Morris Cos.: King, P. B., 1.
 Coastal Plain, Tert.: Weeks, A. W., 2.
 Comanche: Keyes, C. R., 30.
 Cook Mt. fm.: Stenzel, H. B., 1, 8.
 Cooper, Perm.: McSpadden, W., 1.
 Correlations, Paleozoic, Rocky Mts.-Tex.-Okla.: Osborne, H. W., 1.
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Historical geology—Continued.

- Cretaceous, Llano uplift: Barnes, V. E., 10; Geol. S. A., 1; Scott, G., 1, 5.
 Cross sections, Tex.-N. Mex.: Dickey, R., 1, 1; Fritz, W. C., 1; Woods, E. H., 1.
 Dallas Co.: Dallas Petroleum Geologists, 1.
 Devil Ridge area: Smith, J. F., Jr., 2.
 Dome, Van Zandt: Morgan, A., 1.
 Dragoon quartzite: Keyes, 116.
 Eagle Mt., Eagle Spring area: Smith, J. F., Jr., 4.
 East White Point field: Martyn, P. F., 1.
 Eastern midland basin: Page, L. R., 1.
 Edna gas field: Kornfeld, M. M., 3.
 Ellenburger fm.: Cole, T., 2; Hendricks, L., 1, 2; Levorsen, A. I., 4.
 Eocene Wilcox, Gulf Coast: Casey, S. R., 2.
 Fault-line oil fields: Geol. S. A., 1.
 Finley Mts.: Albritton, C. C., Jr., 1.
 Franklin Mts.: Nelson, L. A., 1.
 Frio: Israelsky, M. C., 1.
 Future oil provinces: West Tex. G. S., 1.
 Graphite area: Barnes, V. E., 12.
 Gulf Coast correl. chart: Roy, C. J., 3.
 Gulf Coast structures: Jenny, W. P., 3.
 Guidebook, Gulf Coast oil fields: Houston G. S., 1.
 Houston, Tex.: Culbertson, J. A., 2.
 Hawkins oil field: McLellan, H. J., 1; Mills, B., 1.
 Heavy mineral zones, Gulf Coast: Cogen, W. M., 1.
 Hoffman field, Duval Co.: Whitaker, H. B., 1.
 Hoskins Mount salt dome: Campbell, F. F., 1.
 Igneous rocks, Terlingua-Solitario area: Lonsdale, J. T., 1.
 Jurassic: Imlay, R. W., 4.
 Lake basins, Llano Estacado: Germond, K. W., 1.
 Lampasas Paleozoic inlier: Plummer, F. B., 1.
 Lanoria quartzite: Keyes, 102.
 La Rosa field: Fisher, B., 1.
 Lissie, Beaumont fms.: Metcalf, R. J., 1.
 Llano-Burnet area: Keppel, D., 1.
 Llano region: Geol. S. A., 1.
 Lufkin area: White, W. N., 1.
 Marathon area: Geol. S. A., 1.
 Mitre Peak area: Ives, R. L., 7.
 Navarro group: Stephenson, L. W., 3.
 North-central Texas: Cheney, M. G., 1.
 North Cowden oil field: Giesey, S. C., 1.
 Northwestern Texas: Geol. S. A., 1.
 Oil shale, San Saba Co.: Plummer, F. B., 5.
 Ordovician, Apco area: Cole, T., 1.
 Paleozoic, early, correls.: Bridge, J., 2.
 Paluxy-Pettit oil fields: Kornfeld, J. A., 2.

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Historical geology—Continued.

- Permian: DeFord, R. K., 1; King, P. B., 3; Sheldon, W., 1.
 Petroleum, Jones Co.: Daniel, O. A., 1; North Tex. G. S., 1.
 Petroleum and nat. gas, 1940: Cole, T., 3.
 Producing coastal horizons: Poole, J. C., 2.
 Quartzites, Franklin Mts.: Keyes, 47, 64.
 Quitman Mts.: Huffington, R. M., 3.
 Redlands: Chambers, W. T., 1.
 Riley lms. correls.: Keyes, 84.
 Rim Rock country: Baker, C. L., 3.
 Rogers pool: Clark, G. C., 1.
 San Andres group: Clifton, R. L., 1; Lewis, F. E., 1.
 Saxet oil, gas field: Poole, J. C., 1.
 Sedimentary cycles, Gulf Coast: Stenzel, H. B., 13; Storum, L. W., 2.
 Slaughter oil field: Leuenberger, B., 1; Wilson, G. M., 2.
 South Cotton Lake oil field: Wilson, J. M., 1.
 Southern oil fields: Geol. S. A., 1.
 Sparata-Wilcox trend: Todd, J. D., 2.
 Tansill fm.: DeFord, R. K., 5.
 Terlingua area: Ross, C. P., 1.
 Terrace deposits and ancient man: Sel-lards, E. H., 8.
 Tertiary, Colorado River: Geol. S. A., 1.
 Tertiary fms.: Davis, F. E., 1.
 Van Horn region: King, P. B., 2.
 Walnut Bend oil pool: Hilsseweck, W. J., 1.
 Wasson field: Schneider, W. T., 1.
 West Texas-New Mexico area: DeFord, R. K., 2.
 Wilcox Eocene, Coastal Plain: Culbertson, J. A., 1.
 Wilcox trend oil fields: Todd, J. D., 4.
 Yates area: Adams, J. E., 1.
 Yegua problem: Stenzel, H. B., 6.

Mineralogy.

- Allanite: Marble, J. P., 1.
 Bartlett meteorite: Bullard, F. M., 1.
 Beach sands, origin: Bullard, F. M., 2.
 Bismuth-molybdenum, Kiam prospect: Stenzel, H. B., 7.
 Clays: King, P. B., 1.
 Collecting minerals, Big Bend: Miles, F. A., 1.
 Cuero stony meteorite: Barnes, V. E., 3.
 Fluorescence, phosphorescence in rocks: Keith, B. A., 1.
 Gold, silver in salt-dome cap rocks: Hanna, M. A., 1.
 Heavy mineral-zones, Gulf Coast: Cogen, W. M., 1.
 Igneous rocks, Terlingua-Solitario area: Lonsdale, J. T., 1.
 Kendleton meteorites, May 2, 1939: Fouts, F. F., 1.

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- Kimble Co. stony meteorite: Barnes, V. E., 4.
 Lubbock meteorite: Waldschmidt, W. A., 1.
 Meteor Crater, Ector Co.: Geol. S. A., 1.
 Meteorite catalogue: Barnes, V. E., 2.
 Meteorite craters, Odessa: Boon, J. D., 1.
 Nordheim iron meteorite: Barnes, V. E., 5.
 Odessa meteor crater: Sellards, E. H., 5.
 Odessa meteorite, metal structure: Lord, J. O., 2.
 Pseudotachylite in meteorites: Barnes, V. E., 6.
 Sanidine: Ives, R. L., 4.
 Sediments in Brazos River: Sidwell, R. G., 2.
 Shallowwater meteorite: Foshag, W. F., 3.
 Tektites: Barnes, V. E., 1; Fenner, C., 1.
 Tungsten prospect, Quitman Mts.; Udden, J. A., 1.

Paleontology.

- Ailuraena: Stirling, R. A., 3.
 Alsataspis: Turner, F. E., 1.
 Ammonoites: Miller, A. K., 2, 3; Scott, G., 3.
 Amphibia: Romer, A. S., 4; Sawin, H. J., 2.
 Artifacts, Rio Grande terrace: Evans, G. L., 1.
 Artifacts and associated fossils: Sellards, E. H., 3.
 Bison with artifacts: Barbour, E. H., 3.
 Bone pocket, Lueders fm.: Read, W. F., 2.
 Brachipoda, Eocene: Stenzel, H. B., 2.
 Buettneria skull: Sternberg, C. W., 1.
 Cephalopoda: Cronels, C. G., 7; Scott, G., 2.
 Conodonts: Ellison, S., 2; Graves, R. W., Jr., 1; Hass, W. H., 1.
 Cook Mt. fm. corals: Stenzel, H. B., 1, 8.
 Crinoidea, Carb.: Moore, R. C., 3, 4.
 Cryptochorda: Stenzel, H. B., 4.
 Dallas Co.: Dallas Petroleum Geologists, 1.
 Dinosaurs, age: Berry, E. W., 5.
 Dinosaur tracks: Bird, R. T., 1; S—, A., 1.
 Echinoidea, Cret.: Ikins, W. C., 1.
 Eulicæ, Pliocene: Gregory, J. T., 1.
 Eryops: Romer, A. S., 4; Sawin, H. J., 1.
 Euphemites: King, R. H., 1.
 Faunas, Edwards fm.: Ikins, W. C., 2.
 Jurassic: Imlay, R. W., 4.
 Megascopic reefs: Mills, J. M., 1.
 Navarro group: Stephenson, L. W., 2, 3.
 Permian: Newell, N. D., 1; Stainbrook, M. A., 8.
 Fish: Hesse, C. J., 3.

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Paleontology—Continued.

- Foraminifera: Loeblich, H. T., 1; Lozo, F. E., 1; Tappan, H. N., 1, 2; Vieaux, D. G., 1.
 Fossil localities: Sellards, E. H., 7.
 Fossils, Paleozoic: Bridge, J., 1.
 Frio fossil zones: Rolshausen, F. W., 1.
 Gastropoda, Kiamichi sh.: Stainbrook, M. A., 3.
 Gnathabelodon: Sellards, E. H., 4.
 Ground sloths, Pleist.: McAnulty, W. N., 1.
 Invertebrata: Cooper, G. A., 2.
 Lagenidae: Loeblich, A. R., Jr., 3.
 Lipparia: Stenzel, H. B., 4.
 Llano region: Geol. S. A., 1.
 Mammalia, Pliocene: Hesse, C. J., 2.
 Mammoths: Anonymous, 9.
 Mastodon: Murray, L. T., 1.
 Micro-crinoids, Cret.: Peck, R. E., 3.
 Nautiloids: Stenzel, H. B., 3.
 Ophiurans: Berry, C. T., 3.
 Ostracoda: Harris, R. W., 1.
 Pelecypoda, Perm.: Roth, R. L., 1.
 Permian corals: Moore, R. C., 11.
 Pleistocene stone images: Sellards, E. H., 6.
 Pliocyon: Johnston, C. S., 1.
 Pyrite faunas: Scott, G., 4.
 Radiolaria, Caballos fm.: Aberdeen, E. J., 1.
 Siphonides: Feray, D. E., 1.
 Stensioina: Cushman, J. A., 4.
 Symbathocrinus growth stages: Moore, R. C., 10.
 Terrace deposits and ancient man: Sellards, E. H., 8.
 Tertiary, Colorado River: Geol. S. A., 1.
 Textularia: Davis, F. E., 1.
 Trematopsidae: Olson, E. C., 3.
 Trilophosaurus: Gregory, J. T., 3.
 Turritellidae, Tert.: Stenzel, H. B., 5.
 Vertebrata, Perm.: Olson, E. C., 6.
 Vertebrates, plants, invertebrates, Perm.: Read, W. F., 1.
 Vertebrates and artifacts, Bee Co.: Geol. S. A., 1.
 Wilcox flora: Berry, E. W., 3.
Petrology.
 Alpine area: Bacon, C. S., Jr., 2.
 Big Bend Park area: Maxwell, R. A., 1.
 Caliche, origin: Price, W. A., 4.
 Dallas Co.: Dallas Petroleum Geologist, 1.
 Devil Ridge area: Smith, J. F., Jr., 2.
 Dredkaters: Barnes, V. E., 7.
 Ellenburger fm.: Cole, T., 2.
 Granites: Goldich, S. S., 1.
 Heavy minerals: Bornhauser, M., 2.
 Igneous rocks, Quitman Mts.: Huffer-ton, R. M., 2.
 Terlingua-Solitario area: Lonsdale, J. T., 1.
 Llano-Burnet area granites: Keppel, D., 1.

