

Bibliography of North American Geology 1946 and 1947

By EMMA MERTINS THOM, MARJORIE HOOKER
and RUTH REECE DUNAVEN

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BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY 1946 and 1947

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INTRODUCTION

The bibliography of North American geology, including paleontology, petrology, and mineralogy, for the years 1946 and 1947, lists publications on the geology of the Continent of North America and adjacent islands and on Panama, the Hawaiian Islands, and the Island of Guam. It includes textbooks and papers of a *general character* by American authors, but not papers by foreign authors, except those 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 alphabetic order. The author list is followed by an index to the literature cited.

The bibliography of North American geology to the end of 1945 is contained in the following bulletins of the United States Geological Survey: 746 and 747 (1785-1918) and 823 (1919-28), by John M. Nickles; 937 (1929-39), 938 (1940-41), 949 (1942-43), and 952 (1944-45), by Emma Mertins Thom.

ABBREVIATIONS

A. A. A. S.	American Association for the Advancement of Science	Bur.	Bureau
A. I. M. E.	American Institute of Mining and Metallur- gical Engineers	Camb.	Cambrian
Aardrijksk.	Aardrijkskundig	Carb.	Carboniferous
Aarg.	Aargang	Cat.	Catalog
Abh.	Abhandlung	cent.	central
Abt.	Abteilung	Centralbl.	Centralblatt
Acad.	Academy, etc.	cf.	compare with
Accad.	Accademia	Chap.	Chapter
Adm.	Administration	Chem.	Chemical, etc.
ads.	advertisements	chim.	chimique
Adv.	Advancement	Cienc.	Ciencia, Ciencias
Afd.	Afdeeling, Afdeling	cient.	cientifica
Afl.	Aflevering	Circ.	Circular
Agr.	Agricultural, Agriculture	Cl.	Classe
Akad.	Akademie	classn.	classification
Allg.	allgemeine	Co.	Company, County
Am.	American	Coll.	Collections
Anal.	Analytic, etc.	Comm.	Committee
angew.	angewandte	Commun.	Communications
Ann.	Annual	Comp.	Comparative
anorg.	anorganisch, etc.	con.	consolidated
Anthropol.	Anthropological, etc.	Conf.	Conference
Anz.	Anzeiger	Cong.	Congress, etc.
App.	Appendix	conglom.	conglomerate
appl.	applique	Conserv.	Conservation
approx.	approximately	Contr.	Contributions
Apr.	April	Coop.	Cooperative
Arb.	Arbeiten	correl.	correlation
Årb.	Årbok	Coun.	Council
Archeol.	Archeological, etc.	Cret.	Cretaceous
Årg.	Årgang	Dec.	December
Årssk.	Årsskrift	Denkschr.	Denkschrift
art.	article	Dept.	Department, etc.
Assoc.	Association	Dev.	Devonian
Astron.	Astronomical, etc.	devel.	development
Aug.	August	diagr.	diagram
Auth.	Authority	Direc.	Dirección
Av.	Avancement	Dissert.	Dissertation
Avd.	Avdelingen	dist.	district
Bd.	Board	distrib.	distribution
Beitr.	Beitrag, etc.	Div.	division
Ber.	Bericht, etc.	Doc.	Doctoral, Document
Bibl.	Bibliographic, etc.	Doc. Dissert.	Doctoral Dissertation
Bienn.	Biennial	dol.	dolomite
Biog.	Biographic, etc.	E.	east
Biol.	Biologic, etc.	Ecol.	Ecological, etc.
Bldg.	Building	Econ.	Economic
Bol.	Boletim, Boletín	ed.	edition
Boll.	Bollettino	Educ.	Education, Educational
Bot.	Botanic, etc.	Elec.	Electric, etc.
Br.	Branch	Eng.	Engineering, Engineers
Bull.	Bulletin	Entomol.	Entomological, etc.
		equiv.	equivalent
		Erläut.	Erläuterungen

ex.....	except	Is.....	Island, Islands
exam.....	examination	Ist.....	Istituto
Exper.....	Experiment, Experi- mental	Izv.....	Izvestiya
expl.....	explanation, explanatory	Jaarb.....	Jaarboek
explor.....	exploration, etc.	Jaarg.....	Jaargang
extr.....	extract, extracted	Jahrb.....	Jahrbuch
		Jahresber.....	Jahresbericht
Fac.....	Faculty	Jahresh.....	Jahresheft
facsim.....	facsimile	Jahresvers.....	Jahresversammlung
fasc.....	fascicle	Jahrg.....	Jahrgang
Feb.....	February	Jan.....	January
fig.....	figure	Jour.....	Journal
fm.....	formation	Juras.....	Jurassic
Fören.....	Förening		
Förh.....	Förhandlingar	K.....	Kaiserlich, Königlich, etc.
Fortschr.....	Fortschritte	Kl.....	Klasse
franc.....	français		
front.....	frontispiece	Lab.....	Laboratory
Ft.....	Fort	Lief.....	Lieferung
fysiog.....	fysiografiska	Lit.....	Literary, Literature
		livr.....	livraison
G. S.....	Geological Survey	ls.....	limestone
G. Soc.....	Geological Society	loc.....	locality
Gazz.....	Gazzetta	lvs.....	leaves
Gen.....	General		
gén.....	générale	Mag.....	Magazine
Geneesk.....	Geneeskunde	Mar.....	March
Geochem.....	Geochemical, etc.	Math.....	Mathematical, etc.
Geod.....	Geodetic	mbr.....	member
géod.....	géodétique	Mech.....	Mechanical, etc.
Geog.....	Geographic, etc.	Med.....	Medical
géog.....	géographique	Medd.....	Meddelanden
Geol.....	Geologic, etc.	Meddel.....	Meddelelser
géol.....	géologique	Mededeel.....	Mededeelingen
Geophys.....	Geophysical, etc.	Mem.....	Memoir, Memoria
géophys.....	géophysique	Mém.....	Mémoire
Gesell.....	Gesellschaft	Memo.....	Memorandum
Gior.....	Giornale	Met.....	Metallurgical, etc.
Govt.....	Government	metam.....	metamorphic, metamor- phosed
Grad.....	Graduate	Meteorol.....	Meteorological, etc.
		mier.....	microscopic, etc.
Handl.....	Handler	Mimeo.....	Mimeographed
hist.....	historic, etc.	Min.....	Mineral, Mining
hüttenm.....	hüttenmannisch	min. res.....	mineral resources
Hydrog.....	Hydrographic, etc.	Mineralog.....	Mineralogic, etc.
Hydrol.....	Hydrologic, etc.	Misc.....	Miscellaneous
		Missn.....	Mississippian
ig.....	igneous	Mitt.....	Mitteilungen
illus.....	illustrated, illustration, illustrations	Mon.....	Monograph, etc.
Imp.....	Imperial	Monatsber.....	Monatsbericht
Inc.....	Incorporated	Monatsh.....	Monatsheft
incl.....	including	Monatsschr.....	Monatsschrift
Indust.....	Industrial	ms.....	manuscript
Inf.....	Information	Mt.....	Mount
Ing.....	Ingenieros, Ingenieurs	Mtg.....	Meeting
Inst.....	Institute, Institution, etc.	Mtn.....	Mountain
		Mts.....	Mountains
internac.....	internacional	Mus.....	Museo, Museum, etc.
Internat.....	International, etc.		
intro.....	introduction	n.....	new
intrus.....	intrusive	N.....	north
Inv.....	Investigation, Investiga- tions	N. Am.....	North America
Irr.....	Irrigation	n. d.....	no date

n. s.	new series
nac.	nacional
Nachr.	Nachrichten
Nat.	National, Natural
naturf.	naturforscher, naturfor- schende
naturh.	naturhistorisch
naturwiss.	naturwissenschaftlich
natuurk.	natuurkundig
NE	northeast
no.	number
nos.	numbers
nouv.	nouveau, etc.
Nov.	November
Nr.	Nummer
NW.	northwest
Occ.	Occasional
Oct.	October
Ord.	Ordovician
p.	page
palaeont.	palaeontologisch
Paleocol.	Paleoecological, etc.
Paleogeog.	Paleogeographic, etc.
Paleont.	Paleontologic, etc.
Pamph.	Pamphlet
Pan-Am.	Pan-American
Pen.	Peninsula
Penn.	Pennsylvanian
Perm.	Permian
Petrog.	Petrographic, etc.
Petrol.	Petrologic, etc.
Philos.	Philosophical, etc.
photo.	photograph
photog.	photographic
Phys.	Physical, etc.
physikal.	physikalisch
Physiog.	Physiographic, etc.
Pk.	Peak
pl.	plate
Plann.	Planning
Pleist.	Pleistocene
pls.	plates
Polytech.	Polytechnic, etc.
Pop.	Popular
port.	portrait
ports.	portraits
poss.	possibility, possibilities
p.	pages
prakt.	praktisch
pre-Camb.	pre-Cambrian
Prelim.	Preliminary
Proc.	Proceedings
Prof.	Professional
Prog.	Progress
Proj.	Project
prosp.	prospecting
Prov.	Province
Pt.	Part, Point
Pts.	Parts
Pub.	Publication, Publica- tions, published
quad.	quadrangle
Quart.	Quarterly

Quat.	Quaternary
R.	Reale
R. R.	Railroad
Rap.	Rapport
Rec.	Record, Records, Recueil
reconn.	reconnaissance
Rend.	Rendiconti
Rept.	Report
Res.	Resources
Rev.	Review, Revista, Revue
Riv.	Rivista
Ry.	Railway
s.	series
S.	south, Survey
Sällsk.	Sällskapet
Schr.	Schrift
schweizer.	schweizerisch
Sci.	Science, Sciences, Scientific
SE.	southeast
Sec.	Section
Sed.	Sedimentary
Seismog.	Seismographic, etc.
Seismol.	Seismologic, etc.
séismol.	séismologique
Selsk.	Selskab
Sept.	September
ser.	series
Serv.	Service
Sess.	Session
sh.	shale
Sil.	Silurian
Sitzungsber.	Sitzungsbericht
Skr.	Skrift
Soc.	Société, Society
sp.	species
Spec.	Special
ss.	sandstone
St.	Saint
Sta.	Station
Ste.	Sainte
Strat.	Stratigraphic, etc., Stra- tigraphy
Summ.	Summaries, Summarized, Summary
Supp.	Supplement, Supple- mentary
SW.	southwest
syn.	synonym
TVA.	Tennessee Valley Au- thority
tab.	table
Tech.	Technical, etc.
Technol.	Technological, etc.
temp.	temporary
Terr.	Territory, Territories, Territorial
Tert.	Tertiary
Tidskr.	Tidskrift
Tidsskr.	Tidsskrift
Tijdschr.	Tijdschrift
Topog.	Topographic, etc.
Tp.	Township

Tps.....	Townships	Vetensk.....	Vetenskaps
Trans.....	Transactions	Vetenskaps- akad.....	Vetenskapsakademiens
transl.....	translate, translation	Vidensk.....	Videnskabernes, Viden- skaps
transp.....	transportation	vol.....	volume
Trav.....	Travaux	vs.....	versus
Trias.....	Triassic	W.....	west
U. S.....	United States	Wetensch.....	Wetenschappen
uncon.....	unconformity, etc.	Wiss.....	Wissenschaft
undet.....	undetermined	Wochenschr.....	Wochenschrift
Univ.....	University	Zeitschr.....	Zeitschrift
veg.....	vegetation	Zentralb.....	Zentralblatt
Ver.....	Verein	Zhur.....	Zhurnal
Verh.....	Verhandlungen, Ver- handlung, etc.	Zool.....	Zoological, etc.
Vers.....	Versammlung		

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- No. 53. Geologic and structure-contour map of Sage Creek Dome, Fremont County, Wyo., by Henry Howe Robbins Sharkey, Alfred Dexter Zapp, and Chester Otto Johnson, assisted by Marden Dean Williams, Edward B. Wasson, and Henry H. Gray, 1946. Map with text, Geology and oil possibilities of the Sage Creek Dome, Fremont County, Wyo., by Henry H. R. Sharkey, stratigraphic section, index map, table of wells drilled on dome. Scale approx. 1 inch to 1/2 mile. Accompanied by P. N. 128872, dated Apr. 9, 1946.
- No. 54. Geologic maps of a part of the Las Vegas Basin and of the foothills of the Sangre de Cristo Mountains, San Miguel and Mora Counties, N. Mex., by Stuart Alvord Northrop, Harold H. Sullwold, Jr., Archie Justus McAlpin, and Carl P. Rogers, Jr., 1946. Map with text, Geology and oil and gas possibilities of the Pennsylvanian and Permian rocks in portions of San Miguel and Mora Counties, N. Mex. Scale approx. 1 inch to 3/5 mile and 1 inch to 4 miles. Accompanied by P. N. 3950, dated Aug. 30, 1946.
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- No. 56. Geology of the Bargee area, Fremont County, Wyo., by Marden Dean Williams and Henry Howe Robbins Sharkey, 1946, prepared with the cooperation of the Geological Survey of Wyoming and the Department of Geology, University of Wyoming. Maps, index, geologic, different scales, cross-sections, geologic column, and brief text. Accompanied by P. N. 133810, dated June 24, 1946.
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- No. 58. Map showing distribution of several types of Berea sand in West Virginia, eastern Ohio, and western Pennsylvania, by Gordon Rittenhouse, 1946, prepared with the cooperation of the Geological Survey of Ohio, the Pennsylvania Topographic and Geologic Survey, the West Virginia Geological Survey, and the Kentucky Geological Survey. Geologic map with text, The distribution of several types of Berea sand in West Virginia, eastern Ohio, and Western Pennsylvania. Scale approx. 1 inch to 16 miles. Accompanied by P. N. 93, dated July 3, 1946.
- No. 59. Map of the Berea sand in southern West Virginia, shows thickness of sand and oil and gas pools in the sand, by Charles W. Merrels, 2nd, 1946, prepared with the cooperation of the West Virginia Geological Survey. Geologic map with text, The Berea sand of southern West Virginia, by James Franklin Pepper and Wallace de Witt, Jr. Scale approx. 1 inch to 3 miles. Accompanied by P. N. 92, dated July 3, 1946.
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- No. 61. Geologic map and stratigraphic sections of Paleozoic rocks of Joyita Hills, Los Piños Mountains, and northern Chupadera Mesa, Valencia, Torrance, and Socorro Counties, N. Mex., by Ralph Henry Wilpolt, Archie Justus McAlpin, Robert Latimer Bates, and Georges Vorbes, 1946. Geol. map with text, La Joya area, Los Piños Moun-

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1. Oil and gas investigations, preliminary maps—Continued
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 - No. 62. Geology of northwestern Quay County, N. Mex.; Sheet 1, Geologic map and stratigraphic sections of Mesozoic rocks, by Ernest Dobrovolsky and Charles Henry Summerson, 1946; Sheet 2, Subsurface geology, by Robert Latimer Bates, 1946. Geologic map with text, index maps, stratigraphic sections showing correlations, on 2 sheets. Scale approx. 1 inch to 1 mile. Accompanied by P. N. 14325, dated Feb. 11, 1947.
 - No. 63. Geologic map of northeast margin of San Gabriel Basin, Los Angeles County, Calif., by John Sewall Shelton, 1946. Geol. map with text, Geology of northeast margin of San Gabriel Basin, Los Angeles County, Calif., index, topog. maps, secs., list of wells. Scale 1:24,000 or approx. 1 inch to 2,000 feet. Accompanied by P. N. 4741, dated Sept. 12, 1946.
 - No. 64. Pre-Selma Upper Cretaceous stratigraphy in the McCreary, McShan, Gordo, Samantha, and Searles quadrangles, Ala. and Miss., by Louis Cowles Conant, Dolan Hoye Eargle, and Watson Hiner Monroe, 1947. Geol. map with text, index map, geol. column. Scale approx. 1 inch to 1 mile. Accompanied by P. N. 14007, dated Feb. 5, 1947.
 - No. 65. Geologic map of the Jackson area, Miss., by Watson Hiner Monroe, 1947. Geol. map with text, Geology of the outcropping formations in the Jackson area, Miss., index map, geol. columns. Scale approx. 1 inch to 1 mile. Accompanied by P. N. 17519, dated Mar. 29, 1947.
 - No. 66. Geology of the western part of the Ouachita Mountains of Oklahoma, by Thomas Andrews Hendricks, Louis Samuel Gardner, Maxwell McMichael Knechtel, and Paul Averitt, 1947. 3 sheets, maps with text and cross sections, by T. A. Hendricks. Scale approx. 1 inch to 2/3 mile. Accompanied by P. N. 19463, dated Apr. 30, 1947.
 - No. 67. Subsurface maps of the Rangely anticline, Rio Blanco County, Colo., by Nathan Wood Bass, 1946. Isopach maps with text, Rangely oil field, Rio Blanco County, Colo., index maps, geol. column. Scale approx. 1 inch to 1/2 mile. 1946. Accompanied by P. N. 7134, dated Oct. 16, 1946.
 - No. 68. Structure contour map of the surface rocks of the Model anticline, Las Animas County, Colo., contours drawn on limestone bed at base of Codell members of Carlile shale, contour interval 25 feet, altitudes in feet above sea level, by Nathan Wood Bass, assisted by Charles Edward Straub and Homer Olvin Woodbury, 1947. Structure map with text, The Model anticline, Los Animas County, Colo., index map, strat. column, and cross section. Scale approx. 1 inch to 2/3 mile. Accompanied by P. N. 23451, dated July 24, 1947.
 - No. 69. Map of the Berea sand of southern Ohio, eastern Kentucky, and southwestern West Virginia, shows thickness of the sand and oil and gas pools in the sand, by James Franklin Pepper, David Franklin Demarest, Charles W. Merrels, 2nd, Wallace de Witt, Jr., assisted by Gail M. Everhart, Mary E. Galpin, and Glen E. Saam, 1946. Geol. map with text, The Berea sand of southern Ohio, eastern Kentucky, and southwestern West Virginia, and index maps. Scale approx. 1 inch to 3 miles. Accompanied by P. N. 10134, dated Dec. 5, 1946.
 - No. 70. Not out yet.
 - No. 71. Geologic map of the Big Horn Basin, Wyo. and Mont., showing terrace deposits and physiographic features, by David Arthur Andrews, William Gamewell Pierce, and Dolan Hoye Eargle, 1947. Scale approx. 1 inch to 2 miles. Accompanied by P. N. 23823, dated July 31, 1947.
 - No. 72. Geologic map of the Tertiary and Quaternary formations of Georgia, by Francis Stearns MacNeil, 1947. Scale approx. 1 inch to 8 miles. Accompanied by P. N. 25148, dated Sept. 5, 1947.
 - No. 73. Map of Colorado showing dry holes and oil and gas fields;

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1. Oil and gas investigations, preliminary maps—Continued

- dry holes in fields and producing wells not shown; compiled by Flora K. Demok, H. Russell Castor, and Nathan Wood Bass, 1947. Index map with lists of dry wells. Scale 1:500,000 or approx. 1 inch to 8 miles. Accompanied by P. N. 23638, dated July 25, 1947.
- No. 74. Structure contour map of the Big Horn Basin, Wyo., and Mont., by William Gamewell Pierce, David Arthur Andrews, and Jewell Kirby Kerohar, 1947. Structure map, with index map and map of oil and gas fields in Big Horn Basin. Scale approx. 1 inch to 3 miles. Accompanied by P. N. 21766, dated June 13, 1947.
- No. 75. Geologic map of Duchesne River area, Wasatch and Duchesne Counties, Utah, by John Warfield Huddle and Franklin Thresher McCann, 1947. Text on map, Pre-Tertiary geology of the Duchesne River area, Duchesne and Wasatch Counties, Utah. Scale 1 inch to 1 mile. Accompanied by P. N. 25149, dated Sept. 3, 1947.
- No. 76. Geologic and structure contour maps of the Rose Hill oil field, Lee County Va., by Ralph LeRoy Miller and James Osborn Fuller, 1947. 2 sheets, geol. maps with text, Structure and oil geology of the Rose Hill oil field, by Ralph LeRoy Miller. Scale 1 inch to 1,500 feet. Accompanied by P. N. 27054, dated Oct. 19, 1947.
- No. 77. Not out yet.
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- No. 79. Map of the First and Second Berea sands of southeastern Ohio and western West Virginia, shows thickness of the sands and oil and gas pools in the sands, by James Franklin Pepper, David Franklin Demarest, Wallace de Witt, Jr., Paul Averitt, Henry H. Gray, Harry Hudson Mead, Richard Dean Holt, and Charles W. Merrells, 2nd., assisted by Violet M. Massarelli and Gail M. Everhart, revised by Wallace de Witt, Jr. and David F. Demarest, 1947. Scale approx. 1 inch to 3 miles. [Revision of maps nos. 5 and 9.] Accompanied by P. N. 24957, dated Sept. 2, 1947.
- No. 80. Not out yet.
- No. 81. Not out yet.
- No. 82. Geology of the Whiterocks River-Ashley Creek area, Uintah County, Utah, by Douglas Merrill Kinney and Joseph Franklin Rominger, 1947. Map with text, Pre-Tertiary geology of the Whiterocks River-Ashley Creek area, Uintah County, Utah. Scale approx. 1 inch to 1 mile. Accompanied by P. N. 30294, dated Dec. 24, 1947.

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- No. 21. The stratigraphic relationship of the Berea, Corry, and Cussewago sandstones in northeastern Ohio and northwestern Pennsylvania, by Wallace de Witt, Jr., 1946. Isopach map, with text, cross sections, and tables of sections. Scale approx. 1 inch to 3 miles. Accompanied by P. N. 128695, dated Apr. 4, 1946.
- No. 22. Tertiary stratigraphy in the northeastern part of the Wind River Basin, Wyo., by Harry Allison Tourtelot, assisted by Helen Lone Nace, 1946. Stratigraphic secs., with index, geol. maps, correl. chart, and text by H. A. Tourtelot. Geol. map scale approx. 1 inch to 4 miles. Accompanied by P. N. 5566, dated Sept. 23, 1946.
- No. 23. Correlation of the outcropping Upper Cretaceous formations in Alabama and Texas, modified by Watson Hiner Monroe, from chart by Stephenson, King, Monroe, and Imlay, 1946. Chart with text. Accompanied by P. N. 133076, dated June 13, 1946.
- No. 24. Stratigraphic relations of Eocene, Paleocene, and latest Cretaceous formations of eastern side of San Juan Basin, New Mexico, by Carle Hamilton Dane, 1946. Sections, geol. index maps, text. Accompanied by P. N. 2969, dated Aug. 15, 1946.
- No. 25. Devonian stratigraphy of central and northwestern Montana, by Laurence Louis Sloss and Wilson Morrow Laird, 1946. Correl. chart, with text, index map, isometric diagram, and list of wells, and sections used. Accompanied by P. N. 5567, dated Sept. 24, 1946.

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- No. 26. Regional subsurface stratigraphy, structure, and correlation of Middle and early Upper Cretaceous rocks in Alabama, Georgia, and north Florida, by Paul Livingston Applin and Esther Richards Applin, 1947. Index, geol. sketch maps, well logs, cross sections, and text, 3 sheets. Scale approx. 1 inch to 75 miles. Accompanied by P. N. 12748, dated Jan. 20, 1947.
 - No. 27. The Tertiary stratigraphy of the Jackson Hole area, northwestern Wyoming, by John David Love, 1947. Correlation chart with index maps, text, and cross-sections, 1947. Accompanied by P. N. 18924, dated Apr. 22, 1947.
 - No. 28. Lithology and thickness of the Traverse group in the Michigan Basin, by George Vincent Cohee, 1947. Charts, sections, text, index, geol., isopach, and thickness maps. Scale approx. 1 inch to 16 miles. Accompanied by P. N. 20303, dated May 14, 1947.
 - No. 29. Correlation chart for the outcropping Tertiary formations of the eastern Gulf region, by Francis Stearns MacNeil, 1947. Correlation chart with text, one sheet. Accompanied by P. N. 23021, dated July 16, 1947.
 - No. 30. Stratigraphy of the Wasatch Mountains in the vicinity of Provo, Utah, by Arthur Alan Baker, assisted by H. L. Bissell, Milton Nunn Bramlette, Philip Eldon Dennis, Donald Cave Duncan, David Tressell Griggs, and John David Love, 1947. Chart with text, index map. Scale approx. 1 inch to 5 miles. Accompanied by P. N. 28046, dated Nov. 6, 1947.
 - No. 31. Profiles showing geology along highways in the vicinity of Tuscaloosa, Ala., by Dolan Hoye Eargle, 1947. Chart with text and geol. map. Scale approx. 1 inch to 4 miles. Accompanied by P. N. 29711, dated Dec. 12, 1947.
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 - No. 2. Preliminary map showing sand and gravel deposits of Colorado, compiled by Helen Dowling Varnes and David Marcel Larrabee. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 129388, dated Apr. 17, 1946.
 - No. 3. Preliminary map showing sand and gravel deposits of North Dakota, compiled by David Marcel Larrabee, Lyman Coleman Huff, and C. Ahlman. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 130096, dated Apr. 29, 1946.
 - No. 4. Preliminary map showing sand and gravel deposits of South Dakota, compiled by David Marcel Larrabee. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 130097, dated, Apr. 29, 1946.
 - No. 5. Preliminary map showing sand and gravel deposits of Wyoming, compiled by David Marcel Larrabee and Andrew Fletcher Shride. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 129623, dated Apr. 22, 1946.
 - No. 6. Preliminary map showing sand and gravel deposits of Montana, compiled by David Marcel Larrabee and Andrew Fletcher Shride. 2 maps, East Half, West Half. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 129824, dated Apr. 24, 1946.
 - No. 7. Not out yet.
 - No. 8. Metallic mineral deposits of Colorado, compiled by Richard Philip Fischer, Wilbur Swett Burbank, Helen Cannon, W. Bradley Myers, Albert Herbert Kosehmann, and Donald Huse Dow. Index maps with text by R. F. Fischer, and tables. Scale 1:1,000,000 or approx. 1 inch to 16 miles. 1946. Accompanied by P. N. 10296, dated Dec. 9, 1946.
 - No. 9. Construction materials and nonmetallic mineral resources of Wyoming. Compiled by Stephen Edmund Clabaugh, David Marcel

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Larrabee, Wallace Rush Griffiths, Elizabeth Claire Fischer, Elinor Lefferts Fox, and Martineau Knight Wilson. Geologic-index map with text. Scale 1:500,000 or approx. 1 inch to 8 miles. 1946. Accompanied by P. N. 9102, dated Nov. 19, 1946.

- No. 10. Map showing construction materials and nonmetallic mineral resources of Colorado. Compiled by David Marcel Larrabee, Stephen Edmund Clabaugh, Wallace Rush Griffiths, Elizabeth Claire Fischer, Elinor Lefferts Fox, Robert Pearne Bryson, Robert Alden Weeks, David Joseph Varnes, and Leonard S. [!] Rolnick. Scale 1:500,000 or approx. 1 inch to 8 miles. Text on map. 1947. Accompanied by P. N. 21455, dated June 9, 1947.

No. 11. Not out yet.

- No. 12. Map showing construction materials and nonmetallic mineral resources of South Dakota, compiled by Robert Pearne Bryson, Elinor Lefferts Fox, David Marcel Larrabee, Robert Alden Weeks, and Elizabeth Claire Fischer. Map with text. Scale 1:500,000 or approx. 1 inch to 8 miles. 1947. Accompanied by P. N. 24715, dated Aug. 25, 1947.

- No. 13. Map showing metallic mineral deposits of South Dakota, compiled by Richard Philip Fischer. Text on map. Scale 1:1,000,000 or approx. 1 inch to 16 miles. 1947. Accompanied by P. N. 21274, dated June 3, 1947.

- No. 14. Construction materials and nonmetallic mineral resources of North Dakota, compiled by Andrew Fletcher Shride, Elizabeth Claire Fischer, David Marcel Larrabee, Robert Alden Weeks, Israel Gregory Sohn, and Elinor Lefferts Fox, 1947. Index map with text. Scale 1:500,000 or approx. 1 inch to 8 miles. Accompanied by P. N. 23048, dated July 17, 1947.

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- No. 16. Map showing metallic mineral deposits of Montana, compiled by Frederick M. Chace, Frederick William Cater, Virginia Byers, Medora Hooper Krieger, Juanita Crawford, W. Bradley Myers, and Helen Cannon. Index map with text by Frederick M. Chace. 1947. Scale 1:1,000,000 or approx. 1 inch to 16 miles. Accompanied by P. N. 18957, dated Apr. 23, 1947.

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No. 18. Not out yet.

No. 19. Not out yet.

- No. 20. Reconnaissance map showing locations of possible sources of riprap in western North Dakota and northwestern South Dakota, compiled by Page Ernest Truesdell and G. S. Hilton, 1947. Map with tables. Scale 1:500,000 or approx. 1 inch to 8 miles. Accompanied by P. N. 28472, dated Nov. 20, 1947.

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- No. 2. Aeromagnetic survey at three levels over Benson mines, St. Lawrence County, N. Y., 1946. Index maps, magnetic intensity profile, isogams, explanatory text. Scale 1:31,680 or 1 inch to 1/2 mile. Aeromagnetic survey by James Robinson Balsley, Jr., Darwin Lucian Rossman, Cleve L. Rogers, and Edwin M. Canfield; magnetic data and maps by Herbert Edwin Hawkes, Jr., Mary Emma Hill, and John L. Meuschke. Accompanied by P. N. 37, dated July 2, 1946.

- No. 3. Map no. 3, three sheets, accompanying Prelim. Rept. no. 3, sample aeromagnetic surveys of Iron County, Mich., Mangum, Okla., area, and Naval Petroleum Reserve no. 4, Alaska, 1946. Maps and data compiled by Darwin Lucian Rossman, Mary Emma Hill, Frank

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- M. Byers, Matt Savage Walton, Jr., James Robinson Balsley, Jr., R. Thurwood, L. P. Barrett, Franklin G. Pardee, Wayland Osgood, Homer Jensen, J. Paul Fitzsimmons, and Virginia Smith Neuschel, 1946. Accompanied by P. N. 200, dated July 3, 1946.

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- 6. Maps showing structural geology and dolomitized areas in part of the Picher zinc-lead field, Oklahoma and Kansas. 6 maps with notes. Scale 1 inch to 500 feet. Geologic features based on field maps prepared by E. T. McKnight, R. P. Fischer, C. C. Addison, K. R. Bowie, J. M. Thiel, M. F. Owens, Jr., and F. G. Wells. [1944].

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- 8. Map of the areal and structural geology of T. 35 N., R. 4 W., Toole County, Mont., showing high gravity pool, Kevin-Sunburst oil field and part of Cut Bank gas field. 2 maps with index maps, geologic columns. Scale 1:63,360 or 1 inch to 1 mile. Geology by Charles Edgar Erdmann, Arthur Bertrand Cozzens, and James T. Gist, 1943-44; John M. Nordquist, 1945. Oct. 1946. Accompanied by P. N. 11295, dated Dec. 24, 1946.

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- 12. Map of the areal and structural geology of T. 35 N., R. 3 W., Toole County, Mont., showing oil pools in west Kevin-Sunburst oil field, Sheet A; Sheet B, Map showing contours on eroded surface of Madison limestone, and wells reaching the Madison, T.35N., R.3W., Toole County, Mont. Geol. isopach maps, sections, no other text. Geology by Charles Edgar Erdmann, 1943; James T. Gist, 1944; Jack Warren Nordquist and George William Beer, 1946. Scale approx. 1 inch to 1 mile. Jan. 1947. Accompanied by P. N. 18928, dated Apr. 24, 1947.

- 13. Map [no. 3] of the areal and structural geology of T. 36 N., R. 3 W., Toole County, Mont., showing Thorpe pool and north end of west Kevin district, Kevin-sunburst oil field, Sheet A; Sheet B, Map showing contours on eroded surface of Madison limestone and wells reaching the Madison, T.36 N., R.3 W., Toole County, Mont. Geol., isopach maps, sections, no other text. Geology by Charles Edgar Erdmann and James T. Gist, 1944; Jack Warren Nordquist, 1946. Scale approx. 1 inch to 1 mile. Jan. 1947. Accompanied by P. N. 18927, dated Apr. 25, 1947.

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 Lead Pipe Springs area, blue: Rogers, A. F., 6.
 Mineral collecting locs.: Hagar, D., 1.
 Wiley Well dist.: Henry, D. J., 4.
 Colorado, Wagon Wheel Gap area: Anonymous, 36.
 Idaho, gem minerals: Fernquist, C. O., 1.
 Kansas, crystals, locs.: Graffham, A. A., 2.
 Lake Superior area: Vanasse, T. C., 2.
 Mexico, Bolson de Mapimi area: Estlack, J. C., 1.
 Missouri, glacial gravel pits: Grimstead, L., 1.
 Nevada, mineral collection: McLeod, E., 1.
 New Mexico, Gila Nat. Forest, Jeffers field: Neely, L. M., 1.
 Oklahoma, gems: Reed, F. T., 1.
 Oregon, beaches: Bateman, E. S., 2.
 Central: Dake, H. C., 2.
 Perlite deposits: Anonymous, 59.
 Sagenite: Anonymous, 23.
 Texas: Dake, H. C., 2.
 Trees, petrified, Saddle Mts., Wash.: Bateman, E. S., 3.
 Utah, Jericho field: Hayes, J. J., 2.
 Age of the earth. *See* Earth, age; Geologic time.
 Age ratios of sediments, measurement: Beers, R. F., 2.
 Agglomerates.
 California, Kern Co.: Henry, D. J., 3.
 Quebec, Wettnagami Lake area, Abitibi East: Graham, R. B., 1.
 Agnetite, Vulcan iron deposit, San Bernardino Co., Calif.: Lamey, C. A., 1.
 Airborne magnetometer: Balsley, J. R., Jr., 1; Muffy, G., 1.
 Aids geophys. prosp.: Eckhardt, E. A., 1; Knoerr, A. W., 1; Nicholson, G. B., 1.
 Operations: Wyckoff, R. D., 1.
 Surveys and surveying: Balsley, J. R., Jr., 1; U.S.G.S., 5, no. 3.

Airborne magnetometer—Continued.

- Indiana survey: McGrain, P., 1.
 Plane position control: Jensen, H., 2.
 Techniques, projects: Jensen, H., 3.
 Airplane-noise interference, seismic prosp.: Kendall, J. M., 1.

Alabama.

- Geological Survey Ann. Repts., 1944-45, 1945-46: Jones, W. B., 1.
Economic geology.
 Black Warrior Basin oil poss.: Mellen, F. F., 1.
 Coal, coking, Lookout Mtn.: Coulter, S. M., 1.
 Fuels of the future: Lloyd, S. J., 1.
 Gilbertown oil field, Choctaw Co.: Current, A. M., 1.
 Iron ore outcrops, Red Mtn. fm., NE.: Burchard, E. F., 1.
 Manganese, Walnut Grove dist.: Barnes, C. W., 1.
 Mica, beryl, E.-cent.: U. S. B. M., Tuscaloosa Div., 1.
 Oil and gas fields: Shreveport G. Soc., 1.
 Petroleum and nat. gas. prospects: Jones, W. B., 2.
 Developments: Lloyd, S. J., 2.
 Tertiary fms.: MacNeil, F. S., 2; U. S. G. S., 1, no. 45.

Historical geology.

- Black Warrior Basin, oil geology: Mellen, F. F., 1.
 Citronelle fm.: Carlston, C. W., 2.
 Correlation, pre-Selma Upper Cret. fms. Tuscaloosa Co.-Neshoba Co.: Eargle, D. H., 2; U. S. G. S., 2, no. 20.
 Cretaceous, Upper, outcrops, correls.: Monroe, W. H., 1; U. S. G. S., 2, no. 23.
 Ground-water invs., Mobile area: Peterson, C. G. B., 1.
 Oil and gas fields: Shreveport G. Soc., 1.
 Petroleum and nat. gas. prospects: Jones, W. B., 2.
 Red Mtn. fm., NE.: Burchard, E. F., 1.
 Southeastern: MacNeil, F. S., 1; SE. Geol. Soc., 2.
 Tertiary, geol. map: MacNeil, F. S., 2; U. S. G. S., 1, no. 45.
 Southeast: MacNeil, F. S., 1.
 Tuscaloosa area, highway geology: Eargle, D. H., 3; U. S. G. S., 2, no. 31.
 Vick fm., Juras. or Lower Cret., Coastal Plain: Conant, L. C., 1.
 West, pre-Selma Upper Cret.: Eargle, D. H., 2; Monroe, W. H., 1; U. S. G. S., 1, no. 50.

Mineralogy.

- Coal, coking, Lookout Mtn.: Coulter, D. M., 1.
 Iron ore outcrops, Red Mtn. fm., NE.: Burchard, E. F., 1.
 Manganese, Walnut Grove dist.: Barnes, C. W., 1.
 Mica, beryl, E.-cent.: U. S. Bur. Mines, Tuscaloosa Div., 1.

Alabama—Continued.

Paleontology.

- Ceratobulimina, genus and species: Cushman, J. A., 1.
Corals, Cret.: Wells, J. W., 2.
Foraminifera, Cocoa sand: Cushman, J. A., 4.
Woodbine age: Cushman, J. A., 1.
Petrified woods, Cret.: Fairbanks, E. E., 1.
Southeastern: MacNeil, F. S., 1; SE. Geol. Soc. 2.

Petrology.

- Citronelle fm.: Carlston, C. W., 2.
Southeastern: MacNeil, F. S., 1; SE. Geol. Soc. 2.
Stylolites in sandstone: Andrews, D. A., 3.
Tuscaloosa area, highway geology: Eargle, D. H., 3; U. S. G. S., 2, no. 31.
West, pre-Selma Upper Cret.: Eargle, D. H., 2; Monroe, W. H., 1; U. S. G. S., 1, no. 50.

Physical geology.

- Caves, Sewanee area: Kirby-Smith, H. T., 1; Templeton, H. M., Jr., 1.
Coal, coking, Lookout Mtn.: Coulter, D. M., 1.
Partings in stylolite seams, Lookout Mtn.: Shaub, B. M., 4.
Gilbertown oil field, Choctaw Co.: Current, A. M., 1.
Red Mtn. fm., NE.: Burchard, E. F., 1.
Tuscaloosa area, highway geology: Eargle, D. H., 3; U. S. G. S., 2, no. 31.
West, pre-Selma Upper Cret.: Eargle, D. H., 2; Monroe, W. H., 1; U. S. G. S., 1, no. 50.

Underground water.

- Ground-water invs., Mobile area: Peterson, C. G. B., 1.

Alabaster, Okla.: Lucas, E. L., 1.

Alaska.

Permafrost research area: Jaillite, W. M., 1.

Areas described.

- Cape Mtn. lode tin deposits, Seward Penin.: Heide, H. E., 2.
General: Bruet, E., 1.
Quicksilver deposits, SW.: Webber, B. S., 2.
Red Mtn. chromite deposits, Kenai Penin.: Rutledge, F. A., 1.

Economic geology.

- Arctic area, coal poss.: Toenges, A. L., 3.
Cape Mtn. lode tin deposits, Seward Penin.: Heide, H. E., 2.
Chromite, Red Mtn. Kenai Penin.: Rutledge, F. A., 1.
Coal, Arctic area poss.: Toenges, A. L., 3.
Nenana field, Healy Creek: Marstrand, H. J. K., 1.
Point Barrow, Wainwright areas: Sanford, R. S., 1.
Cobalt-copper-nickel deposit, Funter Bay, Admiralty Is.: Holt, S. P., 2.
Copper, Bullion claims, Rua Cove, Knight Island: Stefansson, K., 1.
Kotsina-Kuskulana dist.: Van Alstine, R. E., 1.

Alaska—Continued.

Economic Geology—Continued.

- Nizina dist.: Miller, D. J., 1.
Copper-lead, argentiferous deposits, Slana dist.: Thorne, R. L., 1.
Copper-nickel-cobalt deposits, Funter Bay, Admiralty Is.: Holt, S. P., 2.
Copper-sulfur deposit, Prince of Wales Is.: Fosse, E. L., 1.
General: Bruet, E., 1.
Gold, Cleveland Penin.: Shaw, V., 2.
Iniskin-Chinitna Penin.: Kellum, L. B., 2.
Iron deposits, Jumbo Basin, Prince of Wales Is.: Wright, W. S., 1.
Poor Man deposit, Prince of Wales Is.: Holt, S. P., 1.
Jumbo Basin iron deposit, Prince of Wales Is.: Wright, W. S., 1.
Lead-copper deposits, argentiferous, Slana dist.: Thorne, R. L., 1.
Lost River tin deposit, Seward Penin.: Heide, H. E., 1.
Matanuska Valley coal field: Barnes, F. F., 1; Payne, T. G., 1.
Minerals, industrial, prosp.: Glover, A. E., 1.
Molybdenite, SE.: Twenhofel, W. S., 1.
Wrangell dist., Groundhog Basin: Gault, H. R., 3.
Mount Andrew iron deposit, Kasaan Penin.: Wright, W. S., 3.
Mount Eielson zinc-lead deposits, Mt. McKinley Nat. Park: Muir, N. M., 3.
Nenana coal field, Healy Creek: Marstrand, H. J. K., 1.
Nickel deposits, Spirit Mtn., Copper River area: Pierce, H. C., 1.
Yakobi Island: Kennedy, G. C., 1.
Nickel-copper-cobalt deposit, Funter Bay, Admiralty Is.: Holt, S. P., 2.
Nonmetalliferous deposits, Railroad belt: Waring, G. A., 2.
Ore deposition, Kasaan Penin., struc. control: Warner, L. A., 1.
Petroleum, continental shelves poss.: Wrather, W. E., 1.
Developments, 1946: Weeks, L. J., 2.
Naval Reserve No. 4: Foran, W. T., 1.
Possibilities: Reed, J. C., 2; Thomas, H. F., 1; Wrather, W. E., 1.
Southwest: Kellum, L. B., 3.
Seeps and poss.: Thomas, H. F., 1.
Poor Man iron deposit, Prince of Wales Is.: Holt, S. P., 1.
Quicksilver deposits, SW.: Webber, B. S., 2.
Sedanka Is. zinc dist.: Webber, B. S., 1.
Southeastern Alaska: Shaw, V., 1.
Tin deposit, Lost River, Seward Penin.: Heide, H. E., 1.
Tungsten deposit, Mountain View, Hyder: Erickson, A. W., 1.
Ultrabasic rocks, SE., and min. deposits: Kennedy, G. C., 2.
V, S. Geol. Survey min. invs., 1943-44: Reed, J. C., 1.
Zinc deposits, Sedanka Is. dist.: Webber, B. S., 1.

Alaska—Continued.

Historical geology.

- Adak Island, Aleutians: Coats, R. R., 1.
 Glacial, postglacial: Judson, S., 1.
 Agattu, Aleutian Is.: Sharp, R. P., 1.
 Alaska Range history: Wahrhaftig, C., 1.
 Aleutian Islands, W., geol. reconnaissance:
 Coats, R. R., 3.
 Cape Mtn. lode tin deposits, Seward Penin.:
 Heide, H. E., 2.
 Chromite deposits, Red Mtn., Kenai Penin.:
 Rutledge, F. A., 1.
 Copper, Bullion claims, Rua Cove, Knight
 Is.: Stefansson, K., 1.
 Kotsina-Kuskulana dist.: Van Alstine,
 R. E., 1.
 Nizina dist.: Miller, D. J., 1.
 General: Bruet, E., 1.
 Great Sitkin Volcano, Aleutians: Simons,
 F. S., 1.
 Index fossils, Mid. Juras., Tuxedni ss.:
 Kellum, L. B., 1.
 Iniskin-Chinitna Penin.: Kellum, L. B., 2.
 Jumbo Basin iron mine, Prince of Wales
 Is.: Wright, W. S., 1.
 Kanaga Is., Aleutians: Coats, R. R., 2.
 Lead-copper deposits, argentiferous, Slana
 dist.: Thorne, R. L., 1.
 Matanuska Valley coal field: Barnes, F. F.,
 1; Payne, T. G., 1.
 Molybdenite, SE.: Twenhofel, W. S., 1.
 Mount Andrew iron deposit, Kasaan
 Penin.: Wright, W. S., 3.
 Mount Eielson zinc-lead deposits, Mt.
 McKinley Nat. Park: Muir, N. M., 3.
 Nenana coal field, Healy Creek: Marstran-
 der, H. J. K., 1.
 Nickel deposits, SE.: Kennedy, G. C., 1.
 Pavlof Volcano area, Aleutian Is.: Ken-
 nedy, G. C., 5.
 Permian, southeast: Williams, J. S., 2.
 Yukon area: Williams, J. S., 3.
 Petroleum Naval Reserve No. 4: Foran,
 W. T., 1.
 Quicksilver deposits, SW.: Webber, B. S., 2.
 Southeastern Alaska: Shaw, V., 1.
 Ultrabasic rocks, SE., and min. deposits:
 Kennedy, G. C., 2.
 Umnak Is. volcano invs., Aleutians: Byers,
 F. M., Jr., 1.
- Mineralogy.*
 Alaskite, granite: Anonymous, 53.
 Cape Mtn. lode tin deposits, Seward
 Penin.: Heide, H. E., 2.
 Chromite, Red Mtn., Kenai Penin.: Rut-
 ledge, F. A., 1.
 Coal poss., Arctic area: Toenges, A. L., 3.
 Cobalt-copper-nickel deposit, Funter Bay,
 Admiralty Is.: Holt, S. P., 2.
 Copper, Bullion claims, Rua Cove, Knight
 Is.: Stefansson, K., 1.
 Kotsina-Kuskulana dist.: Van Alstine,
 R. E., 1.
 Nizina dist.: Miller, D. J., 1.
 Ward mines, Seward Penin.: Wright,
 W. S., 2.

Alaska—Continued.

Mineralogy—Continued.

- Copper-lead deposits, argentiferous, Slana
 dist.: Thorne, R. L., 1.
 Copper-sulfur deposit, Prince of Wales
 Is.: Fosse, E. L., 1.
 Epidote, structure: Ito, T., 1.
 General: Bruet, E., 1.
 Gold, Cleveland Penin.: Shaw, V., 2.
 Iron, Poor Man deposit, Prince of Wales
 Is.: Holt, S. P., 1.
 Lead-copper deposits, argentiferous, Slana
 dist.: Thorne, R. L., 1.
 Lost River tin deposit, Seward Penin.:
 Heide, H. E., 1.
 Matanuska Valley coal field: Barnes, F. F.,
 1; Payne, T. G., 2.
 Meteorite crater (?), Aleutian Is.: La
 Paz, L., 3.
 Minerals, industrial, prosp.: Glover, A. E.,
 1.
 Molybdenite, SE.: Twenhofel, W. S., 1.
 Wrangell dist., Groundhog Basin: Gault,
 H. R., 3.
 Mount Andrew iron deposits, Kasaan
 Penin.: Wright, W. S., 3.
 Mount Eielson zinc-lead deposits, Mt. Mc-
 Kinley Nat. Park: Muir, N. M., 3.
 Nelson Is. collecting: Waskey, F. H., 1.
 Nematite: Waskey, F. H., 2.
 Nickel deposit, Spirit Mtn., Copper River
 area: Pierce, H. C., 1.
 Yakobi Island: Kennedy, G. C., 1.
 Nickel-copper-cobalt deposit, Funter Bay,
 Admiralty Is.: Holt, S. P., 2.
 Poor Man iron deposit, Prince of Wales
 Is.: Holt, S. P., 1.
 Quicksilver deposits, SW.: Webber, B. S., 2.
 Sedanka Is. zinc dist.: Webber, B. S., 1.
 Southeastern Alaska: Shaw, V., 1.
 Tin, Lost River deposit, Seward Penin.:
 Heide, H. E., 1.
 Tungsten deposit, Mountain View, Hyder:
 Erickson, A. W., 1.
 Ultrabasic rocks, SE., and min. deposits:
 Kennedy, G. C., 2.
 U. S. Geol. Survey min. invs., 1943-44:
 Reed, J. C., 1.
- Paleontology.*
 Adak Is., glacial, postglacial: Judson, S., 1.
 Artifacts from Alaska Highway: Johnson,
 F., 1.
 Bison, Pleist.: Skinner, M. F., 1.
 Early man, artifacts: Hibben, F. C., 1.
 Foraminifera, Pliocene, Pleist., Amchitka
 Is.: Cushman, J. A., 1.
 Fossil egg capsules, chimaeroid Cret. fish:
 Brown, R. W., 5.
 Index fossils, Mid. Juras. Tuxedni ss.:
 Kellum, L. B., 1.
 Nelson Is. collecting: Waskey, F. H., 1.
 Parafusulina, Perm.: Dunbar, C. O., 2.
- Petrology.*
 Adak Is., Aleutians: Coats, R. R., 1.
 Agattu, Aleutian Is.: Sharp, R. P., 1.

Alaska—Continued.

Petrology—Continued.

- Aleutian Is., W., geol. reconnaissance:
Coats, R. R., 3.
Chromite deposit, Red Mtn., Kenai Penin.:
Rutledge, F. A., 1.
Copper, Bullion claims, Rua Cove, Knight
Is.: Stefansson, K., 1.
Nizina dist.: Miller, D. J., 1.
Copper-sulfur deposit, Prince of Wales Is.:
Fosse, E. L., 1.
General: Bruet, E., 1.
Great Sitkin Volcano, Aleutians: Simons,
F. S., 1.
Iniskin-Chinitna Penin.: Kellum, L. B., 2.
Kanaga Is., N., Aleutians: Coats, R. R., 2.
Lost River tin deposit, Seward Penin.:
Heide, H. E., 1.
Matanuska Valley coal field: Barnes, F.
F., 1; Payne, T. G., 2.
Ore deposition, Kasaan Penin., struc. con-
trol: Warner, L. A., 1.
Petroleum poss., SW.: Kellum, L. B., 3.
Tungsten deposit, Mtn. View, Hyder:
Erickson, A. W., 1.
Ultrabasic rocks, SE., and min. deposits:
Kennedy, G. C., 2.
Yukon area: Williams, J. S., 3.

Physical geology.

- Adak Is., Aleutians: Coats, R. R., 1.
Aeromagnetic survey of Naval Petroleum
Reserve No. 4: U. S. G. S., 4, no. 3.
Agattu, Aleutian Is.: Sharp, R. P., 1.
Alaska Range history: Wahrhaftig, C., 1.
Aleutian earthquake, 4/1/46: Bodle, R.
R., 2.
Tidal waves: Shepard, F. P., 6.
Aleutian Is., W., geol. reconnaissance:
Coats, R. R., 3.
Bogoslof Islands: Ransom, J. E., 1.
Cape Mtn. lode tin deposits, Seward Penin.:
Heide, H. E., 2.
Chromite, Red Mtn., Kenai Penin.: Rut-
ledge, F. A., 1.
Cobalt-copper-nickel deposit, Funter Bay,
Admiralty Is.: Holt, S. P., 2.
Copper deposits, Kotsina-Kuskulana dist.:
Van Alstine, R. E., 1.
Nizina dist.: Miller, D. J., 1.
Copper-lead deposits, argentiferous, Slana
dist.: Thorne, R. L., 1.
Earthquake, 4/1/40, Aleutian Is.: Bodle,
R. R., 2; Shepard, F. P., 6.
History: Heck, N. H., 2.
Records, 40° to 70° N. Lat.: Lynch, W.
A., 1.
Earthquakes: Vesonen, E., 1.
Great Sitkin Volcano, Aleutians: Simons,
F. S., 1.
Jumbo Basin iron mine, Prince of Wales
Is.: Wright, W. S., 1.
Kanaga Is., N., Aleutians: Coats, R. R., 2.
Lead-copper deposits, argentiferous, Slana
dist.: Thorne, R. L., 1.

Alaska—Continued.

Physical geology—Continued.

- Lost River tin deposit, Seward Penin.:
Heide, H. E., 1.
Matanuska Valley coal field: Barnes, F.
F., 1; Payne, T. G., 1.
Molybdenite, SE.: Twenhofel, W. S., 1.
Mount Andrew iron deposit, Kasaan
Penin.: Wright, W. S., 3.
Mount Eielson zinc-lead deposits, Mt. Mc-
Kinley Nat. Park: Muir, N. M., 3.
Nickel, Spirit Mtn, Copper River area:
Pierce, H. C., 1.
Yakobi Island: Kennedy, G. C., 1.
Nickel-copper-cobalt deposit, Funter Bay,
Admiralty Is.: Holt, S. P., 2.
Ore deposition, Kasaan Penin., struc. con-
trol: Warner, L. A., 1.
Pavlov Volcano area, Aleutians: Kennedy,
G. C., 5.
Permafrost invs.: Wallace, R. E., 3.
Petroleum, Naval reserve No. 4: Foran,
W. R., 1.
Possibilities, SW.: Kellum, L. B., 3.
Poor Man iron deposit, Prince of Wales
Is.: Holt, S. P., 1.
Sedanka Is. zinc dist.: Webber, B. S., 1.
Southeastern Alaska: Shaw, V., 1.
Tidal wave, 1946: Jaggard, T. A., Jr., 1;
Shepard, F. P., 6.
Tin deposit, Lost River, Seward Penin.:
Heide, H. E., 1.
Tulik, Okmok, Caldera, Umnak Is. erup-
tion, 1945: Robinson, G. D., 2.
Tungsten deposit, Mtn. View, Hyder:
Erickson, A. W., 1.
Umnak Is. volcano invs., Aleutians: Byers,
F. M., Jr., 1.
Ultrabasic rocks, SE., and min. deposits:
Kennedy, G. C., 2.
Volcanoes: Coleman, S. N. M., 1.
Investigations, methods, etc.: Robinson,
G. D., 1; U. S. G. S., 11.
Physiographic geology.
Adak Is., Aleutians: Coats, R. R., 1.
Glacial, postglacial: Judson, S., 1.
Agattu, Aleutian Is.: Sharp, R. P., 1.
Aleutian Trench, submarine relief: Mur-
ray, H. W., 1.
Coastal Plain, N.: Cabot, E. C., 2.
General: Bruet, E., 1.
Glacier recession, Muir Inlet, Glacier Bay:
Field, W. O., Jr., 1.
Great Sitkin Volcano, Aleutians: Simons,
F. S., 1.
Jumbo Basin iron mine, Prince of Wales
Is.: Wright, W. S., 1.
Nickel prospect, Spirit Mtn., Copper River
area: Pierce, H. C., 1.
Pavlov Volcano area, Aleutians: Kennedy,
G. C., 5.
Permafrost: Barnes, L. C., 1.
Investigations: Wallace, R. E., 3.
Yukon River Valley, lower: Féwé, T.
L., 3.

Alaska—Continued.

Underground water.

Great Sitkin Volcano, Aleutians: Simons, F. S., 1.

Alaskite, N. Mex., Capitan Mtn.: Sidwell, R., 3.
North Carolina, industrial minerals: Stuckey, J. L., 1.

Alaskoceratops and the Plectoceras: Flower, R. H., 3.

Alaskoceratops vs. Plectoceras: Flower, R. H., 3.
Alberta.

Areas described.

Highwood-Elbow area: Allan, J. A., 2.

Wapiti-Cutbank area, coal: Allan, J. A., 1.

Economic geology.

Alexo area, geol. map: Canada G. S., 1.

Athabaska bituminous sands: Hume, G. S., 2.

Bitumen, liquid, Mildred-Ruth Lakes area: Nickle, C. O., 2.

Bituminous sands, source of liquid fuels: Warren, T. E., 1.

Cripple Creek area: Erdman, O. A., 1.

Edmonton fm., Red Deer Valley: Sternberg, C. M., 2.

Exploration for oil and gas, 1946: Nickle, C. O., 1.

Fall Creek area, geol. map: Canada G. S., 1.

Foothills, Athabaska-Ram Rivers: MacKay, B. R., 2.

Oil fields, overthrusts: Link, T. A., 2.

Gregg Lake area: Irish, E. J. W., 1.

Highwood-Elbow area: Allan, J. A., 2.

Leduc oil field: Irvin, J. L., 1; Link, T. A., 3; Anonymous, 52.

Limestones, W. Canada: Goudge, M. F., 1.

Mineral res.: Hooke, A. J., 1.

Moberly Creek area: Lang, A. H., 2.

North Pinhorn gas field: Wilson, G. M., 1.

Oil and gas fields, poss.: Fowler, N. M., 1.

Plains structure at depth: Rutherford, R. L., 1.

Saunders map area, geol. map: Canada G. S., 1.

Seismic work, accuracy limit: Storm, L. W., 1.

Seismograph prosp. for oil: Medsger, H. O., 1.

Wapiti-Cutbank area, coal: Allan, J. A., 1.

Historical geology.

Alexo area, geol. map: Canada G. S., 1.

Athabaska bituminous sands: Hume, G. S., 2.

Brulé area: Lang, A. H., 1.

West of 5th meridian: Canada G. S., 1.

Callum Creek area: Douglas, R. J. W., 1.

Canadian Pacific Ry. area: Hutt, G. M., 3.
Cretaceous-Tertiary boundary in foothills: Rutherford, R. L., 2.

Correlations: Russell, L. S., 4.

Cripple Creek area: Erdman, O. A., 1.

Dyson Creek geol. map: Canada G. S., 1.

Edmonton fm., Red Deer Valley: Sternberg, C. M., 2.

Alberta—Continued.

Historical geology—Continued.

Fall Creek area, geol. map: Canada G. S., 1.

Foothills, Athabaska Ram Rivers: MacKay, B. R., 2.

Oil fields, overthrusts: Link, T. A., 2.

Gregg Lake area: Irish, E. J. W., 1.

Geologic map: Canada G. S., 1.

Highwood-Elbow area: Allan, J. A., 2.

Langford Creek area, geol. map: Douglas, R. J. W., 2.

Leduc oil field: Link, T. A., 3.

Moberly Creek area: Lang, A. H., 2.

Plains structure at depth: Rutherford, R. L., 1.

Plants, fossil, Juras.-Cret. boundary: Brown, R. W., 3.

Rocky Mtn. fm., Banff area: Warren, P. S., 3.

Saunders map area, geol. map: Canada G. S., 1.

Wapiti-Cutbank area, coal: Allan, J. A., 1.

Water-supply problems: Menzies, D. B., 1.

Mineralogy.

Bitumen, liquid, Mildred-Ruth Lakes area: Nickle, C. O., 2.

Foothills, Athabaska-Ram Rivers: MacKay, B. R., 2.

Mineral res.: Hooke, A. J., 1.

Wapiti-Cutbank area, coal: Allan, J. A., 1.

Paleontology.

Ammonites, Fernie fm.: Warren, P. S., 2.

Bryozoa, Camb.: Fritz, M. A., 6.

Chimaeroid fossil egg capsules: Warren, P. S., 4.

Corythosaurus, Cret., Steeveville: Gilmore, C. W., 1.

Dinosaur, Ceratopsia: Sternberg, C. M., 3.

Edmonton fm., Red Deer Valley: Sternberg, C. M., 2.

Microfossils, Vermilion area, Cret.: Nauss, A. W., 1.

Moberly Creek area: Lang, A. H., 2.

Parasaurolophus, crested dinosaur: Russell, L. S., 1.

Plants, fossil, Juras.-Cret. boundary: Brown, R. W., 3.

Troödon lower jaw, theropod dinosaur: Russell, L. S., 3.

Petrology.

Bison-polished boulders, Great Plains: Bretz, J. H., 1.

Brulé area: Lang, A. H., 1.

Callum Creek area: Douglas, R. J. W., 1.

Cripple Creek area: Erdman, O. A., 1.

Edmonton fm., Red Deer Valley: Sternberg, C. M., 2.

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

Gregg Lake area: Irish, E. J. W., 1.

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- Alexo area: Canada G. S., 1.
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- Arizona, Grand Canyon Camb.: Resser, C. E., 1.
 Beatricidae: Shideler, W. H., 1.
 California, Palos Verdes Hills flora: Woodring, W. F., 1.
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 Cryptozoon, SE. Tenn., Ord.: Brill, K. G., Jr., 1.
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 Oregon, Columbia Co.: Kelly, J. V., 2.
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 Trackways, Moenkopi fm.: Peabody, F. E., 3.
 Evolution, development: Colbert, E. H., 1.
 Footprints, Missn., Ind.: Colbert, E. H., 3.
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 Massachusetts, Holland St. quarry, Somerville: Palache, C., 3.

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Sidwell, R., 3.
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Collier, J., 1.
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Pecora, W. T., 1.

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ham, B. F., 2.

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H., 5.
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Colorado, Silverton area collecting: Hudson, K., 1.
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C. A., 1.
Superstition Mtn. area: Shaw, V., 4.
Triassic, continental, N.: Camp, C. L., 3.
Wellton-Mohawk area, Yuma Co.: Babcock,
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Nininger, H. H., 6.
Chalcedony, near Aguilar: Treolar, T., 1.
Chevkinite, Mohave Co.: Kauffman, A. J.,
Jr., 1.
Copper Butte mine, Mineral Creek dist.:
Phelps, H. D., 1.
Copper, San Manuel prospect: Steele, H.
J., 1.
Coronadite, Greenlee Co.: Anonymous, 30.
Crater Mound, origin: Lewis, W. S., 1.
Ehrenburg, Yuma Co. meteorite: Leonard,
F. C., 7.
Fluorspar, Packard property, Gila Co.:
Cummings, J. B., 1.
Garnets: Trainer, J. N., 3.
Hydrothermal alteration, Castle Dome cop-
per deposit: Peterson, N. P., 1.
Iron deposit, Apache, Navajo Co.: Stewart,
L. A., 1.
Johnny Bull-Silver Knight lead-zinc de-
posit, Cebat Mts.: Tainter, S. L., 1.
Lead-zinc ore, Iron King mine, Prescott:
Mills, H. F., 1.
Libethenite: Anonymous, 25.
Loellingite, Yucca: Rasor, C. A., 1.
Magma copper mine, Superior: Michell,
W. D., 1.
Manganese-silver ores: Romslo, T. M., 1.
Meteor Crater, origin: Blackwelder, E., 1.
Meteoritic crater: Leonard, F. C., 6.
Minerals: Flagg, A. L., 2; Galbraith, F.
W., 3d, 1.
Mining dists. map: Wilson, E. D., 1.
Mohawk zinc prosp., Pima Co.: Haury, P.
S., 1.
New Planet iron deposit, Yuma Co.: Cum-
mings, J. B., 2,

Arizona—Continued.

Mineralogy—Continued.

- Old Reliable copper mine, Pinal Co.:
Denton, T. C., 2.
Opal, Malipai Mesa area: Schell, B. E., 1.
Phosphate minerals, Castle Dome copper
deposit: Peterson, N. P., 2.
Polybasite, Silver King mine: Anonymous,
28.
Reward (Vekol) zinc deposit, Pinal Co.:
Denton, T. C., 1.
Rockhounds and minerals: Flagg, A. L., 1.
San Manuel copper deposit, Pinal Co.:
Chapman, T. L., 1.
Sullivan copper mine, Cochise Co.: Kum-
ke, C. A., 1.
Willemites, calcites, Cochise Co.: Kasey,
M. A., 1.
Zonia copper mine, Yavapai Co.: Kumke,
C. A., 2.

Paleontology.

- Bioherms, Upper Dev., cent.: Huddle, J.
W., 4.
Brachiopoda, Percha sh.: Stainbrook, M.
M., 2.
Cambrian, Grand Canyon: McKee, E. D., 1.
Chirotherium, "hand animal", Trias.: Pea-
body, F. E., 2.
Coal Mine Canyon: Brady, L. F., 1.
Current crescents, Trias. Moenkopi fm.:
Peabody, F. E., 1.
Fossil trees, Painted Desert: Richardson,
T., 1.
Grand Canyon Camb. fauna: Resser, C.
E., 1.
Invertebrate tracks, Coconino ss., N.:
Brady, L. F., 2.
Labyrinthodont, capitosaurid, Moenkopi
fm: Peabody, F. E., 4.
Machaeroprosoopus, Trias. phytosaur: Col-
bert, E. H., 5.
Molluscan faunule, Island Mesa Dev. beds:
Stoyanow, A. A., 1.
Onyx marble: McKee, E. D., 2.
Tolchaco sites, Little Colorado Valley:
Bartlett, K., 1.
Triassic, continental, N.: Camp, C. L., 3.
Ventana Cave site, stratigraphy: Haury,
E. W., 1.
Vertebrata, upper Moenkopi fm.: Welles,
S. P., 1.
Trackways, Moenkopi fm.: Peabody, F.
E., 3.

Petrology.

- Ajo mining dist.: Gilluly, J., 1.
Bagdad area, pre-Camb.: Anderson, C.
A., 1.
Cambrian, Grand Canyon: McKee, E. D., 1.
Canyon Diablo crater soil: Buddhue, J.
D., 8.
Copper Butte, Mineral Creek dist.: Phelps,
H. D., 1.
Dragoon Mts. structure: Cederstrom, D.
J., 2.
Lost Dutchman gold mine, Superstition
Mts.: Shaw, V., 3.
Onyx marble: McKee, E. D., 2.

Arizona—Continued.

Petrology—Continued.

- Paleozoic seaways, W.: McKee, E. D., 3.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Primary lineation, fluvial ss., criterion of current direction: Stokes, W. L., 1.
 Redwall Missn. ls., N.-cent.: Gutschick, R. C., 3.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Salt River Valley: McDonald, H. R., 2.
 Superstition Mtn. area: Shaw, V., 4.
 Wellton-Mohawk area, Yuma Co.: Babcock, H. M., 3.

Physical geology.

- Ajo mining dist.: Gilluly, J., 1.
 Amargosa molybdenum-copper deposit, Pima Co.: Tainter, S. L., 3.
 Aravaipa lead-zinc deposits, Graham Co.: Denton, T. C., 3.
 Asbestos deposits, Gila Co.: Stewart, L. A., 2.
 Bagdad area, pre-Camb.: Anderson, C. A., 1.
 Cactus Flat-Artesia area ground water: Halpenny, L. C., 2.
 Canyon Diablo, Ariz. meteorite destroyed Cliff Dwellers?: Newton, A. M., 1.
 Chiricahua Nat. Monument: Carr, W. H., 1.
 Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.
 Dragoon Mts. structure: Cederstrom, D. J., 2.
 Faulting, E. part, Grand Canyon: Van Gundy, C. E., 1.
 Fluorspar, Packard property, Gila Co.: Cummings, J. B., 1.
 Grand Canyon area: Corle, E., 1; Stone, J. F., 1.
 Scenery cf. geology: Maxson, J. H., 1.
 Hydrothermal alteration, Castle Dome copper deposits: Peterson, N. P., 1.
 Iron King mine, Prescott, lead-zinc ore: Mills, H. F., 1.
 Johnny Bull-Silver Knight lead-zinc deposit, Cebat Mts.: Tainter, S. L., 1.
 Kaibab Plateau, W.: Strahler, A. N., 3, 4.
 Lost Dutchman gold mine, Superstition Mts.: Shaw, V., 3.
 Magma copper mine, Superior: Michell, W. D., 1.
 Manganese-silver ore deposits: Romslo, T. M., 1.
 Mohawk zinc prosp., Pima Co.: Haury, P. S., 1.
 New Planet iron deposit, Yuma Co.: Cummings, J. B., 2.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Safford Basin, ground-water res.: Turner, S. F., 2.

Arizona—Continued.

Physical geology—Continued.

- San Manuel copper deposit, Pinal Co.: Chapman, T. L., 1; Steele, H. J., 1.
 Seismology invs.: Wilson, E. D., 2.
 Sullivan copper mine, Cochise Co.: Kumke, C. A., 1.
 Sunset Crater: Muench, J. R., 1.
 Crater Mound vs. Meteor Crater: Darton, N. H., 2.
 Tonto Natural Bridge: Miller, J., 1.
 Wellton-Mohawk area, Yuma Co.: Babcock, H. M., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.

Physiographic geology.

- Ajo mining dist.: Gilluly, J., 1.
 Coal Mine Canyon: Brady, L. F., 1.
 Crater Mound vs. Meteor Crater: Darton, N. H., 2.
 Dragoon Mts. structure: Cederstrom, D. J., 2.
 Grand Canyon area: Corle, E., 1; Stone, J. F., 1.
 Kaibab Plateau, W.: Strahler, A. N., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.

Underground water.

- Cactus Flat-Artesia area ground water: Halpenny, L. C., 2.
 Definitions, geologic, hydrologic, chemical terms in ground-water repts.: Halpenny, L. C., 3.
 Duncan Basin ground water: Halpenny, L. C., 1.
 Holbrook area, Navajo Co. ground water: Babcock, H. M., 2.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Peoples Valley ground-water res.: Babcock, H. M., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Safford Basin, ground-water res.: Turner, S. F., 2.
 Salt River Valley: McDonald, H. R., 2.
 Santa Cruz Basin ground-water res.: Turner, S. F., 1.
 Wellton-Mohawk area, Yuma Co.: Babcock, H. M., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 Arizonite, Aquarius Range, Ariz., Hackberry: Anonymous, 31.

Arkansas.

Economic geology.

- Barite, Hot Spring Co.: McElwaine, R. B., 1.
 Montgomery Co.: McElwaine, R. B., 2.
 Bauxite-kaolin relations: Goldman, M. I., 1.
 Brookite, Hot Spring Co.: Holbrook, D. F., 1.
 Magnet Cove deposits: Spencer, R. V., 1.
 Mineral res.: Midwest Research Inst., 1.
 Oil and gas fields: Shreveport G. Soc., 1.
 Petroleum and gas devel., 1945: Mackay, D. K., 1; 1946: Williams, J. R., 1.

Arkansas—Continued.

Economic geology—Continued.

Quartz crystal deposits, W.: Engel, A. E. J., 1.

Historical geology.

Barite, Hot Spring Co.: McElwaine, R. B., 1.

Montgomery Co.: McElwaine, R. B., 2.

Magnet Cove rutile deposits: Spencer, R. V., 1.

Morrow group, NW.: Henbest, L. G., 5.

New Planet iron deposit, Yuma Co.: Cummings, J. B., 2.

Oil and gas fields: Shreveport Geol. Soc., 1.

Penters chert, Batesville dist., age: Kinney, D. M., 1.

Quartz crystal deposits, W.: Engel, A. E. J., 1.

Unconformities in oil fields, Ark.-N. La.: Halbouty, M. T., 1.

Mineralogy.

Barite, Hot Spring Co.: McElwaine, R. B., 1, 2.

Bauxite-kaolin relations: Goldman, M. I., 1.

Gem and semiprecious stones, list: Anonymous, 17.

Magnet Cove rutile deposits: Spencer, R. V., 1.

Minerals, county locations: Anonymous, 16.

Novaculite, Quarry Mtn.: Scully, F. J., 1.

Paragould meteorite, 2/17/30: Nelson, H. E., 1.

Paleontology.

Anomoeodus, Cret. pycnodont fish: Hussakof, L., 1.

Foraminifera, Arkadelphia marl, Cret.: Cushman, J. A., 1.

Deaderick collection: Henbest, L. G., 1.

New, Upper Cret.: Lalicker, C. G., 1.

Paleocene: Cushman, J. A., 1.

Ostracoda, Cotton Valley Juras. group: Swartz, F. M., 1.

Penters chert, Batesville dist., age: Kinney, D. M., 1.

Petrology.

Barite, Hot Spring Co.: McElwaine, R. B., 1.

Bauxite-kaolin relations: Goldman, M. I., 1.

Quartz crystal deposits, W.: Engel, A. E. J., 1.

Physical geology.

Barite, Hot Spring Co.: McElwaine, R. B., 1.

Montgomery Co.: McElwaine, R. B., 2.

Bauxite-kaolin relations: Goldman, M. I., 1.

Bull Shoals Dam: Roberts, G. D., 2.

Unconformities in oil fields, Ark.-N. La.: Halbouty, M. T., 1.

Vibrations at Biggers pumping station: Macelwane, J. B., 5.

Underground water.

Water supply, public: Hale, H., 1.

Arroyo problem: Happ, S. C., 1.

Arsenic.

Absorption by plants: Olson, O. E., 1.

British Columbia, Highland-Bell mine ores: Staples, A. B., 2.

Arsenic—Continued.

California, Eagle Crags collecting area: Henry, D. J., 2.

Canada, Flin Flon-Mandy area, Manitoba, Saskatchewan: Stockwell, C. H., 1.

Colorado, San Juan mining dist.: Burbank, W. S., 6, 7.

Mexico, Chihuahua, min. res.: Gonzáles Reyna, J., 3-a.

Nevada, Steamboat Springs: White, D. E., 5.

New Mexico, Little Hatcher Mts. area: Lasky, S. G., 3.

Ontario, Timiskaming silver-cobalt area: Reid, J. A., 1.

United States, Missouri Valley area: U. S. G. S., 3, no. 1.

Utah, Mercur mining dist.: Young, E. B., 1.

Strategic minerals locs.: Buranek, A. M., 1.

Arsenides, nickel, cobalt, Franklin, N. J.: Holmes, R. J., 4.

Nickel, iron, cobalt: Holmes, R. J., 1.

Arsenopyrite.

California, Alpine Co. collecting: Nichols, J. B., 1.

Idaho, Clark Fork dist. lead-silver mineralization: Anderson, A. L., 2.

Missouri, Silver Mine area: Kidwell, A. L., 1.

New Jersey, Rudeville, Windsor quarry: Zodiac, P., 5.

Sheldon quarry, Rudeville: Zodiac, P., 3.

Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.

Washington, Mt. Rainier Nat. Park: Danner, T., 2.

Artesian waters and wells. See also Underground water.

Arizona, Cactus Flat-Artesia area: Halpenny, L. C., 2.

Duncan Basin: Halpenny, L. C., 1.

Mexico, Estado Michoacán, N. area: Blázquez López, L., 4.

Well test of effective radius: Jacob, C. E., 1.

Arthropoda.

Arachnida, Paleozoic, Ill.: Petrunkevitch, A., 1.

Arizona, N., Coconino ss. tracks: Brady, L. F., 2.

Onyx marble fossils: McKee, E. D., 2.

Bermuda, preglacial faunas: Moore, H. B., 1.

California, Pleist. fauna, tar pits, Rancho La Brea: Pierce, W. D., 1.

Catalogue of types, Royal Ontario Mus. Pal.: Fritz, M. A., 5.

Egan collection, Sil. Invertebrata, N. Am.: Ball, J. R., 1.

Insecta, Carb. to Quat., U. S.: Pierce, W. D., 2.

Mississippi, Lee Co. faunas: Vestal, F. E., 1.

Arthropoda—Continued.

New Albany sh., U. S., fauna: Campbell, G., 1.

Pycnogonida, evolutionary significance: Hedgpeth, J. W., 1.

Termites, Pleist., Carpinteria, Calif.: Lance, J. F., 1.

Artificial metamorphism of minerals: Buerger, M. J., 1.

Artinite.

Nevada, Luning: Hurlbut, C. S., Jr., 1.

Vermont, Eden Mills quarry: Frondel, C., 2.

Asbestos.

Alaska, U. S. Geol. Survey min. invs., 1943-44: Reed, J. C., 1.

Nemalite: Waskey, F. H., 2.

Arizona, Gila Co.: Stewart, L. A., 2.

British Columbia, Manson Creek, Cassiar dist.: Canada G. S., 1.

Chrysotile in massive serpentine: Messel, M. J., 1.

El Salvador: Basauri, D., 1.

Maryland: Bangs, H., 1.

Miracle mineral: Nelson, W. E., 2.

North Carolina, Spruce Pine dist.: Olson, J. C., 1.

Quebec: Foster, G. K., 1.

Quebec Central Ry. area: Dawson, A. S., 1.

Thetford mines: Collins, F. W., 1.

Texas, cent. min. region collecting: Moore, J. R., III, 1.

Mineral res.: Sellards, E. H., 4.

United States, Missouri Valley area: U. S. G. S., 3, no. 1.