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Petrology—Continued.

- Mitre Peak area : Ives, R. L., 7.
- Quaternary sands : Huffington, R. M., 1.
- Rock City, and rock creep : McNulty, C. L., 1.
- Sediments, Brazos River : Sidwell, R. G., 2.
- Soils and parent rocks : Chambers, W. T., 2.
- Tansill fm. : DeFord, R. K., 5.
- Tektites : Barnes, V. E., 1.
- Terlingua area : Ross, C. P., 1.

Physical geology.

- Alpine area : Bacon, C. S., Jr., 2.
- Balcones fault zone : Perry, L., Jr., 1.
- Balmorhea area : White, W. N., 2.
- Big Bend Park area : Maxwell, R. A., 1.
- Borger earthquake, 6/19/36 : Sellards, E. H., 2.
- Channel filling, Austin fm. : Ham, W. O., Jr., 1.
- Cretaceous, Austin area : Geol. S. A., 1.
- Cretaceous overlap, Llano uplift : Barnes, V. E., 10.
- Crosbyton high anomaly : McLemore, E. W., 1.
- Dallas Co. : Dallas Petroleum Geologist, 1.
- Desert ranges, erosional origin : Keyes, 147.
- Devil Ridge area : Smith, J. F., Jr., 2.
- Dome, Van Zandt : Morgan, A., 1.
- Dreikanter : Barnes, V. E., 7.
- Eagle Mt., Eagle Spring area : Smith, J. F., Jr., 4.
- Erosion measure by lava flows : Keyes, 107.
- Fault-line oil fields : Geol. S. A., 1.
- Finlay Mts. : Albritton, C. C., Jr., 1.
- Franklin Mts. : Nelson, L. A., 1.
- Gillespie, Blanco Cos. : Barnes, V. E., 11.
- Granites, evolution : Goldich, S. S., 1.
- Hawkins oil field : McLellan, H. J., 1.
- Igneous rocks, Terlingua-Solitario area : Lonsdale, J. T., 1.
- La Rosa field : Fisher, B., 1.
- Lake basins, Llano Estacado : Germond, K. W., 1.
- Llano-Burnet granites : Keppel, D., 1.
- Llano region : Geol. S. A., 1.
- Meteorite craters, Odessa : Boon, J. D., 1.
- Mitre Peak area : Ives, R. L., 7.
- North Cowden oil field : Giesey, S. C., 1.
- Permian basin : Sheldon, W., 1.
- Quitman Mts. : Huffington, R. M., 3.
- Rim Rock country : Baker, C. L., 3.
- Rock City, and rock creep : McNulty, C. L., 1.
- San Antonio area : O'Byrne, (Sister) M. E., 1.
- Southern oil fields : Geol. S. A., 1.
- Terlingua area : Ross, C. P., 1.
- Tertiary, Colorado River : Geol. S. A., 1.
- Van Horn area : King, P. B., 2.
- Wilcox trend oil fields : Todd, J. D., 4.

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Physiographic geology.

- Caliche karst : Price, W. A., 1.
- Channel filling, Austin fm. : Ham, W. O., Jr., 1.
- Coastal Plain, Tert. : Weeks, A. W., 2.
- Cretaceous overlap, Llano uplift : Barnes, V. E., 10.
- Dallas Co. : Dallas Petroleum Geologists, 1.
- Davis sand lens, Hardin field : Casey, S. R., 1.
- East White Point field : Martyn, P. F., 1.
- General : Johnson, E. H., 1.
- Lake basins, Llano Estacado : Germond, K. W., 1.
- Lissie, Beaumont fms. : Metcalf, R. J., 1.
- Mitre Peak area : Ives, R. L., 7.
- Pecos Valley, abandoned : Price, W. A., 3.
- Quaternary sands, High Plains : Huffington, R. M., 1.
- Rim Rock country : Baker, C. L., 3.
- River terraces, Carrollton area : Pattillo, L. G., Jr., 1.
- Sedimentation, Gulf Coast : Storm, L. W., 2.
- Shoreline processes, Brazoria Co. : Curry, W. H., Jr., 1.
- Solution, lms. slopes : Smith, J. F., Jr., 3.
- San Antonio area : O'Byrne (Sister), M. E., 1.
- Slope stability, Finlay Mts. : Campbell, T. N., 1.
- South Plains : Harp, J. W., 1.
- Stability, boulders on slopes : Howard, B. R., 1.
- Stream terraces and Gulf Coastal Plain : Weeks, A. W., 1.
- Valley heads, Panhandle : Stainbrook, M. A., 10.

Underground water.

- Balcones fault zone : Perry, L., Jr., 1.
- Balmorhea area : White, W. N., 2.
- Ground water, Carrizo sand : Guyton, W. F., 1.
- Edwards-Georgetown lms. aquifer : Sayre, A. N., 1.
- Geochemical relations, Houston-Galveston area : Foster, M. C., 1.
- High Plains : Broadhurst, W. G., 1.
- South Plains : Harp, J. W., 1.
- Lufkin area : White, W. N., 1.
- San Antonio area : O'Byrne (Sister), M. E., 1.

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- California fossil guidebook : Schenck, H. G., 1.
- Coal : Moore, E. S., 1.
- Dana's mineralogy : San Martín y Sáenz, R., 2.
- Earth and its resources : Finch, V. C., 1.
- Earth sciences : Bretz, J. H., 1.

Textbooks—Continued.

- Earth's diary: Mitchell, R. H., 2.
 Economic geology: Behre, C. H., Jr., 1;
 Emmons, W. H., 1.
 Exploration geophysics: Blau, L. W., 1;
 Jakosky, J. J., 1.
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 G. R., 1.
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 Gems and gem materials: Kraus, E. H.,
 5.
 General: Fenton, C. L., 1.
 Geological history, Nor. Am.: Hussey, R.
 C., 1.
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 son, J. S., 1.
 Geology and engineering: Eckel, E. B.,
 1.
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 A., 4; Heiland, C. A., 1.
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 W. J., 4.
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 9.
 Mineralogy: Dana, J. D., 1.
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 R. C., 1.
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 Howard, A. D., 1.
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 Shimer, H. W., 1.
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 9.
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 R., 8.
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 Diamond, B. T., 1.
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 B., 1.
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 1.
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 Bendfeld, A. E., 1.
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 Nevada, Goldbanks mining dist.: Dreyer,
 R. M., 2.
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 W. W., 1.
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 W., 1.
 Thiolite, California: Groesbeck, M. J., 1.
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 Thrust faults.
 Montana, Freezeout Mt.-Bald Mt. area:
 Maravich, M. D., 1.
 Texas, Rim Rock country: Baker, C. L.,
 8.
 Thucholite, Quebec: Spence, H. S., 2.
 Thunder eggs:
 Mineral localities: Hazen, G. E., 1.
 Possible formation: Buddhue, J. D., 8.
 Tills.
 Illinois, elongate hills: Ball, J. R., 2.
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 Massachusetts, east.: Currier, L. W., 4.
 Michigan, Montmorency Co.: Bergquist,
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 L., 1.
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 thwait, L., 2.
 New York, till fabric: Holmes, C. D., 2.
 Time-scale of universe: Russell, H. N., 1.
 Time and stratigraphic terminology: Sutton,
 A. H., 2.
 Tin.
 Colorado, Tarryall Range: Butler, R. D.,
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 Nevada, Lander Co.: Fries, C., Jr., 2.
 New Mexico, Black Range: Fries, C.,
 Jr., 1.
 North Carolina: Kesler, T. L., 2, 8;
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 Quebec, Sept-Iles area: Faessler, C., 4.
 South Carolina: Kesler, T. L., 8; Anon-
 ymous, 31.
 South Dakota, Tinton dist.: Smith,
 W. C., 1.
 Virginia, Buena Vista: Bloomer, R. O., 2.
 Washington: Dake, H. C., 5; Page, L. R.,
 3; Anonymous, 25.
 Titanite, New York: Trainer, J. N., 2.
 Titanium.
 Virginia, Nelson, Amherst Cos.: Ross,
 C. S., 1.
 Wyoming, Laramie Range: Diemer,
 R. A., 1.
 Topaz.
 Colorado, Crystal Park: Pearl, R. M.,
 4, 7, 8.
 Massive, thermal properties: Stuckey,
 J. L., 2.
 Tourmaline.
 Colorado, Green Ridge: Ives, R. L., 5.
 New York: Zodac, P., 9.
 Source rocks, weathering: Dryden, A.
 L., Jr., 4.
 Washington, gem minerals: Fernquist,
 C. O., 1.
 Tracks and trails.
 Anchisauripus, Pa.: Willard, B., 1.
 Dinosaur tracks, Tex.: Bird, R. T., 1;
 S—, A., 1.
 Footprints, Carb.: Ingalls, A. G., 1.
 Lion tracks, Ariz.: Ninninger, H. H., 8.
 Mammalian, avian ichnites, Death Val-
 ley: Curry, H. D., 1.
 Micrichnus, Alberta: Russell, L. S., 7

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- Montana, fossil imprints, unknown origin : Vokes, H. E., 2.
 Phenanthropus, Carb. : Ingalls, A. G., 1.
 Virginia, Burkes Garden fossils : Perry, G. G., 1.
 Transient electric prospecting : White, G. E., 1.
 Traverse, Mo.-Iowa : Cline, L. M., 2.
 Travertine, Ohio : Stout, W. E., 2.
 Treanorite, California : Woodford, A. O., 3.
 Tree-growth climate indicators : Glock, W. S., 1, 2.
 Tremolite.
 New Mexico lms. : Patton, L. T., 1.
 New York, Tilly Foster mine : Trainer, J. N., 2.
 North Carolina : Hafer, C., 1.
 Trends, petroleum geology : Levorsen, A. I., 8.
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 Alaska : Capps, S. R., 1; Moffitt, F. H., 1.
 Appalachia : Nelson, W. A., 1.
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 Arizona : Keyes, 55; Stagner, H. R., 1; Strahler, A. N., 1.
 Bay of Fundy : Koons, E. D., 1.
 British Columbia : Billingsley, P. R., 3; McLearn, F. H., 3, 4, 7, 8; Rice, H. M. A., 1.
 California : Durrell, C., 1; Emery, K. O., 5; Gardner, D. L., 1; Jenkins, O. P., 4, 6; Johnston, W. D., Jr., 1; Mayo, E. G., 1; Reed, R. D., 3; Woodford, A. O., 1.
 Canada, Cordilleran geosyncline : Warren, P. S., 1.
 Cascadia : Schofield, S. J., 2.
 Cincinnati Arch area : Weirich, T. E., 1.
 Colorado : Burbank, W. S., 1, 3; Kessler, F. C., 1; Pierce, W. G., 1.
 Connecticut, sed. rocks : Krynine, P. D., 12.
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 Mexico : Kellum, L. B., 1; King, R. E., 1; Woodford, A. O., 1.
 Missouri geology : Keyes, 106.
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 Nebraska-Wyoming-South Dakota-Colorado, correls. : Condra, G. E., 2.
 New Jersey : Hawkins, A. C., 4; Lewis, J. V., 1; Ludlum, J. C., 1.
 New Mexico : Harley, G. T., 1; Keyes, 18; Laudon, L. R., 4.
 North America, Mid-continent area : Dott, R. H., 3.
 Troughs : Bain, G. W., 6.