Vermont, Eden Mills quarry: Frondel, C., 2.

Mineral industries: Jacobs, E. C., 4.

Wyoming, construction materials, nonmetallics: Clabaugh, S. E., 1; U. S. G. S., 3, no. 9.

Asbolite, Missouri: Keller, W. D., 2.

Ash, New Mexico, nat. light-weight bldg. blocks: Clippinger, D. M., 1.

Asphalt. See also Bitumens; Bituminous rocks and sands; Grahamite.

Alberta, liquid bitumen, Mildred-Ruth

Lakes area: Nickle, C. O., 2.

Bituminous sands, asphaltic materials extraction: Ball, J. O., 1.

California, Maricopa to Cymric oil field: Woodward, W. T., 1.

Palos Verdes Hills: Woodring, W. P., 1.

Rancho La Brea, birds: Howard, H., 3.

Rancho La Brea Pleist. life: Stock, C., 1, 9.

New Mexico, Guadalupe Co.: Gorman, J. M., 1; U. S. G. S., 1, no. 4.

Oklahoma: Dott, R. H., 5.

Rancho La Brea pits, Los Angeles, Calif.: Stock, C., 1, 9.

Texas: Sellards, E. H., 4.

Texas and Okla., Trinity River: Weissenborn, A. E., 1.

United States, black sands oil fields: Taliaferro, D. B., Jr., 1.

Asphalt—Continued.

Wyoming, construction materials, nonmetallics: Clabaugh, S. E., 1; U. S. G. S., 3, no. 9.

Asphaltite, Ouachita Mts., Okla.: Beach, J. O., 3.

Associations.

Geological Soc. America, Proc. 58th, 59th Ann. Mtgs.: Aldrich, H. R., 1.

Asteroida. See also Echinodermata.

New York, Catskill, Kaaterskill quads., faunas: Chadwick, G. H., 1.

Ohio, Cincinnati area, fossils, strata: Bucher, W. H., 1.

Wyoming, *Pentagonaster browni*, Cody fm., Landon area: Branson, E. B., 3.

Asthenosphere, nature: Daly, R. A., 2.

Asymmetrical valleys, San Diego Co., Calif.: Emery, K. O., 7.

Atlantic Coastal Plain, floor, N. Car.: Prouty, W. F., 1.

Geophysical invs. at Cape May, New York, Woods Hole, U. S.: Ewing, W. M., 4.

Augite.

Colorado, Grand Co., crystals: Ellermeier, G. B., 1.

Hawaii, Haleakala Volcano: Macdonald, G. A., 2.

Montana, monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.

New Jersey, Sheldon quarry, Rudeville: Zodac, P., 3.

Autunite.

New York, Bedford dist.: Mann, A., 1.

Aves. See also Vertebrata (general).

California, Palos Verdes Hills fauna: Woodring, W. P., 1.

Pleistocene, Los Angeles Mus., Rancho La Brea: Howard, H., 1.

Rancho La Brea, Pleist.: Howard, H., 1, 2, 3; Stock, C., 1, 9.

Chendytes, Pleist., wing elements, Calif.: Howard, H., 7.

Evolution, Pleist. to recent: Howard, H., 5.

Golden eagle, Rancho La Brea, Pleist., Calif.: Howard, H., 8.

Greenland, West, faunas: Laursen, D., 1.

Gymnogyps, Pleist., Rancho La Brea, Calif.: Fisher, H. I., 1.

History of N. Am. birds: Mayr, E., 1.

Kansas Vertebrata: Lane, H. H., 1.

Lucas Auk, Pliocene, San Diego, Calif.: Miller, L. H., 1.

Mancalla, Chendytes, Pleist. flightless birds, Calif.: Howard, H., 6.

Mancalla, Pliocene Lucas Auk, Calif.: Miller, L. H., 1.

Oregon, Fossil Lake, Pleist.: Howard, H., 4.

Origin, devel.: Howard, H., 3.

Pandanaris, Pleist. Rancho La Brea, Calif.: Miller, A. H., 1.

Azurite.

New Jersey, Flemington copper mine: Zodac, P., 1.

New Mexico, Stauber copper mine, Guadalupe Co.: Holmquist, R. J., 2.

Azurite—Continued.

Wyoming, collecting, Encampment area:
Platt, R. E., 1.

Babingtonite.

Massachusetts, Blueberry Mtn. quarry:
Eisenberg, J. M., 1.
Somerville, Granite St. quarry: Palache,
C., 3.

Bacteria and oil: Anonymous, 45.

Effect on oil production: Deegan, C. J., 4.
Role in fm., accumulation of petroleum
and hydrocarbon: ZoBell, C. E., 1, 4.

Bacterial activity, relation to oil: Bench, B.
M., 5.Bacterial release of oil: ZoBell, C. E., 8, 9.
Bahamas. See also West Indies.*Economic geology.*

Magnetometer, flying, survey: Dudley, R.
L., 1.

Deflection of vertical: Steenland, N. C., 1.

Physiographic geology.

Eleuthera Island, submarine topog.: Schalk,
M., 2.

Submarine sed. features, Bahama Banks:
Rich, J. L., 1.

Bancroftina, new brachiopod name: Sinclair,
G. W., 5.

Barbadoes. See also West Indies.

Paleontology.

Miscellanea, peripheral apertures: Vaughan,
T. W., 1.

Underground water.

Ground-water res.: Senn, A., 1.

Barite.

Arkansas, Hot Spring Co., Magnet Cove:
McElwaine, R. B., 1.

Montgomery Co.: McElwaine, R. B., 2.
British Columbia: Hutt, G. M., 6.

California, Los Banos dist. sandstones:
Davies, S. N., 1.

San Juan Bautista quad.: Allen, J. E., 3.
Colorado, construction, nonmetallic ma-
terials: U. S. G. S., 3, no. 10.

Idaho, Clark Fork dist., lead-silver min-
eralization: Anderson, A. L., 2.

Snake-Salmon Rivers area, Idaho Co.:
Wagner, W. R., 1.

Illinois, Alton-Chester area, collecting:
McClure, S. M., 1.

Southern, unusual occurrences: McClure,
S. M., 5.

Kansas, Plattsburg ls.: Graffham, A. A., 1.

Maryland, Campbell quarry, Texas, min-
erals: Levey, H., 1.

Massachusetts, Medford quarry: Palache,
C., 3.

Mexico, Sierra de Santa Rosa, Coahuila:
Willard, M. E., 3.

Missouri, central: Mather, W. B., 2.

Mineral res.: Keller, W. D., 2.

Morgan Co.: Kidwell, A. L., 2; Mather,
W. B., 1.

Pilot Knob: Frank, A. J., 1.

Texas Co., blue: Kidwell, A. L., 5.

New Mexico, fluorspar area: Rothrock, H.
E., 1.

Barite—Continued.

Gallinas fluorspar deposits: Soulé, J. H.,
1.

North Carolina, ceramic material deposits:
Greaves-Walker, A. F., 1; Stuckey,
J. L., 1.

Texas: Evans, G. L., 2.

Central mining area, collecting: Moore,
J. R., III, 1.

Mineral res.: Sellards, E. H., 4.

Texas and Okla., Trinity River area:
Weissenborn, A. E., 1.

United States, min. res. map, Neb.-Iowa-
Kans.-Mo.-Ark.-Okla.: Midwest Re-
search Inst., 1.

Southwest, tungsten, vanadium: Flei-
scher, M., 1.

Utah, Wildcat Mts. fluorspar deposits:
Buraneck, A. M., 4.

Bars, Bahama Banks, submarine sed. features
and oil sands: Rich, J. L., 1.

Basalt.

Arizona, Superstition Mts. area: Shaw,
V., 4.

British Columbia, McConnell Creek area:
Lord, C. S., 1.

Tuya Range, xenoliths in: Watson, K.
D., 3.

California, S., crystalline rocks: Miller, W.
J., 1.

Cuba, Moa chromite dist., Oriente Prov.:
Guild, P. W., 1.

Greenland, Clavering Is., Payer Land:
Mittelholzer, A. E., 1.

East, basaltic rocks: Krokström, T., 1.

Eruptives: Rittman, A., 1.

74°-75° area: Vischer, G. A., 1, 2.

Jamesonland lowlands: Stauber, H., 1.

Northeast: Ahlmann, H. W., 1; Back-
lund, H. G., 1.

Northern plateaus: Noe-Nygaard, A., 2.
Nügssuak Penin., W.: Munck, S., 2.

West, Svartenhuk Penin.: Munck, S., 2;
Noe-Nygaard, A., 1.

Hawaii, chem. alteration, Kilauea area:
Payne, J. H., 1.

Haleakala Volcano: Macdonald, G. A., 2.
Honolulu Pleist. ser., Oahu: Winchell,
H., 3.

Island of Molokai: Macdonald, G. A., 5.

Koolau basalt ser., Oahu: Wentworth, C.
K., 2.

Idaho, Snake-Salmon Rivers area N. of
Riggins: Wagner, W. R., 1.

Sulfur deposits area: Staley, W. W., 2.

Mexico, Maravatio-Zitacuaro dists., Micho-
acán: Flores, T., 1.

New Mexico, Atwood copper group, Lords-
burg dist.: Huntington, M. G., 1.

Oregon, NW., ferruginous bauxite de-
posits: Libbey, F. W., 1.

St. Helens quad.: Wilkinson, W. D., 1.

Texas: Sellards, E. H., 4.

Utah, Mineral Range: Crawford, A. L., 3.

Basic research, indust. minerals and rocks;
Gillson, J. L., 1.

- Basin oil and gas field, Big Horn Co., Wyo.: Hiestand, T. C., 1.
- Bastinite, S. Dak., Custer pegmatites: Fisher, D. J., 2.
- Bastnäsite, Gallinas fluorspar deposits, N. Mex.: Soulé, J. H., 1.
- Gallinas Mts.: Kelley, V. C., 6.
- Batholiths. See also Intrusions.
- Alaska, Prince of Wales Is., Jumbo Basin mine: Wright, W. S., 1.
- Mountain View tungsten deposit, Hyder: Erickson, A. W., 1.
- Southeast: Shaw, V., 1.
- Big Horn Basin, Wyo.-Mont., tectonic devel.: Fanshawe, J. R., 1.
- British Columbia, Ashcroft area: Duffell, S., 1.
- Coast Range: Phemister, T. C., 1.
- Northern: Armstrong, J. E., 2.
- Surf Point, Edye Pass mines: Smith, A., 1.
- California, Cuyama Peak quad. batholith units: Everhart, D. L., 2.
- Ramona quad.: Merriam, R. H., 1.
- Southern, crystalline rocks: Miller, W. J., 1.
- Radioactive rocks: Larsen, E. S., 2.
- Colorado, Gold Hill dist.: Myers, R. E., 2.
- Pegmatites, Eight Mile Park area: Heinrich, E. W., 7.
- Idaho, Blackbird dist., Lemhi Co., cobalt deposits: Anderson, A. L., 3.
- Moyie-Yaak dist.: Anderson, A. L., 1.
- Orofino area: Johnson, C. H., 1.
- Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
- Montana, Bull Run prospects, Silver Bow Co.: Roby, R. N., 2.
- Moffet-Johnston copper area: Roby, R. N., 1.
- Ontario, Bryce area, intrusives and granite: Moorhouse, W. W., 3.
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Gaviota to Santa Maria, road log: Hughes, A. W., 1.

Geologic sec., Sierra Nevada-Death Valley: Hopper, R. H., 1.

Gorman tin dist., Kern Co.: Wiese, J. H., 1.

Great Valley, central: Laiming, B. G., 1.

Tertiary: Ferguson, G. C., 3.

Guide Book, Field Trip, Mar. 1947, oil fields: A. A. P. G., 1.

California—Continued.

Historical geology—Continued.

Hirz Mtn. iron deposit, Shasta Co.: Lamey, C. A., 1.

Inyo Range, Bishop quad.: Maxson, J. H., 2.

Iron Hat iron-ore deposits, San Bernardino Co.: Lamey, C. A., 1.

Ivanpah quad., SW.: Hewett, D. F., 1.

Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.

Kern River Basin, Sierra Nevada: Webb, R. W., 1.

Klamath Mtn. Prov., Sil.: Westman, B. J., 1.

Kramer borate dist., Kern Co.: Gale, H. S., 1.

Lake Cahuilla, age: Cockerell, T. D. A., 2.

Los Angeles Basin: Wissler, S. G., 2.

Origin, evolution: Driver, H. L., 1.

Schist surface and wells: White, J. L., 1.

Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.

Maricopa to Cymric oil field: Woodward, W. T., 1.

Minarets magnetite deposits, Iron Mtn., Madera Co.: Trask, P. D., 2.

Miocene conglomerates, Puente, San Jose Hills: Woodford, A. O., 1.

Monterey fm., siliceous rocks: Bramlette, M. N., 1.

Moreno shale: Long, J. A., 1.

Newhall-Potrero oil field, Los Angeles Co.: Lee, A. T., 1.

Oak Canyon oil field, Los Angeles Co.: Bell, G. R., 1.

Oak Ridge oil fields, Ventura Co.: Baddley, E. R., 1.

Oil-field fms. correls., San Joaquin Valley, E. side: Ferguson, G. C., 1.

West side: Goudkoff, P. P., 1.

Origin, migration, oil into Sespe red beds: Bailey, T. L., 1.

Ostracoda in paleogeography: Rothwell, W. T., Jr., 1.

Oxnard oil field, Ventura area: Hazzard, J. C., 3.

Palos Verdes Hills: Woodring, W. P., 1.

Petroleum, explor., discovery, 1946: Stockman, L. P., 1.

Pico anticline, Los Angeles Co.: Arleth, K., 1.

Pine Creek, Adamson tungsten mines, Inyo Co.: Bateman, P. C., 1.

Placer gold mining: Averill, C. V., 1.

Quicksilver, Mayacmas dist., E. and W., Lake, Napa, Sonoma Cos.: Bailey, E. H., 1; Yates, R. G., 1.

New Idria dist.: Eckel, E. B., 1.

Sulphur Bank mine, Lake Co.: Everhart, D. L., 1.

Ramona quad., ig., metamorphic rocks: Merriam, R. H., 1.

Rancho La Brea, Pleist. life: Stock, C., 9.

California—Continued.

Historical geology—Continued.

- Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
 Repetto conglomerate, deposition environment: Natland, M. L., 1.
 Repetto fm. pseudo-shoreline: Natland, M. L., 2.
 Ridge Route area: Loel, W., 1.
 Sacramento Valley: Goudkoff, P. P., 2.
 San Gabriel Basin, NE. margin, Los Angeles Co.: Shelton, J. S., 1; U. S. G. S., 1, no. 63.
 San Joaquin Valley: Barbat, W. F., 1.
 South, oil-field accumulation types: Bryan, J. J., 1.
 San Juan Bautista quad.: Allen, J. E., 3.
 Sandstones, Cret., Tert., Los Banos dist.: Daviess, S. N., 1.
 Santa Maria dist.: Hughes, A. W., 3.
 Santa Maria to W. end of Cuyama Valley: Hughes, A. W., 2.
 Santa Paula, Silver Thread oil fields, Ventura area: Hazzard, J. C., 2.
 Santa Rosa Mts. area, Riverside Co.: Wright, L. B., 1.
 Santiago oil pool, Kern Co.: Ledingham, G. W., 1.
 Shasta, California iron-ore deposits: Lamey, C. A., 1.
 Shiells Canyon area, Bardsdale oil field: Bailey, W. C., 1.
 Ship Mtn. iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 Sierra Nevada, S., structure: Mayo, E. B., 1.
 Sierra Nevada-Death Valley section: Hopper, R. H., 1.
 Sixteen-To-One gold-quartz vein, Allghany: Cooke, H. R., Jr., 1.
 Tin deposits: Bedford, R. H., 1.
 Trico gas field, San Joaquin Valley: Bailey, W. C., 2.
 Tuscan fm., Red Bluff area: Treasher, R. C., 1.
 Ventura Basin: Kuffel, G. C., 1.
 Oil field, Ventura Co.: Arthur, J., 1; Bailey, T. L., 2.
 Ventura to Carpinteria road log: Redwine, L. E., 1.
 Vulcan iron-ore deposit, San Bernardino Co.: Lamey, C. A., 1.
 West Newport oil and gas field: Corwin, C. H., 1; Dunlap, W. E., 1, 2.
 Wiley Well dist., mineral collecting: Henry D. J., 4.
 Yosemite Valley: Matthes, F. E., 3.

Mineralogy.

- Akoz mine, Mariposa Co.: Wiebelt, F. J., 2.
 Alpine Co. minerals: Nichols, J. B., 1.
 Aragonite, banded, wavy onyx, Fairfield: Lisle, T. O., 4.
 Batholith rocks, radioactivity: Larsen, E. S., 2.
 Bessemer iron project, San Bernardino Co.: Wiebelt, F. J., 1.

California—Continued.

Mineralogy—Continued.

- Caliche minerals, San Diego Co.: Emery, K. O., 1.
 Calico Mts. area: Henry, D. J., 1.
 Cassiterite, contact metamorphic: Page, L. R., 1.
 Chromite, Del Norte Co.: Wells, F. G., 1.
 North Elder Creek area: Rynearson, G. A., 1.
 Collecting, Kern Co.: Henry, D. J., 3.
 Copper-zinc belt, Sierra Nevada area: Heyl, G. R., 2.
 Crystalline rocks, S. Calif.: Miller, W. J., 1.
 Eagle Crags collecting area: Henry, D. J., 2.
 Fulgurites, San Clements Is.: Griesbach, J. O., 1.
 Garnets: Trainer, J. N., 3.
 Geodes, Black Hills area: Weight, H. O., 1.
 Chuckawalla Mts., nodules, chalcodony roses: Schweitzer, C. G., 1.
 "The Geysers," Sonoma Co., minerals: Vonsen, M., 1.
 Glauconite schists, Coast Ranges: Switzer, G., 5.
 Gold mesothermal veins: Halke, A., 1.
 Gorman tin dist., Kern Co.: Wiese, J. H., 1.
 Halite, red fluorescing: Murata, K. J., 4.
 Hardpan, claypan, in San Joaquin soil: Nikiforoff, C. C., 1.
 Hirz Mtn. iron deposit, Shasta Co.: Lamey, C. A., 1.
 Inderite: Heinrich, E. W., 1.
 Iron Hat iron-ore deposits San Bernardino Co.: Lamey, C. A., 1.
 Jade, Monterey Co. coast: Henley, R. F., 1.
 Jasper, Coyote Point: Lisle, T. O., 5.
 Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.
 Kramer borate dist., Kern Co.: Gale, H. S., 1.
 Limonite, in chalcodony, Mule Mts.: Rochester, E., 1.
 Magnesite vein system, Red Mtn. dist. control: Bodenlos, A. J., 1.
 Minarets iron deposits, Iron Mtn., Madera Co.: Severy, C. L., 2; Trask, P. D., 2.
 Mineral collecting: Hagar, D., 1.
 Minerals, for tomorrow: Bradley, W. W., 1.
 Occurrence: Murdoch, J., 2.
 Neuvite, rare-earth mineral: Murdoch, J., 1.
 Olivine in dunite, perfect cleavage, Dunsuir: Hawks, H. E., Jr., 2.
 Onyx, Death Valley: Lisle, T. O., 1.
 Owens Lake sodium minerals: Dub, G. D., 1.
 Phosphorite from sea floor: Emery, K. O., 3.
 Pine Creek, Adamson tungsten mines. Inyo Co.: Bateman, P. C., 1.
 Placer gold mining: Averill, C. V., 1.
 Quicksilver deposits, Mayacmas dist., E. and W., Lake, Napa, Sonoma Cos.: Bailey, E. H., 1; Yates, R. G., 1.

California—Continued.

Mineralogy—Continued.

- New Idria dist.: Eckel, E. B., 1.
 Sulphur Bank mine, Lake Co.: Everhart, D. L., 1.
 Salts, Searles Lake: Withington, H. E., 1.
 San Juan Bautista quad.: Allen, J. E., 3.
 Sand fulgurites enclosing lechatelierite: Rogers, A. F., 1.
 Sandstones, Cret., Tert., Los Banos dist.: Daviess, S. N., 1.
 Shasta, California iron-ore deposits: Lamey, C. A., 1.
 Ship Mtn. iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 Sixteen-To-One gold-quartz vein, Alleghany: Cooke, H. R., Jr., 1.
 Stellerite, epidesine and stilbite relations: Pabst, A., 1.
 Straw-silica glass: Milton, C., 2.
 Strontium deposits: Durrell, C., 1.
 Tehama Co. mines: O'Brien, J. C., 1.
 Uvarovite garnets, Jacksonville: Trainer, J. N., 2.
 Vulcan iron ore deposits, San Bernardino Co.: Lamey, C. A., 1.
 Wiley Well dist., mineral collecting: Henry, D. J., 4.

Paleontology.

- Antelope, Pleist., Rancho La Brea: Furlong, E. L., 1.
 Arthropoda, Pleist., Rancho La Brea: Pierce, W. D., 1.
 Auk, Lucas, San Diego Pliocene: Miller, L. H., 1.
 Aves, flightless, Pleist.: Howard, H., 6.
 Rancho La Brea, Pleist.: Howard, H., 2.
 Avian evolution, Pleist. to recent: Howard, H., 5.
 Bakersfield Clock Tower, El Tejon Hotel to Lebec, road log: Hackel, O., 1.
 Biometrical analysis, molluscan assemblages: Schenck, H. G., 1.
 Birds, flightless, Pleist.: Howard, H., 6.
 Calipyrgula, Pliocene, gastropod: Leonard, A. B., 1.
 Canis (Aenocyon), Pleist., La Brea: Stock, C., 8.
 Carnivores, Black Hawk Ranch: Macdonald, J. R., 2.
 Ceratobulimina, genus and species: Cushman, J. A., 1.
 Chendytes, wing elements, Pleist.: Howard, H., 7.
 Diatoms, Moreno sh.: Long, J. A., 1.
 Dire wolf group, Pleist., Rancho La Brea, metapodials: Nigra, J. O., 1.
 Elephants, Pleist., Channel Islands: Stock, C., 2.
 Fish, distrib. and Pleist. hydrography, correl.: Miller, R. R., 1.
 Fossil, cf. remains in recent deposits: David, L. R., 3.
 Upper Cret., San Joaquin Valley: David, L. R., 2.

California—Continued.

Paleontology—Continued.

- Fish-scales, Eocene: David, L. R., 1.
 Foraminifera, Eocene, Contra Costa Co.: Nicholson, P. R., 1.
 Pliocene, Timms Point: Cushman, J. A., 1.
 Fossil birds, Rancho La Brea: Howard, H., 3.
 Fusulinidae, Perm.: Thompson, M. L., 1.
 Glycymeris, Tert.: Nicol, D., 1.
 Golden eagle, Rancho La Brea, Pleist.: Howard, H., 8.
 Great Valley, central: Laiming, B. G., 1.
 Guide Book, Field Trip Mar. 1947, oil fields: A. A. P. G., 1.
 Gymnogyps, Pleist. vultures: Fisher, H. I., 1.
 Insecta, Pleist., Rancho La Brea: Pierce, W. D., 1.
 Klamath Mtn. Prov., Sil.: Westman, B. J., 1.
 Los Angeles Basin: Wissler, S. G., 2.
 Man, early, Tranquillity site, Fresno Co.: Hewes, G. W., 1.
 Mancalla, Lucas auk, Pliocene, San Diego: Miller, L. H., 1.
 Mollusca, Newport Bay area, Calif.: Bruff, S. C., 1.
 Biometrical analysis of assemblages: Schenck, H. G., 1.
 Pleistocene: Berry, S. S., 1.
 Pliocene, Los Angeles City: Willett, G., 1.
 Moreno shale: Long, J. A., 1.
 Palos Verdes Hills: Woodring, W. P., 1.
 Pandanaris, Pleist., Rancho La Brea: Miller, A. H., 1.
 Petrified trees, Calitoga: Lisle, T. O., 3.
 Pleistocene birds of Rancho La Brea, Los Angeles Mus. collections: Howard, H., 1.
 Rancho La Brea, Pleist. life: Stock, C., 1, 9.
 Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
 San Joaquin Valley: Barbat, W. F., 1.
 Sequoia wood, Miocene, Eldorado, cf. modern wood: Cundy, P. F., 1.
 Silicoflagellates, Cret.: Deffandre, G., 1.
 Termites, Pleist., Carpinteria: Lance, J. F., 1.
Petrology
 Batholith rocks, radioactivity: Larsen, E. S., 2.
 Blue agate, Lead Pipe Springs area: Rogers, A. F., 6.
 Caliente Range: Hill, M. L., 2.
 Chromite, Del Norte Co.: Wells, F. G., 1.
 North Elder Creek area: Rynearson, G. A., 1.
 Coles Levee, Kern Co.: Taliaferro, N. L., 1.
 Crystalline rocks, S. Calif.: Miller, W. J., 1.
 Edison oil field, basement complex: Beach, J. H., 2.

California—Continued.

Petrology—Continued.

- Garnet-idocrase, pseudo jade, Placer Co.: Rogers, A. F., 5.
- Glaucophane schists, Coast Ranges: Switzer, G., 5.
- Glendora volcanics: Shelton, J. S., 2.
- Gorman tin dist., Kern Co.: Wiese, J. H., 1.
- Hardpan, claypan in Jan Joaquin soil: Nikiforoff, C. C., 1.
- Hirz Mtn. iron deposit, Shasta Co.: Lamey, C. A., 1.
- Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.
- Kern River Basin, mid., Sierra Nevada: Webb, R. W., 1.
- Kramer borate dist., Kern Co.: Gale, H. S., 1.
- Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
- Minarets iron deposits, Madera Co.: Severy, C. L., 2.
- Miocene conglomerates, Puente, San Jose Hills: Woodford, A. O., 1.
- Monterey fm., siliceous rocks: Bramlette, M. N., 1.
- Mother Lode fault zone, Sierra Nevada: Heyl, G. R., 1.
- Newhall-Potrero oil field, Los Angeles Co.: Lee, A. T., 1.
- Pala pegmatites, San Diego Co.: Jahns, R. H., 5.
- Pine Creek, Adamson tungsten mines, Inyo Co.: Bateman, P. C., 1.
- Quicksilver deposits, E. Mayacmas dist., Lake, Napa Cos.: Yates, R. G., 1.
- New Idria dist.: Eckel, E. B., 1.
- Sulphur Bank mine, Lake Co.: Everhart, D. L., 1.
- Ramona quad., igneous, metamorphic rocks: Merriam, R. H., 1.
- Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
- Repeto conglomerate, deposition environment: Natland, M. L., 1.
- Ridge Route area: Loel, W., 1.
- San Gabriel Basin, NE. margin, Los Angeles Co.: Shelton, J. S., 1; U. S. G. S., 1, no. 63.
- San Juan Bautista quad.: Allen, J. E., 3.
- Sandstones, Cret., Tert., Los Banos dist.: Daviess, S. N., 1.
- Santa Rosa Mts. area, Riverside Co.: Wright, L. B., 1.
- Shasta Dam, Sacramento River: Gardner, W. I., 1.
- Ship Mtn. iron deposit, San Bernardino Co.: Lamey, C. A., 1.
- Sierra Nevada, S.: Mayo, E. B., 1.
- Sierra Nevada-Death Valley: Hopper, R. H., 1.
- Sixteen-To-One gold-quartz vein, Alleghany: Cooke, H. R., Jr., 1.
- Submarine geology off S. coast: Emery, K. O., 5.

California—Continued.

Petrology—Continued.

- Vulcan iron-ore deposit, San Bernardino Co.: Lamey, C. A., 1.

Physical geology.

- Akoz mine, Mariposa Co.: Wiebelt, F. J., 2.
- Aliso Canyon oil field: Leach, C. E., 1.
- Asymmetrical valleys, San Diego Co.: Emery, K. O., 7.
- Bakersfield Clock Tower, El Tejon Hotel to Lebec: Hackel, O., 1.
- Basement oil production poss.: Cabeen, W. R., 1.
- Batholith rocks, radioactivity: Larsen, E. S., 2.
- Bessemer iron project, San Bernardino Co.: Wiebelt, F. J., 1.
- Blue Ledge cooper-zinc mine, Siskiyou Co.: Hundhausen, R. J., 2.
- Buena Vista Hills oil pool: Burtner, E., 1.
- Calico Mts. area: Henry, D. J., 1.
- Caliente Range: Hill, M. L., 2.
- Carpinteria to Gaviota, road log: Simonson, R. R., 1.
- Cerro Gordo area, Inyo Co.: Merriam, C. W., 1.
- Chromite, Del Norte Co.: Wells, F. G., 1.
- North Coast Ranges: Dow, D. H., 2.
- North Elder Creek area: Rynearson, G. A., 1.
- Coast Ranges, glaucophane schists: Switzer, G., 5.
- Colorado Desert: Cockerell, T. D. A., 1.
- Copper-zinc belt, Sierra Nevada area: Heyl, G. R., 2.
- Cuyama Valley, W., to Maricopa, road log: Hill, M. L., 1.
- Cymric oil field, Kern Co.: McMasters, J. H., 1.
- Death Valley area: Putnam, G. P., 1.
- Del Valle, Ramona oil fields: Matter, J. E., 1.
- Dominquez Hills earthquake, June 18, 1944: Martner, S. T., 1.
- Donner Pass, Sierra Nevada, defm. zone: Hudson, F. S., 1.
- Earthquake swarm, Lassen Volcanic Nat. Park, 1945-46: Robinson, H. B., 1.
- Earthquakes: Byerly, P., 1.
- Central Calif., 1830's: Louderback, G. D., 2.
- 1818-1829: Louderback, G. D., 3.
- Southern: Wood, H. O., 1.
- Southern, 1945-1946: Gutenberg, B., 1.
- East Coalinga Nose area, velocity analysis: Long, G. J., 1.
- Edison oil field, basement complex: Beach, J. H., 2.
- Elwood, Capitan oil fields, Santa Barbara Co.: Simonson, R. R., 2.
- Fluvial surfaces offset by faults, Pasadena area: Buwalda, J. P., 2.
- Gaviota to Santa Maria, road log: Hughes, A. W., 1.
- Geologic sec., Sierra Nevada-Death Valley: Hopper, R. H., 1.

California—Continued.

Physical geology—Continued.

- Glendora volcanics: Shelton, J. S., 2.
 Gold in mesothermal veins: Helke, A., 1.
 Gorman tin dist., Kern Co.: Wiese, J. H., 1.
 Gravity determinations on the Carnegie:
 Forbush, S. E., 1.
 Great Valley thro Tert.: Ferguson, G. C., 3.
 Ground displacement from strong-motion
 accelerograms: Housner, G. W., 2.
 Ground-water table effect on beach ero-
 sion: Grant, U. S., IV, 1.
 Guide Book, Field trip Mar. 1947, oil
 fields: A. A. P. G., 1.
 Hirz Mtn. iron deposit, Shasta Co.: La-
 mey, C. A., 1.
 Imperial Valley earthquake displacement,
 5/18/40: Heumann, F., 1.
 Inyo Range, Bishop quad.: Maxson, J.
 H., 2.
 Iron Hat iron-ore deposits, San Bernar-
 dino Co.: Lamey, C. A., 1.
 Ivanpah quad., SW.: Hewett, D. F., 1.
 Julian-Cuyamaca area, San Diego Co.:
 Creasey, S. C., 1.
 Kern River Basin, Mid., Sierra Nevada:
 Webb, R. W., 1.
 Kramer borate dist., Kern Co.: Gale, H.
 S., 1.
 La Jolla marine solution basins: Emery,
 K. O., 2.
 Landslides, Ventura Ave. oil field: Leach:
 C. E., 2.
 Lassen Volcanic Nat. Park: Killinger, P.
 E., 1.
 Long Beach harbor area, subsidence: Gil-
 luly, J., 2.
 Los Angeles Basin: Wissler, S. G., 2.
 Origin, evolution, Driver, H. L., 1.
 Los Angeles-Santa Paula via oil fields:
 Hazzard, J. C., 1.
 Magnesite vein system, Red Mtn. dist.,
 structural control: Bodenlos, A. J., 1.
 Manix earthquake, Apr. 10, 1947: Richter,
 C. F., 1.
 Maricopa to Cymric oil field: Woodward,
 W. T., 1.
 Marine solution basins, La Jolla: Emery,
 K. O., 2.
 Minarets iron deposits, Madera Co.: Sev-
 ery, C. L., 2; Trask, P. D., 2.
 Monterey fm., siliceous rocks: Bramlette,
 M. N., 1.
 Mother Lode fault zone, Sierra Nevada:
 Heyl, G. R., 1.
 Oak Canyon oil field, Los Angeles Co.:
 Bell, G. R., 1.
 Oak Ridge oil fields, Ventura Co.: Badd-
 ley, E. R., 1.
 Origin, migration, oil into Sespe red beds:
 Bailey, T. L., 1.
 Owens Lake sodium minerals: Dub, G.
 D., 1.
 Oxnard oil field, Ventura area: Hazzard,
 J. C., 3.

California—Continued.

Physical geology—Continued.

- Pala pegmatites, San Diego Co.: Jahns,
 R. H., 5.
 Palos Verdes Hills: Woodring, W. P., 1.
 Periods of local earthquake-waves: Byerly,
 P., 3.
 Pico anticline, Los Angeles Co.: Arleth,
 K., 1.
 Pine Creek, Adamson tungsten mines,
 Inyo Co.: Bateman, P. C., 1.
 Pseudo-bedding, banded gabbro, Tungsten
 Hills: Bateman, P. C., 2.
 Quicksilver deposits, E., W. Mayacmas
 dist., Lake, Napa, Sonoma Cos.:
 Bailey, E. H., 1; Yates, R. G., 1.
 New Idria dist.: Eckel, E. B., 1.
 Sulphur Bank mine, Lake Co.: Ever-
 hart, D. L., 1.
 Ramona quad., igneous, metamorphic
 rocks: Merriam, R. H., 1.
 Reef Ridge, Coalinga dist.: Stewart, R.
 B., 1.
 Refraction, ocean waves, and beach ero-
 sion: Munk, W. H., 1.
 Ridge Route area: Loel, W., 1.
 San Andreas fault: Hill, M. L., 3.
 San Andreas Rift area: Wallace, R. E., 2.
 San Joaquin Valley, S., oil-field accumula-
 tion types: Bryan, J. J., 1.
 San Juan Bautista quad.: Allen, J. E., 8.
 Santa Maria to W. end of Cuyama Val-
 ley: Hughes, A. W., 2.
 Santa Paula, Silver Thread oil fields, Ven-
 tura area: Hazzard, J. C., 2.
 Santa Rosa Mts. area, Riverside Co.:
 Wright, L. B., 1.
 Sea-level variation and Long Beach sub-
 sidence: Leyboldt, H., 1.
 Seismic activity, topog. of sea floor off S.
 Calif.: Clements, T. D., 1.
 Seismic waves, Port Chicago explosion:
 Byerly, P., 2.
 Shasta, California iron-ore deposits: La-
 mey, C. A., 1.
 Shasta Dam, Sacramento River: Gardner,
 W. I., 1.
 Ship Mtn. iron deposit, San Bernardino
 Co.: Lamey, C. A., 1.
 Sierra Nevada, S., structure: Mayo, E.
 B., 1.
 Sixteen-To-One gold-quartz vein, Alle-
 ghany: Cooke, H. R., Jr., 1.
 Submarine geology off S. coast: Emery,
 K. O., 5.
 Tectonic elevation changes, S.: Grant,
 U. S. IV., 3.
 Tejon quad., NE., structure: Wiese, J.
 H., 2.
 Thrust fault zones, Ventura Basin, Shel-
 ler, J. W., 1.
 Twin Lake drainage, Fresno Co.: Adding-
 ton, A. R., 1.
 Ventura to Carpinteria road logs: Red-
 wine, L. E., 1.

California—Continued.

Physical geology—Continued.

- Ventura Basin oil fields: Arthur, J., 1; Bailey, T. L., 2.
 Thrust faulting: Lammers, E. C. H., 2.
 Vulcan iron-ore deposit, San Bernardino Co.: Lamey, C. A., 1.
 Wave erosion, S. coast: Shepard, F. P., 3.
 Wave-types, breaking effect on beaches: Grant, U. S. IV, 2.
 West Newport oil and gas field: Corwin, C. H., 1; Dunlap, W. E., 1, 2.
 Wiley Well dist.: Henry, D. J., 4.
 Yosemite Valley: Matthes, F. E., 3.

Physiographic geology.

- Asymmetrical valleys, San Diego Co.: Emery, K. O., 7.
 Colorado Desert: Cockerel, T. D. A., 1.
 Death Valley area: Putnam, G. P., 1.
 Gaviota to Santa Maria, road log: Hughes, A. W., 1.
 Ground-water table, effect on beach erosion: Grant, U. S., IV, 1.
 Kern River Basin, Sierra Nevada: Webb, R. W., 1.
 Los Angeles Basin, origin, evolution: Driver, H. L., 1.
 Mounds, Central Valley depressions: Hordredge, C. P., 1.
 Oceanography, submarine geology, Scripps Inst., Apr. 1945-47: Sverdrup, H. U., 1.
 Owens Lake sodium minerals: Dub, G. D., 1.
 Pacific, submarine geology studies: Shepard, F. P., 2.
 Palos Verdes Hills: Woodring, W. P., 1.
 Placer gold mines: Averill, C. V., 1.
 Recessional moraines, Sierra Nevada Mtn. valleys: Blackwelder, E. R., 5.
 Refraction, ocean waves, and beach erosion: Munk, W. H., 1.
 San Andreas Rift area: Wallace, R. E., 2.
 San Clements Is.: Griesbach, J. O., 1.
 San Juan Bautista quad.: Allen, J. E., 3.
 Santa Paula, Silver Thread oil fields, Ventura area: Hazzard, J. C., 2.
 Santa Rosa Mts. area, Riverside Co.: Wright, L. B., 1.
 Sierra Nevada-Death Valley: Hopper, R. H., 1.
 Submarine canyons, diving operations: Shepard, F. P., 7.
 Submarine canyons and war research: Shepard, F. P., 4.
 Submarine geology off S. coast: Emery, K. O., 5.
 Submarine photography off coast: Shepard, F. P., 1.
 Ventura to Carpinteria road logs: Redwine, L. E., 1.
 Verdugo-San Rafael Hills area: Strahler, A. N., 5, 6.
 Yosemite Valley: Matthes, F. E., 3.