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- North Carolina, Anson Co. : Berry, E. W., 3.
 North Dakota, deep-well records : Laird, W. M., 3.
 Oregon : Allen, J. E., 2; Merriam, C. W., 2; Oregon St. Bd., 1; Packard, E. L., 1; Smith, W. D., 4; Thayer, T. P., 1; Wells, F. G., 6.
 Pennsylvania : Hersey, J. B., 1; Lohman, S. W., 4; Tomlinson, W. H., 1; Whitcomb, L., 2; Willard, B., 4.
 Permian-Triassic, Rocky Mts. : Newell, N. D., 5.
 Permo-Triassic boundary, Idaho-Mont.-Wyo. : Newell, N. D., 2.
 Quicksilver deposits : Ross, C. P., 2.
 Randolph quad, Utah-Wyo. : Richardson, G. B., 3.
 Rocky Mt. area : Bartram, J. G., 1.
 South Dakota : Gries, J. P., 1; Kans. G. S., 1.
 Texas : Cole, T., 1; Geol. S. A., 1; Germond, K. W., 1; Giesey, S. C., 1; Leuenberger, B., 1; Maxwell, R. A., 1; Page, L. R., 1; Sheldon, W., 1; Sidwell, R. G., 2; Wilson, G. M., 2.
 Utah : Bacon, C. S., Jr., 1; Gregory, H. E., 1; McKnight, E. T., 1; Williams, N. C., 1.
 Utah-Ariz., Hurricane fault area : Gardner, L. S., 1.
 Washington : Waters, A. C., 1, 2.
 Wyoming : Beckwith, R. H., 1; Branson, E. B., 7; Demorest, M. H., 2.
 Wyoming-Black Hills, S. Dak. : Bartram, J. G., 2.
 Tridymite, California : Durrell, C., 1.
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 Alabama : Bowles, E. O., 2; Butts, C., 1.
 Alsataspis, Tex. : Turner, F. E., 1.
 Ampyx, Okla. : Decker, C. E., 1.
 Arctic America, fauna, Frobisher Bay : Roy, S. K., 1.
 Arizona, Camb. Grand Canyon : Resser, C. E., 4.
 Braintree, Mass. : Wheeler, R. R., 4.
 California, characteristic fossils : Hanna, G. D., 1.
 Cambridge lms. fauna, Pa. : Seaman, D. M., 3.
 Cambro-Ordovician, Okla.-Wis. : Fredrickson, E. A., Jr., 1.
 Dalmanites, Mo. : Ball, J. R., 4.
 Faunas, Maryville fm. : Resser, C. E., 3.
 Ordovician, Mich. : Hussey, R. C., 2.
 Silurian, Ripogenus Dam, Maine : Willard, B., 7.
 Isotelus, Okla. : Loeblich, A. R., Jr., 1.
 Minnesota, S. E. : Stauffer, C. R., 3.
 Nevada : Holliday, S., 1; Merriam, C. W., 1.
 New Mexico, Sacramento Mts. : Laudon, L. R., 4.

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- New York-Vermont, Cambro-Ord.:
Wheeler, R. R., 3.
Niagaran, Ohio-Ind.: Busch, D. A., 1.
North American, phacopid: Delo, D. M.,
2; Weller, J. M., 4.
Ontario, Toronto-Hamilton area: Caley,
J. F., 1.
Ordovician appendages: Garstang, W., 1.
Pathologic pygidium, Mo.: Lochman,
C., 2.
Relative-growth method analyses:
Phleger, F. B., Jr., 3.
Saukiinae, N. Y.: Wheeler, R. R., 6.
Silicified, Ord., Va.: Whittington, H.
B., 2.
Texas, Perm.: Stainbrook, M. A., 8.
Trinucleidae, Nor. Am.: Whittington,
H. B., 1.
Utah, Logan quad.: Williams, J. S., 1.
Vermont-New York, Cambro-Ord.:
Wheeler, R. R., 3.
Wisconsin, Door Co.: Shrock, R. R., 1.

Trinidad.

Economic geology.

- Los Bajos fault area: Wilson, C. C., 1.

Palaeontology.

- Dentalium, Cret.: Cushman, J. A., 4.
Foraminifera, Cret., Tert.: Vaughan,
T. W., 2.
Nodosuria, Cret.: Cushman, J. A., 4.

Physical geology.

- Los Bajos fault area: Wilson, C. C., 1.

Tripoli, Arkansas: Branner, G. C., 1.

Trona, Wyoming: Greene, R. G., 1; Mendenhall, W. C., 3.

Tschermigite, California: Vonsen, M., 1.

Tufa, Ohio: Stout, W. E., 2.

Tuffs.

- California, San Joaquin Valley: Forbes,
H., 1.

- Quebec, Noranda dist.: Wilson, M. E., 3.

- Virginia, Unicoi fm.: Bloomer, R. R., 1.

Tungsten.

- Arizona: Wilson, E. D., 2.
British Columbia: Stevenson, J. S., 4.
California: Lemmon, D. M., 1, 2, 3, 4;
Partridge, J. F., Jr., 1.
Colorado: Lovering, T. S., 1, 2; McKenna, J. W., 1; Rubright, D., 1.
Idaho, Lemhi Co.: Callaghan, E., 1.
Mother Lode Area, Calif.-Oreg.: Averill,
C. V., 1.
Nevada, Golconda area: Kerr, P. F., 3.
North America, Cordillera: Kerr,
P. F., 5.
Nova Scotia: Douglas, G. V., 1, 4.
Washington: Page, L. R., 3; Anonymous, 25.

Turquoise.

- Colorado: Pearl, R. M., 2, 5.
Texas, Big Bend: Miles, F. A., 1.

- Twenty years of petroleum geology in Calif.:
Barnes, R. M., 1.

- Types in modern taxonomy: Simpson,
G. G., 2.

- Turtles. See Reptilia.

- Ulexite, crystallography: Murdoch, J., 2.

Unconformities.

- Accumulation, oil and gas, related to:
Garner, F. J., 1.

- Alabama, Montevallo-Columbiana quads.:
Butts, C., 1.

- Alaska, Tetling River area: Moffit, F.
H., 1.

- Alberta, Athabasca area: Ball, M. W., 2.
Arizona: Keyes, 32, 54, 55.

- California: Bailey, T. L., 1; Eaton, J. E.,
3; Gilbert, C. M., 1; Noble, L. F., 1;
ropenoe, W. P., 3; Taliaferro,
N. L., 3.

- Colorado: Burbank, W. S., 1; Singewald,
Q. D., 1.

- Cross section, Tex.-N. Mex.: Fritz, W.
C., 1.

- Cuba, Vento Valley: Brodermann, J., 1.

- Florida, peninsula: Campbell, R. B., 2.

- Great Lakes States, overlap: Lowenstam,
H. A., 1.

- Illinois: Newton, W. A., 1; Payne, J. N.,
1; Weller, J. M., 2.

- Iowa: Keyes, 79.

- Kansas, S. W.: Smith, H. T. U., 9.

- Kinderhook: Keyes, 9.

- Louisiana, Eola field: Bates, F. W., 1.

- Mexico, Durango: Terrones Langone,
A., 1.

- Michigan, Menominee iron range: Pettijohn, F. J., 5.

- Minnesota, Knife Lake area: Gruner,
J. W., 3.

- Mississippi: Stephenson, L. W., 1.

- Missouri geology: Keyes, 91, 106.

- Nebraska-Wyoming-South Dakota-Colo-
rado, correls.: Condra, G. E., 2.

- Nevada, Roberts Mts.: Merriam, C. W., 4.

- New Brunswick, Jacquet-Tetagouche Riv-
ers area: Alcock, F. J., 1.

- New Jersey, Hardyston fm.: Ludlum,
J. C., 1.

- New Mexico: DeFord, R. K., 5; Denny,
C. S., 1; Ray, L. L., 2.

- New York, Trinity Lake area: Fluhr,
T. W., 2.

- Oklahoma: Moore, C. A., 1; Oakes, M. C.,
1, 2; Paschal, E. A., 1.

- Ontario: Bateman, J. D., 1, 4; Horwood,
H. C., 2; Prest, V. K., 1.

- Oregon, Madras quad.: Hodge, E. T., 6.

- Pennsylvania, Fayette Co.: Hickok, W. C.,
IV, 1.

- Quebec: Bannerman, H. M., 1; Laver-
dière, J.-W., 1.

- Santo Domingo: Weyl, R., 1.

- South Dakota, Tinton dist.: Smith, W.
C., 1.

- Sub-Bethany, Mo.: Keyes, 58.

Unconformities—Continued.

- Texas: Albritton, C. C., Jr., 1; DeFord, R. K., 5; Huffington, R. M., 3; Martyn, P. F., 1; Morgan, A., 1.
- Trinidad, Los Bajos fault area: Wilson, C. C., 1.
- Utah: McKnight, E. T., 1; Williams, N. C., 1.
- Virginia, Catoctin fm.: Bloomer, R. O., 3.
- Wyoming: Beckwith, R. H., 1; Bertagnolli, A. J., Jr., 1.

Underground water (general). For areal see names of States. See also Geysers; Mineral water; Springs; Thermal water.

- Connate waters in circulation: Lane, A. C., 6.
- Ground water, elevation measurements: Johnston, C. N., 1.
- Motion theory: Hubbert, M. K., 1; Krutter, H., 1; Wenzel, L. K., 3.
- Water flow in artesian aquifer: Jacob, C. E., 1.
- Water sources: Theis, C. V., 1.

Undertow evidence: Evans, O. F., 3.

Ungulata. See Mammalia.

Uniformitarianism theory, revision: Miller, R. L., 1.

United States.

Areas described.

- Geologic explorations, S. W.: Bryan, K., 1.

Economic geology.