California—Continued.

Underground water.

- Coalinga oil field: Kaplow, E. J., 1.
 "The Geysers", Sonoma Co.: Bradley, W. W., 4; Vonsen, M., 1.
 Ground-water contamination, Los Angeles: Pentegoff, V. P., 1.
 Ground-water table effect on beach erosion: Grant, U. S., IV, 1.
 Heat-flow value of well: Benfield, E. E., 1.
 Hot springs, Agua Caliente, San Diego Co.: South, M., 1.
 Lake Co., Sulphur Bank quicksilver mine: Everhart, D. L., 1.
 Mayacmas quicksilver dist., Sonoma Co.: Bailey, E. H., 1.
 San Jacinto, Antelope Valleys, ground-water levels: Gleason, G. B., 1.
 Tehama Co. mines: O'Brien, J. C., 1.
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 Adirondack border: Wheeler, R. R., 4.
 Adirondackia, vanishing: Chadwick, G. H., 5.
 Alabama, NE.: Burchard, E. F., 1.
 Alberta, Cripple Creek area: Erdman, O. A., 1.
 Arizona, Apache iron deposit, Navajo Co.: Stewart, L. A., 1.
 Central: Huddle, J. W., 3.
 Dagoon Mts.: Cederstrom, D. J., 2.
 Grand Canyon area: Corle, E., 1; McKee, E. D., 1; Stone, J. F., 1; Van Gundy, C. E., 1.
 Mohawk zinc prosp., Pima Co.: Haury, F. S., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 West, Paleozoic seaways: McKee, E. D., 3.
 Arkansas, Montgomery Co. barite deposits: McElwaine, R. B., 2.
 Arkansas-Okla.-Kans., geol. map: Ireland, H. A., 1; U. S. G. S. 1, no. 52.
 Base of system: Wheeler, H. E., 1.
 Bighorn Basin, Wyo.-Mont.: Wyoming Univ., 1.
 Rim features: Thom. W. T. Jr., 2.
 Tectonic development: Fanshawe, J. R., 1.
 British Columbia, Alcan. Highway Paleozoic sed. rocks: Laudon, L. R., 2.
 Northern: Armstrong, J. E., 2.
 California, Inyo Range, Bishop quad.: Maxson, J. H., 2.
 Iron Hat deposits, San Bernardino Co.: Lamey, C. A., 1.
 Sierra Nevada-Death Valley: Hopper, R. H., 1.
 Vulcan iron deposits, San Bernardino Co.: Lamey, C. A., 1.
 Canada, Norman Wells oil field: Stewart, J. S., 1.
 Ottawa-Cornwall area: Canada G. S., 1.

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- Rocky Mts.: Rasetti, F., 10; Williams, M. Y., 2.
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 Colorado, Alma, Horseshoe dists. lode deposits: Singewald, Q. D., 1.
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 Gilman dist., Eagle Co.: Tweto, O. L., 3.
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 Kokomo mining dist.: Koschmann, A. H., 1, 3.
 La Plata dist.: Eckel, E. B., 2.
 Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
 Rico mining dist., Dolores Co.: Varnes, D. J., 2.
 San Juan region: Burbank, W. S., 6.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 Upper Blue River area, Summit Co.: Singewald, Q. D., 3.
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 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Forest City Basin: U. S. G. S. 1, no. 48.
 Georgia, Murray Co. talc area: Furcron, A. S., 1.
 Greenland, E., faulted area N. of Muskox Fjord: Büttler, H., 1.
 Scoresby Sound area: Rothé, J. P., 1.
 Idaho, geol. map: Ross, C. P., 1.
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 King oil field, Jefferson Co.: Folk, S. H., 1.
 Indiana, E., deep oil wells: Bieberman, D. F., 1.
 Kansas, Arbuckle dolomite, subdivision: Clair, J. R., 1.
 Barton Co. buried hills: Walters, R. F., 1.
 Genesee uplift: Clark, S. K., 1.
 Geol. cross section, Ford Co. to Dallam Co., Tex.: Edson, F. C., 1.
 Kraft-Prusa oil field: Walters, R. F., 3.
 Labrador Penin., E. area: Tanner, V., 2.
 Lipalian interval problem: Snyder, F. G., 1.
 Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.
 South Mtn. fold, defm.: Cloos, E., 3.
 Mexico, Altar dist., Sonora: Arellano, A., R. V., 2.
 Caborca area, NW. Sonora: Cooper, G. A., 1.
 Northern, geol. map: King, P. B., 4.
 Michigan, min. res.: Zuidema, H. P., 2.
 Southeast, well cores: Cohee, G. V., 1.
 Minnesota, NE.: Thiel, G. A., 2.
 Missouri, barite deposits: Mather, W. B., 2.
 Gulf Coastal Plain in SE.: Grohskopf, J. G., 2.
 Lead belt: Wagner, R. E., 1.
 Morgan Co.: Mather, W. B., 1.

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- Ste. Genevieve, St. Francis Cos., SE.: Kidwell, A. L., 6.
 Montana, Cat Creek oil field: Perry, E. S., 2.
 Big Belt Range, N.: Lyons, J. B., 1.
 Great Plains sed. rocks: Perry, E. S., 1.
 Northwest: Sloss, L. L., 1; U. S. G. S. 2, no. 25.
 Oil geology: Emrick, E. R., 1.
 Plains, structure map: Dobbin, C. E., 3.
 Pryor Mts. structure, Bighorn Basin: Blackstone, D. L., Jr., 2.
 Montreal, Canada: Clark, T. H., 1.
 Nevada, Bristol Range: Wheeler, H. E., 2.
 Eureka Corp'n. mines, Eureka Co.: Binyon, E. O., 1.
 Eureka mining dist.: Sharp, W., 1.
 New Brunswick, Sussex, Kings and Queens Cos.: Canada G. S., 1.
 New Hampshire, Mt. Washington quad.: Billings, M. P., 1.
 New Mexico, fluorspar area: Rothrock, H. E., 1.
 Future oil poss.: Bates, R. L., 1.
 Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 Rattlesnake field, San Juan Co.: Hinson, H. H., 1.
 New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1, 2.
 Fort Ann area: Flower, R. H., 7.
 Long Island: Fox, J. T., 1.
 Stissing Mtn.: Knopf, E. F. B., 3.
 Newfoundland, W., trilobites: Troelsen, J. C., 1.
 North America, Gulf of St. Lawrence area: Twenhofel, W. H., 4.
 North Carolina, Cherokee iron deposits: Robertson, A. F., 1.
 Hot springs origin: Stose, G. W., 3.
 Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
 Ouachita Mtn. area: U. S. G. S., 1, no. 66.
 Southern, oil fields: Gouin, F., 1.
 Southwest Antioch oil field: Swesnik, R. M., 1.
 Ontario, Chelmsford area, Sudbury dist.: Canada, G. S., 1.
 Geologic map: Ontario Dept. Mines, 3.
 Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Pennsylvania, high-calcium ls. deposits: Swain, F. M., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Taconic sequence: Stose, G. W., 2.
 Quebec: Hutt, G. M., 5.
 Descriptive geology: Dresser, J. A., 1.
 Major faults, Abitibi region: Norman, G. W. H., 5.
 St. Lawrence Valley: Rasetti, F., 3.
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- South Dakota, Missouri Valley: Petsch, B. C., 1.
 Western, deep well borings: Baker, C. L., 2.
 Tennessee, Caves Cove: Neuman, R. B., 1.
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 Eve Mills area, Monroe Co.: Dunlap, J. C., 1.
 Mascot-Jefferson City dist.: Bridge, J., 1.
 Stiner, Bunch Hollow zinc properties: Sayrs, R. L., 1.
 Tennessee-Virginia dolomites: Prouty, C. E., 2.
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 Ellenburger lss. divisions, K. M. A. oil field: Crowley, A. J., 1.
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 Geologic cross-sec., Dallam Co. to Ford Co., Kans.: Edson, F. C., 1.
 Glass Mts.-Marathon Basin Trip: West Texas, Geol. Soc., 2.
 Llano uplift area: Bridge, J., 2; Bullard, F. M., 1.
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 Pre-Permian fms., Central Basin Platform: Barton, J. M., 1.
 West, pre-Perm. oil devel: Deegan, C. J., 1.
 United States, Appalachian structure: Hietanen, A., 1.
 Appalachians, central, drainage, Newark series: Carlston, C. W., 1.
 Black Warrior Basin, Ala.-Miss.: Melten, F. F., 1.
 Missouri Valley area: U. S. G. S., 3, no. 1.
 Northeast. Basin areas: Lockett, J. R., 1.
 Rocky Mtn. area oil geology: Dobbin, C. E., 2.
 Western, base of: Wheeler, H. S., 1.
 Utah, Drum Mtn. manganese project: King, W. H., 1.
 Duchesne River area: Huddle, J. W., 1; U. S. G. S., 1, no. 75.
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 Little Cottonwood area: Ives, R. L., 2.
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 Pavant Range, Millard Co.: Maxey, G. B., 1.
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 Wah Wah lead-zinc mine, Beaver Co.: Jones, R. L., 1.
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 Blue Ridge ss., Montebello-Glasgow: Chittum, H. T., Jr., 1.
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 Wyoming, Bighorn Basin Paleozoic fms.: Stipp, T. F., 2.
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Ore, prosp., explor., Brit. Col. and Yukon: Irwin, A. B., 1.

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Petroleum, nat. gas devels, 1945-46: Fournier, F. L., 1; Hume, G. S., 1, 3; Weeks, L. J., 2.

Search for: Hopkins, O. B., 2.

Pinchi Lake quicksilver belt: Armstrong, J. E., 4.

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Salt industry, history and devel.: Wilson, H. W., 1.

Sudbury, nickel intrusive dist.: Stanley, R. C., 1.

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Zinc-lead mines, Quebec, Ontario: Bonham, W. M., 1.

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Limestones, W.: Goudge, M. F., 1.

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Pinchi Lake quicksilver belt: Armstrong, J. E., 4.

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- Cephalopoda, Upper Ord., Baffin Is.: Miller, A. K., 18.
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- Brucite for basic refractories: Goudge, M. F., 2.
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- Canadian Rockies: Williams, M. Y., 2.
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 Kirkland Lake structure: Hopkins, H., 1.
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- Eskers N. of Great Slave Lake: Wilson, J. Tuzo, 1.

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- Flin Flon-Mandy area: Stockwell, C. H., 1.
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don, L. R., 1, 2.

Ashcroft area: Duffell, S., 1.

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General geology: Vanderwilt, J. W., 5.
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Golden-Morrison area, Jefferson Co.:
LeRoy, L. W., 1.

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E. W., 1.

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lin, G. F., 1.

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1, 2; Bosco, F. N., 1; Newton, S. M.,
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Rico mining dist., Dolores Co.: Varnes,
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bank, W. S., 9.

Snowmass Mtn. area, Gunnison Co.:
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Thompson, W. O., 1.

Colorado Springs quad., Colo.: McLaugh-
lin, K. P., 1.

Correlation, marine Penn., Colo.-N. Mex.:
Henbest, L. G., 3.

Cross-section, subsurface, Ness Co., Kans.-
Lincoln Co., Colo.: Maher, J. C., 1.

Scott Co., Kans.-Otero Co., Colo.: Mah-
er, J. C., 3.

Trego Co.-Kans.-Cheyenne Co., Colo.:
Collins, J. B., 2.

Forest City Basin: U. S. G. S. 1, no. 48.
Georgia, Sand, Lookout Mts., coal depos-
its: Johnson, V. H., 1.

Greenland, East, coast, 73°-75° and is-
lands: Maync, W., 1.

Faulted area North of Muskox Fjord:
Bütler, H., 1.

Sedimentary petrology: Kleiber, K., 1.
74°-75°: Vischer, G. A., 2.

Jamesonland lowlands: Stauber, H., 1.
Kronprins Christians Land: Nielsen,
E., 1.

Northeast: Ahlmann, H. W., 1.

Sands: Huebscher, H., 1.

Scoresbyland: Bierther, W., 1.

Guatemala, Huehuetenango Dept.: Manó,
J. C., 1.

Idaho, Borah Peak quad.: Ross, C. P., 2.
Geologic map: Ross, C. P., 1.

Last Chance-Horn silver mines, Lava
Creek dist.: Anderson, A. L., 5.

Snake-Salmon Rivers area, Idaho Co.:
Wagner, W. R., 1.

Sulfur deposits area: Staley, W. W., 2.
Teton Co. coal deposits: Staley, W. W., 1.

Illinois, coal field diamond-drill explor.:
Cady, G. H., 1.

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- Correlations, coal beds by plant fossils:
Kosanke, R. M., 1.
Cyclothem system, Penn. classn.: Cady, G. H., 2.
Daisy fluorite mine, Hardin Co.: Muir, N. M., 2.
Geol. map: Weller, J. M., 1.
Hardin Co., Lee mine area: Bishop, O. M., 1.
King oil field, Jefferson Co.: Folk, S. H., 1.
McLeansboro group coal beds, pollen correls.: Kosanke, R. M., 1.
Marine pool, Madison Co.: Lowenstam, H. A., 1.
Mattoon oil field: Kniseley, H. B., 1.
Pope Co. fluorite, zinc mines: Bishop, O. M., 1.
Indiana, Buddha outlier, Mansfield Penn. fm.: Malott, C. A., 2.
Cataract Falls, Owen Co. strata: Malott, C. A., 1, 3.
Spring Mill State Park: Anonymous, 29.
State Parks: Freeman, O. W., 1.
Wyandotte Cave: McGrain, P., 2.
Invertebrata in Penn. correls.: Weller, J. M., 2.
Iowa, clay minerals in soils: Peterson, J. B., 1.
Kansas, Barton Co. buried hills: Walters, R. F., 1, 2.
Central area: Taylor, M. H., 1.
Coal reserves: Abernathy, G. E., 2.
Crude oils: Tulsa Geol. Soc. 1.
Genesee uplift: Clark, S. K., 1.
Geologic cross-sec., Ford Co. to Dallam Co., Tex.: Edson, F. C., 1.
Kinderhook dolomite, Sedgwick Co.: Ver Wiebe, W. A., 2.
Kraft-Prusa oil field: Walters, R. F., 3.
Lansing group, Wilson Co.: Chelikowsky, J. R., 1.
Pottawatomie Co., unconformity: Harned, C. H., 1.
Relationship, crude oils and stratigraphy: Neumann, L. M., 1.
Southeast, strip mines: Abernathy, G. E., 1.
Wabaunsee coals: Schoewe, W. H., 1.
Kentucky, Clinton Co. pools: Jillson, W. R., 5.
Eva Tanguay mines, Crittenden Co.: Starnes, X. B., 3.
Hickory Cane, K-K fluorspar prosp.: Hickman, R. C., 1.
J. D. Price fluorite deposit, Crittenden Co.: Starnes, X. B., 4.
Krausse Estate prosp., Crittenden Co.: Starnes, X. B., 2.
Mineral Ridge-Clay Lick fault system fluorite beds: Muir, N. M., 1.
Moore Hill fluorite: Starnes, X. B., 1.

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- Maryland, W. Penn. clays: Waage, K. M., 1.
Massachusetts, Somerville, Mystic quarries: Palache, C., 3.
Mexico, Altar dist., Sonora: Arellano, A. R. V., 2.
Caborca area, NW. Sonora: Cooper, G. A., 1.
Northern, geol. map: King, P. B., 4.
Yaqui Valley, Sonora: Toron Villegas, L., 2.
Michigan, min. res.: Zuidema, H. P., 2.
Oakland Co.: Bingham, M. T., 1.
Southeast, well-cores: Cohee, G. V., 1.
Microfossils, role in Penn. correls.: Cooper, C. L., 3.
Mississippi, Kilmichael dome: Priddy, R. R., 1.
Mississippian - Pennsylvanian boundary, Rocky Mtn. area: Williams, J. S., 4.
Missouri: Hinchey, N. S., 1.
Barite deposits: Mather, W. B., 2.
Morgan Co.: Mather, W. B., 1.
O'Jack Mining Co. zinc, lead deposits, Jasper Co.: Brichta, L. C., 2.
Phelps lease, Jasper Co.: Brichta, L. C., 1.
Southeast, post-Camb. ig. activity: Kidwell, A. L., 7.
Ste. Genevieve, St. Francois Cos.: Kidwell, A. L., 6.
Montana, Cat Creek oil field: Perry, E. S., 2.
Cut Bank-West Kevin fields: Erdmann, C. E., 2.
Great Plains sed. rocks: Perry E. S., 1.
Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.
Kevin-Sunburst, Cut Bank fields: U. S. G. S., 8, 12, 13.
North Big Belt Range: Lyons, J. B., 1.
Petroleum geology: Emrick, E. R., 1.
Plains, structure contour map, Colo. shale base: Dobbins, C. E., 3.
South-central, Paleozoic, Mesozoic rocks: Gardner, L. S., 1.
Montreal, Canada: Clark, T. H., 1.
Nebraska, Boice sh., new Missn. subsurface fm.: Reed, E. C., 1.
Nevada, Mount Hope mine, lead-zinc, Eureka Co.: Matson, E. J., 1.
Sultan zinc-lead mine, Clark Co.: Gehan, R. W., 3.
New Albany shale: Campbell, G., 1.
New Brunswick: Hutt, G. M., 4.
Honeydale area: Alcock, F. J., 3.
Sussex, Kings and Queens Cos.: Canada G. S., 1.
New Hampshire, Mt. Pawtuckaway quad.: Freedman, J., 1.
Mt. Washington quad.: Billings, M. P., 1.
Paleozoic magmatic series: Billings, M. P., 3.
Plymouth quad.: Moke, C. B., 1.
New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.

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- New Mexico, Atwood copper group, Lordsburg dist.: Huntington, M. G., 1.
 Bishop Cap fluorspar prosp.: Sur, F. S., 1.
 Fluorspar area: Rothrock, H. E., 1.
 Future oil poss.: Bates, R. L., 1.
 Gran Quivira quad.: Bates, R. L., 3.
 Guadalupe Co.: U. S. G. S., 1, no. 44.
 Lake Valley deposits, Sierra Co.: Apell, G. A., 2.
 Las Vegas Basin, Sangre de Cristo foothills: U. S. G. S., 1, no. 54.
 Los Piños Mts.: Stark, J. T., 1.
 Lower Penn. cyclothems: Young, J. A., Jr., 1.
 Lower Rio Puerco area: Wright, H. E., Jr., 1.
 Lucero uplift: U. S. G. S., 1, no. 47.
 Manzano, North Manzanita Mts.: Reiche, P., 1.
 Nacimiento, San Pedro Mts., adjacent plateaus: U. S. G. S., 1, no. 57.
 Northern, Penn.: Read, C. B., 2.
 Northwest Quay Co.: Dobrovolsky, E., 1; U. S. G. S., 1, no. 62.
 Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: Wilpolt, R. H., 1; U. S. G. S., 1, no. 61.
 Peerless lead-zinc mine, Grant Co.: Soule, J. H., 4.
 Pennsylvanian: Read, C. B., 2; Young, J. A., Jr., 2.
 Rattlesnake field, San Juan Co.: Hinson, H. H., 1.
 San Juan Basin oil and gas fields: Colton, R. E., 1.
 Southeast, pre-San Andreas fms. oil zones: King, R. E., 1.
 Newfoundland, E. area: Twenhofel, W. H., 3.
 North America, Gulf of St. Lawrence area: Twenhofel, W. H., 4.
 North America-Europe correlations: Truman, A. E., 1.
 North Carolina, Halifax area: Mundorff, M. J., 2.
 Neuse River Basin: Mundorff, M. J., 3.
 North Dakota, Nesson anticline: Laird, W. M., 1.
 Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.
 Guysborough Co.: MacNeil, D. J., 2.
 Springhill coal field, mine bumps or rock bursts: Phillips, A., 1.
 Strait of Canso area: Ferguson, S. A., 2.
 Ohio, Black Hand mbr., Missn.: Ver Steeg, K., 4.
 Chillicothe test-core studies: Carman, J. E., 2.
 Conodont zones: Hass, W. H., 2.
 Dunkard-Permian boundary: White, G. W., 1.
 Flint: Stout, W. E., 2.
 Geologic map: Bownocker, J. A., 1.
 Ground-water fms.: Bernhagen, R. J., 2.

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- Ohio—Continued.
 Iron-ore bearing fms.: Stout, W. E., 1.
 Scenic geology: Carman, J. E., 1.
 Tuscarawas County: Cummins, J. W., 1.
 Waynesburg coal. Harrison, Belmont Cos.: White, G. W., 1.
 Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
 Antioch pool, Garvin Co.: Turk, L. B., 1.
 Crude oils and stratigraphy: Tulsa Geol. Soc., 1.
 Cumberland oil field: Cram, I. H., 1.
 Johns Valley sh. erratic boulders: Rea, H. C., 1.
 Mayes fm.: Selk, E. L., 1.
 North-central: Okla. City. Geol. Soc., 1.
 Correlations: Lukert, L. H., 1.
 Northeast, Morrow series: Moore, C. A., 3.
 Ouachita Mtn. area: U.S.G.S., 1, no. 66.
 Relationship, crude oils and stratigraphy: Neumann, L. M., 1.
 South Moore oil pool, Burgess sand: Moore, C. A., 2.
 Southern oil fields: Gouin, F., 1.
 Southwest Antioch oil field: Swesnik, R. M., 1.
 West Edmond field: McGee, D. A., 1.
 West Edmond-Huntoon pool reservoirs: Littlefield, M. S., 1.
 West Ouachita Mts.: Hendricks, T. A., 1; Tulsa Geol. Soc., 1.
 Johns Valley sh.: Harlton, B. H., 1.
 Stanley-Jackfork fms.: Harlton, B. H., 1.
 Ontario, Windsor-Sarnia area Paleozoic: Caley, J. F., 1.
 Pennsylvania, Clinton Co. diaspore clays: Foote, R. M., 3.
 High-calcium ls. deposits: Swain, F. M., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Lackawanna Basin origin: Willard, B., 1.
 North Strabane area: Fettke, C. R., 1.
 Pittsburgh area: Leighton, H., 3.
 Smicksburg quad.: Shaffner, M. N., 1.
 Pennsylvanian problems: Wanless, H. R., 2, 3.
 Permian Basin, U. S., hard-rock drilling: Johnston, D., 1.
 Quebec, descriptive geology: Dresser, J. A., 1.
 Shawinigan area: Laverdière, J. W., 1.
 Rangely oil field, Colo.: Newton, S. M., 2.
 Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
 South Dakota, metallic min. deposits: U.S. G. S., 3, no. 13.
 Missouri Valley: Petsch, B. C., 1.
 Western, deep-well borings: Baker, C. L., 2.
 Wind Cave Nat. Park: Anonymous, 13.

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- Tennessee, Chattanooga shale type area:
Hass, W. H., 3.
Hales Bar Dam foundations: Frink, J. W., 1.
Texas, central: Barnes, V. E., 1, 2, 5, 7;
Spivey, R. C., 1.
Building stones: Barnes, V. E., 8.
Ellenburger group: Barnes, V. E., 1;
Cloud, P. E., Jr., 1; Goldich, S. S., 2.
Geologic cross section, Dallam Co. to
Ford Co., Kans.: Edson, F. C., 1.
Glass Mts.-Marathon Basin trip: West
Texas G. S., 2.
Hueco, Franklin Mts.: West Texas G.
S., 1.
Llano Uplift sec.: Bullard, F. M., 1;
Plummer, F. B., 2; Thompson, M. L.,
2.
Lampasas Co.: Damon, H. G., 1.
Pennsylvanian fms.: Cheney, M. G., 3,
4; Plummer, F. B., 2; Thompson, M.
L., 2.
Surface and subsurface correl.:
Cheney, M. G., 4.
Petroleum and gas occurrences: Sellards,
E. H., 3.
Western, pre-Permian fms., Central
Basin Platform: Barton, J. M., 1.
Pre-Permian oil devel.: Deegan, C. J.,
1.
Texas and Oklahoma, Trinity River area
min. res.: Weissenborn, A. E., 1.
United States, Appalachian area, Missn.:
Cooper, B. N., 4.
Appalachian Basin ss.: Rittenhouse, G., 1.
Appalachian structure: Hietanen, A., 1.
Berea, Corry, Cussewago ss. relations:
de Witt, W., Jr., 1; U.S.G.S., 2, no. 21.
Berea, Murrysburg sands: Demarest, D.
F., 1; U. S. G. S., 1, no. 49.
Berea sand pools: Pepper, J. F., 3; U. S.
G. S., 1, no. 69.
Big Horn Basin oil and gas fields:
Pierce, W. G., 1; U. S. G. S., 1, no. 74.
Bitumen in black shales: Gutschick, R.
C., 1.
Black Warrior Basin, Miss.-Ala.: Mel-
len, F. F., 1.
Blue River-South Platte Transmountain
Diversion line area: Haff, J. C., 1.
East Gulf Coast oil poss.: Todd, J. D., 2.
Elk Basin field, Mont.-Wyo.: McCabe,
W. S., 2.
Illinois Basin, Lower Chester correl.:
Swann, D. H., 2.
Mississippian, Mid-continent to Rocky
Mts.: Reed, E. C., 2.
Missouri Valley area: U.S.G.S., 3, no. 1.
Northeast, Basin areas: Lockett, J. R.,
1.
Northern Gulf Coastal Plain: Moody, C.
L., 3.
Osage-Meramec boundary, Missn.: Lau-
don, L. R., 3.
Paleozoic, Appalachian Basin: Ritten-
house, G., 3.

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- United States—Continued.
Pennsylvanian, Colo.-N. Mex.-Utah:
Henbest, L. G., 4.
Lithologic variation: Wanless, H. R.,
4.
Petroleum poss., Black Warrior Basin:
Mellen, F. F., 1.
Picher Field, Okla.-Kans.: Stoiber, R.
E., 1.
Rocky Mtn. area oil and gas fields:
Dobbin, C. E., 1, 2, 4.
Southern Appalachian coal field, Penn.:
Wanless, H. R., 1.
Southern Appalachians, Missn.: Stock-
dale, P. B., 1.
Southwest, Missn.: Stoyanow, A. A., 2.
Utah, Cedar City, Parowan Valleys, Iron
Co.: Thomas, H. E., 2.
Duchesne River area: Huddle, J. W., 1;
U. S. G. S., 1, no. 75.
Green River desert-Cataract Canyon
area: Baker, A. A., 1; U. S. G. S., 1,
no. 55.
Little Cottonwood area: Ives, R. L., 3.
Mercur mining dist.: Young, E. B., 1.
Morgan Penn. fm., Split Mtn.: McCann,
F. T., 1.
Ophir Hill Consolidated mine, Tooele
Co.: Wideman, F. L., 1.
San Juan oil field: Colton, R. E., 2.
Tintic dist.: Kildale, M. B., 1.
Uinta Mts., stratigraphy: Thomas, H.
D., 1.
Wasatch Mts., Provo area: Baker, A.
A., 4; U. S. G. S., 2, no. 30.
West-central, Confusion Range: Bacon,
C. S., Jr., 2.
Whiterocks River-Ashley Creek area,
Uintah Co.: Kinney, D. M., 2; U. S.
G. S., 1, no. 82.
Vermont, Bellows Falls quad.: Kruger, F.
C., 1, 2.
Virginia, Rose Hill oil pool, Lee Co.:
Jillson, W. R., 15.
Washington-Oregon biostratigraphy: Beck,
R. S., 1.
West Virginia, nat. gas horizons: Reger,
D. B., 1.
Southern, Berea sand: Merrels, C. W.,
2nd, 1; U. S. G. S., 1, no. 59.
Well-sample records: Martens, J. H. C.,
1.
Wyoming, Basin oil and gas field, Big
Horn Co.: Hiestand, T. C., 1.
Bighorn Basin Paleozoic fms.: Stipp, T.
F., 2.
Elk Basin anticline oil field: McCabe,
W. S., 1.
Frannie oil field, Park Co.: Brainerd,
A. E., 1.
Good Fortune iron mine: Frey, E., 4.
Hamilton Dome oil field: Krampert, E.
W., 2.
Hartville iron dist., Platte Co.: Frey,
E., 3.
Jackson Hole area Ranges, Paleozoic,
Mesozoic: Wanless, H. R., 5.

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- Lander area phosphate deposits: King, R. H., 3.
- Northwest Wind River Mts.: Baker, C. L., 1.
- Oregon Basin oil field: Walton, P. T., 2, 3.
- Paleozoic fms., Shoshone River Canyon, Cody area: Stipp, T. F., 1.
- Sage Creek dome area: U. S. G. S., 1, no. 53.
- South Wind River Basin: U. S. G. S., 1, no. 60.
- Southeast Wind River Basin: U. S. G. S., 1, no. 51.

Carbon-ratio theory: Deegan, C. J., 7.

Caribbean area, microseisms: Murphy, L. M., 2.

Carnallite.

- New Mexico, Eddy Co.: Lindberg, M. L. L., 2.
- Utah, Grand Co.: Lindberg, M. L. L., 2.
- McCarthy well, Grand Co.: Stringham, B. F., 2.
- Salts cored with oil-field equipment: Severy, C. L., 1.

Carnallite-filled mud cracks in salt clay, N. Mex.: King, R. H., 1.

Carnelian collecting, Wash., Oreg., Wyo.: Bateman, E. S., 1.

Carnotite.

- Colorado, vanadium area: Huleatt, W. P., 1.
- Nature, occurrence, distrib.: Stewart, D., Jr., 2.
- Utah, vanadium area: Huleatt, W. P., 1.

Carolina Bays.

- General: Corlett, E. H., 1.
- Jerome bog, N.C., age: Buell, M. F., 2.
- Origin: Alexander, K. C., 1; Ferguson, J. L., 1; Gudger, E. W., 1; Leonard, F. C., 3.

Carthage gas field, Panola Co., Tex.: Foster, F. K., 1.

Cartography.

- Aerial photography, in map making: Waugh, B. W., 1.
- In struc. mapping, sed. fms.: Nugent, L. E., Jr., 2.
- In geologic training: Smith, H. T. U., 4.
- War development in: Nugent, L. E., Jr., 1.
- California, index to topog. quadrangles: Helm, M. H., 1.
- Caves, mapping: Davies, W. E., 1.
- Classification of topog. elements: Blásquez López, L., 3.
- Coastal delineation from: McCurdy, P. G., 1.
- Cooperative geol. program, U. S.-Mass.: Currier, L. W., 3.
- Engineering applications, aerial reconnaissance: Belcher, D. J., 1.
- Exaggeration, vertical scale of geol. sections: Suter, H. H., 2.
- Geophotometric mapping: Deegan, C. J., 6; Anonymous, 57.

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- Gold region, Calif., 1848-1857 maps: Wheat, C. I., 1.
 - Graphic locator for geol. mapping: Varnes, D. J., 1.
 - Labrador Peninsula, E. area: Tanner, V., 2.
 - Location-designation problems: Ives, R. L., 18.
 - Log map, new type subsurface map: Bower, T. H., 1.
 - Map, aerial photograph reading: Mil. Ser. P. C., 1.
 - Map Information Office, U. S. Geol. Survey: Fuechsel, C. F., Jr., 1.
 - Map-projection demonstration apparatus: Collins, R. F., 1.
 - Map projections: Chamberlin, W., 1.
 - New Hampshire, areal mapping program: Billings, M. P., 5.
 - Newfoundland-Labrador area: Tanner, V., 2.
 - Oregon, topog., geol. mapping, 1946: Addington, J. E., 5.
 - Pedometer value, explor. rough terrain: Mullerried, 4.
 - Photogrammetric mapping and the war: Abrams, T., 1.
 - Photographic aid: Wengerd, S. A., 1.
 - Plastic-model relief maps: Weed, M., 2.
 - Reconnaissance mapping with trimetrogon: U. S. Army Air Forces, 1.
 - Search for concealed deposits: Lasky, S. G., 2.
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 - Tilt corrections, math., for aerial photos.: Van Camp, C. P., 1.
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 - California, contact metamorphic deposits: Page, L. R., 1.
 - Transport, disposition: Smith, F. G., 1.
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- Air photographs, collections of: Lang, A. R., 4.
 - Canada Bur. Mines, index of repts.: Canada Bur. Mines, 1.
 - Meteorites, largest known of the world: Leonard, F. C., 15.
 - Meteoritic falls of the world: Leonard, F. C., 9.
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- Catastrophism, seas, pal. significance: Gunter, G., 3.
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 - Cause and sequence of glaciation: Lewis, G. N., 1.

Caves.

- Alabama, Sewanee area: Kirby-Smith, H. T., 1; Templeton, H. M., Jr., 1.
 Arizona, Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 Exploration of: Stone, R. W., 2.
 General: Stephenson, W. W., 2.
 Indiana, Spring Mill State Park: Anonymous, 29.
 State Parks: Freeman, O. W., 1.
 Wyandotte Cave: McGrain, P., 2.
 Mammoth Cave, Ky.: Lix, H. W., 1.
 Mapping of: Davies, W. E., 1.
 Maryland, survey of: Muma, M. H., 2.
 Mexico, Cacahuamilpa Cave: Craun, V. S., 1.
 Terán area, Aug. 1944, subsidence: Mullerried, 2.
 Missouri, Cherokee Cave, *Platygonus*, extinct peccary: Simpson, G. C., 5.
 Newfoundland, Big Oven sea cave: Kindle, C. H., 1.
 Nipissing Great Lakes: Stanley, G. M., 1.
 Ohio, scenic geol.: Carman, J. E., 1.
 Settling, natural distortions in: Stephenson, W. J., 1.
 South Dakota, Wind Cave Nat. Park: Anonymous, 13.
 Tennessee, E., blowing caves: Money-maker, B. C., 1.
 Hales Bar Dam foundations: Frink, J. W., 1.
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 United States, National Parks: Melbo, I. R., 1.
 Wonders underground: Janssen, R. E., 4.
 Virginia, Gibson's Hole, Augusta Co.: Robertson, J. T., 1.
 Giles Co., Goodwin Ferry Cave: Krinitzsky, E. L., 1.
 Undeveloped caves: McGill, W. M., 2.
 Wisconsin, Crystal Cave: Vanasse, T. C., 1.
- Celestite.**
 California, Los Banos dist. ss.: Daviess, S. N., 1.
 Kansas, crystals: Graffham, A. A., 2.
 Michigan, Rockwood quarry: Bay, J. W., 2.
 Ohio, Clay Center min. loc.: McAlister, R. F., 1; Mihelcic, J. F., 1.
 Texas: Dennis, W. E., 3; Evans, G. L., 3.
 Central min. area collecting: Moore, J. R., III, 1.
 Mineral res.: Sellards, E. H., 4.
 Texas and Oklahoma, Trinity River area: Weissenborn, A. E., 1.
 Utah, San Rafael Swell area: Crawford, A. L., 2.
 Cellulose peel vs. petrotome secs. in paleobot. research: Arnold, C. A., 5.
 Cenozoic, undifferentiated.
 United States, Missouri Valley: U. S. G. S., 3, no. 1.
 Center of origin theory: Metcalf, Z. P., 1.

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Economic geology.

- Mineral industry: Manó, J. C., 4.
 Petroleum devels., 1946: Weeks, L. J., 2.

Historical geology.

- Geologic map: Mullerried, 1.
 Petroliferous province: Woodring, W. P., 2.
 Structure of: Stille, H. W., 1.

Paleontology.

- Nautiloidea, Tert.: Miller, A. K., 15.

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- Bauxite, strat., origin: Harder, E. C., 1.
 Structure of: Stille, H. W., 1.
 Volcanoes: Coleman, S. N. M., 1.

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- Alaska, Tuxedni Juras. ss. fauna: Kellum, L. B., 1.

- Alaskocerans and the Plectoceratidae: Flower, R. H., 3.

- Alberta, Highwood-Elbow area faunas: Allan, J. A., 2.

- Jernie fm. Juras. fauna: Warren, P. S., 2.

- Ammonite, giant, Cret., Mont.: Miller, A. K., 4.

- Ammonoidea, Allegheny Penn. fm., Ohio: Miller, A. K., 3.

- Mexico, S., Perm.: Guiza, R., Jr., 2.

- Arctic America, Ellesmere Land Camb.-Ord. faunas: Poulsen, C., 2.

- Baculites, Cret., Saskatchewan: Robinson, H. R., 1.

- Beyrichoceras, goniatite, Missn. Boone fm., Mo.: Miller, A. K., 7.

- British Columbia, NE., Upper Trias. faunas: McLearn, F. H., 2.

- California, Reef Ridge fauna: Stewart, R. B., 1.

- Canada, fauna, Ord., SW. Arctic Archipelago: Miller, A. K., 6.

- Southeast Baffin Is., Upper Ord.: Miller, A. K., 18.

- Mackenzie River Valley Cret. fauna: Warren, P. S., 1.

- Gayugoceras, Sil., N. Y.: Flower, R. H., 4.
 Cincinnati area, U. S., Ord.: Flower, R. H., 2.

- Cuba, Camagüey dist.: Albear y Franquiz, J. F. de, 1.

- Cyclolobus, Perm., E. Greenland: Miller, A. K., 1.

- Diestoceras, Ord., N.-cent. Ky.: Jillson, W. R., 14.

- Egan collection, Sil. Invertebrata, N. Am.: Ball, J. R., 1.

- Endolobus, Greenbrier Missn. ls., Pa.: Miller, A. K., 9.

- Faunas, Conemaugh series, W. Pa.: Miller, A. K., 10.

- Fossil lists, Pittsburgh area, Pa.: Leighton, H., 3.

- Pennsylvanian, Texas: Plummer, F. B., 3.

- Winterset Penn. ls., Mo.: Miller, A. K., 13.

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- Greenland, East, Cret.: Spath, L. F., 1.
 East, 74°-75°: Vischer, G. A., 2.
 Haiti, Cret.: Reeside, J. B., Jr., 1.
Heminautilus etheringtoni, nuclear whorls:
 Durham, J. W., 3.
Holochoanites are endoceroids: Flower, R.
 H., 5.
 Illinois, Cherry Valley area: Smith, V.
 R., 1.
 Invertebrata, Atlantic Coastal Plain, deep-
 well fauna: Richards, H. G., 3.
 Koninckioceras, Permian, Texas: Miller,
 A. K., 11.
 Manitoba, Ord. fauna, Hudson Bay, west
 shore: Miller, A. K., 14.
 Mexico, Missn. Caballero fm. fauna:
 Miller, A. K., 8.
 Mississippi, Lee Co. faunas: Vestal, F.
 E., 1.
 Missouri, Ord., with subterminal apertures:
 Miller, A. K., 2.
 Morphology: Flower, R. H., 2.
 Nautiloidea, Allegheny, Ohio: Sturgeon,
 M. T., 1.
 North American Tertiary: Miller, A.
 K., 15.
 New Mexico, Texas, Mid. Perm.: Clifton,
 R. L., 1.
 New York, Catskill, Kaaterskill quads.
 faunas: Chadwick, G. H., 1.
 Clinton fauna, W. cent.: Gillette, T., 1.
 Ordovician nautiloids: Flower, R. H., 6.
 Ohio, Cincinnati area: Bucher, W. H., 1.
 Parapopanoceras Trias. fauna, NE. British
 Columbia: McLearn, F. H., 1.
 Paratrachyceras, Trias. ammonoid genus:
 McLearn, F. H., 4.
 Pennsylvania, Pittsburgh area, hist.: Leigh-
 ton, H., 3.
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wyominensis, variation, ontogeny:
 Haas, O., 3.
 Protrachyceras, Trias. ammonoid genus:
 McLearn, F. H., 5.
 Quebec, faunas: Dresser, J. A., 1.
 Simard map area faunas: McGerrigle,
 H. W., 1.
 Tennessee, Great Smoky Mts. Nat. Park
 fauna: Neuman, R. B., 2.
 Texas, Perm., Colorado River Valley:
 Miller, A. K., 12.
 Permian, Mid., Texas and N. Mex.:
 Clifton, R. L., 1.
 Vernon shale fauna, Sil., N. Y.: Flower,
 R. H., 8.
 Cerium, N. Am. gravels: Roots, E. F., 1.
 Cerussite.
 Missouri, Fredericktown mining dist.:
 Kidwell, A. L., 4.
 North America, desert minerals: Belz, C.
 A., 2.
 Pennsylvania, Wheatley mines area:
 Thomas, C. A., 7.
 Chalcantinite, Alpine Co., Calif.: Nichols, J.
 B., 1.

Chalcedony.

- Arizona, Aguilar area: Treolar, T., 1.
 Superstition Mtn. area: Shaw, V., 4.
 California, Calico Mts. area: Henry, D.
 J., 1.
 Chuckawalla Mts., roses: Schweitzer, C.
 G., 1.
 Kern Co. collecting: Henry, D. J., 3.
 Lead Pipe Springs, blue agates: Rogers,
 A. F., 6.
 Wiley Well dist. collecting: Henry, D.
 J., 4.
 Idaho, gem-minerals: Fernquist, C. O., 1.
 Kansas: Graffham, A. A., 2.
 Mexico, Estado Aguascalientes: Lopez G.,
 F., 1.
 Nevada, Steamboat Springs: Gianella, V.
 P., 3.
 Roses, Chuckawalla Mts., Calif.: Schweit-
 zer, C. G., 1.
 Utah, Jericho field: Hayes, J. J., 2.
 Washington, Nizina dist. deposits: Miller,
 D. J., 1.

Chalcocite.

- Alaska, Nizina dist. deposits: Miller, D.
 J., 1.
 Arizona, San Manuel copper prospect:
 Steele, H. J., 1.
 Massachusetts, Warren St. quarry, Brigh-
 ton: Palache, C., 3.
 New Jersey, Flemington copper mine:
 Zodac, P., 1.
 New Mexico, Stauber copper mine, Guade-
 lupe Co.: Holmquist, R. J., 2.

Chalcopyrite.

- Alaska, Kasaan Penin.: Warner, L. A., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 British Columbia, Britannia mines No. 8
 ore bodies: Irvine, W. T., 1.
 Colorado, Jamestown dist. fluorspar de-
 posits: Goddard, E. N., 1.
 Costa Rica, Monte Aguacate mine: Rex,
 R., 1.
 Greenland: Pauly, H., 1.
 Idaho, Snake-Salmon Rivers area, Idaho
 Co.: Wagner, W. R., 1.
 Kansas, Plattsburg ls.: Graffham, A. A.,
 1.
 Massachusetts, Holland St. quarry, Somer-
 ville: Palache, C., 3.
 Mexico, Maravatio-Zitacuaro dists., Micho-
 acán: Flores, T., 1.
 Missouri, Fredericktown mining dist.: Kid-
 well, A. L., 4.
 Morgan Co.: Kidwell, A. L., 2; Mather,
 W. B., 1.
 Silver Mine area: Kidwell, A. L., 1.
 New Jersey, Flemington copper mine:
 Zodac, P., 1.
 Rudeville, Windsor quarry: Zodac, P., 5.
 New Mexico, Atwood copper group, Lords-
 burg dist.: Huntington, M. G., 1.
 Newfoundland, Baie Verte-Mings Bight
 area: Watson, K. D., 1.
 Quebec, Desvaux Lake area, Dasserat Tp.,
 poss.: Auger, P. E., 2.

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- Vermont, Orange Co. copper mines: Jacobs, E. C., 2.
 Washington, Mt. Rainier Nat. Park: Daner, T., 2.
 Wyoming, Encampment area: Platt, R. E., 1.

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- Mexico, Maravatio-Zitacuaro dists. Michoacán: Flores, T., 1.
 Michoacán, N. area: Blásquez López, L., 4.
 Tlaxcala: Blásquez López, L., 1.
 Mississippi, Lee Co. min. res.: Vestal, F. E., 1.

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- British Columbia: Hutt, G. M., 6.
 California, Long Beach subsidence: Leopoldt, H., 1.
 South, tectonic elevation changes: Grant, U. S., IV, 3.
 Canadian Arctic, Victor Is. area: Washburn, A. L., 1.
 Continental shelves, origin: Umbgrove, J. H. F., 3.
 Coral-reef hypotheses: Stearns, H. T., 2.
 Greenland, NE.: Ahlmann, H. W., 1.
 South and SE.: Boegvad, R., 1.
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 Hawaiian Islands: Stearns, H. T., 1.
 Labrador Penin., E. area: Tanner, V., 2.
 Massachusetts, Grassy Is., Taunton River: Johnson, F., 2.

Mexico, provinces, geol., geog.: Ordóñez, E., 2-a.

New Jersey, Piedmont, Coastal Plain post-Trias, devel.: Thom, W. T., Jr., 4.

United States, Atlantic Coast evolution: Thom, W. T., Jr., 3.

Gulf Coastal Plain, historic times diastrophism: Sheets, M. M., 1.

High Plains drainage: Smith, H. T. U., 5.

Charny fm. for Sillery, Quebec: Rasetti, F., 3.

Charts correlating optical properties with composition: Kennedy, G. C., 4.

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Pareiasaurs vs. placodonts, as turtle ancestors: Gregory, W. K., 1.

Testudo, Oligocene, Wyo.: Gilmore, C. W., 2.

Tortuga, Cret., Chiapas, Mex.: Mullerried, F. K. G., 1-a.

Chemical analyses of minerals: Burwell, A. L., 3.

Chemical aspects of petroleum origin: Oakwood, T. S., 1.

Chemical composition and paragenesis, biotite micas: Nockolds, S. R., 1.

Chemical elements, devel. of: Heinrich, E. W., 5.

Chemical prospecting: Rankama, K. K., 4.

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Bermuda, preglacial history: Moore, H. B., 1.

Idaho, Lemhi area; Shoup, G. E., 1.

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Illinois, collecting minerals: McClure, S. M., 1.

Kansas, cent., Siluro-Dev. strata: Taylor, M. H., 1.

Ogallala fm. silicified rock: Frye, J. C., 4.

Mexico, origin lenses in lss., Soyatal: White, D. E., 3.

Minnesota, Mesabi range: Gruner, J. W., 1.

Missouri, Columbia area: Trefethen, J. M., 2.

Phelps lease, Jasper Co.: Brichta, L. C., 1.

Ohio: Stout, W. E., 2.

Oklahoma, W. Ouachita Mts.: Tulsa Geol. Soc., 1.

Texas, Ellenburger group: Cloud, P. E., Jr., 1.

Chevkinite, Mohave Co., Ariz.: Kauffman, A. J., Jr., 1.

Chips from the blasted moon: Nininger, H. H., 4.

Chiton, fossil lists, Pittsburgh area, Pa.: Leighton, H., 3.

Chlorastrolite, Keweenaw Co., Mich.: Luoma, H. L., 1.

Chondrodite.

New Jersey, McAfee quarry: Zodiac, P., 2.

Rudeville, Windsor, quarry: Zodiac, P., 5.

New York, Mt. Adam and Pine Island: Cosminsky, P. R., 1.

Chondrodite and norbergite, synthesis by dry fusion: Rankama, K. K., 2.

Chromite.

Alaska, Red Mtn., Kenai Penin.: Rutledge, F. A., 1.

Southeast, ultrabasic rocks: Kennedy, G. C., 2.

California, Coast Ranges, N.: Dow, D. H., 2.

Del Norte Co.: Wells, F. G., 1.

Los Banos dist. ss.: Daviess, S. N., 1.

North Elder Creek area; Rynearsop, G. A., 1.

Tehama Co.: O'Brien, J. C., 1.

Correlation with containing rocks: Thayer, T. P., 1.

Cuba: Calvache, A., 1.

Camagüey Prov.: Guild, P. W., 2.

Moa dist.: Guild, P. W., 1.

Kansas, Bala intrusive, Riley Co.: Dreyer, R. M., 1.

Maryland: Ostrander, C. W., 1.

Montana, Red Lodge area: James, H. L., 1.

North Carolina, industrial minerals: Stuckey, J. L., 1.

Oregon, Coos Bay area: Hundhausen, R. J., 1.

Map of min. deposits: Oregon Dept. Geol. Min. Indust., 1.

Southern, black beach sands: Griggs, A. B., 1.

Quebec, Orford area: Fortier, Y. O., 2.

Texas, min. res.: Sellards, E. H., 4.

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United States, Missouri Valley area:
U. S. G. S., 3, no. 1.

Chromium.

British Columbia, Ashcroft area: Duffell, S., 2.

Manson Creek, Cassiar dist.: Canada G. S., 1.

Michigan, Marquette, Gogebic ranges: Gruner, J. W., 3.

Quebec, Quebec Central Ry. area: Dawson, A. S., 1.

Chronology, Pacific Northwest, post-glacial forest succession: Hansen, H. P., 3.

Chrysocolloids.

Arizona, Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.

San Manuel copper prospect: Steele, H. J., 1.

Michigan, conglomerate: Luoma, H. L., 2.

New Jersey, Flemington copper mine: Zodac, P., 1.

Chrysoprase.

California, Wiley Well dist. collecting: Henry, D. J., 4.

Chrysotile asbestos, deposits in massive serpentine: Messel, M. J., 1.

Cinnabar. See also Quicksilver.

Alaska, SW. deposits: Webber, B. S., 2.

California, Almaden placers: Bailey, E. H., 3.

The Geysers area: Vonsen, M., 1.

Mayacmas dist.: Bailey, E. H., 1; Yates, R. G., 1.

New Idria dist.: Eckel, E. B., 1.

Mexico, Cuarento dist., Durango: Gallagher, D., 1.

El Cuarenta min. zone, Durango: Pérez Siliceo, R., 4.

Nevada, Steamboat Springs: Gianella, V. P., 3; White, D. E., 5.

Oregon, Glass Buttes deposits: Reed, G. C., 2.

Horse Heaven mine: Lewis, F. E., 1.

Texas, Terlingua deposits: Evans, A. M., 1.

Cirques. See also Glacial geology.

Labrador Penin., E. area: Tanner, V., 2.

Clarence King and Henry Adams, friendship: Dickason, D. H., 1.

Clark Fork, Idaho, minerals, determination: Anderson, A. L., 2.

Cirripedia. See also Crustacea.

Greenland, West, faunas: Laursen, D., 1.

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Amphibia, Reptilia: Colbert, E. H., 1.

Diadectidae, N. Am. Reptilia: Olson, E. C., 2.

Faults: Hill, M. L., 5.

Highway engineering, rocks: Runner, D. G., 1.

Igneous minerals and rocks: Shand, S. J., 2; Wahlstrom, E. E., 1.

Intraspecific categories, invertebrate pal.: Newell, N. D., 2.

Kansas, Vertebrata: Lane, H. H., 1.

Meteorite falls: Leonard, F. C., 4.

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Ordovician, Lower Middle, Va., Tenn.: Prouty, C. E., 1.

Ostracoderms, species, problems of: Robertson, G. M., 1.

Ostreidae, major groups: Stenzel, H. B., 5.

Paramyidae, Tert. rodents: Wood, A. E., 4.

Pennsylvanian fms., Tex.: Plummer, F. B., 3.

Reptilia, Amphibia: Colbert, E. H., 1.

Rivers, numeric indices for study: Blásquez López, L., 2.

Rocks, classn. by age-ratio: Lane, A. C., 4.

Sand: Smith, E. R., 2.

Sedimentary rocks: Krynine, P. D., 2; Shrock, R. R., 7.

Seeds, Paleozoic: Hoskins, J. H., 2.

Soils, identification: Casagrande, A., 1.

Systematics and the origin of species: Mayr, E., 2.

Taxonomic characters, relative value: Just, T., 2.

Texas, Lower Penn., Llano region: Plummer, F. B., 2.

North-central, Penn.: Cheney, M. G., 3.

Topographic elements: Blásquez López, L., 3.

United States, SE., sheet deposits: Jahns, R. H., 6.

Vermont, Ord. Chazy: Kay, G. M., 2.

Virginia, Shenandoah Valley Lower-Mid. Ord.: Cooper, B. N., 1.

Clay. See also Bentonite; Fire clay; Kaolin.

Alabama: SE. Geol. Soc., 2.

Southeast: MacNeil, F. S., 1.

Alaska Railroad belt, nonmetalliferous deposits: Waring, G. A., 2.

Alberta, Highwood-Elbow area: Allan, J. A., 2.

Wapiti-Cutbank area: Allan, J. A., 1.

Alteration studies: Kerr, P. F., 2.

Arizona, Duncan Basin: Halpenny, L. C., 1.

Paradise Valley, Maricopa Co.: McDonald, H. R., 1.

Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.

Arkansas, bauxite-kaolin relations: Goldman, M. L., 1.

Bermuda, preglacial history: Moore, H. B., 1.

British Columbia: Hutt, G. M., 6.

Princeton coal field: Hughes, E. R., 1.

California, hardpan, claypan in San Joaquin soil: Nikiforoff, C. C., 1.

Kramer borate dist.: Gale, H. S., 1.

Paloma oil field, Stevens sand: Miller, K. T., 1.

Canada, Lake Agassiz Basin: Maynard, J. E., 3.

Claypan soil, genesis: Nikiforoff, C. C., 2.

Colorado, construction materials: U. S. G. S., 3, no. 10.

Golden area, montmorillonite-nontronite: Schlocker, J., 1.

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Metals, nonmetals, fuels: Vanderwilt, J. W., 5.

Cuba: Calvache, A., 1.

Discs, exper. invs.: Williamson, W. O., 1.

Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.

Massive kyanite: McVay, T. N., 1.

Gulf of Mexico, recent changes in sedimentation: Trask, P. D., 3.

Hawaii, Kahuku Point, Oahu, Pleist. lithified: Chapman, R. W., 1.

Soils, differential thermal analysis: Dean, L. A., 1.

High temperature effects: Grim, R. E., 6.

Idaho, Benson deposit, origin: Allen, V. T., 5.

Illinois, collecting minerals: McClure, S. M., 1, 2.

Indiana soils: Bushnell, T. K., 1.

Influence on oil-sand water conductivity: Bates, T. F., 1.

Iowa, min. res.: Hershey, H. G., 1.

Minerals in soils: Peterson, J. B., 1.

Kansas, Arkansas River Valley, Hutchinson area: Williams, C. C., 2.

Kaolin, related minerals, structure: Perkins, A. T., 1.

Kentucky, Gulf Embayment area: Roberts, J. K., 2.

Maine: Trefethen, J. M., 3.

Manitoba, Miami-Deerwood area bentonites: Cameron, E. L., 1.

Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 2.

Western, Penn.: Waage, K. M., 1.

Mexico: Knižek, J. O., 2.

Alunitic clays: Knižek, J. O., 1.

Estado Michoacán, N. area: Blásquez López, L., 4.

State of Zacatecas, min. res.: Gonzalez Reyna, J., 2.

Tlaxcala: Blásquez López, L., 1.

Michigan, mineral collecting locs.: Parsons, W. H., 1.

Port Huron moraines: Bergquist, S. G., 1.

Mineral mixtures, thermal curves: Grim, R. E., 3.

Reaction with organic cations: Grim, R. E., 3.

Mississippi, Itawamba Co.: Vestal, F. E., 2.

Lee Co.: Vestal, F. E., 1.

Missouri, Cheltenham fireclay origin: Keller, W. D., 1.

Mineral res.: Keller, W. D., 2.

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Molding sands, dry, bonding action: Grim, R. E., 2.

Montmorillonite minerals: Ross, C. E., 1.

Most indispensable minerals: Keller, W. D., 8.

Nebraska, Pleist. deposits: Condra, G. E., 1.

Nevada, Steamboat Springs minerals: Gianella, V. P., 3.

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New Brunswick: Hutt, G. M., 4.

New Jersey, differential thermal analyses: Cuthbert, F. L., 2.

New Mexico, Carlsbad area, carnallite-filled mud cracks: King, R. H., 1.

New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

Genesee Gorge sediments: Alling, H. L., 1.

Long Island: Fox, J. T., 1.

North America, bentonites: Dérivé, M., 1.

North Carolina, ceramic min. deposits: Greaves-Walker, A. F., 1.

Cherokee iron deposits: Robertson, A. F., 1.

Dinnerware material: N. Car. Dept. C. D., 1.

Industrial minerals: Stuckey, J. L., 1.

Kaolins: Stuckey, J. L., 2.

Raw materials for cement: Adair, R. B., 1.

Spruce Pine dist.: Olson, J. C., 1; Parker, J. M., III, 1.

North Dakota, construction materials: Shride, A. F., 1: U.S.G.S., 3, no. 14.

Keene dome, McKenzie Co.: Nevin, C. M., 2.

Ohio, fire clays as foundry bond-clays: Dunbeck, N. J., 1.

Mineral res.: Stout, W. E., 3.

Oil sands, content: Bates, T. F., 3.

Oklahoma, res.: Winburn, H. L., 1.

Ontario, clay belt landforms: Hills, A., 1.

Onakawana lignite, Moose Basin:

McLaren, D. C., 5.

Orilla area: Deane, R. E., 1.

Parry Sound area: Satterly, J., 1.

Robb-Jamieson area: Berry, L. G., 1.

Sarnia dist. Pleist.: Legget, R. F., 2.

Oregon, Columbia Co. mines: Kelly, J. V., 2.

Horse Heaven quicksilver mine: Lewis, F. E., 1.

Pacific Northwest min. res.: Appleton, J. B., 1.

Panama, Canal bed: Bowman, W. G., 1.

Pennsylvania, Clinton Co. diaspore clays:

Foose, R. B., 3.

Hollidaysburg-Huntington quads.: Butts, C., 1.

Pittsburgh area: Leighton, H., 3.

Vandergrift min. locs.: Hamilton, H. V., 1.

White Rocks area: Foose, R. M., 1.

Petroleum poss., regional: Reeves, F., 1.

Prince Edward Island, Canada: MacPherson, A. R., 1.

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Saint Louis area landslide: Morin, L. G., 1.

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- Research and oil devel. problems: Griffiths, J. C., 1; Grim, R. E., 4.
- Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
- Sauconite: Ross, C. S., 2.
- South Dakota, Black Hills bentonites: Knechtel, M. M., 1.
- Missouri Valley: Petsch, B. C., 1.
- Sioux Falls area: Rothrock, E. P., 3.
- Tennessee, Clarksburg area, Carroll Co.: Whitlatch, G. I., 1.
- Texas, min. res.: Cunningham, W. A., 1; Sellards, E. H., 4.
- Silver Eagle zinc deposit: Dennis, W. E., 2.
- Typical clays: Nobles, M. A., 1.
- Waller, Harris Cos.: Beckelhymer, R. L., 1.
- Texas and Oklahoma, Trinity River area: Weissenborn, A. E., 1.
- Thermal curves, mineral mixtures: Grim, R. E., 5.
- Trinidad, research and oil devel. problems: Griffiths, J. C., 1.
- Soil genesis: Rodrigues, G., 1.
- United States, midwest min. res. map: Midwest Research Inst., 1.
- Missouri Valley area: Dow, D. H., 1; U. S. G. S., 3, no. 1.
- Southeast coastal plain soils: Coleman, R., 1.
- Western, fm. of high-alumina clays: Allen, V. T., 1.
- Utah, Pavant Valley, Millard Co.: Dennis, P. E., 1.
- Weathering agent, acid: Keller, W. D., 7.
- Wyoming, bentonite: Fisk, H. G., 1.
- Construction materials, nonmetallics: Claibough, S. E., 1; U. S. G. S., 3, no. 9.
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- Clays, related minerals, high-temperature effects: Grim, R. E., 6.
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- Arizona, W., Paleozoic seaways: McKee, E. D., 3.
- Wisconsin, Rufus beach, Lake Superior concretions: Knowlton, F. G., 1.
- Cleaning mineral grains for petrographic study: Gilbert, C. M., 1.
- Cleavage, olivine, Dunsmuir, Calif.: Hawkes, H. E., Jr., 2.
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- Cleiophanes, Sunrise Mtn., N. J., fluorescence: Hayes, W. H., 1.
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- Climate, Pacific NW, U. S. postglacial forest succession: Hansen, H. P., 3.
- Climatic variations, N., affecting geotherm initial: Lane, A. C., 3.
- Clinocllore, Eden Mills quarry, Vt.: Frondel, C., 2.
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- Nevada, Majuba Hill: Gianella, V. P., 1; Palache, C., 2.
- Utah: Palache, C., 2.
- Clinohumite, Dillon area, Mont.: Lindberg, M. L. L., 3.
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- Alaska, Arctic area poss.: Toenges, A. L., 3.
- Matanuska Valley field: Barnes, F. F., 1; Payne, T. G., 1.
- Nelson Is. collecting: Waskey, F. H., 1.
- Nenana field, Healy Creek: Marstrand, H. J. K., 1.
- Point Barrow, Wainwright areas: Sanford, R. S., 1.
- U. S. Geol. Survey min. invs., 1943-44: Reed, J. C., 1.
- Alberta, Alexo area: Canada G. S., 1.
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- Canadian Pacific Ry. area poss.: Hutt, G. M., 3.
- Cripple Creek area: Erdman, O. A., 1.
- Edmonton fm., Red Deer Valley: Sternberg, C. M., 2.
- Fall Creek area: Canada G. S., 1.
- Foothills, Athabaska-Ram Rivers: McKay, B. R., 2.
- Gregg Lake area, poss.: Irish, E. J. W., 1.
- Highwood-Elbow area: Allan, J. A., 2.
- Mineral res.: Hooke, A. J., 1.
- Moberly Creek area poss.: Lang, A. H., 2.
- Saunders map area: Canada G. S., 1.
- Wapiti-Cutbank area: Allan, J. A., 1.
- Arizona, coal fields: Andrews, D. A., 1.
- Coal Mine Canyon: Brady, L. F., 1.
- British Columbia: Fieldner, A. C., 1; Hutt, G. M., 6.
- Carbon Creek-Mount Bickford area: Mathews, W. H., 2.
- Nanaimo field: Buckham, A. F., 1, 2.
- Nicola, Kamloops, Yale dists.: Canada G. S., 4.
- Northern: Armstrong, J. E., 2.
- Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
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- Canada, fields and reserves: MacKay, B. R., 1.
 Western, lignite: Cowie, W. G., 1.
 Canadian Arctic, Victor Is. poss.: Washburn, A. L., 1.
 Carbon-ratio theory: Deegan, C. J., 7.
 Colorado, Canyon City area: Blum, V. J., 1.
 Coal Creek dist., Gunnison Co.: Toenges, A. L., 2.
 Metals, nonmetals, fuels: Vanderwilt, J. W., 5.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Correlations by fossil spores and pollen: Wilson, L. R., 3.
 Plant microfossils in: Kosanke, R. M., 1.
 Formation: Schopf, J. M., 3.
 General: Thiessen, R., 1.
 Georgia, Lookout Mtn., Sand Mtn. seams: Troxell, J. R., 1.
 Greenland, East, Kap Hope area: Rosenkrantz, A., 1.
 Idaho coal fields: Andrews, D. A., 1
 Teton Co.: Staley, W. W., 1.
 Illinois, coal-field diamond-drill explor.: Cady, G. H., 1.
 McLeansboro group coal beds, pollen correls.: Kosanke, R. M., 1.
 Kansas, reserves: Abernathy, G. E., 2.
 Strip mines, SE.: Abernathy, G. E., 1.
 Wabaunsee group: Schoewe, W. H., 1.
 Kentucky, cannel coal: Anonymous, 37.
 Mexico, Año Nuevo mine, Chihuahua: Cantero Pérez, E., 1.
 Maravatio-Zitacuaro dists. Michoacán: Flores, T., 1.
 Nuevo León: Mullerried, 6.
 Santa Clara, Sonora: Wilson, I. F., 1.
 Sierra de Santa Rosa, Coahuila: Willard, M. E., 3.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Michigan, min. res.: Zuidema, H. P., 2.
 Collecting locs.: Parsons, W. H., 1.
 Mineral fuels, part played by: Miser, H. D., 1-a.
 Missouri, Morgan Co.: Mather, W. B., 1.
 Montana, Red Lodge, Ft. Union microfossils in: Wilson, L. R., 5.
 Nevada fields: Andrews, D. A., 1.
 New Brunswick: Hutt, G. M., 4; Lockhart, J. G., 1.
 North America, composition, deposition: Stainer, X., 1.
 Microstructure in polished thin sec.: Teichmüller, M. L., 1.
 Northwest Territories poss.: Denis, H. B., 1.
 Nova Scotia, Springhill coal field, mine bumps or rock bursts: Phillips, A., 1.
 Strait of Canso area, econ. poss.: Ferguson, S. A., 2.
 Ohio, Dunkard-Permian boundary: White, G. W., 1.

Coal—Continued.

Ohio—Continued.

- Meigs Creek field, Caldwell, Cumberland quads.: White, G. W., 2.
 Mineral res.: Stout, W. E., 3.
 Waynesburg coal, Harrison, Belmont Cos.: White, W. G., 1.
 Oklahoma, indust. minerals: Dott, R. H., 5.
 Ouachita Mts.: Hendricks, T. A., 2;
 Tulsa G. Soc., 1; U.S.G.S., 1, no. 66.
 Ontario, Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Oregon coal fields: Andrews, D. A., 1.
 Map of min. deposits: Oregon Dept. Geol. Min. Indust., 1.
 Pacific Northwest res.: Appleton, J. B., 1.
 Pennsylvania, anthracite reserves: Ashley, G. H., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Pittsburgh area: Leighton, H., 3.
 Smicksburg quad.: Shaffner, M. N., 1.
 Vandergrift min. locs.: Hamilton, H. V., 1.
 Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
 Spore floras, Penn., W. Va.: Cross, A. T., 1.
 Texas: Stenzel, H. B., 3.
 Mineral res.: Cunningham, W. A., 1;
 Sellards, E. H., 4.
 Texas and Oklahoma, Trinity River area res.: Weissenborn, A. E., 1.
 Thermographic features, carbonaceous sediments: Tripp, R. M., 2.
 United States, map of fields: Averitt, P., 1.
 Mineral res. map, Nebr., Iowa, Kans., Mo., Okla., Ark.: Midwest Research Inst., 1.
 Missouri Valley area: Dow, D. H., 1;
 U. S. G. S., 3, no. 1.
 South Appalachian coal field Penn.: Wanless, H. R., 1.
 Thickness of seams, bituminous, lignite: Young, W. H., 1.
 Utah, Henry Mts. poss.: Hunt, C. B., 1.
 Resinous, Salina, Huntington Canyons: Buranek, A. M., 3.
 Whiterocks River, Ashley Creek area, Uintah Co., poss.: Kinney, D. M., 2;
 U. S. G. S., 1, no. 82.
 Washington: Green, S. H., 1.
 West Virginia, well-sample records: Martens, J. H. C., 1.
 Wyoming, subbituminous properties: Lynn, J. R., 1.
 Coal balls. See also Paleobotany.
 Medullosa, Des Moines Carb., Iowa: Andrews, H. N., Jr., 1.
 Pachyvera, Carb., Iowa: Hoskins, J. H., 1.
 Seeds, Carb., Iowa: Kern, E. M., 1.
 Stigmairian appendages cf. Isoetes roots: Stewart, W. N., 1.

Coal balls—Continued.

- United States, fossil plants: Andrews, H. N. Jr., 2, 5.
 Coal Measures, Europe cf. N. America: Truman, A. E., 1.
 Coalinga Nose oil field, Calif.: Goudkoff, P. P., 1.
 Coalinga oil field, Calif.: Kapow, E. J., 1.
 Coarse sediments on edge of continental shelf: Fairbridge, R. W., 1.
 Coarseness of grain, effect on quicksand lifting: Smith, E. R., 3.
 Coastal delineation from aerial photographs: McCurdy, P. G., 1.
 Cobalt.

- Alaska, Funter Bay, Admiralty Is. deposits: Holt, S. P., 2.
 British Columbia, poss.: Warren, H. V., 4.
 California, Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.
 Canada, explor., prosp. increase mineral output: Hoffman, R. D., 1.
 Idaho, Blackbird dist., Lemhi Co.: Anderson, A. L., 3; Reed, G. C., 3.
 Iron meteorites, composition: Brown, H. S., 1.
 Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.
 New Jersey, Franklin arsenides: Holmes, R. J., 4.
 North America, higher arsenides: Holmes, R. J., 1.
 Northwest Territories, Eldorado mine: Murphy, R., 1.
 Possibilities: Denis, H. B., 1.
 Ontario, Timiskaming silver-cobalt area: Reid, J. A., 1.
 Single crystals of some magnetic metals: Bozorth, R. M., 1.
 United States, min. res. map, Nebr., Iowa, Kans., Mo., Okla., Ark.: Midwest Research Inst., 1.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Coelenterata. See also Anthozoa; Hydrozoa; Invertebrata (general).
 Bermuda, preglacial fauna: Moore, H. B., 1.
 Quebec, faunas: Dresser, J. A., 1.
 United States, Atlantic Coastal Plain deep-well fauna: Richards, H. G., 3.
 Colemanite, Kramer borate dist., Calif.: Gale, H. S., 1.
 Collecting, Mich. min. locs.: Parsons, W. H., 1.
 New England: Sampster, E. L., 1.
 Ontario, Bruce mines area: Mandarino, J. A., 1.

Collections.

- California, Los Angeles Mus. Rancho La Brea Pleist.: Howard, H., 1.
 Catalog of types, Royal Ontario Mus. Pal.: Fritz, M. A., 5.
 Colorado, well cores: Wirges, E., 1.
 Cranbrook Institute of Science, Mich.: Hatt, R. T., 1.
 Egan collection, Sil. Invertebrata: Ball, J. R., 1.

Collections—Continued.

- Foraminifera: Henbest, L. G., 2.
 Cretaceous, Ark., Deaderick collections: Henbest, L. G., 1.
 Fossil plant collecting: Arnold, C. A., 2.
 Illinois, Sil. Invertebrata, Thomas A. Greene Mem. Mus.: Greacen, K. F., 1.
 Jacob Boll's collecting, Tex. Perm.: Geiser, S. W., 1.
 Meteorites, numbering: Leonard, F. C., 1.
 Royal Ontario Museum of Paleontology: Fritz, M. A., 1.
 U. S. National Museum, Repts. 1945-47: Bassler, R. S., 1.
 United States, minerals, NW.: Dake, H. C., 7.
 West Virginia Geol. Survey drill cuttings: Martens, J. H. C., 2.

Color in gem stones: Anonymous, 60.

Colorado.

- History, geol. work: Koschmann, A. H., 2.
 Temperature, heat flow, well near Colorado Springs: Birch, A. L., 2.

Areas described.

- Kokomo mining dist.: Koschmann, A. H., 1.

Economic geology.

- Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
 Beaver-Tarryall dist., Park Co. lode deposits: Singewald, Q. D., 2.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Blue River area, Summit Co.: McCulloch, R. B., 1.
 Bonanza (Kerber Creek) mining dist., Saguache Co.: Burbank, W. S., 14.
 Canyon City area: Blum, V. J., 1.
 Cement-Mineral Creek area, San Juan Co.: Varnes, D. J., 7.
 Climax molybdenum mine, Lake Co.: Vanderwilt, J. W., 3.
 Coal deposits, Coal Creek dist.: Toenges, A. L., 2.
 Construction materials, nonmetallics: Larrabee, D. M., 5; U.S.G.S., 3, no. 10.
 Corundum, Penn., Turret area: Heinrich, E. W., 9.
 Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Dry holes, and oil and gas fields: Demok, F. K., 1; U. S. G. S., 1, no. 73.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Eureka-Animas Forks area: Burbank, W. S., 11.
 Fluorspar: Cox, D. C., 1; Van Alstine, R. E., 2.
 Jamestown dist.: Goddard, E. N., 1.
 Northgate deposits: Warne, J. D., 1.
 Fort Collins Extension oil field: Wilson, J. H., 2.

Colorado—Continued.

Economic geology—Continued.

- Front Range mineral belt: Goddard, E. N., 5.
- Ganets, spessartite, Nathrop area: Ellermeier, G. B., 3.
- Geological survey, cooperative: Burbank, W. S., 5.
- Gilman dist., Eagle Co.: Tweto, O. L., 3.
- Gold Hill dist.: Myers, R. E., 2.
- Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
- History, geol. work: Koschmann, A. H., 2.
- Iron Springs mining dist., San Miguel Co.: Varnes, D. J., 4.
- Jewell Tunnel zinc mine, Chaffee Co.: Ames, E. W., 1.
- Kokomo mining dist.: Koschmann, A. H., 1, 3.
- Lake City area, Hinsdale Co.: Burbank, W. S., 13.
- La Plata dist.: Eckel, E. B., 2.
- Las Animas arch area oil poss.: Osborne, H. W., 1.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Metal provinces: Helke, A., 1.
- Metallic mineral deposits: Fischer, R. P., 1; U. S. G. S., 3, no. 8.
- Metals, nonmetals, fuels: Vanderwilt, J. W., 5.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Mineral resources: Scott, W. E., Jr., 1; Vanderwilt, J. W., 4.
- Mining dists., min. deposits: Burbank, W. S., 4.
- Model anticline surface, Las Animas Co.: Bass, N. W., 3; U. S. G. S., 1, no. 68.
- Molybdenum mine, Climax: Anonymous, 61.
- Mount Wilson dist., San Miguel Co.: Varnes, D. J., 5.
- Oil-shale mine studies, Anvil Points, Rifle: Gardner, E. D., 1.
- Pegmatites: Hanley, J. B., 3.
- Eight Mile Park area: Heinrich, E. W., 7.
- Petroleum geology, 1945: Van Tuyl, F. M., 1.
- Placers, NW. Park Co.: Singewald, Q. D., 4.
- Rangely oil and gas field: Bass, N. W., 1; Bench, B. M., 1, 2; Bosco, F. N., 1; Newton, S. M., 1, 3, 4; Pickering, W. Y., 1; Thomas, C. R., 1; U. S. G. S., 1, no. 67.
- Structure map: Bass, N. W., 2.
- Weber fm. porosity, permeability: Newton, S. M., 2.
- Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.
- Rico mining dist., Dolores Co.: Varnes, D. J., 2.
- San Juan mining dist.: Burbank, W. S., 6, 7.

Colorado—Continued.

Economic geology—Continued.

- Sand, gravel deposits: U. S. G. S., 3, no. 2; Varnes, H. D., 1.
- Scheelite, Boulder dist.: Tweto, O. L., 1.
- Silverton area, San Juan Co.: Varnes, D. J., 6.
- Silverton volcanic center dists., Tert. deposits: Burbank, W. S., 9.
- Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
- Strategic mineral res.: Traver, W. M., Jr., 1.
- Telluride area, S. part: Varnes, D. J., 3.
- Tungsten dist., Boulder Co.: Tweto, O. L., 2.
- Uncompahgre dist., Tert. ore deposits: Burbank, W. S., 8.
- Vanadium area: Huleatt, W. P., 1.
- Vanadium-bearing sandstone: Fischer, R. P., 3.
- Well cores, collections: Wirges, E., 1.
- Well logs, selected: Barb, C. F., 1.
- Year Books, W. mining area: Colo. Min. Assoc., 1.

Historical geology.

- Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
- Big Four zinc-silver mine area, Summit Co.: McCulloch, R. B., 1.
- Big Sandy Creek area: McLaughlin, T. G., 1.
- Blue River area, upper, Summit Co.: Singewald, Q. D., 3.
- Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
- Cañon City area: Blum, V. J., 1.
- Climax molybdenum mine, Lake Co.: Vanderwilt, J. W., 3.
- Colorado Springs quad., Penn.: McLaughlin, K. P., 1.
- Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
- Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
- Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
- Dunmore mine, Ouray Co.: Kelley, V. C., 3.
- Eureka-Animas Forks area: Burbank, W. S., 11.
- Fluorspar deposits: Cox, D. C., 1.
- Jamestown dist.: Goddard, E. N., 1.
- Freezeout Creek fault, Baca Co.: Buchler, K. M., 1.
- Front Range, Cenozoic phys. history:**
- Wahlstrom, E. E., 2.
- Front Range mineral belt: Goddard, E. N., 5.
- Gilman dist., Eagle Co.: Tweto, O. L., 3.
- Golden-Morrison area, Jefferson Co.: LeRoy, L. W., 1.
- Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
- Intertonguing marine, nonmarine Upper Cret. deposits: Pike, W. S., Jr., 1.