- Alunite: Thoenen, J. R., 1.
- Bauxite: Thoenen, J. R., 2.
- Beryl: Bliss, L. G., 1.
- Clays, sou. U. S.: Mansfield, G. R., 1, 2.
- Fluorine. ph. sphate deposits: Mansfield, G. R., 5.
- Future oil provinces: Appalachian G. S., 2; Levorsen, A. I., 6; Miss. G. S., 3; Pacific Sec. A. A. P. G., 1; Rocky Mt. Assoc., 1; Tulsa G. S., 1.
- Geochemistry, nat. gas, Appalachian prov.: Price, P. H., 2.
- Geophysical explor., 1924-39: Macelwane, J. B., 2.
- Gulf Coast delta oil fields: Brace, O. L., 4.
- Iceland spar and optical fluorite: Hughes, H. H., 1.
- Lignite: Lavine, I., 1, 2.
- Magnetite, secondary: Hayes, A. O., 1.
- Mineral resources, Northwest: Hodge, E. T., 4.
- Southeastern States: Crickmay, G. W., 4.

Petroleum, future resources: Levorsen, A. I., 5, 7.

Petroleum industry developments: Fowler, H. C., 1.

- Phosphate deposits: Mansfield, G. R., 3, 4.
- Possibilities, oil and gas, S. E.: Poor, R. S., 1.

United States—Continued.

Economic geology—Continued.

- Possible oil fields: Howard, W. V., 2.
- Quicksilver deposits: Ross, C. P., 6.

Historical geology.

- Allegheny synclinalorium: Kay, G. M., 5.
- Atlantic Coastal Plain Pleist. features: Flint, R. F., 2.
- Cambrian: Resser, C. E., 1.
- Upper Mississippi Basin: Keyes, 74.
- Carboniferous-Permian boundary: Moore, R. C., 1.
- Chico ser., divisions: Anderson, F. M., 3.
- Clays, sou. U. S.: Mansfield, G. R., 1, 2.
- Climatic variation, S. W.: Antevs, E. V., 1.
- Color as guide to continental Tert.: Wood, H. E., 2d, 3.
- Future oil provinces: Appalachian G. S., 2; Miss. G. S., 3; Rocky Mt. Assoc., 1; Tulsa G. S., 1.
- Geologic explorations, S. W.: Bryan, K., 1.
- Geologic map: Lobeck, A. K., 1.
- Geological notes: Sharp, H. S., 1.
- Laurel-Brownspout overlap, Great Lakes area: Lowenstam, H. A., 1.
- National Parks: Janssen, R. E., 3.
- Permian correlations: Dunbar, C. O., 1.
- Phosphate deposits: Mansfield, G. R., 3, 4.
- Quicksilver deposits: Ross, C. P., 6.
- Regional structure correls.: Billingsley, P. R., 1.
- Rocky Mts.: Atwood, W. W., 2.
- Southwest: Baker, C. L., 4.
- Tectonic map, north-central: Longwell, C. R., 1.
- Varve chronology in S. W.: Antevs, E. V., 2.

Mineralogy.

- Alunite: Thoenen, J. R., 1.
- Bauxite: Thoenen, J. R., 2.
- Beryl: Bliss, L. G., 1.
- Iceland spar and optical fluorite: Hughes, H. H., 1.
- Magnetite in iron ores: Hayes, A. O., 1.
- Meteorites, fall of Jan. 1941: Leonard, F. C., 2.
- Mineral localities, east: Hawkins, A. C., 5.
- Mineral resources, Northwest: Hodge, E. T., 4.
- Phosphate deposits: Mansfield, G. R., 3, 4.
- Seleniferous areas, plant indicator: Beath, O. A., 1, 2.
- Selenium: Williams, K. T., 1.

Paleontology.

- Birds, Tert.: Wetmore, A., 1.
- Candorbulina, Coastal Plain: Cushman, J. A., 4.
- Crinoidea Inadunata, Carb.: Kirk, E., 3.
- Diatoms, Cret.: Rampl, L., 1.
- Echinoids, Cenozoic: Cooke, C. W., 2.
- Exilia, Tert.-Cret.: Bentson, H., 1.

United States—Continued.

Paleontology—Continued.

Floras, Carboniferous, S. W.: Read, C. B., 2.

Fossil: Brown, R. W., 1.

Foraminifera, Upper Cret.: Cushman, J. A., 4.

Fossils, Paleozoic: Bridge, J., 1.

Geology vs. archeology, S. W.: Gould, C. N., 1.

Laurel-Brownport overlap, Great Lakes area: Lowenstam, H. A., 1.

Nautiloids, Perm.: Unklesbay, A. G., 1.

Reptilia, Perm., autotomy: Price, L. I., 1.

Ticholeptinae, Tert.: Schultz, C. B., 6.

Vertebrates, West Coast: Camp, C. L., 3.

Physical geology.

Allegheny synclinorium: Kay, G. M., 5.

Earthquakes: Bodle, R. R., 3; Neumann, F., 1, 2; Treasher, R. C., 2.

Isostatic anomalies: Tsuboi, C., 1.

Land erosion, S. W.: Bailey, R. W., 1.

National Parks: Janssen, R. E., 3.

Pacific Coast seismol., 1938: Ulrich, F. P., 1.

Regional structure correls.: Billingsley, P. R., 1.

Rocky Mts.: Atwood, W. W., 2.

Seismological field work: Ulrich, F. P., 3, 4.

Submarine valleys, nor. Atlantic, origin: Bucher, W. H., 3.

Trace-slip faults, Rocky Mt. area: Beckwith, R. H., 2.

Physiographic geology.

Atlantic Coastal Plain Pleist. features: Flint, R. F., 2.

Erosion, S. W.: Bailey, R. W., 1; Bryan, K., 6.

Glacial stages, middle west: Bryan, K., 11.

Land erosion, S. W.: Bailey, R. W., 1; Bryan, K., 6.

Loess, distrib., stratig.: Apfel, E. T., 1.

Rocky Mts.: Atwood, W. W., 2.

Southwestern U. S.: Laudon, L. R., 1.

Submarine valleys, origin, Atlantic coast: Bucher, W. H., 3; Vokes, H. E., 3.

Varve chronology in Southwest: Antevs, E. V., 2.

Underground water.

Ground water: Meinzer, 1, 3.

United States Geol. Survey: Broggi, J. A., 1.

United States Nat. Pks.: Janssen, R. E., 3.

Upper Silurian. See Silurian.

Uraninite.

New York, Richville, age: Shaub, B. M., 1.

Quebec: Spence, H. S., 2.

Uranium. See also Carnotite.

Colorado, geophys. prosp.: Kelly, S. F., 1.

Fuels, possible: Dake, H. C., 4.

Uranium—Continued.

Northwest Territories: Lord, C. S., 2.

Radio-active minerals: De Ment, J., 1.

Radioactivity: Urry, W. D., 2.

Uranium minerals, possible fuels: Dake, H. C., 4.

Utah.

Areas described.

Green-Colorado Rivers area: McKnight, E. T., 1.

Wasatch Plateau: Spieker, E. M., 1.

Economic geology.

Carbon dioxide accumulations: Miller, J. C., 1.

Green-Colorado Rivers area: McKnight, E. T., 1.

Iron, Bull Valley: Wells, F. G., 4.

Non-metallic resources: Gabriel, C., 1.

Randolph quad.: Richardson, G. B., 3.

Historical geology.

Bryce Canyon Nat. Pk.: Gregory, H. E., 1.

Bull Valley: Wells, F. G., 4.

Cambrian, Logan quad.: Williams, J. S., 1.

Cedar Hills: Schoff, S. L., 2.

Confusion and Conger Ranges: Bacon, C. S., Jr., 1.

Crystallines, pre-Camb.: Eardley, A. J., 1.

Green-Colorado Rivers area: McKnight, E. T., 1.

Hurricane fault, Utah-Ariz.: Gardner, L. S., 1.

Permian, Ariz.-Utah Basin: McKee, E. D., 2.

Rocky Mts.-Colorado plateau area: Baker, A. A., 1.

Proterozoic (?), north-cent. Utah: Eardley, A. J., 2.

Randolph quad.: Richardson, G. B., 3.

Southwestern U. S.: Laudon, L. R., 1.

Uta Basin, Eocene: Stagner, W. L., 1.

Wasatch Mts.: Williams, N. C., 1.

Wasatch Plateau, glaciation: Spieker, E. M., 1.

Wasatch Range: Eardley, A. J., 4.

Mineralogy.

Feldspar replacing fossils: Stringham, B., 1.

Green-Colorado Rivers area: McKnight, E. T., 1.

Iron, Bull Valley: Wells, F. G., 4.

Montgomeryite: Larsen, E. S., 3d, 1.

Overite: Larsen, E. S., 3d, 1.

Rex chert, origin: Keller, W. D., 2.

Selenite crystals: Inglesby, A. L., 1.

Sterrettite: Larsen, E. S., 3d, 2.

Paleontology.

Cambrian, Logan quad.: Williams, J. S., 1.

Charophyta, Rocky Mts.: Peck, R. E., 1.

Confusion and Conger Ranges: Bacon, C. S., Jr., 1.

Dinosaurs: Gazin, C. L., 1.

Utah—Continued.

Paleontology—Continued.

- Feldspar replacing fossils: Stringham, B., 1.
- Fossils, Paleozoic: Bridge, J., 1.
- Fusulinids, Carb.: Thompson, M. L., 1.
- Lizards, Cret.: Gilmore, C. W., 2.
- Mammalia: Gazin, C. L., 1, 4.
- Microfossils, Cret., Rocky Mts.: Peck, R. E., 2.
- Ostracoda, Rocky Mts.: Peck, R. E., 1.
- Randolph quad.: Richardson, G. B., 3.
- Vertebrata: Gazin, C. L., 2.
- Wasp nest, Cret.: Brown, R. W., 4.

Petrology.

- Crystallines, pre-Camb.: Eardley, A. J., 1.
- Pre-Cambrian gneiss, San Rafael swell: Hatch, R. A., 1.
- Proterozoic (?), north-cent. Utah: Eardley, A. J., 2.
- Rex chert, origin: Keller, W. D., 2.
- Uinta Basin, Eocene: Stagner, W. L., 1.

Physical geology.

- Bryce Canyon Nat. Pk.: Gregory, H. E., 1.
- Cedar Hills: Schoff, S. L., 2.
- Confusion and Conger Ranges: Bacon, C. S., Jr., 1.
- Crystallines, pre-Camb.: Eardley, A. J., 1.
- Fluctuations, ground water, during earthquakes: Thomas, H. E., 1.
- Green-Colorado Rivers area: McKnight, E. T., 1.
- Ground-water dams, Hurricane fault-zone: Thomas, H. E., 2.
- Hurricane fault, Utah-Ariz.: Gardner, L. S., 1; Thomas, H. E., 2.
- Ice spring in extinct crater: Rogers, W. T., 1.
- Randolph quad.: Richardson, G. B., 3.
- Southwestern U. S.: Laudon, L. R., 1.
- Volcanism, Salt Lake City area: Schneider, H., 1.
- Wasatch Mts.: Williams, N. C., 1.
- Wasatch Plateau: Spieker, E. M., 1.
- Wasatch Range: Eardley, A. J., 4.

Physiographic geology.

- Bryce Canyon Nat. Pk.: Gregory, H. E., 1.
- National Parks: Janssen, R. E., 3.
- Uinta Basin: Stagner, W. L., 1.
- Wasatch Mts.: Williams, N. C., 1.
- Wasatch Plateau, glaciation: Spieker, E. M., 1.
- Wasatch Range: Eardley, A. J., 4.

Underground water.

- Fluctuations, ground water, during earthquakes: Thomas, H. E., 1.
- Ground-water dams, Hurricane fault-zone: Thomas, H. E., 2.
- Ice spring in extinct crater: Rogers, W. T., 1.
- Randolph quad.: Richardson, G. B., 3.

Valentinite, California: Murdoch, J., 4.

Vanadium.

- Colorado, geophys. prosp.: Kelly, S. F., 1.
- Quebec: Pelletier, P. E., 1.

Vandiestite, redefinition: Frondel, C., 4.

Variscite: McConnell, D., 2.

Varves.

- Fossil magnetism: McNish, A. G., 1.
- Quebec Beattie mine: Banfield, A. F., 1.
- United States chronology in Southwest: Antevs, E. V., 2.

Veatchite, California: Murdoch, J., 1; Anonymous, 1.

Vegetative indicators of solidification: Ives, R. L., 6.

Veins.

- Vein formation process: Roberts, H. M., 1.
- Vein-forming solutions: Garrels, R., 1.

Velocity, basaltic lava flows: Nichols, R. L., 2.

Ventifacts.

- Massachusetts, Cape Cod: Mather, K. F., 1.
- New Mexico, San Acacia area: Denny, C. S., 5.
- Sleeping Bear Pt., Mich.: Dow, K. W., 1.

Vermes. See also Invertebrates (general).
California, Kettleman Hills oil field: Woodring, W. P., 1.

- Maryland, Camb.: Howell, B. F., 8.
- Midway fauna, west Gulf prov.: Gardner, J. A., 4.

Mississippi: Stephenson, L. W., 1.
Navarro group, Tex.: Stephenson, L. W., 3.

New Jersey, Vincentown fm.: Greacen, K. F., 1.

Ontario, Toronto-Hamilton area: Caley, J. F., 1.

Planolites, Pa.: Howell, B. F., 4.
Skolithos, Cambrian: Howell, B. F., 4, 9.

Texas, Dallas Co.: Dallas Petroleum Geologists, 1.

Vermiculite.

- Composition: Ruthruff, R. F., 1.
- Montana, Libby: Kriegel, W. W., 1.

Vermont.

Economic geology.

- Talc quarry: Zodac, P., 5.

Historical geology.

- Ascutey Mt.: Chapman, R. W., 1.
- Cambro-Ordovician boundary: Wheeler, R. R., 3.
- Facies control, structural patterns: Cady, W. M., 1.
- Green Mts.: Jacobs, E. C., 1.

Vermont—Continued.

Historical geology—Continued.

- Memphremagog quad.: Doll, C. G., 1.
 Ordovician, cent. Vt.: Currier, L. W., 2.
 Paleozoic rocks: Jahns, R. H., 4.
 Taconic fault roots: Hawkes, H. E., Jr., 1.

Mineralogy.

- Talc quarry: Zodac, P., 5.

Paleontology.

- Sponges, Chazy: Raymond, P. E., 1.
 Trilobites, Adirondack border: Wheeler, R. R., 3.

Petrology.

- Dolomite orientation: Fairbairn, H. W., 5.
 Memphremagog quad.: Doll, C. G., 1.
 Ordovician, cent. Vt.: Currier, L. W., 2.

Physical geology.

- Ascutney Mt.: Chapman, R. W., 1.
 Facies control, structural patterns: Cady, W. M., 1.
 Green Mts.: Jacobs, E. C., 1.
 Memphremagog quad.: Doll, C. G., 1.
 Monroe fault: Eric, J. H., 1.
 Ordovician, cent. Vt.: Currier, L. W., 2.
 Taconic fault roots: Hawkes, H. E., Jr., 1.

Physiographic geology.

- Facies control, structural patterns: Cady, W. M., 1.
 Glacial features, Bennington: Gordon, C. E., 2.
 Green Mts.: Jacobs, E. C., 1.

Vertebrata (general). See also Amphibia, Aves, etc.

- Bibliography of fossil: Camp, C. L., 1.
 California, Cret.: Stock, C., 3.
 Collecting, Utah-Wyoming: Gazin, C. L., 2.

- Ecology of marine organisms: Ladd, H. S., 1.

- Eporeodon, Wash.: Grant, R. Y., 1.

- Evolution of: Romer, A. S., 7.

- Fauna, Emma Creek fm., Kans.: Frye, J. C., 4.

- Morrison, Summerville fms., Colo.: Holt, E. L., 1.

- Florida, Miocene: White, T. E., 4.

- General: Romer, A. S., 2.

- Hoplophonus, S. Dak.: Simpson, G. G., 8.

- Kansas: Robertson, G. M., 1; Smith, H. T. U., 9.

- Land-living, limbs evolution: Gregory, W. K., 3.

- Mississippi: Stephenson, L. W., 1.

- North America, paleoecology: Camp, C. L., 2.

- Oregon, Astoria fm.: Packard, E. L., 3.

- Relative growth, vertebrate phylogeny: Phleger, F. B., 1.

- Rhipidistian paddle into tetrapod limb: Gregory, W. K., 4.

Vertebrata (general)—Continued.

- Tetrapod tarsus: Schaeffer, B., 1.

- Tetrapods, early, locomotion: Schaeffer, B., 1.

- Texas: Dallas Petroleum Geologists, 1; Geol. S. A., 1; Read, W. F., 2; Sellards, E. H., 7.

- This living world: Clark, C. C., 1.

- United States, West Coast: Camp, C. L., 3.

- Vertebrate paleontology, U. S. Nat. Mus.: Gilmore, C. W., 3.

Virgin Islands.

Historical geology.

- St. Croix: Cederstrom, D. J., 1, 3.

Physical geology.

- St. Croix: Cederstrom, D. J., 1, 3.

Physiographic geology.

- St. Croix: Cederstrom, D. J., 1, 3.

Underground water.

- St. Croix: Cederstrom, D. J., 1, 3.

Virginia.

- Survey research program: Bevan, A. C., 4.

- Virginians' contrib. to State's geology: Roberts, J. K., 1.

Economic geology.

- Amethyst: Sniffen, S. W., 1.
 Gallium in rocks: Mathews, A. A. L., 3.
 Kyanite: Sawyer, J. P., 1.
 Limestones: Bevan, A. C., 1.
 Limonite: Holden, R. J., 1.
 Nelsomite dikes: Moore, C. H., Jr., 1.
 Stone: Bevan, A. C., 6.
 Titaniferous ss.: Bloomer, R. O., 2.
 Titanium: Ross, C. S., 1.
 Vaucluse gold mine: Bass, C. E., 1.

Historical geology.

- Appalachian coal fields: Wanless, H. R., 1.

- Appalachians, cent.: Swartz, C. K., 1.

- Athens fm., equivalents N. W. of Clinch Mt. area: Cooper, B. N., 3.

- Blue Ridge area: Bloomer, R. O., 1, 4.

- Buena Vista quad.: Bloomer, R. O., 5.

- Catoctin fm.: Bloomer, R. O., 3.

- Chazy-Black River ser.: Cooper, B. N., 2.

- Coastal Plain, S. E.: Cederstrom, D. J., 2.

- Geologic maps: Singewald, J. T., Jr., 1.
 Jackson's Valley campaign and geology: Campbell, C. D., 1.

- Limestones: Prouty, C. E., 1.

- Little North Mt.: Edmundson, R. S., 1.

- Martie thrust rocks: Brown, W. R., 1.

- Max Meadows fault breccia: Cooper, B. N., 1.

- Mosheim unconformity: Holden, R. J., 1.

- Richmond field trip: Roberts, J. K., 3.

- Shenandoah Valley: Pomerantz, H. B., 1.

- Smyth County: Roberts, J. K., 2.

- Stratigraphic variation, Ord.: Edmundson, R. S., 4.

Virginia—Continued.

Historical geology—Continued.

- Taconic allochthone and Martie thrust:
 Kay, G. M., 4.
 Tennessee River area: Eckel, E. C., 1, 2.
 Tidewater Miocene: Barclay, G. C., 1.
 Topographic and geol. maps: Glenn, L. C., 1.
 Walker Mt.: Edmundson, R. S. 3.

Mineralogy.

- Amethysts: Bevan, A. C., 3; Sniffen, S. W., 1.
 Artesian water from Cret. rocks: Cederstrom, D. J., 4.
 Diabase minerals: Overstreet, W. C., 1.
 Gallium in rocks: Mathews, A. A. L., 3.
 Helictites: Barker, W., 1.
 Kyanite: Sawyer, J. P., 1.
 Limonite: Holden, R. J., 1.
 Martite in hematite: Pegau, A. A., 2.
 Microlite: Donnay, J. D. H., 9.
 Nelsönite dikes: Moore, C. H., Jr., 1.
 Sands, Shenandoah River, South Fork: Sartor, C. L., 1.
 Titaniferous ss.: Bloomer, R. O., 2.
 Titanium: Ross, C. S., 1.
 Tuscarora ss.: Horn, E., 1.
 Vaucluse gold mine: Bass, C. E., 1.

Paleontology.

- Delp'hinodon: Barwick, A. R., 2.
 Early man: Bushnell, D. I., Jr., 1.
 Fauna, Maryville fm.: Resser, C. E., 3.
 Fossils, Ord., Burkes Garden: Perry, G. G., 1.
 Limestones, Ord.: Prouty, C. E., 1.
 Ordovician fossils, sou. Appalachians: Cooper, G. A., 1.
 Sponges, Chazyan: Raymond, P. E., 1.
 Tidewater Miocene: Barclay, G. C., 1.
 Trilobita, silicified: Whittington, H. B., 2.

Petrology.

- Cobbles from Pleist. terraces: Sniffen, E. W., 1.
 Max Meadows fault breccia: Cooper, B. N., 1.
 Nelsonite dikes: Moore, C. H., Jr., 1.
 Petersburg granite: Pegau, A. A., 1.
 Titaniferous ss.: Bloomer, R. O., 2.
 Tuscarora ss.: Horn, E., 1.
 Unicoi tuffs: Bloomer, R. R., 1.

Physical geology.

- Appalachians, gravity profile: Hammer, S. I., 1.
 Blue Ridge area: Bloomer, R. O., 1, 4.
 Buena Vista quad.: Blomer, R. O., 5.
 Catoctin fm.: Bloomer, R. O., 3.
 Caves: Anonymous, 7.
 Fo'd, large isoclinal: Holden, R. J., 1.
 Little North Mt.: Edmundson, R. S., 1.
 Massanutten Mt.: Edmundson, R. S., 2.
 Max Meadows fault breccia: Cooper, B. N., 1.
 Mosheim unconformity: Holden, R. J., 1.
 Nelsonite dikes: Moore, C. H., Jr., 1.