Colorado—Continued.

Historical geology—Continued.

- Jurassic fms., correl. revision: Baker, A. A., 3.
- Kokomo mining dist., Summit Co.: Koschmann, A. H., 1, 3.
- Lake City area, Hinsdale Co.: Burbank, W. S., 13.
- La Plata dist.: Eckel, E. B., 2.
- Laramie fm., Golden area: Moody, J. D., 1.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Metals, nonmetals, fuels: Vanderwilt, J. W., 5.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Mineral resources: Vanderwilt, J. W., 4.
- Mining districts, min. deposits: Burbank, W. S., 4.
- Model anticline surface, Las Animas Co.: Bass, N. W., 3; U. S. G. S., 1, no. 68.
- Paleozoic rocks, Las Animas Arch correls.: Maher, J. C., 2.
- Subsurface, SE.: Maher, J. C., 2.
- Pegmatites: Hanley, J. B., 3.
- Pennsylvanian, W.: Henbest, L. G., 4.
- Petroleum geology, 1945: Van Tuyl, F. M., 1.
- Placer, NW. Park Co.: Singewald, Q. D., 4.
- Rangely oil and gas field: Bass, N. W., 1; Bench, B. M., 1, 2; Bosco, F. N., 1; Newton, S. M., 1, 3, 4; Thomas, C. R., 1; U. S. G. S., 1, no. 67.
- Faults: Newton, S. M., 4.
- Structure map: Bass, N. W., 2.
- Rico mining dist., Dolores Co.: Varnes, D. J., 2.
- San Juan mining dist.: Burbank, W. S., 6, 7.
- Silverton area, San Juan Co.: Varnes, D. J., 6.
- Silverton volcanic center dists., Tert. deposits: Burbank, W. S., 9.
- Snowmass Mtn. area: Vanderwilt, J. W., 6.
- Tungsten dist., Boulder Co.: Tweto, O. L., 2.
- Uncompahgre dist., Tert. ore deposits: Burbank, W. S., 8.
- Upper Montana group, Golden area: Moody, J. D., 2.
- Vanadium area: Huleatt, W. P., 1.
- Placerville area: Fischer, R. P., 4.
- Well logs, selected: Barb, C. F., 1.
- White River area, late Paleozoic: Thompson, W. O., 1.

Mineralogy.

- Agate, Wagon Wheel Gap: Anonymous, 36.
- Alaskaite, San Juan Co.: Anonymus, 53.
- Alma, Horseshoe dists. lode deposits: Singewald, Q. D., 2.
- Augite crystals, Grand Co.: Ellermeier, G. B., 1.

Colorado—Continued.

Mineralogy—Continued.

- Beaver-Tarryall dist., Park Co.: Singewald, Q. D., 2.
- Beryllium, tantalum pegmatites: Hanley, J. B., 1.
- Beyerite in pegmatite: Heinrich, E. W., 4.
- Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
- Bismuth minerals in pegmatites: Heinrich, E. W., 4.
- Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
- Braunite, Snowmass, Pitkin Co.: Rogers, A. F., 2.
- Cañon City area: Blum, V. J., 1.
- Cement-Mineral Creeks area: Varnes, D. J., 7.
- Climax molybdenum mine, Lake Co.: Vanderwilt, J. W., 3.
- Coal, Coal Creek dist.: Toenges, A. L., 2.
- Corundum, Penn., Turret area: Heinrich, E. W., 9.
- Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
- Dunmore mine, Ouray Co., mineralization: Kelley, V. C., 3.
- Epidote, Park Co.: Ellermeier, G. B., 2.
- Eureka-Animas Forks area: Burbank, W. S., 11.
- Fluorspar: Cox, D. C., 1; Goddard, E. N., 1; Van Alstine, R. E., 2.
- Front Range mineral belt: Goddard, E. N., 5.
- Gilman dist., Eagle Co.: Tweto, O. L., 3.
- Gold Hill dist.: Myers, R. E., 2.
- Iron Springs mining dist.: Varnes, D. J., 4.
- Jewell Tunnel zinc mine, Chaffee Co.: Ames, E. W., 1.
- Kokomo mining dist.: Koschmann, A. H., 1, 3.
- Lake City area, Hinsdale Co.: Burbank, W. S., 13.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Lithia pegmatites, Brown Derby mine: Hanley, J. B., 2.
- Metal provinces: Helke, A., 1.
- Metallic mineral deposits: Fischer, R. P., 1; U. S. G. S., 3, no. 8.
- Metals, nonmetals, fuels: Vanderwilt, J. W., 5.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Mineral res.: Scott, W. E., Jr., 1; Vanderwilt, J. W., 4.
- Mining dists., min. deposits: Burbank, W. S., 4.
- Molybdenum mine, Climax: Anonymous, 61.
- Mount Wilson dist., San Miguel Co.: Varnes, D. J., 5.
- Nahcolite from oil shale: Ertl, T., 1.
- Garfield County: Glass, J. J., 1.

Colorado—Continued.

Mineralogy—Continued.

- Pegmatites: Hanley, J. B., 2, 3.
 Placers, NW. Park Co.: Singewald, Q. D., 4.
 Quartz paramorphs after tridymite, Home quad.: Rau, L. L., 1.
 Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.
 Rico mining dist., Dolores Co.: Varnes, D. J., 2.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Scheelite, Boulder dist.: Tweto, O. L., 1.
 Silverton area minerals: Hudson, K., 1; Varnes, D. J., 6.
 Silverton volcanic dists., Tert. deposits: Burbank, W. S., 9.
 Snowmass Mtn. area: Vanderwilt, J. W., 6.
 Strategic min. res.: Traver, W. M., Jr., 1.
 Telluride area, S.: Varnes, D. J., 3.
 Triplite, El Paso Co.: Boucot, A. J., 1.
 Crystals, Fremont, El Paso Cos.: Wolfe, C. W., 1.
 Tungsten dist., Boulder Co.: Tweto, O. L., 2.
 Turquoise nugget, King mine: Pearl, R. M., 1.
 Umcompahgre dists. Tert. ore deposits: Burbank, W. S., 8.
 Vanadium area: Huleatt, W. P., 1.
 Placerville area: Fischer, R. P., 4.
 Vanadium-bearing sandstone: Fischer, R. P., 3.
 Zeolites, Table Mtn.: Ellermeier, G. B., 4.

Paleontology.

- Artifacts, Folsom, with Bison bones, San Luis Valley: Hurst, C. T., 1.
 Tabeguache Creek area, Montrose Co.: Hurst, C. T., 2.
 Colorado Springs quad., Penn.: McLaughlin, K. P., 1.
 Dinosaur Nat. Monument: Crowder, F., 1.
 Folsom artifacts with Bison bones, San Luis Valley: Hurst, C. T., 1.
 Gem wood: Graffham, A. A., 3.
 Neocalamites, Trias.: Holt, E. L., 1.
 Prehistoric peoples, Folsom man: Roberts, F. H. H., Jr., 1.
 Upper Montana group, Golden area: Moody, J. D., 2.

Petrology.

- Alva Adams Tunnel, Colorado-Big Thompson project: Heaton, R. L., 1.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Cañon City area: Blum, V. J., 1.
 Colorado Springs quad.: McLaughlin, K. P., 1.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Dikes, clastic, Pikes Peak area: Roy, C. J., 1.
 Dunmore mine, Ouray Co. mineralization: Kelley, V. C., 3.

Colorado—Continued.

Petrology—Continued.

- Fluorspar deposits, Jamestown dist.: Goddard, E. N., 1.
 Freezeout Creek fault, Baca Co.: Buehler, K. M., 1.
 Golden-Morrison area, Jefferson Co.: LeRoy, L. W., 1.
 Kokomo mining dist.: Koschmann, A. H., 1.
 Mineral Point, Poughkeepsie, Upper Umcompahgre dists.: Kelley, V. C., 1.
 Model anticline surface, Las Animas Co.: Bass, N. W., 3; U. S. G. S., 1, no. 68.
 Montmorillonite-nontronite, Golden area: Schlocker, J., 1.
 Pegmatites, Eight Mile Park area: Heinrich, E. W., 7.
 Longs Peak-St. Vrain batholith: Boos, M. F., 2.
 Primary lineation, fluvial ss., criterion of current direction: Stokes, W. L., 1.
 Rangely oil and gas field, Uinta Basin: Bench, B. M., 1.
 Sills, form, structure: Tweto, O. L., 4.
 White River area, late Paleozoics: Thompson, W. O., 1.

Physical geology.

- Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
 Alva Adams Tunnel, Colorado-Big Thompson project: Heaton, R. L., 1.
 Beaver-Tarryall dist., Park Co. lode deposits: Singewald, Q. D., 2.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Blue River area, upper, Summit Co.: Singewald, Q. D., 3.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Cañon City area: Blum, V. J., 1.
 Cement-Mineral Creeks area: Varnes, D. J., 7.
 Climax molybdenum mine, Lake Co.: Vanderwilt, J. W., 3.
 Colorado Springs quad., Penn.: McLaughlin, K. P., 1.
 Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Dikes, clastic, Pikes Peak area: Roy, C. J., 1.
 Dunmore mine, Ouray Co. mineralization: Kelley, V. C., 3.
 Eaten Park origin: Quam, L. O., 1.
 Eureka-Animas Forks area: Burbank, W. S., 1.
 Fluorspar deposits: Cox, D. C., 1; Goddard, E. N., 1.

Colorado—Continued.

Physical geology—Continued.

- Freezout Creek fault, Baca Co.: Buehler, K. M., 1.
- Front Range, Cenozoic phys. hist: Wahlstrom, E. E., 2.
- Mineral belt: Goddard, E. N., 5.
- Structure, surface heat flow: Birch, A. L., 1.
- Gilman dist., Eagle Co.: Tweto, O. L., 3.
- Gold Hill dist.: Myers, R. E., 2.
- Golden-Morrison area, Jefferson Co.: LeRoy, L. W., 1.
- Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
- Ground movement next to caving block, Climax mine: Vanderwilt, J. W., 2.
- Iron Springs mining dist., San Miguel Co.: Varnes, D. J., 4.
- Jewell Tunnel zinc mine, Chaffee Co.: Ames, E. W., 1.
- Kokomo mining dist., Summit Co.: Koschmann, A. H., 1, 3.
- Lake City area: Burbank, W. S., 13.
- La Plata dist.: Eckel, E. B., 2.
- Laramie fm., Golden area: Moody, J. D., 1.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Metals, nonmetals, fuels: Vanderwilt, J. W., 5.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Molybdenum mine, Climax: Anonymous, 61.
- Mount Wilson dist.: Varnes, D. J., 5.
- Pegmatites: Hanley, J. B., 3.
- Eight Mile Park area: Heinrich, E. W., 7.
- Genesis, Denver Mtn. Parks area: Boos, M. F., 1.
- Longs Peak-St. Vrain batholith: Boos, M. F., 2.
- Pre-Fountain weathering, Flagstaff Mtn.: Wahlstrom, E. E., 3.
- Rangely oil and gas field: Bass, N. W., 1; Bench, B. M., 1, 2; Newton, S. M., 3, 4; U. S. G. S., 1, no. 67.
- Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.
- Rico mining dist.: Varnes, D. J., 2.
- San Juan mining dist.: Burbank, W. S., 6, 7.
- Scheelite, Boulder dist.: Tweto, O. L., 1.
- Sills, form, structure: Tweto, O. L., 4.
- Silverton area, San Juan Co.: Varnes, D. J., 6.
- Silverton volcanic center, Tert. deposits: Burbank, W. S., 9.
- Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
- Telluride area, S.: Varnes, D. J., 3.
- Temperature, heat flow, well near Colo. Springs: Birch, A. L., 2.
- Tungsten dists., Tert. ore deposits: Burbank, W. S., 8,

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- Uncompahgre dists. Tert. ore deposits: Burbank, W. S., 8.
- Vanadium, Placerville area: Fischer, R. P., 4.
- Vanadium-bearing sandstone: Fischer, R. P., 3.
- Physiographic geology.*
- Climax molybdenum mine, Lake Co.: Vanderwilt, J. W., 3.
- Estes Park origin: Quam, L. O., 1.
- Front Range, Cenozoic phys. history: Wahlstrom, E. E., 2.
- Glacial bastions, N.: Ives, R. L., 15.
- Kokomo mining dist.: Koschmann, A. H., 1.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
- Placer, NW. Clark Co.: Singewald, Q. D., 4.
- San Juan mining dist.: Burbank, W. S., 6, 7.
- Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.

Underground water.

- Big Sandy Creek area: McLaughlin, T. G., 1.

Ground-water invs.: Stiefel, A. C., 1.

Colorado River, age: Longwell, C. R., 2.

Colorado School Mines well-core collection: Wirges, E., 1.

Colorado-U. S. G. S. cooperative geol. work: Crain, H. M., 1.

Color-numerical system for well logs: Maddox, D. C., 1.

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- Colorado pegmatites: Hanley, J. B., 3.
- General: Fleener, F. L., 2.
- New York, Bedford dist, minerals: Mann, A., 1.
- Quebec, Lacorne area: Tremblay, L. P., 1.

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- Geochemistry: Rankama, K. K., 3.
- Rarer metals: De Ment, J. A., 1.

Common-sense geology: Price, G. M., 1.

Comparative weathering, common heavy minerals: Dryden, A. L., Jr., 1.

Compass gradients, use: MacCarthy, G. R., 1.

Competency, moving water to transport debris: Nevin, C. M., 3.

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Conchilites, catalyzer, origin of life: Tanton, T. L., 1.

Concrete aggregates, petrographic examinations: Mielenz, R. C., 1.

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- California, Monterey fm.: Bramlette, M. N., 1.

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- Colorado, nahcolite from oil shale: Ertl, T., 1.
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 Haiti, calcitic pisolites in cascade deposit, Miragoane area: Shrock, R. R., 2.
 Illinois, Mazon Creek, Penn. plants: Janssen, R. E., 1.
 Montana sand: Thompson, A. R., 1.
 New Albany shale: Campbell, G., 1.
 New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 Ohio, iron-ore bearing fms.: Stout, W. E., 1.
 Oregon, Dayton soils, iron-manganese: Drosdoff, M., 1.
 Texas, Woodbine-Eagle Ford contact nodules: Stephenson, L. W., 4.
 Texas-New Mexico, Ogallala fm.: Price, W. A., 1.
 West Virginia, Pittsburgh coal seam: Foster, W. D., 1.
 Wisconsin, Rufus Beach, Lake Superior, claystone: Knowlton, F. G., 1.
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 Alaska, Matanuska Valley coal field: Payne, T. G., 1.
 Arizona, Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.
 Bermuda, preglacial history: Moore, H. B., 1.
 California, Puente, San Jose Hills, Miocene: Woodford, A. O., 1.
 Ramona quad.: Merriam, R. H., 1.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 Environmental significance: Twenhofel, W. H., 5.
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 Kap Hope area: Rosenkrantz, A., 1.
 Haiti, manganese deposits: Goddard, E. N., 2.
 Manitoba, Tramping Lake, N. part: Stanton, M. S., 1.
 Mexico, Cuarento dist., Durango: Gallagher, D., 1.
 Durango, El Cuarento min. zone: Pérez Siliceo, R., 1.
 New Brunswick, recent, from glacial fms.: Alcock, F. J., 4.
 New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
 New York, cent., interglacial boulders: Schmidt, V. E., 1.
 Nova Scotia, Guysborough Co.: MacNeil, D. J., 2.
 Ohio, min. res.: Stout, W. E., 3.
 Mississippian, Black Hand mbr.: Ver Steeg, K., 4.
 Sharon, high-silica: Fuller, J. O., 1.

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- Pennsylvania, Hollidaysburg - Huntington quads.: Butts, C., 1.
 Quebec, Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
 Types of, environmental significance: Twenhofel, W. H., 5.
 Utah, Hat Island, Great Salt Lake: Blackwelder, E., 3.
 Virginia, Pulaski fault, Appalachian Valley: Cooper, B. N., 2.
 Connate waters.
 Determination, restored - state method: Bruce, W. A., 1.
 Nevada, Steamboat Springs: White, D. E., 5.
 North Carolina, Coastal Plain brackish water: Mundorff, M. J., 5.
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 Texas, N.-cent., oil-field waters: Barnes, V. E., 6.
 United States, diagenesis, oil-field brines: De Sitter, L. U., 1.
 Water, connate, oil and gas producing horizons: Bench, B. M., 4.
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 Geological outlook: Troxell, E. L., 2.
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 Beryl deposits: Cameron, E. N., 2.
 Stafford Springs area, devel. glacial drainage: White, S. E., 1.
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 Branchville pegmatite: Shainin, V. E., 1.
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 Mianus Gorge minerals: Brown, S. C., 1.
 Natrophillite, structure: Byström, A., 1.
 Pyrite, Collins Hill pegmatites, crystal variation: Shaub, B. M., 1.
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 Branchville pegmatite: Shainin, V. E., 1.
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 Beryl deposits: Cameron, E. N., 2.
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 Connecticut Valley floods: Jahns, R. H., 2.
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 Chattanooga shale type area fauna, Tenn.: Hass, W. H., 3.
 Colorado Springs quad., Colo., Penn.: McLaughlin, K. P., 1.
 Iowa, Sheffield Dev. fm.: Youngquist, W. L., 3.
 Sweetland Creek sh. fauna, Dev.: Miller, A. K., 16; Youngquist, W. L., 5.
 Upper Devonian: Youngquist, W. L., 4.
 Kentucky, Bransfield Sil. fm.: Branson, E. B., 1.

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- Kinderhook microfaunas, U. S.: Cooper, C. L., 4.
- Microfauna, Kinkaid Missn., Ill.: Cooper, C. L., 2.
- Microfossils, role in Penn. correls.: Cooper, C. L., 3.
- Missouri, Dutchtown Ord. fm. fauna: Youngquist, W. L., 2.
- Fauna, Fern Glen fm.: Mehl, M. G., 1.
- New Albany shale, fauna: Campbell, G., 1.
- Ohio, Chillicothe test-core studies: Carman, J. E., 2.
- Franklin Co., Ohio sh. fauna: Bond, R. H., 1.
- Upper Dev., Lower Missn. zones: Hass, W. H., 2.
- Paleozoic guide fossils: Ellison, S. P., Jr. 1.
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- Quebec, faunas: Dresser, J. A., 1.
- Tennessee, Lowville fm. fauna: Branson, E. B., 8.
- Texas, central mineral area faunas: Haas, W. H., 4.
- United States, Miss. Valley fauna: Branson, E. B., 7.
- Orientation of crystal units: Haas, W. H., 1.
- Construction materials, S. Dak., map: Bryson, R. P., 1.
- Contact deposits at unconformities: Branson, E. B., 4.
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 - Continents, ocean floors, origin: Umbgrove, J. H. F., 4.
 - Distribution, oceans, continents: Longwell, C. R., 3; Woolnough, W. G., 1.
 - Ideas, emergence, illus. by geology: Ashley, G. H., 2.
 - North America: Malaise, R., 1.
 - Polar displacement, recent theories: Umbgrove, J. H. F., 2.
- Continental shelves.
 - Exploration, U. S. Gulf Coast: Anonymous, 63.
 - Mexico, Ranger Bank: Emery, K. O., 6.
 - Origin: Umbgrove, J. H. F., 2.
 - Torsion balance surveys of inundated areas: Hasselmann, K. F., 1.
 - United States, Gulf Coast, explor.: Anonymous, 63.
 - Petroleum possibilities: Critz, J. S., 3; Kastrop, J. E., 1.
 - U. S. Geol. Survey program: Hendricks, T. A., 4.
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 - Geological-geophysical study: Thom, W. T., Jr. 1.
 - Origin of, continents, ocean floors: Umbgrove, J. H. F., 3, 4.
- Contouring fault planes: Reiter, W. A., 1.

- Convergence, stratigraphic, in oil-finding: Swesnik, R. M., 2.
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- Cooperative geologic program, U.S.G.S.-Mass.: Currier, L. W., 3.
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- Coordinate numbers for meteoritic falls: Leonard, F. C., 8.
- Copiapite.
 - Composition, optics: Berry, L. G., 2.
 - Morphologic superlattice: Peacock, M. A., 5.
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 - Funter Bay, Admiralty Is. deposits: Holt, S. P., 2.
 - Kasaan Penin. ore deposits: Warner, L. A., 1.
 - Kotsina-Kuskulana dist.: Van Alstine, R. E., 1.
 - Nizina dist. deposits: Miller, D. J., 1.
 - Prince of Wales Island: Fosse, E. L., 1.
 - Rua Cove, Knight Island Copper Bullion claims: Stefansson, K., 1.
 - Seward Penin., Ward mines: Wright, W. S., 2.
 - Southeastern: Shaw, V., 1.
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 - Yakobi Is. nickel deposits: Kennedy, G. C., 1.
- Arizona, Ajo mining dist.: Gilluly, J., 1.
- Amargosa deposit, Pima Co.: Tainter, S. L., 3.
- Apex property, Coconino Co.: Tainter, S. L., 2.
- Aravaipa deposit, Graham Co.: Denton, T. C., 3.
- Castle Dome deposit: Peterson, N. P., 1.
- Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.
- Magma mine, Superior: Michell, W. D., 1.
- Old Reliable mine: Denton, T. C., 2.
- Reward (Vekol) deposits, Pinal Co.: Denton, T. C., 1.
- San Manuel deposit: Chapman, T. L., 1; Steele, H. J., 1.
- Sullivan mine, Cochise Co.: Kumke, C. A., 1.
- Wallapai mining dist., Mohave Co.: Haury, P. S., 2.
- Zonia mine, Yavapai Co.: Kumke, C. A., 2.
- British Columbia, Ashcroft area: Duffell, S., 1, 2.
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- Britannia mines, No. 8 ore bodies: Irvine, W. T., 1.
- Highland-Bell mine ores: Staples, A. B., 2.
- McConnell Creek area: Lord, C. S., 1.

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British Columbia—Continued.

Manson Creek, Cassiar dist.: Canada G. S., 1.

Nicola, Kamloops, Yale dists., min. res.: Canada G. S., 4.

Northern: Armstrong, J. E., 2.

California, Akos mine, Mariposa Co.: Wiebelt, F. J., 2.

Blue Ledge mine, Siskiyou Co.: Hundhausen, R. J., 2.

Gorman tin dist.: Wiese, J. H., 1.

Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.

Pine Creek, Adamson mines, Inyo Co.: Bateman, P. C., 1.

Sierra Nevada foothills: Heyl, G. R., 2.
Canada, explor., prosp., increase mineral output: Hoffman, R. D., 1.

Flin Flon-Mandy area, Manitoba, Saskatchewan: Stockwell, C. H., 1.

Kirkland Lake-Noranda-Val d'Or area: Norman, G. W. H., 10; Wilson, M. E., 2.

Langlade, Miquelon, min. res.: Cailière, S., 1.

Montreal to Port Arthur: Hutt, G. M., 1.

Sudbury dist.: Stanley, R. C., 1.

Canadian Arctic, Victor Is. area poss.: Washburn, A. L., 1.

Colorado, Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.

Dunmore mine, Ouray Co.: Kelley, V. C., 3.

Eureka-Animas Forks area: Burbank, W. S., 11.

Front Range mineral belt: Goddard, E. N., 5.

Gilman dist., Eagle Co.: Tweto, O. L., 3.

Jamestown dist.: Goddard, E. N., 1.

La Plata dist.: Eckel, E. B., 2.

Leadville mining dist., Lake Co.: Loughlin, G. F., 1.

Metals: Vanderwilt, J. W., 5.

Mineral point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.

Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.

San Juan mining dist.: Burbank, W. S., 6, 7.

Silverton volcanic center dists.: Burbank, W. S., 9.

Snowmass Mtn. area: Vanderwilt, J. W., 6.

Telluride area, S.: Varnes, D. J., 3.

Cuba, minerals: Calvache, A., 1.

Guatemala, Huehuetenango Dept.: Manó, J. C., 1.

Quiché, Baja Verapaz and Alta Verapaz Depts.: Manó, J. C., 2.

Idaho, Blackbird dist., Lemhi Co.: Anderson, A. L., 3.

Gold deposits: Staley, W. W., 3.

Lava Creek dist., Last Chance-Horn-silver mines: Anderson, A. L., 5.

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Idaho—Continued.

Snake-Salmon Rivers area, Idaho Co.:

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Impounding structures, control of ore deposits: Mackay, R. A., 1.

Manitoba, Granville Lake area: Brown, E. L., 1.

Lynn Lake area: Allan, J. D., 1.

Prospecting areas: de Wet, J. P., 1.

Sherridon area: Canada G. S., 1.

Tramping Lake, N., poss.: Stanton, M. S., 1.

Maryland, Carroll, Frederick Cos. min. res.: Singewald, J. T., Jr., 2.

Liberty mine, Frederick Co.: Miller, V. J., 1.

Mexico, Baja Calif. poss.: Pérez Siliceo, R., 3.

Chihuahua min. res.: González Reyna, J., 3-a.

El Moral dist.: González Reyna, J., 10.

Estado Aguascalientes: Lopez G., F., 1.

Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.

Nuevo León: Mullerried, 6.

Oaxaca guide book: Barrera, T., 1.

San Ignacio dist., Sinaloa: Martínez Pérez, F., 1.

State of Zacatecas, min. res.: González Reyna, J., 2.

Typical deposits: González Reyna, J., 12.

Urique min. zone, Chihuahua: González Reyna, J., 7.

Michigan: Broderick, T. M., 1.

Mineral collecting locs.: Parsons, W. H., 1.

Mineral res.: Zuidema, H. P., 2.

Miquelon, min. res.: Aubert de la Rüe, E., 1.

Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.

Montana, Bull Run prospects, Silver Bow Co.: Roby, R. N., 2.

Metallic min. deposits: Chace, F. M., 1; U. S. G. S., 3, no. 16.

Moffet-Johnston area: Roby, R. N., 1.

Pre-Cambrian carbonate rocks: Heinrich, E. W., 8.

Queen Mary mine, Missoula Co.: Brinton, W. H., 1.

Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.

Rio Grand deposit, Elko Co., poss.:

Matson, E. J., 2.

Steamboat Springs area: Gianella, V. P., 3; White, D. E., 5.

Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

Little Bay area: MacLean, H. J., 1.

New Jersey, Flemington copper mine: Zodac, F., 1.

New Mexico, Atwood group, Lordsburg dist.: Huntington, M. G., 1.

Copper King mine, Taos Co.: Holmquist, R. J., 4.

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New Mexico—Continued.

- Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Peerless lead-zinc mine, Grant Co.: Soulé, J. H., 4.
 Santa Rita mine, hydrothermal alteration: Kerr, P. F., 5.
 Stauber mine, Guadalupe Co.: Holmquist, R. J., 2.
 Steeple Rock dist., Grant Co.: Russell, P. L., 6.
 North American desert minerals: Belz, C. A., 2.
 North Carolina midland counties, former mines: Berry, E. W., 2.
 Northwest Territories poss.: Denis, H. B., 1.
 Ontario, Northeast, Timagami Lake area: Moorhouse, W. W., 1.
 Parry Sound area: Satterly, J., 1.
 Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
 Robb-Jamieson area poss.: Berry, L. G., 1.
 Sudbury area: Bullen, C. S., 1; Cooke, H. C., 2.
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 Pacific Northwest, min. res.: Appleton, J. B., 1.
 Quebec, Beauchastel Tp. W. half: Ambrose, J. W., 1.
 Bourlamaque, Abitibi Co.: Canada G. S., 1; Norman, G. W. H., 1, 2.
 Major faults, Abitibi region: Norman, G. W. H., 5.
 St. Pierre, min. res.: Aubert de la Rüe, E., 1.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
 Tennessee, Ducktown area: Barclay, R. E., 1.
 Texas, min. res.: Sellards, E. H., 4.
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 Missouri Valley area: U.S.G.S., 3, no. 1.
 North-central, glacial origin drift on float: Knowlton, F. G., 2.
 Ore deposits: Helke, A., 1.
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- Vermont min. industries: Jacobs, E. C., 4.
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 Washington, Sultan Basin deposits: Carithers, L. W., 1.
 Wisconsin, Douglas Co. amygdaloidal ores: Smith, M. C., 1.
 Wyoming, Encampment area: Platt, R. E., 1.
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- Oil and gas fields: Shreveport G. Soc., 1.
- Southeast: MacNeil, F. S., 1.
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Alaska, Tuxedni Juras. ss. fauna: Kellum, L. B., 1.

Yukon-Copper River Perm.: Williams, J. S., 3.

Alberta, Brûlé area: Lang, A. H., 1.

Alberta-Montana Juras.-Cret. boundary: Brown, R. W., 3.

Alberta-Saskatchewan, Cret.-Tert.: Russell, L. S., 4.

Analysis of stratigraphy: Kay, G. M., 1.

Arctic America, Ellesmere Land-Greenland: Poulsen, C., 2.

Arizona, Ajo mining dist.: Gilluly, J., 1.

Northern, continental Trias., fauna: Camp, C. L., 3.

Arkansas, Cretaceous, with Tex., La., Miss., Ala.: Hazzard, R. T., 1.

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Artifacts, Big Bend area, Quat., Tex.: Kelley, J. C., 1.

Atlantic Coastal Plain, New Jersey-Georgia: Richards: H. G., 7.

Bighorn Basin, Wyo.-Mont.: Stow, M. H., 2; Wyoming Univ., 1.

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Northern, Missn.: Laudon, L. R., 1.

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Reef Ridge Coalina dist.: Stewart, R. B., 1.

San Joaquin Valley: Barbat, W. F., 1.

Sespe red beds, oil origin and migration to: Bailey, T. L., 1.

Sierra Nevada-Death Valley section: Hopper, R. H., 1.

Southern, earthquakes: Wood, H. O., 1.

West Newport oil and gas field: Dunlap, W. E., 2.

Cambrian system, fossil determination:

Wheeler, H. E., 1.

Canada, Gaspé: McGerrigle, H. W., 1, 2.

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A. E., 4.

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Chromite, with containing rocks: Thayer, T. P., 1.

Colorado, Front Range: Wahlstrom, E. E., 2.

Southeast, subsurface Paleozoics: Maher, J. C., 2.

White River, upper area Paleozoics: Thompson, W. O., 1.

Cretaceous, Upper, outcrops, Tex.-Ala.:

Monroe, W. H., 1; U.S.G.S., 2, no. 23.

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Eastern N. Am., with Peru, Europe: Regtergen Altana, C. O. v., 1.

Fauna and continental Trias., N. Ariz.: Camp, C. L., 3.

Hypsognathus and Newark ser.: Colbert, E. H., 3.

Illinois, coal beds by plant fossils: Kosanke, R. M., 1.

Invertebrata, Penn., as index fossils: Weller, J. M., 2.

Jurassic fms., Utah-Ariz.-N. Mex.-Colo., revision: Baker, A. A., 3.

Kansas, Arbuckle dolomite, subdivisions: Clair, J. R., 1.

Belvidere area Cret.: Latta, B. F., 1.

Central, Mid. Ord. limestones: Taylor, M. H., 2.

Relationship, crude oils and stratigraphy: Neumann, L. M., 1.

Kentucky, Brassfield fm., Sil.: Branson, E. B., 1.

Clinton Co. oil pools: Jillson, W. R., 5.

Tip Top sand and Meramec-Chester boundary: Ray, L. L., 2.

Labrador Penin., E. area: Tanner, V., 2.

Louisiana, Cret., with Tex.-Ark.-Miss.-Ala.: Hazzard, R. T., 1.

Northern, oil and gas fields: Shreveport G. Soc., 1.

Magnetite deposits, N. Y.-N. J., drill-hole: Hawkes, H. E., Jr., 3.

Mammalia, holarctic, Cenozoic relationships: Simpson, G. G., 8.

Mexico, Sierra de Santa Rosa, Coahuila: Willard, M. E., 3.

Valley of, Pleist.: Terra, H. de, 3.

Michigan, Traverse group, Afton-Onaway area: Kelly, W. A., 1.

Mississippi, Cret., with Ark.-La.-Tex.-Ala.: Hazzard, R. T., 1.

Macrofossils, deep wells: Stephenson, L. W., 5.

Oil and gas fields: Shreveport G. Soc., 1.

Missouri, Fern Glen fm.: Mehl, M. G., 1.

Montana, cent., and NW., Dev.: Sloss,

L. L., 4.

Judith Basin: Walton, P. T., 1.

South-central faunas: Gardner, L. S., 1.

Nebraska Pleist. deposits: Condra, G. E., 1.

New Albany shale: Campbell, G., 1.

Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

New Mexico, Gran Quivira quad.: Bates,

R. L., 3.

Little Hatchet Mts. area: Lasky, S. G., 3.

Los Piños Mts.: Stark, J. T., 1.

Northern, Penn.: Read, C. B., 2.

Pennsylvanian: Read, C. B., 2.

Quay County: Dobrovolsky, E., 1; U. S. G. S., 1, no. 62.

Rattlesnake field, San Juan Co.: Hinson, H. H., 1.

Southeast, pre-San Andreas fms. oil zones: King, R. E., 1.

Correlations—Continued.

- New York, Clinton, W., central: Gillette, T., 1.
 Fort Ann area Camb.-Ord., with Vermont: Flower, R. H., 7.
 Trenton delta: Chadwick, G. H., 3.
 North America, Cenozoic Mammalia, hol-arctic: Simpson, G. G., 8.
 Southern Appalachians, erosion surfaces: Shaffer, P. R., 1.
 Tertiary floras: Chaney, R. W., 4.
 North America-Europe, Coal Measures: Trueman, A. E., 1.
 North America-South America, Penn. floras: Read, C. B., 3.
 North Dakota, Keene Dome, McKenzie Co.: Nevin, C. M., 2.
 Nova Scotia, Strait of Canso area: Ferguson, S. A., 2.
 Ohio, conodont zones: Hass, W. H., 2.
 Lower Missn.: Ver Steeg, K., 4.
 Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
 North-central Perm., Penn.: Lukert, L. H., 1.
 Relationship, crude oils and stratigraphy: Neumann, L. M., 1.
 Ontario, Bryce-Kirkland areas, intrusions: Moorhouse, W. W., 3.
 Sudbury area: Cooke, H. C., 2.
 Windsor-Sarnia area Paleozoic: Caley, J. F., 1.
 Ordovician, Lower, gastropods and trilobites: Bridge, J., 2.
 Pennsylvania, Hollidaysburg-Huntington quads.: Butts, C., 1.
 Taconic sequence: Stose, G. W., 2.
 Pennsylvanian, by microfossils: Cooper, C. L., 3.
 Invertebrata in: Weller, J. M., 2.
 Problems: Wanless, H. R., 2.
 Permian, Tex.-N. Mex.: Skinner, J. W., 1.
 Plant microfossils in coal beds: Kosanke, R. M., 1.
 Quebec: Dresser, J. A., 1.
 Radioactivity well-logs: Mercier, V. J., 2.
 Sedimentary rocks by fossil spores and pollen: Wilson, L. R., 3.
 Seismic areas and secular magnetic variations: Omer, G. C., Jr., 1.
 Soil types and parent materials: Marshall, C. E., 1.
 Stegocephalia, genera census: Case, E. C., 1.
 Taconic sequence, Pa.-N. Y.: Stose, G. W., 2.
 Tennessee, Chattanooga shale, type area: Hass, W. H., 3.
 Texas, central, Dev.: Barnes, V. E., 7.
 Comanche fms.: Stanton, T. W., 1.
 Cretaceous, with Ark.-La.-Miss.-Ala.: Hazzard, R. T., 1.
 Ellenburger group: Cloud, P. E., Jr., 1.
 La Gloria oil and gas field: Woolley, W. C., 1.
 Llano Uplift, Penn.: Thompson, M. L., 2.

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- Texas—Continued.
 Pennsylvanian, surface, subsurface: Cheney, M. G., 3, 4.
 Triassic, Mid., N. Am.: McLearn, F. H., 1.
 Tuscaloosa Co., Ala.-Neshoba Co., Miss., pre-Selma Upper Cret. fms.: Eargle, D. H., 2; U. S. G. S., 2, no. 20.
 United States, Appalachians, Newark series: Carlston, C. W., 1.
 Atlantic Coast, N. J.-Ga., macrofossils: Richards, H. G., 6.
 Atlantic Gulf Coastal Plains, Tert.: Leriche, M., 1.
 Berea sand pools: Pepper, J. F., 3; U. S. G. S., 1, no. 69.
 Black Hills area, marine Jurassic: Im-lay, R. W., 2.
 Comanche fms.: Stanton, T. W., 1.
 Guadalupe Mts., N. Mex.-Tex.: West Tex. G. Soc., 3.
 Illinois Basin, Lower Chester: Swann, D. H., 2.
 Marine Penn., Colo.-N. Mex.: Henbest, L. G., 3.
 New Albany shale: Campbell, G., 1.
 Oil and gas fields, La.-Ark.-Miss.-Ala.: Shreveport G. Soc., 1.
 Pearlette volcanic ash: Frye, J. C., 7.
 Permian: King, P. B., 1.
 Rocky Mtn. area, oil correls.: Crawford, J. G., 1.
 Southern, fms. below Smackover ls.: Hazzard, R. T., 2.
 Southwest, intertonguing marine, non-marine Cret. deposits: Pike, W. S., Jr., 1.
 Utah, central: Spieker, E. M., 1.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Vermont, Strafford quad.: Doll, C. G., 1.
 Virginia, Appalachian Valley lss. facies: Cooper, B. N., 3.
 Shenandoah Valley, Lower Mid. Ord.: Cooper, B. N., 1.
 Washington, NE. Stevens Co. Camb.: Campbell, C. D., 1.
 Wells in thermal equilibrium: Guyod, H. C., 1.
 Wyoming, Gros Ventre Mts.-Mt. Leidy Highlands, Paleozoic, Mesozoic: Foster, H. L., 1.
 Oregon Basin oil field: Walton, P. T., 3.
 Paleozoic fms., Cody area: Stipp, T. F., 1.
 Shoshone River Canyon-Oregon Basin oil field: Stipp, T. F., 1.
 Tables and charts.
 Alabama, Cretaceous, with Tex., Ark., La., Miss.: Hazzard, R. T., 1.
 Oil and gas fields: Shreveport Geol. Soc., 1.
 Arctic America, Ellesmere Land-Greenland: Poulsen, C., 2.
 Arizona, N., continental Trias. fauna: Camp, C. L., 3.