Virginia—Continued.

Physical geology—Continued.

- Petersburg granite: Pegau, A. A., 1.
 Smyth County: Roberts, J. K., 2.
 Taconic allochthone and Martie thrust:
 Kay, G. M., 4.
 Tennessee Valley region: Eckel, E. C., 2.
 Walker Mt.: Edmundson, R. S., 3.
 Watergaps: Fridley, H. M., 1.

Physiographic geology.

- Catoctin belt: Ver Steeg, K., 5.
 Cobbles from Pleist. terraces: Sniffen, E. W., 1.
 Jackson's Valley campaign and geology: Campbell, C. D., 1.
 Little North Mt.: Edmundson, R. S., 1.
 Monterey, Staunton, Harrisonburg quads.: Thompson, H. D., 1.
 Shenandoah Valley: Pomerantz, H. B., 1.
 Watergaps: Fridley, H. M., 1.

Underground water.

- Artesian water from Cret. rocks: Cederstrom, D. J., 4.
 Coastal Plain, S. E.: Cederstrom, D. J., 2.
 Ground water along Fall Zone: McGill, W. M., 1.

Virginians' contrib. to State's geology: Roberts, J. K., 1.

Viscosity of shale: Ricker, N., 2.

Volcanic ash.

- California, Mono Crater tunnel fms.: Gresswell, W. K., 1.
 Kansas, S. W.; Smith, H. T. U., 9.

Volcanic ash and wood silicification: Murata, K. J., 2.

Volcanism. See also Volcanoes; Volcanoes, extinct.

Arizona, Protozoic, Grand Canyon: Keyes, 54.

Bermuda: Allen, C. M., 1.

California: Anderson, C. A., 4; Chelkowsky, J. R., 1; Farmin, R., 1; Hinds, N. E. A., 2; MacDonald, G. A., 5; Mayo, E. B., 1; Tallafarro, N. L., 3; Woodford, A. O., 1.

Cascadia: Schofield, S. J., 2.

Colorado, Stony Mt. stock: Dings, M., 1.

Uncompahgre area: Burbank, W. S., 1.

Eruptivity and mt. bldg.: Willis, B., 2.

Hawaii: Stearns, H. T., 4, 5.

Inland Empire, Wash.-Oreg.: Reed, J. C., 1.

Mexico, Sierra Madre Occidental: King, R. E., 1.

Montana, Highwood Mts.: Larsen, E. S., 3.

New Mexico: Harley, G. T., 1; Powers, W. E., 2; Smith, J. F., Jr., 5.

North America, Permian: Wheeler, H. E., 1.

Western Pre-Camb.: Hinds, N. E. A., 1.

Ontario, Birch-Slate Lakes area: Bateman, J. D., 4.

Volcanism—Continued.

- Oregon: Hodge, E. T., 6; Jones, A. E., 1; Oregon St. Bd., 1; Packard, E. L., 1; Treasher, R. C., 3.
 Structural control, ig. rocks: Loughlin, G. F., 3.
 Texas, Big Bend Park area: Maxwell, R. A., 1.
 United States, fluorine and phosphate deposits: Mansfield, G. R., 5.
 Utah, Salt Lake City area: Schneider, H., 1.
 Washington, Cascade Mts. area: Warren, W. C., 1; Wash. Plan. C., 1.
 Okanogan Valley: Krauskopf, K. B., 1, 2.

Volcanoes. See also Volcanism; Volcanoes, extinct.

- Calderas and their origin: Finch, R. H., 2; Williams, H., 4.
 California, Hat Creek lava flow: Anderson, C. A., 3.
 Mt. Lyell-Mt. Whitney interval: Mayo, E. B., 1.
 Central America: Müllerried, F. K. G., 1.
 Dana's studies: Hoffmeister, J. E., 1.
 Guatemala, survey volcanic areas: McNish, A. G., 2; Wright, F. E., 1; Zies, E. G., 1.
 Hawaii: Finch, R. H., 1; Jaggar, T. A., Jr., 1; MacDonald, G. A., 1; Stearns, H. T., 2, 7; Waesch, H. H., 1; Wentworth, C. K., 5.
 Mexico: Müllerried, F. K. G., 1.
 Oregon: Lawrence, D. B., 1; Nichols, R. L., 4; Phillips, K. N., 1; Williams, H., 2.
 Popocatepetl, Mex.: Murillo, G. [Dr. Atl], 1.
 United States National parks: Janssen, R. E., 3.

Volcanoes, extinct.

- Calderas and their origin: Williams, H., 4.
 California: Anderson, C. A., 4; Groesbeck, M. J., 1; Mayo, E. B., 1.
 Colorado: Burbank, W. S., 3; Wahlstrom, E. E., 3.
 Hawaii: MacDonald, G. A., 1; Stearns, H. T., 2, 3, 4.
 Idaho, Big Craters: Nichols, R. L., 1.
 Massachusetts, Holyoke: Briggs-Conn., 1.
 Valley structure: Bain, G. W., 5.
 New Mexico: Reiche, P., 1; Wright, H. E., Jr., 1.
 Oregon: Nichols, R. L., 3, 4; Packard, E. L., 1; Williams, H., 1, 2.
 Texas, Mitre Peak area: Ives, R. L., 7.
 United States National parks: Janssen, R. E., 3.
 Utah, ice spring in extinct crater: Rogers, W. T., 1.
 Washington: Throssell, W. I., 1; Wash. Plan. C., 1.

Volcanology.

- General: Geol. S. A., 2; Williams, H., 3.
 Voltaite, California: Vonsen, M., 1.
 Vrbaita, crystallography: Frondel, C., 5.
 Wad, Butte area, Montana: Smith, P. A., 1.
 Walther Penck's contribution to geomorphology: Engeln, O. D. von, 1.
 Warm springs, Mont.: Sobotka, H., 1.
 Washington.
 10th bienn. report, 1938-40: Culver, H. E., 1.

Areas described.

- Cascade Mts. area: Wash. Plan. C., 1.

Economic geology.

- Cassiterite: Dake, H. C., 5.
 Clays: Glover, S. L., 4.
 Gem minerals: Fernquist, C. O., 1.
 Magnesite: Bennett, W. A. G., 2.
 Mt. Adams area: Throssell, W. I., 1.
 Nickel: Hobbs, S. W., 1.
 Nickel-gold deposits: Hobbs, S. W., 1.
 Shales: Glover, S. L., 4.
 Tin: Page, L. R., 3; Anonymous, 25.
 Tungsten: Page, L. R., 3; Anonymous, 25.

Historical geology.

- Browns Pt. fm.: Glover, S. L., 2.
 Cascade Mts. area: Wash. Plan. C., 1.
 Colville batholith: Waters, A. C., 2.
 Dam sites, Cascade front: Mackin, J. H., 5.
 Hood River conglomerate: Warren, C. R., 1.
 Inland Empire area: Reed, J. C., 1.
 Intrusives, Okanogan Valley: Krauskopf, K. B., 1, 2.
 Magnesite deposits: Bennett, W. A. G., 2.
 Nickel-gold deposits: Hobbs, S. W., 1.
 Okanogan Valley: Krauskopf, K. B., 1; Waters, A. C., 1.
 Scabland origin: Allison, I. S., 2.
 Spokane area: Fernquist, C. O., 2.
 Tertiary, late: Beck, G. F., 3.
 Yakima basalt and Cascade andesites: Warren, W. C., 1.

Mineralogy.

- Cascade Mts. area: Wash. Plan. C., 1.
 Cassiterite: Dake, H. C., 5.
 Cleveland mine: Fernquist, C. O., 1.
 Gem minerals: Fernquist, C. O., 1.
 Hornblende: Coombs, H. A., 1.
 Magnetite: Coombs, H. A., 1.
 Mt. Adams area: Throssell, W. I., 1.
 Nickel: Hobbs, S. W., 1.
 Nickel-gold deposits: Hobbs, S. W., 1.
 Pegmatites: Campbell, C. D., 2.
 Sphaeroiderite: McLeod, E., 2; Anonymous, 21.
 Spokane area: Fernquist, C. O., 2.
 Tin: Page, L. R., 3; Anonymous, 25.

Washington—Continued.

Mineralogy—Continued.

Tungsten: Puge, L. R., 3; Anonymous, 25.

Waterville meteorite: McMillan, F. A., 1.

Paleontology.

Bonaparte Lake peat: Hanseif, H. P., 3.

Corals, Tert.: Durham, J. W., 1.

Epoecodon: Grant, R. Y., 1.

Foraminifera, Oligocene: Cushman, J. A., 4.

Fossil-bearing basalts: Beck, G. F., 4.

Fusulinidae: Anderson, R. A., 1.

Latah beds: Upson, R. H., 1.

Oligocene fossil zones: Durham, J. W., 3.

Paleoecology, bogs: Hansen, H. P., 3, 5.

Peat, interglacial: Hansen, H. P., 1.

Pleistocene fossils: Fernquist, C. O., 4.

Pollen, lake sediments: Hansen, H. P., 6.

Pollen studies, Puget Sound bogs: Hansen, H. P., 4.

Spokane area: Fernquist, C. O., 2.

Tertiary: Beck, G. F., 3.

Wood, fossil: Beck, G. F., 2.

Petrology.

Basalt studies: Waters, A. C., 3.

Cascade andesites: Warren, W. C., 1.

Clays: Glover, S. L., 4.

Coaly sediment: Goodspeed, G. E., 5.

Colville batholith: Campbell, C. D., 5; Waters, A. C., 2.

Covada group: Campbell, C. D., 4.

Dilation and replacement dikes: Goodspeed, G. E., 1.

Dolomite metamorphism: Roberts, F. B., 1.

Hood River conglomerate: Warren, C. R., 1.

Hornblende: Coombs, H. A., 1.

Igneous rocks, Olympic Penin.: Glover, S. L., 1.

Intrusive, Okanogan Valley: Krauskopf, K. B., 1, 2.

Magnetite deposits: Bennett, W. A. G., 2; Coombs, H. A., 1.

Magnetite: Coombs, H. A., 1.

Moss agate in vein quartz: Fernquist, C. O., 3.

Okanogan Valley intrusives: Krauskopf, K. B., 1, 2.

Quartzites, Kettle Falls: Campbell, C. D., 3.

Ringold fm.: Stevenson, R. G., 1.

Shales: Glover, S. L., 4.

Twin Sisters Mts. ultrabasics: Bennett, W. A. G., 1.

Yakima basalt and Cascade andesites: Warren, W. C., 1.

Physical geology.

Cascade Mts. area: Wash. Plan. C., 1.

Coaly sediment, metasomatism: Goodspeed, G. E., 5.

Colville batholith: Campbell, C. D., 5; Waters, A. C., 2.

Washington—Continued.

Physical geology—Continued.

Covada group metamorphism: Campbell, C. D., 4.

Deformation, Pleist.: Glover, S. L., 1.

Dilation and replacement dikes: Goodspeed, G. E., 1.

Dolomite metamorphism: Roberts, F. B., 1.

Earthquake, 11/12/39: Barksdale, J. D., 1.

Ellipsoidal structure: Fuller, R. E., 1.

Ice cave: Fritz, B. J., 1.

Igneous rocks, Olympic Penin.: Glover, S. L., 1.

Inland Empire area: Reed, J. C., 1.

Intrusive, Okanogan Valley: Krauskopf, K. B., 1, 2.

Lewiston basin, Pleist.: Lupher, R. L., 1.

Magnetite deposits: Bennett, W. A. G., 2.

Mt. Adams: Throssell, W. L., 1.

Okanogan Valley intrusives: Krauskopf, K. B., 1, 2; Waters, A. C., 1.

Seismicity, Pacific Coast: Byerly, P., 2.

Spokane area: Fernquist, C. O., 2.

Twin Sisters Mts.: Bennett, W. A. G., 1.

Yakima basalt: Warren, W. C., 1.

Physiographic geology.

Cascade Mts.: Wash. Plan. C., 1.

Columbia Plateau: Freeman, O. W., 3.

Columbia River: Mackin, J. H., 1; Warren, C. R., 2.

Colville batholith: Waters, A. C., 2.

Dam sites, Cascade front: Mackin, J. H., 5.

Glacial drainage changes: Freeman, O. W., 1.

Glacial history: Hodge, E. T., 3.

Inland Empire area: Reed, J. C., 1.

Lewiston basin: Lupher, R. L., 1.

Lyman Glacier, recession: Freeman, O. W., 2.

Methow Valley, glaciation: Barksdale, J. D., 2.

Mound fans, Columbia Plateau: Mackin, J. H., 4.

Scablands, origin: Allison, I. S., 2.

Snoqualmie-Cedar area: Mackin, J. H., 3.

Williamette Valley: Allison, I. S., 1.

Yakima basalt and Cascade andesites: Warren, W. C., 1.

Underground water.

Cascade Mts. area: Wash. Plan. C., 1.

Water analyses: Collins, W. D., 1.

Water flow in artesian aquifer: Jacob, C. E., 1.

Water gaps.

Arizona, Sacaton Mts.: Howard, A. D., 4.

Pennsylvania, Wind Gap area: Mackin, J. H., 2.

Virginia, Little North Mt.: Edmundson, R. S., 1.

Water gaps—Continued.

Watergaps by solution and piracy :
Fridley, H. M. 1.

Watergaps, not formed by solution and
stream piracy : Ver Steeg, K., 1.

Water, underground. See Underground water.

Weathering.

Acid clay, chemical agent : Graham, E.
R., 1.

Appalachians, sou. : Moneymaker, B. C., 7.
Arctic America, Baffin Bay area : Pater-
son, T. T., 1.

Arizona : Reiche P., 2; Howard, A. D., 4.
California, Santa Ana Mts. : Popenoe,
W. P., 3.

Georgia, forsterite deposits : Hunter,
C. E., 3.

Graded river concept : Kesseli, J. E., 3.
Greenland, Holstensborg dist. : Belknap,
R. L., 1.

Hawaii : Hough, G. J., 1; Wentworth,
C. K. 4, 7.

Illinois, soil profiles and highways :
Ekblaw, G. E., 1.

Indiana : Shrock, R. R., 5; Thornbury,
W. D., 2.

Kentucky, Tuscaloosa fm. : Rhoades, R.
F., 4.

Michigan : Zirbel, N. N., 1.

Mississippi, loess : Needham, C. E., 2.

Missouri geology : Keyes C. R., 106.

Montana, Highwood Mts. : Buie, B. F., 1.
Newfoundland surface : Twenhofel, W.
H., 4.

New Hampshire, White Mts. : Chapman,
R. W., 2.

New Jersey till : MacClintock, P., 1.

North Carolina, forsterite deposits :
Hunter, C. E., 3.

Pebbles with concave facets : Treasher,
R. C., 4.

Peneplains, pediments, Rocky Mts. :
Howard, A. D., 5.

Piedmont soils and surfaces : Eargle, D.
H., 1.

Salt crystallization : Blackwelder, E., 3.

Seismic weathering refraction theory :
Banta, H. E., 1.

South Carolina, pits in granite : Smith,
L. L., 1.

Tennessee, Chicamauga dam : Fox, P.
F., 1.

Tennessee Valley region : Eckel, E. C., 2.

Texas, Dallas Co. : Dallas Petroleum
Geologists, 1.

United States Nat. Pks. : Janssen, R.
E., 3.

Wisconsin, periglacial features : Smith,
H. T. U., 8.

Well records. See Borings.

Well cased on nearby stream : Thels, C. Y., 2.

West Indies (general). See also names of
islands.

West Indies—Continued.

Economic geology.

Mineral resources, Greater Antilles :
Meyerhoff, 4.

Historical geology.

Antilles structure : Weyl, R., 1.

Cuban geosyncline : Corral y Alemán,
J. I., 1.

Mineralogy.

Greater Antilles min. res. : Meyerhoff, 4.

Paleontology.

Tubulostium, Eocene : Rutsch, R. F., 1.

Petrology.

Peridotite intrusions : Hess, H. H., 4.

Physical geology.

Antilles, structure : Weyl, R., 1.

Cordillera of the Antilles : Gerth, H., 1.

Cuban geosyncline : Corral y Alemán,
J. I., 1.

Earthquakes : Linehan D., 2.

Peridotite intrusions : Hess, H. H., 4.

Physiographic geology.

Cuban geosyncline : Corral y Alemán,
J. I., 1.

West Virginia.

Economic geology.

Appalachian geosyncline : Lafferty, R. C.,
Jr., 2.

Barium in brines : Heck, E. T., 2.

Coal : Heck, E. T., 1.

Gay-Spencer-Richardson oil and gas
trend : Heck, E. T., 5.

Natural gas : Appalachian G. S., 1.

Petroleum : Appalachian G. S., 1.

Well logs, oil field data : Oil and Gas
Journal, 1.

Historical geology.

Appalachian basin : Lafferty, R. C., Jr.,
1.

Appalachian geosyncline : Lafferty, R. C.,
Jr., 2.

Devonian : Price, P. H., 1.

Gay-Spencer-Richardson oil and gas
trend : Heck, E. T., 5.

Helderberg-Oriskany relations : Wood-
ward, H. P., 1.

Mineralogy.

Coal : Heck, E. T., 1.

Connate waters : Heck, E. T., 4.

Quartz crystal : Hawkins, A. C., 2.

Paleontology.

Mammut, Pleist., Crum : Wells, D., 1.

Syllomus : Berry, C. T., 4.

Tetrapoda : Romer, A. S., 3.

Physiographic geology.

Appalachian basin : Hammer, S. I., 1;
Lafferty, R. C., Jr., 1, 2.

Physiographic geology.

Watergaps, not formed by solution and
stream piracy : Ver Steeg, K., 1.

Whitlockite, New Hampshire : Frondel, C., 6.

Willemite.

- New York, Balmat: Hough, F. H., 1.
 North America: Pough, F. H., 1.

Wind gaps.

- Pennsylvania, Wind Gap area: Mackin,
 J. H., 2.
 Virginia, Catocin belt: Ver Steeg, K., 5.
 Little North Mt.: Edmundson, R. S., 1.
 Washington, Columbia River: Warren,
 C. R., 2.
 Wyoming, Cedar Mt.: Sharp, H. S., 3.

Wind work.

- Alaska, muck-silt, Fairbanks area: Tuck,
 R., 1.
 Arizona: Hack, J. T., 1; McKee, E. D.,
 3; Smith, H. T. U., 6.
 Dust storms, U. S., 1939: Martin, R.
 J., 1.
 Dynamics of wind erosion: Malina, F.
 J., 1.
 Fluting, faceting, rock fragments: Max-
 son, J. H., 1.
 Greenland, Holstensborg dist.: Belknap,
 R. L., 1.
 Hawaii, Kahoolawe: Stearns, H. T., 4.
 Kansas: Frye, J. C., 8; Latta, B. F., 1;
 Smith, H. T. U., 9.
 Layers of plant material in sand dunes:
 Lutz, H. J., 1.
 Loess: Keyes, 134.
 Michigan: Dow, K. W., 1; Smith, H.
 T. U., 3.
 Nebraska, Box Butte mbr. Sheep Creek
 fm.: Cady, R. C., 2.
 Oregon, Lake Co.: Allison, I. S., 3.
 Pebbles with concave facets: Treasher,
 R. C., 4.
 Sand, size distrib.: Keller, W. D., 3.
 Sand dunes: Melton, F. A., 3.
 Texas: Barnes, V. E., 7; Germond, K. W.,
 1; Huffington, R. M., 1.
 Ventifacts: Barnes, V. E., 7; Green, J.,
 2; Maxson, J. H., 1; Treasher, R.
 C., 4.
 Wyoming, Cedar Mt. windgaps: Sharp, H.
 S., 3.

Wisconsin.*Economic geology.*

- Galena lms.: Sardeson, F. W., 1.

Historical geology.

- Buried pre-Camb.: Thwaites, F. T., 1.
 Glacial drifts, age: Hole, F. D., 1.
 Lake Superior pre-Camb.: Tyler, S. A., 1.
 Madison ss.: Keyes, 5.
 Montane peat: Hansen, H. P., 7.
 Pleistocene, N. W. Wis.: Mathiesen, J.
 T., 1.
 Silurian lithology: Ball, J. R., 5.
 Trilobita correls.: Frederickson, E. A.,
 Jr., 1.
 Washington I., Door Co.: Shrock, R.
 R., 1.

Mineralogy.

- Galena lms.: Sardeson, F. W., 1.

Wisconsin—Continued.*Mineralogy—Continued.*

- Heavy minerals, Camb.: Ostrander, A.
 R., 1.
 Lake Superior pre-Camb.: Tyler, S. A., 1.
 Millerite: Bagroski, B. P., 1.
 Rhenium-bearing molybdenite: Works, E.
 P., 1.

Paleontology.

- Brachiopoda: Cloud, P. E., 1.
 Graptolites: Decker, C. E., 4, 8.
 Grassy Lake sediments: Twenhofel, W.
 H., 11.
 Montane peat: Hansen, H. P., 7.
 Ostracoda: Kay, G. M., 1.
 Trilobita correls.: Frederickson, E. A.,
 Jr., 1.
 Washington I., Door Co.: Shrock, R.
 R., 1.

Petrology.

- Beach sediments, Trout Lake: McKelvey,
 V. E., 1.
 Heavy minerals, Camb.: Ostrander,
 A. R., 1.
 Lake Superior pre-Camb.: Tyler, S. A., 1.
 Sand, flotation, Trout Lake: McKelvey,
 V. E., 2.
 Silurian lithology: Ball, J. R., 5.
 Washington I., Door Co.: Shrock, R. R., 1.

Physical geology.

- Pokerville cave: Fischer, A. G., 1.

Physiographic geology.