Correlations—Continued.

Tables and charts—Continued.

- Arkansas, Cretaceous, with Tex., La., Miss., Ala.: Hazzard, R. T., 1.
 Southern, oil and gas fields: Shreveport Geol. Soc., 1.
 Big Horn Basin, Wyo.-Mont., early Tert.: Jepsen, G. L., 1.
 British Columbia, NE. Trias.: McLearn, F. H., 2.
 Buena Vista Hills oil field, Calif.: Goudkoff, P. P., 1.
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 California, E. side San Joaquin Valley oil-field fms.: Ferguson, G. C., 1.
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 Oak Canyon oil field, Los Angeles Co.: Bell, G. R., 1.
 Santa Clara River-Santa Barbara oil fields, oil zones: Rankin, W. D., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 West side San Joaquin Valley oil-field fms.: Gouldkoff, P. P., 1.
 Canada, Gaspé: McGerrigle, H. W., 1, 2.
 Canal oil field, Calif.: Goudkoff, P. P., 1.
 Coalinga Northeast Extension oil field, Calif.: Goudkoff, P. P., 1.
 Coalinga Nose field, Calif.: Goudkoff, P. P., 1.
 Coffee Canyon oil field, Calif.: Ferguson, G. C., 1.
 Coles Levee oil field, Calif.: Goudkoff, P. P., 1.
 Correlation, Perm., W. Tex.-SE. N. Mex.: Skinner, J. W., 1.
 Cretaceous correls., Tex.-Ark.-La.-Miss.-Ala.: Hazzard, R. T., 1.
 Devils Den Old area and Alferitz area oil fields, Calif.: Goudkoff, P. P., 1.
 Dominion oil field, Calif.: Ferguson, G. C., 1.
 East Coalinga oil field, Calif.: Goudkoff, P. P., 1.
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 Elk Hills oil field, Calif.: Goudkoff, P. P., 1.
 Fauna and continental Trias., N. Ariz.: Camp, C. L., 3.
 Florida, N., poss.: Todd, J. D., 1.
 Forest City Basin, U. S.: Lee, W., 1;
 U. S. G. S., 1, no. 48.
 Fruitvale oil field, Calif.: Ferguson, G. C., 1.
 Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.
 Greeley oil field, Calif.: Ferguson, G. C., 1.
 Hawaiian Islands: Stearns, H. T., 1.
 Kentucky, E., Brassfield fm. Sil.: Branson, E. B., 1.
 Tip Top sand and Meramec-Chester boundary: Ray, L. L., 2.
 Kern Front oil field, Calif.: Ferguson, G. C., 1.
 Kettleman North Dome field, Calif.: Goudkoff, P. P., 1.

Correlations—Continued.

Tables and charts—Continued.

- Knob Hill oil field, Calif.: Ferguson, G. C., 1.
 Lost Hills oil field, Calif.: Goudkoff, P. P., 1.
 Louisiana, N., oil and gas fields: Shreveport Geol. Soc., 1.
 Louisiana-Texas-Miss.-Ala.-Ark., Cret.: Hazzard, R. T., 1.
 McKittrick Franco Western area, Calif.: Goudkoff, P. P., 1.
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 McKittrick West End oil field, Calif.: Goudkoff, P. P., 1.
 McVan oil field, Calif.: Ferguson, G. C., 1.
 Mammalia, holarctic, Cenozoic relationships: Simpson, G. G., 8.
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 Michigan, Traverse group, Afton-Onaway area: Kelly, W. A., 1.
 Traverse group, Michigan Basin: Cohee, G. V., 2; U. S. G. S., 2, no. 28.
 Midway-Sunset Republic area, Calif.: Goudkoff, P. P., 1.
 Mississippi, oil and gas fields: Shreveport Geol. Soc., 1.
 Mississippi with Ark-Tex.-La.-Ala., Cret.: Hazzard, H. T., 1.
 Montana, Great Plains sed. rocks: Perry, E. S., 1.
 Northwestern: Sloss, L. L., 1; U. S. G. S., 2, no. 25.
 Mount Poso oil field, Calif.: Ferguson, G. C., 1.
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 New Albany shale, U. S.: Campbell, G., 1.
 New Mexico, N., Penn.: Read, C. B., 2.
 North Belridge oil field, Calif.: Goudkoff, P. P., 1.
 North Poso oil field, Calif.: Ferguson, G. C., 1.
 Ohio, conodont zones: Hass, W. H., 2.
 Oklahoma, Ouachita Mts.: Hendricks, T. A., 1; Tulsa Geol. Soc., 1.
 Southern, oil fields: Gouin, F., 1.
 Paleozoic rocks, Las Animas Arch, Colo.: Maher, J. C., 2.
 Pennsylvania, Taconic sequence: Stose, G. W., 2.
 Permian, W. Tex.-SE. N. Mex.: Skinner, J. W., 1.
 Premier oil field, Calif.: Ferguson, G. C., 1.
 Rio Bravo oil field, Calif.: Ferguson, G. C., 1.
 Round Mtn. oil field, Calif., Ferguson, G. C., 1.
 Semitropic oil field, Calif.: Goudkoff, P. P., 1.
 South Belridge oil field, Calif.: Goudkoff, P. P., 1.

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- South Dakota, Missouri Valley: Petsch, B. C., 1.
- Stegocephalia, general census: Case, E. C., 1.
- Taconic sequence, Pa.-N. Y.: Stose, G. W., 2.
- Ten Section oil field, Calif.: Goudkoff, P. P., 1.
- Tertiary time chart, continental: Simpson, G. G., 10.
- Texas, Comanche fms.: Stanton, T. W., 1.
- Hueco, Franklin Mts.: West Tex. Geol. Soc., 1.
- Pennsylvanian Llano region: Plummer, F. B., 2.
- North-central: Cheney, M. G., 3.
- Upper Cambrian, Llano uplift area: Bridge, J., 2.
- Texas with Ark.-La.-Miss.-Ala., Cret.: Hazzard, R. T., 1.
- Triassic, Upper Perm., N. Am.-Europe-USSR-Africa: Colbert, E. H., 3.
- Tupman oil field, Calif.: Goudkoff, P. P., 1.
- United States, Black Hills area, marine Jurassic: Imlay, R. W., 2.
- Continental Triassic: Camp, C. L., 3.
- Eastern Gulf Coast oil poss.: Todd, J. D., 2.
- Eastern Gulf Coast area, Tert. outcrops: MacNeil, F. S., 4; U.S.G.S., 2, no. 29.
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- Southwest, intertonguing marine, non-marine Cret. deposits: Pike, W. S., Jr., 1.
- Wasco oil field, Calif.: Ferguson, G. C., 1.
- Washington, NE. Stevens Co., Camb.: Campbell, C. D., 1.
- Wheeler Ridge oil field, Calif.: Goudkoff, P. P., 1.
- Williams area, Calif.: Goudkoff, P. P., 1.
- Wyoming, Bighorn Basin Paleozoic fms.: Stipp, T. F., 2.
- Elk Basin anticline oil field: McCabe, W. S., 1.
- Jackson Hole area: Love, J. D., 1; U. S. G. S., 2, no. 22.
- Shoshone River Canyon-Oregon Basin oil field: Stipp, T. F., 1.
- Wind River Basin, NE.: Tourtelot, H. A., 1; U. S. G. S., 2, no. 22.
- Correlation of refraction shooting: Gamburtsev, G. A., 1.
- Correlation-refraction method, seismic surveying: Gillin, J. A., 1.
- Corundum.
- Colorado, nonmetallic minerals: Heinrich, E. W., 9; U. S. G. S., 3, no. 10.
- Feldspar, products, laboratory alteration: Folk, R. L., 1.
- Georgia, Hog Creek mine, no ore: Ballard, T. J., 1.

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- Idaho, sapphires: Anonymous, 58.
- Jewel-bearings, materials for: Insley, H., 1.
- Montana, Bear Trap deposit, Madison Co.: Hopkins, J. B., 1.
- Bozeman mine, Gallatin Co.: O'Brien, R. D., 1.
- Gallatin Co. deposits: O'Brien, R. D., 2.
- Navigation in crystallography: Winchell, H., 2.
- Nevada, Blue Metal mines, Douglas Co.: Binyon, E. O., 1.
- New Jersey, Rudeville, Windsor quarry: Zodac, P., 5.
- North Carolina, Buck Creek deposits, Clay Co.: Ballard, T. J., 3.
- Corundum Hill mine, Macon Co.: Ballard, J. T., 2.
- Industrial minerals: Stuckey, J. L., 1.
- Ontario, Craigmont deposit: Eardley-Wilmot, V. L., 1.
- Migmatites, SE.: Moyd, L. S., 2.
- Renfrew Co. locs.: Eisenberg, J. M., 2.
- Corundum and garnet, distinction: Butler, G. M., 1.
- Corundum, none found, Hog Creek, Ga.: Ballard, T. J., 1.
- Costa Rica. See also Central America.
- Economic geology.*
- Monte Aguacate gold mines: Rex, R., 1.
- Mineralogy.*
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- Physical geology.*
- Volcanoes: Stocking, H. E., 1.
- Cotangent ruler for structural geol. problems: White, W. S., 2.
- Cranfield oil and gas field, Miss.: Zebal, G. P., 1.
- Craters, geology applied to Imbrian Plain of the moon: Spurr, J. E., 1.
- Hawaii, Lanai meteorites: Buddhue, J. D., 7.
- Craton, and geosynclinal nomenclature: Kay, G. M., 3.
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- Southeast: MacNeil, F. S., 1.
- Tuscaloosa area, highway profiles: Eargle, D. H., 3; U. S. G. S., 2, no. 31.
- Vick fm., Coastal Plain: Conant, L. C., 1.
- West, pre-Selma fms.: Eargle, D. H., 1; Monroe, W. H., 2; U.S.G.S., 1, no. 50.
- Alaska, oil poss.: Reed, J. C., 2.
- Petroleum Naval Reserve No. 4: Foran, W. T., 1.
- Southeast, molybdenite deposits: Twenhofel, W. S., 1.
- Ultrabasic rocks, SE.: Kennedy, G. C., 2.
- Alberta, Alexo area: Canada G. S., 1.
- Athabasca sands, drilling: Hume, G. S., 2.
- Athabasca-Ram Rivers: MacKay, B. R., 2.
- Brulé area: Lang, A. H., 1.
- West of 5th Meridian: Canada G. S., 1.

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Alberta—Continued.

- Callum Creek area: Douglas, R. J. W., 1.
 Canadian Pacific Ry. area: Hutt, G. M., 3.
 Cripple Creek area: Erdman, O. A., 1.
 Fall Creek area: Canada G. S., 1.
 Foothills boundary: Rutherford, R. L., 2.
 Gregg Lake area: Irish, E. J. W., 1.
 Highwood-Elbow area: Allan, J. A., 2.
 Jurassic-Cret. boundary: Brown, R. W., 3.
 Langford Creek area: Douglas, R. J. W., 2.
 Liquid bitumen, Mildred-Ruth Lakes area: Nickle, C. O., 2.
 Moberly Creek area: Lang, A. H., 2.
 North Pinhorn gas field: Wilson, G. M., 1.
 Plains structure at depth: Rutherford, R. L., 1.
 Saunders map area: Canada G. S., 1.
 Wapiti-Cutbank area: Allan, J. A., 1.
 Alberta-Saskatchewan, correl.: Russell, L. S., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 Coal Mine Canyon: Brady, L. F., 1.
 Dragoon Mts.: Cederstrom, D. J., 2.
 Holbrook area, water fms.: Babcock, H. M., 2.
 Intertonguing marine, nonmarine deposits: Pike, W. S., Jr., 1.
 Mohawk zinc prosp., Pima Co.: Haury, P. S., 1.
 Old Reliable copper mine: Denton, T. C., 2.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Salt River Valley: McDonald, H. R., 2.
 Wellton-Mohawk area: Babcock, H. M., 3.
 Western, Paleozoic seaways: McKee, E. D., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 Arkansas, Magnet Cove deposits: Spencer, R. V., 1.
 Southern oil and gas fields: Shreveport Geol. Soc., 1.
 Bauxite, stratigraphy, origin: Harder, E. C., 1.
 Bighorn Basin, Wyo.-Mont.: Stow, M. H., 2; Wyoming Univ., 1.
 Mesozoic fms.: Downs, G. R., 1.
 Rim features: Thom, W. T., Jr., 2.
 Tectonic development: Fanshawe, J. R., 1.
 British Columbia: Hutt, G. M., 6.
 Ashcroft area: Duffell, S., 1, 2.
 Carbon Creek-Mount Rickford area: Mathews, W. H., 2.
 Coast Range batholith: Phenister, T. C., 1.
 Electrum-ruby silver deposit, East Fold mine: Fawley, A. P., 1.
 Kootenay Lake origin: Schofield, S. J., 1.
 McConnell Creek area: Lord, C. S., 1.

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British Columbia—Continued.

- Manson Creek, Cassiar dist.: Canada G. S., 1.
 Nanaimo coal field: Buckham, A. F., 1, 2.
 Nicola, Kamloops, and Yale dists.: Canada G. S., 1.
 Northern: Armstrong, J. E., 2.
 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Salmon Arm area: Rice, H. M. A., 1.
 Southern half, Aiken Lake area: Armstrong, J. E., 1.
 California, Caliente Range: Hill, M. L., 2.
 East Mayacmas dist. quicksilver deposits: Yates, R. G., 1.
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 Hirz Mtn. iron deposit, Shasta Co.: Lamey, C. A., 1.
 Ivanpah quad.: Hewett, D. F., 1.
 Los Angeles Basin: Driver, H. L., 1.
 Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Los Banos dist. ss.: Daviess, S. W., 1.
 Moreno shale: Long, J. A., 1.
 New Idria dist. quicksilver deposits: Eckel, E. B., 1.
 North Elder Creek area chromite: Rynearson, G. A., 1.
 Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
 San Joaquin Valley: Barbat, W. F., 1.
 Santa Maria to W. end of Cuyama Valley: Hughes, A. W., 2.
 Shasta, California iron deposits: Lamey, C. A., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 Ventura Basin: Bailey, T. L., 2.
 Western Cuyama Valley to Maricopa, road log: Hill, M. L., 1.
 Canada, Kootenay fm. age: Bell, W. A., 1.
 Lloydminster-Lone Rock oil and gas field: Edmunds, F. H., 1.
 Mackenzie River Valley fossil horizons: Warren, P. S., 1.
 Norman Wells oil field: Stewart, J. S., 1.
 Rocky Mts.: Williams, M. Y., 2.
 Western, limestones: Goudge, M. F., 1.
 Central America, geol. map: Mullerried, 1.
 Petroleum poss.: Woodring, W. F., 2.
 Volcanism: Lester, J. G., 1.
 Colorado, Baca Co., Freezeout Creek fault area: Buehler, K. M., 1.
 Big Sandy Creek area: McLaughlin, T. G., 1.
 Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Coal Creek dist., Gunnison Co.: Toenges, A. L., 2.

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Colorado—Continued.

- Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Fluorspar deposits: Cox, D. C., 1.
 Front Range mineral belt: Goddard, E. N., 5.
 General geology: Vanderwilt, J. W., 5.
 Golden-Morrison area: LeRoy, L. W., 1.
 Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
 Kokomo mining district: Koschmann, A. H., 1, 3.
 La Plata dist.: Eckel, E. B., 2.
 Laramie fm., Golden area: Moody, J. D., 1.
 Model anticline, Las Animas Co.: U. S. G. S., 1, no. 68.
 Mount Wilson dist., San Miguel Co.: Varnes, D. J., 5.
 Rangely oil and gas field: Bench, B. M., 1, 2; Bosco, F. N., 1; Newton, S. M., 4; Pickering, W. Y., 1; Thomas, C. R., 1; U. S. G. S., 1, no. 67.
 San Juan region: Burbank, W. S., 6.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
 Southwest, intertonguing marine, non-marine deposits: Pike, W. S., Jr., 1.
 Uncompahgre mining dist., Ouray Co.: Burbank, W. S., 8.
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 Vanadium deposits, Placerville area: Fischer, R. P., 4.
 Correlations, outcrops, Tex.-Ala.: Monroe, W. H., 1; U. S. G. S., 2, no. 23.
 Pre-Selma fms., Ala.-Miss.: Eargle, D. H., 2; U. S. G. S., 2, no. 20.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Cuba, Camagüey dist. fauna and stratigraphy: Albear y Franquiz, J. F. de, 1.
 Camagüey Prov., E.: Wessem, A., 1.
 Camagüey-Oriente area: Hermes, J. J., 1.
 Eastern: Thayer, T. P., 2.
 Geologic map: Brodermann y Vignier, J., 2.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de, 1.
 Serpentine, age: Rutten, L. M. R., 1.
 Soils: González, A. de J., 1.
 Florida, geology, oil occurrence: Pressler, E. D., 1.
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 Georgia Strait area, British Columbia: Wash.: Mathews, W. H., 4.
 Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.
 Petroleum and gas poss.: Peyton, G., 1.
 Greenland, East: Stauber, H., 2.
 East coast 73°-75°, and islands: Maync, W., 1.

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- East, sed. petrology: Kleiber, K., 1.
 East, 74°-75°: Vischer, G. A., 2.
 Jamesonland lowlands: Stauber, H., 1.
 Kronprins Christians Land: Nielsen, E., 1.
 North-east: Ahlmann, H. W., 1.
 Northern plateaus: Noe-Nygaard, A., 2.
 Scoresby Sound area: Tothé, J. P., 1.
 Svartenhuk, basalt prov.: Noe-Nygaard, A., 1.
 Svartenhuk Penin., West: Rosenkrantz, A., 2.
 Guatemala, Petén area: Wadell, H. A., 1.
 Haiti, Jacmel area manganese prospects: Goddard, E. N., 4.
 Idaho, Blackbird dist., Lemhi Co., cobalt deposits: Anderson, A. L., 3.
 Geologic map: Ross, C. P., 1.
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- Joyita Hills, Los Piños Mts., Chupadera Mesa area: U. S. G. S., 1, no. 61.
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- Chromite, Camagüey Prov.: Guild, P. W., 2.
 Manganese, E. deposits: Straczek, J. A., 1.
 Mineral map: Calvache, A., 2.
 Mineral resources: Brodermann y Vignier, J., 1.
 Mineral waters: Cosculluela y Barreras, J. A., 1.
 Minerals, history and development: Calvache, A., 1.
 Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Tungsten: Li, K. C., 1.

Paleontology.

- Camagüey dist., stratigraphy, paleontology: Albear y Franquiz, J. F., de, 1.
 Camagüey Prov., cent.: Wessem, A., 1.
 Camagüey-Oriente area: Hermes, J. J., 1.
 Foraminifera, small, Oligocene: Bellen, R. C. van, 1; Keijzer, F. G., 1.
 Glyptobairdia, new Ostracoda genus: Stephenson, M. B., 2.
 Mollusca, Tert.: Aguayo, C. G., 1, 2.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de, 1.
 Rotalia, Cret., Tert.: Cushman, J. A., 1.

Petrology

- Camagüey Prov., cent.: Wessem, A., 1.
 Camagüey-Oriente area: Hermes, J. J., 1.
 Geology and soils: González, A. de J., 1.
 Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de, 1.
 Origin, "Colorado" or red beds: González, A. de J., 2.
 Serpentine, age: Rutten, L. M. R., 1.

Cuba—Continued.

Petrology—Continued.

- Soils, rocky: González, A. de J., 3.
- Thrust-faults, related structures: Thayer, T. P., 2.

Physical geology.

- Camagüey Prov., cent.: Wessem, A., 1.
- Camagüey-Oriente area: Hermes, J. J., 1.
- Manganese, E. deposits: Straczek, J. A., 1.
- Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
- Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de, 1.

- Soils, rocky: González, A. de J., 3.
- Thrust-faults, related structures: Thayer, T. P., 2.

Physiographic geology.

- Oriente Prov., E.: Keijzer, F. G., 3.

Underground water.

- Mineral waters: Cosculluela y Barreras, J. A., 1.

Cubanite, crystal structure: Buerger, M. J., 3.

Cultural vs. professional approach to geology:

- Lougee, R. J., 3; Mather, K. F., 1.

Cumberland oil field, Okla.: Cram, I. H., 1.

Cumulative intensity of soil drifting: Chepil, W. S., 3.

Cuprite.

- Gems, cubic system: Holmes, R. J., 3.

New Jersey, Flemington copper mine: Zodiac, P., 1.

Pennsylvania, Wheatley mines area: Thomas, C. A., 7.

Wyoming, collecting, Encampment area: Platt, R. E., 1.

Curaçao, Mollusca, Tert.: Regteren Altena, C. O., van, 1.

Current crescents, Trias. Moenkopi fm., Ariz.: Peabody, F. E., 1.

Cuspidine in system $\text{CaO} \cdot 2\text{SiO}_2 \cdot \text{CaF}_2$: McCaughey, W. J., 1.

Cut Bank gas field, Mont.: Erdmann, C. E., 2; U. S. G. S., 8.

Cut Bank-West Kevin fields, Mont.: Erdmann, C. E., 2.

Cymric oil field, Kern Co., Calif.: McMasters, J. H., 1.

Cystoidea. See also Echinodermata; Invertebrata (general).

Ohio, Cincinnati area, fossils, strata: Bucher, W. H., 1.

Quebec, faunas: Dresser, J. A., 1.

Virginia, Shenandoah Valley Ord. faunas: Cooper, B. N., 1.

Dacite, Greenland, E., eruptives: Rittman, A., 1.

Dams and dam sites.

Anderson Ranch Dam, Boise River, Idaho: Okeson, C. J., 1.

Arkansas, Bull Shoals Dam: Roberts, G. D., 2.

Cyclothem and dam designs, W. Appalachians: Philbrick, S. S., 1.

Dos Bocas Dam, Puerto Rico: Money-maker, B. C., 3.

Garzas Dam, Vacas River, Puerto Rico: Moneymaker, B. C., 4.

Dams and dam sites—Continued

Georgia, Nottely Dam area: Kellberg, J. M., 2.

Idaho, Palisades Dam site: Harshman, E. N., 1.

Kansas, Kanopolis Dam site: Happ, S. C., 5.

Marshall Ford Dam, Travis Co., Tex.: Darnell, J. L., 1.

Missouri River Basin, upper, studies: Fox, P. P., 2.

Montana, Clark Fork-Kootenai River devel.: Erdmann, C. E., 1.

Flathead River above Columbia Falls: Erdmann, C. E., 3.

North Carolina, Fontana Dam area: Moneymaker, B. C., 2.

Shasta Dam, Sacramento River, Calif.: Gardner, W. I., 1.

South Dakota, Ft. Randall Dam explor.: Barnett, R. E., 1.

Tennessee, Iron Mtn. fault, Watauga Dam: Grant, L. F., 2.

TVA, methods and objects: Moneymaker, B. C., 6.

Washington, Foster Creek Dam site: Schmidt, A. W., 1.

Grand Coulee: Irwin, W. H., 1; Koester, C. R., 1.

South Dam, Columbia Basin project: Irwin, W. H., 2.

Dana's System of Mineralogy, vol. I, 7th ed., corrections: Frondel, C., 3.

Datolite, N. Mich., collecting: Luoma, W. E., 1.

Daubrélite.

Meteoritic mineral: Neuerburg, G. J., 1.

Mexico, structure: Lundquist, D., 1.

Decapoda.

California, Palos Verdes Hills fauna: Woodring, W. P., 1.

Greenland, West, faunas: Laursen, D., 1.

Deciduous forests, devel. eastern N. Am.: Braun, E. L., 1.

Definitions, geologic, hydrologic, chemical terms in ground-water reports, Ariz.: Halpenny, L. C., 3.

Deflections of vertical from gravity anomalies: Lambert, W. D., 1.

Deformation.

Alaska, Alaska Range: Wahrhaftig, C., 1.

Arizona, Ajo mining dist.: Gilluly, J., 1.

Dragoon Mts.: Cederstrom, D. J., 2.

Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.

Big Horn Basin, Wyo.-Mont., tectonic devel.: Fanshawe, J. R., 1.

British Columbia: Armstrong, J. E., 2.

Nanaimo coal field: Buckham, A. F., 1.

Nicola, Kamloops, Yale dist.: Canada G. S., 1.

California, Los Angeles Basin: Driver, H. L., 1.

Palos Verdes Hills: Woodring, W. P., 1.

Section, Sierra Nevada-Death Valley: Hopper, R. H., 1.

Deformation—Continued.

California—Continued.

Sierra Nevada, Donner Pass zone: Hudson, F. S., 1.

Southern Sierra Nevada structure: Mayo, E. B., 1.

Canada, beaches, glacial Lake Agassiz: Johnston, W. A., 1.

Canadian Arctic, Victor Is. area: Washburn, A. L., 1.

Carbonates, vein, microscopic characters: Grout, F. F., 2.

Caribbean Sea: Bucher, W. H., 3.

Colorado, Kokomo mining dist.: Koschmann, A. H., 1, 3.

Blue River area, Summit Co.: Koschmann, A. H., 3.

Cuba, eastern: Thayer, T. P., 2.

Experimental rock deformation study: Knopf, E. F. B., 1.

Flow and creep of rocks: Jacob, C. E., 2.

Idaho, Blackbird dist. cobalt deposits: Anderson, A. L., 3.

Labrador Peninsula, E. area: Tanner, V., 2.

Maryland, South Mtn. fold: Cloos, E., 3.

Mexico, Plateau: Nye, S. S., 1.

Missouri, cherts, Columbia area: Trefethen, J. M., 2.

Nevada, Aztec ss., Juras., bleaching: Longwell, C. R., 5.

Bristol Range: Wheeler, H. E., 2.

New Mexico, lower Rio Puerco area: Wright, H. E., Jr., 1.

Lucero uplift: Kelley, V. C., 2; U. S. G. S., 1, no. 47.

Normal fault structures and others: Willis, B., 1.

North America, Caribbean Sea area: Bucher, W. H., 3.

Northwest Territories, Yellowknife area: Henderson, J. F., 1.

Ocean deeps, mountain chains, and volcanic ranges: Gunn, R., 1.

Puerto Rico: McGuinness, C. L., 1.

Quebec, Federal mine, Gaspé: Auger, P. E., 3.

Rock bursts, geol. conditions favoring: Boos, M. F., 3.

United States, normal and other fault structures: Willis, B., 1.

Northeast basin areas devel.: Lockett, J. R., 1.

Utah, Green River Desert-Cataract Canyon area: Baker, A. A., 1.

Kelly's Hole, Dugway Range: Ives, R. L., 16.

Tintic dist.: Kildale, M. B., 1.

Vein carbonates, microscopic characters: Grout, F. F., 2.

Vermont, Orange Co. copper mines: Jacobs, E. C., 2.

Wisconsin, Baraboo quartzite, Columbia, Sauk Cos.: Riley, N. A., 1.

Coughlin, Galena Level zinc mines: Berliner, M. H., 1.

Wyoming, cent. Owl Creek Mts.: Engel, A. E. J., 3.

Delafossite structure: Pabst, A., 2.

Delaware, Ostracoda, Cret.: Schmidt, R. A. M., 2.

Delaware-Childers oil field, Okla., reserves: Johnston, K. H., 1.

Delhi field, Franklin-Richland Parishes, La.: Bloomer, P. A., Jr., 1.

Delhi, West Delhi, Big Creek oil and gas fields, La.: Lloyd, A. M., 1.

Del Monte oil and gas field, Zavala Co., Tex.: Clark, G. H., 1.

Deltas.

British Columbia: Hutt, G. M., 6.

Colorado, Colorado Springs quad.: McLaughlin, K. P., 1.

Depositional surfaces, geomorphology: Price, W. A., 3.

Greenland, West: Laursen, D., 1.

Gulf Coast depositional surfaces: Price, W. A., 3.

Mexico, phys. provinces: Ordoñez, E., 1.

New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

New York City area: Rosalsky, M. B., 1.

Ontario, clay-belt land forms: Hills, A., 1.

United States, E., Clinton sand deposition: Swain, J. F., 1.

Meander belts: Russell, R. J., 2.

Mississippi River Valley, lower: Fisk, H. N., 1.

Utah, Henry Mts. region: Hunt, C. B., 1.

Pavant Range, Millard Co.: Maxey, G. B., 1.

Del Valley oil field, Calif.: Hazzard, J. C., 1; Matter, J. E., 1.

Dendrites, Kern Co., Calif., collecting: Henry, D. J., 3.

Denudation. See Erosion.

Deposition. See Sedimentation.

Depositional surfaces, geomorphology: Price, W. A., 3.

Depth changes in ore deposition: Bruce, E. L., 1.

Deserts.

California, Colorado Desert: Cockerell, T. D. A., 1.

Death Valley area: Putnam, G. P., 1.

Mexico, geol., geog. provinces: Ordoñez, E., 2-a.

North America, minerals: Belz, C. A., 2.

Western, ripples: Ives, R. L., 9.

Devonian. See also Paleontology, Devonian.

Adirondackia, vanishing: Chadwick, G. H., 5.

Alabama, NE.: Burchard, E. F., 1.

Alaska, Petroleum Naval Reserve No. 4: Foran, W. T., 1.

Southeast molybdenite deposits: Twenhofel, W. S., 1.

Alberta, Alexo area: Canada G. S., 1.

Athabaska sands, drilling: Hume, G. S., 2.

Brûlé area: Lang, A. H., 1.

West of 5th Meridian: Canada G. S., 1.

Cripple Creek area: Erdman, O. A., 1.

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

Devonian—Continued.

Alberta—Continued.

- Foothills, Athabaska-Ram Rivers: MacKay, B. R., 2.
 Moberly Creek area: Lang, A. H., 2.
 Plains structure at depth: Rutherford, R. L., 1.
 Saunders map area: Canada G. S., 1.
 Arizona, bioherms, cent.: Huddle, J. W., 4.
 Central: Huddle, J. W., 3.
 Dragoon Mts.: Cederstrom, D. J., 2.
 Grand Canyon area: Corle, E., 1; Stone, J. F., 1; Van Gundy, C. E., 1.
 Mohawk zinc prosp., Pima Co.: Haury, P. S., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Western, Paleozoic seaways: McKee, E. D., 3.
 Arkansas, Hot Spring Co., Magnet Cove: McElwaine, R. B., 1.
 Magnet Cove deposits: Spencer, R. V., 1.
 Montgomery Co. barite deposits: McElwaine, R. B., 2.
 Penters chert, Batesville dist., age: Kinney, D. M., 1.
 Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.
 Bighorn Basin, Wyo.-Mont.: Wyoming Univ., 1.
 British Columbia, Alcan Highway Paleozoic sed. rocks: Laudon, L. R., 2.
 California, Cerro Gordo area, Inyo Co.: Merriam, C. W., 1.
 Sierra Nevada-Death Valley section: Hopper, R. H., 1.
 Canada, Gaspé: McGerrigle, H. W., 2.
 Lloydminster-Lone Rock oil and gas field: Edmunds, F. H., 1.
 Montreal: Clark, T. H., 1.
 Norman Wells oil field: Stewart, J. S., 1.
 Rocky Mts.: Williams, M. Y., 2.
 Western, limestones: Goudge, M. F., 1.
 Colorado, Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
 Blue River area, Summit Co.: Singewald, Q. D., 3.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Colorado Springs quad.: McLaughlin, K. P., 1.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 General: Vanderwilt, J. W., 5.
 Gilman dist., Eagle Co.: Tweto, O. L., 3.
 Jewell Tunnel mine, Chaffee Co.: Ames, E. W., 1.
 Kokomo mining dist.: Koschmann, A. H., 1.
 La Plata dist.: Eckel, E. B., 2.
 Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
 Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
 Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.

Devonian—Continued.

Colorado—Continued.

- Rico mining dist., Dolores Co.: Varnes, D. J., 2.
 San Juan region: Burbank, W. S., 6.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
 Forest City Basin, U. S.: U. S. G. S., 1, no. 48.
 Greenland, East, coast 73°-75°, and islands: Maync, W., 1.
 East, coast, 74°-75°: Vischer, G. A., 2.
 Eruptives: Rittman, A., 1.
 Faulted area N. of Muskox Fjord: Butler, H., 1.
 Jamesonland lowlands: Stauber, H., 1.
 Northeast: Ahlmann, H. W., 1.
 Idaho, Borah Peak quad.: Ross, C. P., 2.
 Geologic map: Ross, C. P., 1.
 Illinois, geol. map: Weller, J. M., 1.
 King oil field, Jefferson Co.: Folk, S. H., 1.
 Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Mattoon oil field: Kniseley, H. B., 1.
 Indiana State Parks: Freeman, O. W., 1.
 Kansas, central area: Taylor, M. H., 1.
 Kentucky, Clinton Co. pools: Jillson, W. R., 5.
 Tip Top sand and Meramec-Chester boundary: Ray, L. L., 2.
 Leduc oil field, Alberta: Anonymous, 52.
 Maine, manganese deposits: Miller, R. L., 2.
 Manitoba, prospecting areas: de Wet, J. P., 1.
 Geologic map: Canada G. S., 1.
 Mexico, Caborca area, NW. Sonora: Cooper, G. A., 1.
 Northern, geologic map: King, P. B., 4.
 Sonora, Altar dist.: Arellano, A. R. V., 2.
 Michigan, Mackinac Island: Stanley, G. M., 1.
 Michigan Basin, Traverse group: Cohee, G. V., 2; U. S. G. S., 2, no. 28.
 Mineral res.: Zuidema, H. P., 2.
 Northeast: Thiel, G. A., 2.
 Oakland Co.: Bingham, M. T., 1.
 Southeast, well-cores: Cohee, G. V., 1.
 Traverse group: Cohee, G. V., 2; Kelly, W. A., 1; U. S. G. S., 2, no. 28.
 Missouri: Hinchey, N. S., 1.
 Barite deposits: Mather, W. B., 2.
 Morgan Co.: Mather, W. B., 1.
 Post-Camb. ig. activity, SE.: Kidwell, A. L., 7.
 Ste. Genevieve, St. Francis Cos.: Kidwell, A. L., 6.
 Montana, cent. and NW.: Sloss, L. L., 4.
 Cut Bank-West Kevin fields: Erdmann, C. E., 2.
 General: Laird, W. M., 4.
 Great Plains, sed. rocks: Perry, E. S., 1.
 North Big Belt Range: Lyons, J. B., 1.

Devonian—Continued

Montana—Continued.

Northwest: Sloss, L. L., 1; U. S. G. S., 2, no. 25.

Petroleum geology: Emrick, E. R., 1.
Plains, structure contour map, Colo. shale base: Dobbin, C. E., 3.

Montreal, Canada: Clark, T. H., 1.

Nevada, Bristol Range: Wheeler, H. E., 2.

New Albany shale: Campbell, G., 1.

New Brunswick: Hutt, G. M., 4.

Honeydale area: Alcock, F. J., 3.

St. Stephen area, Charlotte Co.: Alcock, F. J., 2.

New England, Keene-Brattleboro area: Moore, G. E., 1.

Newfoundland, eastern area: Twenhofel, W. H., 3.

Little Bay area: MacLean, H. J., 1.

New Hampshire, Monadnock area: Billings, K. S. F. L., 1.

Mt. Pawtuckaway quad.: Freedman, J., 1.

Mt. Washington quad.: Billings, M. P., 1, 2.

Oliverian magma ser., trace elements: Chapman, C. A., 2.

Paleozoic magma series: Billings, M. P., 3.

Plymouth quad.: Moke, C. B., 1.

New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.

New Mexico, fluorspar area: Rothrock, H. E., 1.

Future oil poss.: Bates, R. L., 1.

Lake Valley deposits, Sierra Co.: Apell, G. A., 2.

Rattlesnake field, San Juan Co.: Hinson, H. H., 1.

Southeast, pre-San Andres fms. oil zones: King, R. E., 1.

New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

North America, Gulf of St. Lawrence area: Twenhofel, W. H., 4.

North Dakota, Nesson anticline: Laird, W. M., 1.

Northwest Territories, Great Slave Lake area: Bateman, J. D., 2.

Nova Scotia, Barasos-Indian Brook area: Douglas, G. V., 4.

Guysborough Co.: MacNeil, D. J., 2.

Ohio, Chillicothe test-core studies: Carman, J. E., 2.

Columbus area rocks, paleoecological analysis: Wells, W. J., 3.

Conodont zones: Hass, W. H., 2.

Flint: Stout, W. E., 2.

Geologic map: Bownocker, J. A., 1.

Ground-water fms.: Bernhagen, R. J., 2.

Iron ore bearing fms.: Stout, W. E., 1.

Scenic geology: Carman, J. E., 1.

Tuscarawas County: Cummins, J. W., 1.

Vance well drill cuttings: Pye, W. D., 1.

Oklahoma, Antioch pool, Garvin Co.: Turk, L. B., 1.

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Oklahoma—Continued.

Cumberland oil field, Bryan-Marshall Co.: Cram, I. H., 1.

Hunton ls. cores, West Edmond field:

Richards, J. T., 2.

Northeastern: Moore, C. A., 3.

Ouachita Mtn. area: Hendricks, T. A., 1; Tulsa Geol. Soc., 1; U. S. G. S., 1, no. 66.

Southern, oil fields: Gouin, F., 1.