- Driftless cuestaform hill land: Tre-
 wartha, G. T., 1.
 Glacial drifts, age: Hole, F. D., 1.
 Mud cracks, rectangular: Shrock, R. R., 2.
 Muskeonge moraine area: Broughton,
 W. A., 1.
 Periglacial features, driftless area:
 Smith, H. T. U., 8.
 Pleistocene, N. W. Wis.: Mathiesen,
 J. T., 1.
 Pokerville cave: Fischer, A. G., 1.
 Sand, flotation, Trout Lake: McKelvey,
 V. E., 2.
 Washington I., Door Co.: Shrock, R. R., 1.
 Wisconsin glacial epoch: Keyes, 122.

Underground water.

- Muskeonge moraine area: Broughton,
 W. A., 1.
 Pokerville cave: Fischer, A. G., 1.

Wisconsin glacial epoch: Keyes, 122.

Wollframite, California: Partridge, J. F.,
 Jr., 1.

Wollastonite, California: Murdoch, J., 1.

Wulfenite, Arizona: King, J. B., 1.

Wulff net in mineral determination: Hafl,
 J. C., 1.

Wyoming.*Economic geology.*

- Big Muddy oil field: Brainerd, A. E., 1.
 Chromite: Stephenson, E. L., 2.

Wyoming—Continued.

Economic geology—Continued.

- Dewey Dome and Terrace: Krampert, E. W., 3.
 Elk Mt. dist.: Beckwith, R. H., 1.
 Evaporite salts: Greene, R. G., 1.
 Ferris-Löst Soldier oil fields: Sietlaff, R. L., 1.
 Great Plains basin: Kornfeld, J. A., 6.
 La Barge area: Bertagnolli, A. J., Jr., 1.
 Lance Creek oil field: Krampert, E. W., 1.
 Magnetite: Diemer, R. A., 1.
 Mule Creek oil field: Krampert, E. W., 2.
 Petroleum, gas fields: Espach, R. H., 1; Taylor, F. B., 1.
 Randolph quad.: Richardson, G. B., 3.
 Waters, oil-field: Crawford, J. G., 1.
 Well logs, oil field data: Oil and Gas Journal, 1.
 Western South Dakota-eastern Wyoming: Kans. G. S., 1.

Historical geology.

- Absaroka Range: Bauer, C. M., 1; Love, J. D., 2; Rouse, J. T., 1.
 Bighorn Basin area: Chamberlin, R. T., 1.
 Bighorn Mts.: Demorest, M. H., 2.
 Camp Davis area: Dobrovolsky, E., 1.
 Correlations: Condra, G. E., 1, 2.
 Cross section, Bell Springs-Black Hills: Bartram, J. G., 3.
 Colorado Springs-Black Hills: Thompson, W. O., 1.
 Dewey Dome and Terrace: Krampert, E. W., 3.
 East Wyoming-Black Hills: Bartram, J. G., 2.
 Elk Mt. dist.: Beckwith, R. H., 1.
 Eocene correl.: Wood, H. E., 2d, 4.
 Faunas, Polecat Bench fm.: Jepsen, G. L., 1.
 Flora, type Lance fm.: Dorf, E., 4.
 Great Plains basin: Kornfeld, J. A., 6.
 Heart Mt.: Pierce, W. G., 2.
 Horse and Bear Creek Valleys: Dockery, W. L., 1.
 La Barge area: Bertagnolli, A. J., Jr., 1.
 Lance Creek area: Dorf, E., 1.
 Lance Creek oil field: Krampert, E. W., 1.
 Marsland fm.: Schultz, C. B., 4.
 Mule Creek oil field: Krampert, E. W., 2.
 Pegmatite dikes, Bridger Mts.: McLaughlin, T. G., 1.
 Pennsylvania-Permian: Thomas, H. D., 1.
 Permian, Rocky Mts.-Colo. plateau: Baker, A. A., 1.
 Permo-Triassic boundary: Newell, N. D., 2, 6.
 Petroleum, gas fields: Espach, R. H., 1; Taylor, F. B., 1.
 Randolph quad.: Richardson, G. B., 3.
 Selenium in rocks and soils: Knight, S. H., 1.
 Structure, W. Wyo.: Horberg, L., 2.
 Teton Range area: Fryxell, F. M., 3.

Wyoming—Continued.

Historical geology—Continued.

- Western S. Dakota-eastern Wyoming: Kans. G. S., 1.
 Wind River Mts.: Branson, E. B., 7.
 Wyoming-Kansas cross sec.: Jones, C. T., 2.
Mineralogy.
 Aragonite crystals: Goldring, E. D., 1.
 Bradleyite: Fahey, J. J., 2.
 Chromite: Stephenson, E. L., 2.
 Cristobalite in bentonite: Gruner, J. W., 1.
 Geode: Anonymous, 3.
 Jade: Branham, A., 1.
 Magnetite: Diemer, R. A., 1.
 Pegmatite dikes: McLaughlin, T. G., 1.
 Rex chert, origin: Keller, W. D., 2.
 Trona: Mendenhall, W. C., 3.

Paleontology.

- Eocene plants in coal: Wilson, L. R., 6.
 Faunas, Paleocene: Jepsen, G. L., 1.
 Ferns, Frontier fm.: Andrews, H. N., Jr., 2.
 Fish, Eocene: Anonymous, 4.
 Flora, Frontier fm.: Andrews, H. N., 3.
 Floras, Lance and Fort Union: Dorf, E., 1, 4.
 Foraminifera: Fox, S. K., Jr., 2.
 Fusulinids: Thompson, M. L., 3.
 Hassiacosuchus: Mook, C. C., 2.
 Laotrioid impression: Caster, K. E., 3.
 Lizards, Oligocene: Gilmore, C. W., 4.
 Microfossils: Peck, R. E., 2.
 Myopterygius: Nace, R. L., 1.
 Plants, Mesaverde Cret.: Dorf, E., 5.
 Primates, Eocene: Seton, H., 1.
 Prodiplotynodon: Mook, C. C., 3.
 Randolph quad.: Richardson, G. B., 3.
 Sparganium: Smith, B. R., 1.
 Sponge, Camb.: Howell, B. F., 1.
 Vertebrata: Gazin, C. L., 2.

Petrology.

- Chromite, Casper Mt.: Stephenson, E. L., 2.
 Concretions: Schultz, C. B., 5.
 Elk Mt. dist.: Beckwith, R. H., 1.
 Geode: Anonymous, 3.
 Nigger Hill Tert. ig. rocks: Berg, J. H., 1.
 Pegmatite dikes: McLaughlin, T. G., 1.
 Rex chert, origin: Keller, W. D., 2.
 Selenium in rocks and soils: Knight, S. H., 1.

Physical geology.

- Absaroka Range: Bauer, C. M., 1; Love, J. D., 2; Rouse, J. T., 1.
 Bighorn Basin: Chamberlin, R. T., 1.
 Bighorn Mts.: Demorest, M. H., 2.
 East Wyoming-Black Hills: Bartram, J. G., 2.
 Elk Mt. dist.: Beckwith, R. H., 1.
 Heart Mt., South Fork thrusts: Pierce, W. G., 2.

Wyoming—Continued.

Physical geology—Continued.

Hot Springs, origin: Rubey, W. W., 1.
Jackson Hole earthquakes: Gale, B. T., 1.

La Barge area: Bertagnoli, A. J., Jr., 1.
Mud flows, Teton Range: Fryxell, F. M., 2.

Pegmatite dikes: McLaughlin, T. G., 1.
Petroleum, gas fields: Espach, R. H., 1.
Randolph quad.: Richardson, G. B., 3.
Structure, W. Wyo.: Horberg, L., 2.
Teton Range area: Fryxell, F. M., 3.
Thrust fault, Big Horn Mts.: Love, J. D., 1.

Western South Dakota-eastern Wyoming:
Kans. G. S., 1.

Wind River Mts.: Branson, E. B., 7.

Physiographic geology.

Absaroka Range: Love, J. D., 2.
Dinwoody glaciers, recession: Delo, D. M., 1.

Elk Mt. dist.: Beckwith, R. H., 1.
Esker, Middle Teton Glacier: Wilson, L. R., 9.

Pedestals, miniature: Bradley, W. H., 3.
Pediments, miniature: Bradley, W. H., 3.
Teton Range area: Fryxell, F. M., 3.
Windgaps, Cedar Mt.: Sharp, H. S., 3.
Wind River Mts.: Branson, E. B., 7;
Richmond, G. M., 1.

Underground water.

Ground water, Horse and Bear Creek
Valleys: Dockery, W. L., 1.
Hot springs, origin: Rubey, W. W., 1.
Randolph quad.: Richardson, G. B., 3.
Waters, oil-fields: Crawford, J. G., 1.

Xenoliths, Maine: Haff, J. C., 3.

Yegua problem: Stenzel, H. B., 6.

Yellowstone National Park.

Bibliography: Voth, H. H., 1.

Paleontology.

Gallatin Petrified Forest: Young, P. A., 1.

Yukon.

Physiographic geology.

Wolf Creek glaciers, St. Elias Range:
Sharp, R. P., 8.

Zeolites.

Identification: Northup, M. A., 2.

Montana, Highwood Mts.: Larsen, E. S., 5.

Oklahoma, Wichita Mts.: Merritt, C. A., 3.

Zinc.

Arizona, Iron King mine: Mills, H. F., 1.
Arkansas, Polk Co.: Branner, G. C., 1.

British Columbia: Canada G. S., 1;
Kindle, E. D., 1; Lang, A. H., 1.

Colorado, Uncompahgre area: Burbank, W. S., 1.

Galena lms., Wis.-Ill.: Sardeson, F. W., 1.
Idaho: Anderson, A. L., 1; Whiting, K., 1.

Mexico: Edelen, A. W., 1; Terrones
Langone, A., 1.

Mississippi Valley area: Newhouse, W. H., 2.

Montana: Goddard, E. N., 2; Smith, P. A., 1.

New Jersey: Lewis, J. V., 1.

New Mexico: Harley, G. T., 1.

New York, Shawangunk Mt.: Ingham, A. I., 1.

North America, Mississippi Valley type
deposits: Garrels, R. M., 2.

Ore dists.: Billingsley, P. R., 1.

Northwest Territories: Lord, C. S., 2.

Picher dist., Kans.-Okla.: Stoiber, R. E., 2.

Quebec: Armstrong, P., 1; Moorhouse,
W. W., 1; Tolman, C., 1; Wilson,
M. E., 3.

Replacement deposits in limestone:
Brown, J. S., 1.

Sulphide deposits: Smith, F. G., 2; Van
Tuyt, F. M., 2.

Zincite, New Jersey: Frondel, C., 3.

Zircon.

Colorado: Pearl, R. M., 4, 6.

Fluorescent: De Ment, J. A., 7.

New Jersey, Highland area: Tyler, S. A., 1.

New York, Frondel, C., 1.

Pennsylvania, hyacinth: Dryden, A. L., Jr., 3.

Source rocks, weathering: Dryden, A. L., Jr., 4.