West Edmond oil field: McGee, D. A., 1.

Ontario: Hutt, G. M., 7.

Detroit River ls. strat. position: Caley, J. F., 2.

Geologic map: Ontario Dept. Mines, 3.

Onakawana lignite, Moose Basin: McLaren, D. C., 5.

Southwest, value of seismic prosp.: Hodgson, J. H., 2.

Windor-Sarnia area Paleozoic: Caley, J. F., 1.

Pennsylvania, Hollidaysburg - Huntington quads.: Butts, C., 1.

Huntington area: Willard, B., 5.

Lackawanna Basin origin: Willard, B., 1.

North Strabane area: Fettke, C. R., 1.

Permian Basin, U. S., hard-rock drilling: Johnston, D., 1.

Quebec: Hutt, G. M., 5.

Descriptive geology: Dresser, J. A., 1.

Eastern Tps., serpentine belt epigenesis: Faessler, C., 3.

Federal mine, Gaspé: Auger, P. E., 3.

Gaspé, oil residuals, volcanic rocks: Alcock, F. J., 1.

Megantic to Montreal: Hutt, G. M., 2.

Quebec Central Ry. area: Dawson, A. S., 1.

Shawinigan area: Laverdière, J. W., 1.

Saskatchewan, Cypress Lake area: Furnival, G. M., 1.

Texas, cent.: Barnes, V. E., 5, 7.

Ellenburger group: Cloud, P. E., Jr., 1; Goldich, S. S., 2.

Glass Mts.-Marathon Basin trip: West Tex. Geol. Soc., 2.

Hueco, Franklin Mts.: West Tex. G. Soc., 1.

Keystone field, Winkler Co.: Mygdal, K. A., 1.

Petroleum and gas occurrence: Sellards, E. H., 3.

TXL oil field, Ector Co.: Cantrell, C. D., Jr., 1; David, M. W., 1; Weber, G., 1.

Western, pre-Perm. fms., Central Basin Platform: Barton, J. M., 1.

Pre-Permian oil devel.: Deegan, C. J., 1.

United States, Appalachian Basin: Ritzenhouse, G., 1, 3.

Appalachians, central drainage, Newark series: Carlston, C. W., 1.

Structure: Hietanen, A., 1, 2.

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United States—Continued.

- Bitumen in black shales: Gutschick, R. C., 1.
 Black Warrior Basin, Ala-Miss.: Mel-
 len, F. F., 1.
 Rocky Mtn. area oil and gas fields:
 Dobbin, C. E., 1, 2.
 Utah, Ophir Hill Consolidated mine,
 Tooele Co.: Wideman, F. L., 1.
 Wasatch Mts., Provo area: Baker, A.
 A., 4; U. S. G. S., 2, no. 30.
 Vermont, Orange Co. copper mines: Ja-
 cobs, E. C., 2.
 Stratford quad.: Doll, C. G., 1.
 Virginia, Rose Hill oil field, Lee Co.:
 Miller, R. L., 1-a; U. S. G. S., 1, no.
 76.
 Washington-Oregon biostratigraphy: Beck,
 R. S., 1.
 West Virginia, nat. gas horizons: Reger,
 D. B., 1.
 Well-sample records: Martens, J. H. C.,
 1.
 Wyoming, Bighorn Basin Paleozoic fms.:
 Stipp, T. F., 2.
 Jackson Hole Ranges, Paleozoic, Meso-
 zoic: Wanless, H. R., 5.
 Northwest Wind River Mts.: Baker, C.
 L., 1.
 Oregon Basin oil field: Walton, P. T., 3.
 Paleozoic fms., Shoshone River Canyon,
 Cody area: Stipp, T. F., 1.
 Sage Creek dome area: U. C. C. S., 1,
 no. 53.
- Diabase.**
 Greenland, Thule dist.: Munck, S., 1.
 Massachusetts, Somerville Mystic quarries:
 Palache, C., 3.
 Mexico, Bolson de Mapimi area: Estlack,
 J. C., 1.
 Cuarento dist., Durango: Gallagher, D.,
 1.
 Durango, El Cuarente min. zone: Pérez
 Siliceo, R., 1.
 Minnesota, Lake Superior shore NE. of
 Two Harbors: Grogan, R. M., 2.
 New Hampshire, Lost River, Flume
 gorges, jointing: McNair, A. H., 1.
 New Jersey, Franklin Furnace quad.,
 dikes: Milton, C., 3.
 North Carolina, Halifax Co. molybdenum
 deposits: Robertson, A. F., 2.
 Orange Co., Triassic trough: Harring-
 ton, J. W., 2.
 Ontario, Timiskaming silver-cobalt area:
 Reid, J. A., 1.
 Quebec, Wetetnagami Lake, River areas:
 Fairbairn, H. W., 1; Graham, R. B., 1.
 United States, E. Trias.: Belz, C. A., 1.
 Washington, quartz incl. with diabase
 reaction rims: Goodspeed, G. E., 1.
- Diagenesis and sedimentation, analysis:** Krum-
 bein, W. C., 1.
Diamond drill core polishing: Moyd, L. S., 1.
Diamond drill holes, surveying, controlling:
 Yates, A. B., 1.

Diamond drilling: E. J. Longyear Co., 1.

- Exploration and devel.: Moehlman, R. S., 1.
Diamonds. See also Gems; Precious stones.
 Color range, form variation: Holmes, R.
 J., 2.
 Fluorescence: Shipley, R. M., 1; Switzer,
 G., 2.
General: Woodruff, H. L., 1; Anonymous,
 8.
Hardness variations, microstructure: Slaw-
 son, C. B., 1.
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 chell, H., 5.
Navigation in crystallography: Winchell,
 H., 2.
Single crystal forms: Lonsdale, K., 1.
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**United States, min. res. map, Neb.-Iowa-
 Kana.-Mo.-Okla.-Ark.:** Midwest Re-
 search Inst., 1.
- Diaspore.**
 Missouri, fire clays, differential thermal
 analysis: Keller, W. D., 12.
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 Effect on oil accumulation: Illing, V. C.,
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General: Keller, W. D., 5.
Hypothesis: Tuttle, R. C., 2.
**Mexico, Pachuca-Real del Monte silver
 dist.:** Wisser, E. H., 1.
**Montana, Judith Basin, Ellis, Amsden,
 Big Snowy group:** Walton, P. T., 1.
New Mexico, Lower Penn. cyclothem:
 Young, J. A., Jr., 1.
North America, Caribbean Sea area:
 Bucher, W. H., 3.
 Western Gulf Coastal Plain, historic
 times: Sheets, M. M., 1.
Sedimentary rocks: Krynine, P. D., 2.
**United States, Appalachian drainage de-
 terminants:** Meyerhoff, H. A., 4.
Gulf Coastal Plain, historic times:
 Sheets, M. M., 1.
Rocky Mtn. area oil and gas fields:
 Dobbin, C. E., 1.
Western Gulf Coastal Plain: Price, W.
 A., 4.
**Utah, Cedar City, Parowan Valleys, Iron
 Co.:** Thomas, H. E., 2.
- Diastrophism and evolution, sed. rocks:** Kry-
 nine, P. D., 2.
- Diatomaceae, Diatomaceous earth, and Diato-
 mite.**
 Alaska, Adak Island: Judson, S., 1.
 British Columbia, Nicola, Kamloops, Yale
 dists.: Canada G. S., 1.
**California, Bakersfield Clock Tower, El
 Tejon to Lebec:** Hackel, O., 1.
Moreno shale: Long, J. A., 1.
Monterey fm.: Bramlette, M. N., 1.
Palos Verdes Hills: Woodring, W. P., 1.
Nova Scotia, Digby Neck area: Bancroft,
 M. F., 1.
Ontario, Parry Sound area: Satterly, J., 1.
Oregon, east, bldg.-block material: Wag-
 ner, N. S., 1.

Diatomaceae—Continued.

Oregon—Continued.

Map of mineral deposits: Oregon Dept. Geol. Min. Indust., 1.

Texas, High Plains area: Evans, G. L., 5.

Mineral res.: Sellards, E. H., 4.

United States: Nelson, E. W., 2.

Mineral res. map, Nebr.-Iowa-Kans.-

Mo.-Okla.-Ark.: Midwest Research Inst., 1.

Missouri Valley area: U. S. G. S., 3, no. 1.

Diatremes, SE. Mo., post-Dev. ig. activity: Kidwell, A. L., 6.

Dickite, Mich., Marquette, Gogebic ranges: Gruner, J. W., 3.

Montana, Fergus Co. clay deposits: Dougan, C. W., 1.

Differential thermal analysis, carbonate minerals: Cuthbert, F. L., 2.

Multiple: Kerr, P. F., 4.

Differentiation. See Magmas and magmatic differentiation.

Dikes. See also Intrusions.

Alaska, copper deposits, Kotsina-Kuskulana dist.: Van Alstine, R. E., 1.

Copper-sulfur deposits, Prince of Wales Island: Fosse, E. L., 1.

Kasaan Penin. ore deposits: Warner, L. A., 1.

Lost River tin deposit, Seward Penin.: Heide, H. E., 1.

Molybdenite deposits, SE.: Twenhofel, W. S., 1.

Mountain View tungsten deposit, Hyder: Erickson, A. W., 1.

Poor Man mine, Prince of Wales Island: Holt, S. P., 1.

Southeast: Shaw, V., 1.

Anderson Ranch Dam, Boise River, Idaho: Okeson, C. J., 1.

Arizona, Ajo mining dist.: Gilluly, J., 1.

Dragoon Mts.: Cederstrom, D. J., 2.

Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.

British Columbia, Britannia mines No. 8 ore bodies: Irvine, W. T., 1.

Lucky Jim mine area: Hedley, M. S., 2.

McConnell Creek area: Lord, C. S., 1.

California, Akos mine, Mariposa Co.: Wiebelt, F. J., 2.

Iron Hat deposits, San Bernardino Co.: Lamey, C. A., 1.

Minarets deposit, Madera Co.: Severy, C. L., 2.

North Elder Creek area chromite: Rynearson, G. A., 1.

Oxnard oil field, Ventura area: Hazard, J. C., 3.

Pala pegmatites: Jahns, R. H., 6.

Shasta, California mines, deposits: Lamey, C. A., 1.

Shasta Dam, Sacramento River: Gardner, W. I., 1.

Sierra Nevada structure, S.: Mayo, E. B., 1.

Dikes—Continued.

California—Continued

Southern, crystalline rocks: Miller, W. J., 1.

Ventura Basin: Bailey, T. L., 2.

Vulcan iron deposits, San Bernardino Co.: Lamey, C. A., 1.

Canada, Sudbury dist.: Stanley, R. C., 1.

Colorado, Alva Adams Tunnel, Colorado-Thompson project: Heaton, R. L., 1.

Boulder Co. tungsten dist.: Tweto, O. L., 2.

Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.

Dunmore mine, Ouray Co.: Kelley, V. C., 3.

Front Range mineral belt: Goddard, E. N., 5.

Kokomo mining dist.: Koschmann, A. H., 1.

Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.

Model anticline, Las Animas Co.: U. S. G. S., 1, no. 68.

Pikes Peak area: Roy, C. J., 1.

Snowmass Mtn. area: Vanderwilt, J. W., 6.

South Silverton area, San Juan Co.: Varnes, D. J., 6.

Uncompahgre mining dist.: Burbank, W. S., 8.

Cuba, manganese deposits, E.: Straczek, J. A., 1.

Moa chromite dist., Oriente Prov.: Guild, P. W., 1.

Georgia Strait area, British Columbia-Wash.: Mathews, W. H., 4.

Greenland, East, basaltic rocks: Krokstrom, T., 1.

Kap Hope area: Rosenkrantz, A., 1.

74°-75°: Vischer, G. A., 2.

Northeast basalts: Backlund, H. G., 1.

Svartenhuk, basalt prov.: Noe-Nygaard, A., 1.

Thule dist.: Munck, S., 1.

Hawaii, Koolau basalt ser., Oahu: Wentworth, C. K., 2.

Idaho, Avon Mica deposit: Reed, G. C., 1.

Blackbird cobalt deposits, Lemhi Co.: Reed, G. C., 3.

Clark Fork lead-zinc dist.: Lorain, S. H., 1.

Sapphires: Anonymous, 58.

Kentucky, Krausse Estate prosp., Crittenden Co.: Starnes, X. B., 2.

Labrador Penin., E. area: Tanner, V., 2.

Manitoba, McVeigh Lake area: Bate-
man, J. D., 1.

Prospecting areas: de Wet, J. P., 1.

Maryland, Carroll, Frederick Cos.: Stosse, A. J., 2.

Massachusetts, Somerville Mystic quar-
ries: Palache, C., 3.

Mexico, Bolson de Mapimi area: Estlack, J. C., 1.

Dikes—Continued.

Mexico—Continued

- Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
Cuarento dist., Durango: Gallagher, D., 1.
San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
Yaqui Valley, Sonora: Toron Villegas, L., 2.
Michigan, Crystal Falls-Alpha iron dist., Iron Co.: Pettijohn, F. J., 1.
Minnesota, Lake Superior shore NE. of Two Harbors: Grogan, R. M., 2.
Missouri, SE., post-Camb., post-Dev.: Kidwell, A. L., 6, 7.
Montana, Bozeman corundum mine, Gallatin Co.: O'Brien, R. D., 1.
Chromite, Red Lodge area: James, H. L., 1.
Gallatin Co. corundum: O'Brien, R. D., 2.
North Big Belt Range: Lyons, J. B., 1.
Nevada, Blue Metal mines, Douglas Co.: Binyon, E. O., 1.
Osgood Range tungsten deposits: Hobbs, S. W., 1.
New Hampshire, Lost River, Flume gorges: McNair, A. H., 1.
Percy quad.: Chapman, R. W., 3.
Mt. Washington quad.: Billings, M. P., 2.
New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 2.
New Jersey, Franklin Furnace quad.: Milton, C., 3.
New Mexico, Apache mica mine, Rio Arriba Co.: Holmquist, R. J., 3.
Capitan quad., effects: Sidwell, R., 1.
Contact manganese mine, Grant Co.: Russell, P. L., 1.
Elk Mtn. mica deposit: Holmquist, R. J., 1.
Gallinas fluorspar deposits: Soulé, J. H., 1.
Gran Quivira quad.: Bates, R. L., 3.
Guadalupe Co.: U. S. G. S., 1, no. 44.
Harding deposits, Taos Co.: Soulé, J. H., 3.
Lithium-tantalum pegmatities, Mora Co.: Jahns, R. H., 4.
Little Hatchet Mts. area: Lasky, S. G., 3.
Socorro Co., Jones iron deposit: Grantham, R. M., 1.
White Eagle fluorspar mine: Soulé, J. H., 2.
New York, Lake Sanford area: Stephenson, R. C., 1.
Postanorthosite gabbro, Avalanche Lake: Jaffe, H. W., 1.
Syracuse, pyridotite, altered: Maynard, J. E., 1.
Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

Dikes—Continued.

- North Carolina, Buck Creek corundum deposits: Ballard, T. J., 3.
Halifax Co. molybdenum deposits: Robertson, A. F., 2.
Northwest Territories, Camsell River area: Lord, C. S., 2.
Eldorado mine: Murphy, R., 1.
Indin Lake gold area: Lilje, E. O., 1.
Ross Lake area: Fortier, Y. O., 3.
Yellow Knife area: Riley, C., 1.
Yellow Knife-Beaulieu area: Fortier, Y. O., 1.
Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.
Strait of Canso area: Ferguson, S. A., 2.
Ontario, Bancroft area, nephelinized paragneisses: Gummer, W. K., 1.
Calumet Island mines: McLaren, D. C., 1.
Cochenour Willans gold mine area: Nolan, J. P., 1.
Helen iron mine: Kidder, S. J., 1.
Lyndoch beryl deposit: McLaren, D. C., 3.
Missinaibi area, Tp. 47: Bruce, E. L., 3.
Northeast part Timagami Lake area: Moorhouse, W. W., 1.
Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.
Omega gold mine: McLaren, D. C., 4.
Purdy Mica Mines, Ltd., Mattawan Tp.: Spence, H. S., 2.
Robb-Jamieson area: Berry, L. G., 1.
Rush Lake gold mine: Hogg, N., 1.
Sudbury area: Cooke, H. C., 2.
Oregon, Horse Heaven quicksilver mine: Lewis, F. E., 1.
Pelite deposits, Wasco Co.: Allen, J. E., 2.
Puerto Rico, Garzas Dam, Vacas River: Moneymaker, B. C., 4.
Quebec, Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
Bachelor Lake area: Longley, W. W., 3.
Barraute area, Abitibi Co.: Tremblay, L. P., 3.
Beauchastel Tp., W. half: Ambrose, J. W., 1.
Camptonite, Sherbrooke dist.: Poitevin, E., 1.
Canton Carpentier, Abitibi: Tiphane, M., 1.
Desvaux Lake area, Dasserat Tp.: Auger, P. E., 2.
Faults, Abitibi region: Norman, G. W. H., 5.
Lacorne area, Abitibi Co.: Tremblay, L. P., 1, 2.
North Shore, St. Lawrence area: Claveau, J., 1.
Orford area chromite: Fortier, Y. O., 2.
Wettnagami Lake, River, areas, Abitibi East: Fairbairn, H. W., 1; Graham, R. B., 1.

Dikes—Continued.

- Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
 Rottenstone Lake area: Mawdsley, J. B., 1.
 Texas, cent. mineral area feldspars: Barnes, V. E., 4.
 Llano iron deposits: Evans, A. M., 2.
 United States, tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
 Tungsten mineralization: Kerr, P. F., 1.
 Utah, Alta dist. scheelite deposits: Crawford, A. L., 1.
 Granite Peak area: Ives, R. L., 8.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Ophir Hill Consolidated mine, Tooele Co.: Wildman, F. L., 1.
 Wildcat Mts., fluor spar deposits: Buranek, A. M., 4.
 Vermont, Strafford quad.: Doll, C. G., 1; Jacobs, E. C., 1.
 Virginia, Piney River ilmenite: Davidson, D. M., 2.
 Pulaski fault, Appalachian Valley: Cooper, B. N., 2.
 Washington, Anderson zinc-lead prospect, Stevens Co.: Lorain, S. H., 2.
 Bi-Metallic Mtn. molybdenum deposit: Storch, R. H., 1.
 Quartz incls. with diabase reaction rims: Goodspeed, G. E., 1.
 Sultan Basin deposits: Carithers, L. W., 1.
 Tungsten res.: Culver, H. E., 1.
 Dimensions, units, electromagnetic quantities: Baker, G. J., 1.
 Dinosauria. See also Reptilia.
 Alberta, S., Ceratopsia: Sternberg, C. M., 3.
 Arizona, Moenkopi fm. trackways: Peabody, F. E., 3.
 Ceratopsia, relative growth: Gray, S. W., 1.
 Colorado, Dinosaur Nat. Monument area: Crowder, F., 1.
 Gorgosaurus, Lance fm., Mont.: Gilmore, C. W., 5.
 Kansas Vertebrata: Lane, H. H., 1.
 New Mexico, Ghost Ranch Trias.: Colbert, E. H., 7.
 Parasaurolophus feeding: Russell, L. S., 1.
 Protoceratops, Psittacosaurus hyoid bones: Colbert, E. H., 2.
 Relative growth, phylogenetic, ontogenetic ser.: Gray, S. W., 1.
 Torosaurus, Cret., Harding Co., S. Dak.: Colbert, E. H., 4-a.
 Utah, Dinosaur Nat. Monument area: Crowder, F., 1.
 Diopside, Vermont, Eden Mills quarry: Frondel, C., 2.
 Dioptase, North America, desert minerals: Belz, C. A., 2.
 Diorite.
 Alaska, copper-sulfur deposits, Prince of Wales Is.: Fosse, E. L., 1.

Diorite—Continued.

- California, Iron Hat deposits, San Bernardino Co.: Lamey, C. A., 1.
 Julian-Cuyamaca area, San Diego Co.: Creasey, S. C., 1.
 Ramona quad.: Merriam, R. H., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 Vulcan iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 Canada, Flin Flon-Mandy area, Manitoba, Saskatchewan: Stockwell, C. H., 1.
 Idaho, Blackbird dist., Lemhi Co., cobalt deposits: Anderson, A. L., 3.
 Northwest Territories, Eldorado mine: Murphy, R., 1.
 Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Quebec, Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
 Wetetnagami Lake area, Abitibi East: Fairbairn, H. W., 1; Graham, R. B., 1.
 Dip and strike, teaching: Whitcomb, L., 2.
 Dispersion-birefringence ratio, a diagnostic: Winchell, A. N., 2.
 Distribution, fossil fresh-water Mollusca: Yen, T.-C., 7.
 Modern vs. fossil floras: Camp, W. H., 1.
 Oceans, continents: Longwell, C. R., 3; Woolnough, W. G., 1.
 District of Columbia, sed. fms., Washington and vicinity: Darton, N. H., 1.
 Diving bell for underwater gravimeter work: Frowe, E. W., 1.
 Dolerite.
 Greenland, East, basaltic rocks: Krokström, T., 1.
 Nügssuak Penin.: Munck, S., 2.
 Svartenhuk, basalt prov.: Noe-Nygaard, A., 1.
 Dolomite.
 California, Iron Hat deposits, San Bernardino Co.: Lamey, C. A., 1.
 Canada, W., limestones: Goudge, M. F., 1.
 Colorado, Cañon City area: Blum, V. J., 1.
 Construction, nonmetallic materials: U. S. G. S., 3, no. 10.
 Evaporites fm., marine evaporation: Weaver, P., 4.
 Grain size in carbonate rock: DeFord, R. K., 2.
 Greenland, East, Wollaston-Forland-Franz Josephs Fjord: Maync, W., 2.
 Thule dist.: Munck, S., 1.
 Hawaii, dolomitization in semi-arid soils: Sherman, G. D., 1.
 Idaho, Shilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Illinois, Alton-Chester area, collecting: McClure, S. M., 1.
 Jo Daviess Co., lead, zinc deposits: Zinner, P., 1.
 Southern, unusual min. occurrences: McClure, S. M., 5.
 Iowa, min, res.; Hershey, H. G., 1.

Dolomite—Continued.

- Kansas, central: Taylor, M. H., 2.
 Central Siluro-Dev. strata: Taylor, M. H., 1.
 Kinderhook, Sedgwick Co.: Ver Wiebe, W. A., 2.
 Kraft-Prusa oil field: Walters, R. F., 3.
 Plattsburg ls.: Graffham, A. A., 1.
 Maryland, Campbell quarry minerals, Tex.: Levey, H., 1.
 Michigan, Adams, Deep River oil fields: Landes, K. K., 1.
 Minnesota, SE.: Thiel, G. A., 1.
 Missouri, Alice zinc mine, Ozark Co.: Needham, A. B., 1.
 Fredericktown mining dist.: Kidwell, A. L., 4.
 Mineral res.: Keller, W. D., 2.
 Morgan Co.: Mather, W. B., 1.
 New Jersey, Rudeville, Windsor quarry: Zodac, P., 5.
 Ohio: Lee, H. C., 1.
 Mineral res.: Stout, W. E., 3.
 Oklahoma: Dott, R. H., 5; Ham, W. E., 3; Oakes, M. C., 1.
 Ontario, Rutherglen dist.: Keith, M. L., 1.
 Ore horizons, favorable, unfavorable characteristics: Rove, O. N., 1.
 Origin: Rogers, K. J., 1.
 Porosity, cavities: Landes, K. K., 1.
 Reservoirs, oil: Imbt., W. C., 1.
 Radioactivity logging: Mercier, V. J., 1.
 Salt intergrowths, Chaves Co., N. Mex.: Schwade, I. T., 1.
 Tennessee, Knox Co., Longview mbr., Kingsport fm.: Allen, A. T., Jr., 1.
 Shallow Ore mine, New Market: Black, W., 1.
 Tennessee-Virginia, Camb.-Ord.: Prouty, C. E., 2.
 Texas, Ellenburger group: Cloud, P. E., Jr., 1.
 Keystone field, Winkler Co.: Mygdal, K. A., 1.
 Mineral res.: Sellards, E. H., 4.
 Potter, Moore Cos.: Warren, L. E., 2.
 TXL field, Ector Co.: Cantrell, C. D., Jr., 1.
 Texas and Oklahoma, Trinity River area min. res.: Weissenborn, A. E., 1.
 Trenton oil field, Ohio, Ind.: Landes, K. K., 1.
 United States, min. res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Picher zinc-lead zone, Okla.-Kans.: U. S. G. S., 6.
 Utah, Ophir Hill Consolidated mine, Tooele Co.: Wideman, F. L., 1.
 Virginia, Cootes Store area, high-magnesium: Edmundson, R. S., 1.
 Washington, Marble area: Deiss, C., 1.
 West Virginia, Pittsburgh coal seam concretion: Foster, W. D., 1.
 Wisconsin, Coughlin, Galena Level zinc mines: Berliner, M. H., 1.

Dolomite—Continued.

- Wyoming, construction materials, non-metallics: Clabaugh, S. E., 1; U. S. G. S., 3, no. 9.
 Domes. See also Salt domes.
 California, Shiels Canyon area, Bardsdale field: Bailey, W. C., 1.
 Southern, tectonic elevation changes: Grant, U. S. IV, 3.
 Colorado, La Plata dist.: Eckel, E. B., 2.
 Illinois, King oil field, Jefferson Co.: Folk, S. H.: 1.
 Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Kansas, Kraft-Prusa oil field: Walters, R. F., 3.
 Louisiana, West Tepetate field: Bates, F. W., 3.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.
 Mississippi, Jackson area: Monroe, W. H., 3; U.S.G.S., 1, no. 65.
 Montana, Kevin-Sunburst, Cut Bank fields: U.S.G.S., 8.
 Petroleum geology: Emick, E. R., 1.
 New Hampshire, Mt. Washington quad.: Billings, M. P., 2.
 New Mexico, Guadalupe Co.: U.S.G.S., 1, no. 44.
 Northwest Territories, Great Slave Lake area: Bateman, J. D., 2.
 Oil field and oil traps: Illing, V. C., 1.
 Texas, Katy gas and oil field: Allison, A. P., 1.
 Pioneer geology: Gould, C. N., 5.
 United States, Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 4.
 Utah, San Juan field: Colton, R. E., 2.
 Washington, Colville batholith, E. border structures: Campbell, C. D., 2.
 Wyoming, Sage Creek dome area: Sharkey, H. H. R., 1; U.S.G.S., 1, no. 53.
 Dominican Republic. See also West Indies.
 Research, geologic, poss.: Weyl, R., 1.
 Paleontology.
 Foraminifera, small Tert.: Bermúdez y Hernández, P. J., 1.
 Petrology.
 Soils, aluminous, Sierra de Bahoruco area: Goldich, S. S., 1.
 Talus deposits, Central Cordillera: Weyl, R., 2.
 Doublets, triplets, fluorescence test for: Liddicoat, R. T., 1.
 Drainage changes. See also Glacial geology: Physiographic geology (general).
 Alaska, Alaska Range: Wahrhaftig, C., 1.
 Alberta, Brûlé area: Lang, A. H., 1.
 Canadian Pacific Ry. area: Hutt, G. M., 3.
 Highwood-Elbow area: Allan, J. A., 2.
 Alluvial rivers, meandering: Friedkin, J. F., 1.
 Arizona, Dragoon Mts.: Cederstrom, D. J., 2.
 Bighorn Basin area, Mont.-Wyo.: Mackin, J. H., 1.

Drainage changes—Continued.

British Columbia, Kootenay Lake origin:
Schofield, S. J., 1.

California, Bakersfield Clock Tower, El
Tejon Hotel to Lebec: Hackel, O., 1.

Colorado Desert: Cockerell, T. D. A.,
1.

Kern River Basin, Sierra Nevada: Webb,
R. W., 1.

Owens Lake area: Dub, G. D., 1.

Placer gold mining: Averill, C. V., 1.

Twin Lake, Fresno Co.: Addington,
A. R., 1.

Yosemite Valley, Nat. Park: Matthes,
F. E., 8.

Colorado, Estes Park origin: Quam, L. O.,
1.

Colorado River age: Longwell, C. R., 2.
Connecticut, Stafford Springs area: White,
S. E., 1.

Hawaii, Waimea, Oahu: Palmer, H. S., 1.
Idaho, Borah Peak quad.: Ross, C. P., 2.

North Rocky Mts.: Anderson, A. L., 4.
Illinois, pre-glacial erosion surfaces: Hor-
berg, C. L., 1.

Indiana State Parks: Freeman, O. W., 1.
Fish distrib. by post-glacial drainage:
Gerking, S. D., 1.

Sluiceways, lacustrine plains, S.: Thorn-
bury, W. D., 1.

Iowa, Pleist. problems: Trowbridge, A. C.,
3.

Kansas, Arkansas River Valley, Hutch-
inson area: Williams, C. C., 2.

Kentucky River, English abandoned chan-
nel: Jillson, W. R., 2.

Nonesuch abandoned channel: Jillson, W.
R., 9.

Providence abandoned channel: Jill-
son, W. R., 7.

Warwick abandoned Pliocene channel:
Jillson, W. R., 10.

Labrador Penin., E. area: Tanner, V., 2.
Louisiana, Miss. River abandoned channel:

Osterhoudt, W. J., 1.

Maine, Messalonskee River course: Lou-
gee, R. J., 2.

Mexico, hydrology; Osorio Tafall, B. F., 1.
Minnesota, NE., structure, drainage: Ver
Steeg, K., 3.

Montana, Marias River buried Pleist.
gorge: Fox, P. P., 1.

North Big Belt Range: Lyons, J. B., 1.
Nebraska, Box Butte Co.: Cady, R. C., 1.

Scotts Bluff Co.: Wenzel, L. K., 1.

New England, Conn. Valley floods: Jahns,
R. H., 2.

New Jersey, Pensauken fossiliferous peb-
bles, Princeton area: Howell, B. F., 6.

New Mexico, Rio Puerco, lower: Wright,
H. E., Jr., 1.

New York, Catskill, Kaaterskill quads.:
Chadwick, G. H., 1.

Hornell area, glacial stream diversion:
Wood, A. E., 5.

North America, St. Lawrence River bur-
ied channel: Wilson, A. E., 5.

Drainage changes—Continued.

North America—Continued.

Gulf of St. Lawrence area: Twenhofel,
W. H., 4.

North Dakota, Maddock quad.: Ball, J. R.,
2.

Ohio, Butler, Hamilton Cos.: Bernhagen,
R. J., 3.

Scenic geology: Carman, J. E., 1.

Ohio River, Easterday abandoned chan-
nel, Ky.: Jillson, 1.

Ontario: Hutt, G. M., 7.

Mattawan-Olrig area: Harding, W. D.,
1.

Pennsylvania, Pittsburgh area: Leighton,
H., 3.

Quebec, Shawinigan area: Laverdière, J.
W., 1.

Rocky Mtn. area, E.-cent. Idaho: Ander-
son, A. L., 4.

Submergence, cause of shifting stream
divides: Olmsted, E. W., 1.

Tennessee, Richmond channels: Wilson,
C. W., Jr., 1.

United States, Appalachians, central,
Newark series drainage: Carlston,
C. W., 1.

Determination of Appalachian drainage:
Meyerhoff, H. A., 4.

Colorado drainage basin: Gregory, H. E.,
2.

High Plains drainage: Smith, H. T. U.,
5.

Mississippi River meander belts: Rus-
sell, R. J., 2.

Mississippi Valley, lower: Fisk, H. N.,
1.

Teays River, Ver Steeg, K., 2.

Utah, Henry Mts. region: Hunt, C. B., 1.
Red Plateau surface drainage affected
by: Stokes, W. L., 2.

Virginia, Clifton Forge area: Hoffman,
R. L., 1.

Washington, Grand Coulee: Koester, C.
R., 1.

Wisconsin, Dells, Devils Lake area: Pow-
ers, W. E., 1.

Wyoming, Laramie Mts. wind gaps,
origin: Blackstone, D. L., Jr., 1.

Drainage maps from aerial photos.: Parvis,
M., 1.

Drifts, Missouri Pleist. glacial problems:
Holmes, C. D., 3.

Drilling, sampling with wagon drill: Soulé,
J. H., 5.

Drumlins.

New York, Catskill, Kaaterskill quads.:
Chadwick, G. H., 1.

Ontario, Orilla area: Deane, R. E., 1.

Dunes.

California, Palos Verdes Hills: Woodring,
W. P., 1.

Depositional surfaces, geomorphology:
Price, W. A., 3.

Gulf Coast: Price, W. A., 3.

Indiana, sluiceways, lacustrine plains, S.:
Thornbury, W. D., 1.

Dunes—Continued.

- Kansas, Arkansas River, Hutchinson area: Williams, C. C., 2.
- Nebraska, Box Butte Co.: Cady, R. C., 1.
- New York, Long Island: Fox, J. T., 1.
- Oregon, sands, Coos Bay to Columbia River mouth: Twenhofel, W. E., 1.
- Sand dunes: Smith, H. T. U., 1.
- South Dakota, James Basin: Rothrock, E. P., 2.
- Utah, Cedar City, Parowan Valleys, Iron Co.: Thomas, H. E., 2.
- Henry Mts. region: Hunt, C. B., 1.
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 Eolian erosion, Isthmuses of Tehuantepec and Chiapas: Mullerried, 7.
 Placers, Guadalupe, Puerto del Aire, Chihuahua: González Reyna, J., 3.
 Provinces, geog., geol.: Ordóñez, E., 2-a.
 State of Zacatecas, min. res.: González Reyna, J., 2.
 Michigan, lakes, soil profiles, extinction: Veatch, J. O., 1.
 Mackinac Island: Stanley, G. M., 1.
 Minnesota, NE., structure, drainage: Ver Steeg, K., 3.
 Whitewater Valley alluviation: Happ, S. C., 4.
 Montana, Kevin-Sunburst, Cut Bank, fields: U. S. G. S., 8.
 Montreal, Canada: Clark, T. H., 1.
 Nature, soil movement by wind: Chapil, W. S., 3.
 Nebraska, Box Butte Co.: Cady, R. C., 1.
 Scotts Bluff Co.: Wenzel, L. K., 1.
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 North America, dual-drainage northern areas: Cabot, E. C., 1.
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 Southern Appalachians, correl.: Shaffer, P. R., 1.
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 Oklahoma, West Edmond Huntton pool reservoirs: Littlefield, M. S., 1.
 Ontario, Hasaga gold mines: McLaren, D. C., 7.
 Oregon, Eugene area foundry sand: Lowry, W. D., 1.
 Parícutin, Mex., eruptions: Lowdermilk, W. C., 1.
 Pennsylvania, Pittsburgh area: Leighton, H., 3.
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- Sorting of material by wind: Chepil, W. S., 3.
- Transport capacity of wind: Chepil, W. S., 3.
- United States, Colorado drainage basin: Gregory, H. E., 2.
- Columbia River area, Excelsior surface: Scheid, V. E., 1.
- Gully erosion: Happ, S. C., 1.
- Rocky Mtn. area: Dobbin, C. E., 2.
- Soil and water conservation: Bennett, H. H., 1.
- Southwest, cone erosional form: Clements, T. D., 3.
- Utah, Nat. Parks: Lauritzen, J., 1.
- Zion Nat. Monument: Gregory, H. E., 1.
- Virginia, Giles Co., Goodwin Ferry Cave: Krinitzky, E. L., 1.
- Wind erosion of soil cf. roughness of surface: Chepil, W. S., 1.
- Wind erosion, translocation and abrasive effect: Chepil, W. S., 3.
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- Rufus beach, Lake Superior concretions: Knowlton, F. G., 1.
- Wyoming, NW. Wind River Mts.: Baker, C. L., 1.
- Error, maximum, mineralogic computations: Fairbairn, H. W., 2.
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- Canada, N. of Great Slave Lake: Wilson, J. Tuzo, 1.
- New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
- Ontario, clay-belt land forms: Hills, A., 1.
- Etch tests for minerals: Anderson, A. L., 2.
- Etching corneous brachiopods: Bell, W. C., 1.
- Ethyl acetate to separate vanadium and chromium: Foster, M. D., 2.
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- Vernon shale fauna, Sil.: Flower, R. H., 8.
- Quebec faunas: Dresser, J. A., 1.
- Evaluation, oil explor. methods: Zunino, J. J., 1.
- Well samples: Richards, J. T., 1.
- Evaporites fm., marine evaporation: Weaver, P., 4.
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- Alligator temperature tolerances and dinosaur extinction: Colbert, E. H., 4.
- Arachnida, Paleozoic, Ill.: Petrunkevitch, A., 1.
- Birds, Pleist. to recent: Howard, H., 5.
- California, Great Valley: Ferguson, G. C., 3.
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- Conchilites, Findlayson Lake, Steep Rock area, Canada: Goodwin, W. M., 1.
- Desert playas: Blackwelder, E., 4.
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- Life, origin, conchilites as catalyzer: Tanton, T. L., 1.
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- Plants, rate, from distribution: Stebbins, G. L., Jr., 1.
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- Silicoflagellates, Cret., Calif.: Defandrea, G., 1.
- Systematics and the origin of species: Mayr, E., 2.
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- Basalt alteration, Kilauea area, Hawaii: Payne, J. H., 1.
- Bentonitic clays for eng. purposes: Greene, K. T., 1.
- Beryllium, recrystallization temperature: Alexander, W. A., 1.
- Blue halite, color cause: Buddhue, J. D., 4.
- California, Paloma oil field, Stevens sand: Miller, K. T., 1.
- Canada, wind erosion and soil structure: Chepil, W. S., 2.
- Chondrodite, norbergite, synthesis by dry fusion: Rankama, K. K., 2.
- Clay discs: Williamson, W. O., 1.
- Clay minerals mixtures, thermal curves: Grim, R. E., 5.
- Clays, related minerals, high-temperature effects: Grim, R. E., 6.
- Compressibility of consolidated oil-bearing ss.: Carpenter, C. B., 1.
- Concrete aggregates, reactivity with cement alkalies: Mielenz, R. C., 5.
- Contact metamorphic minerals in melting optical glass: Parsons, W. H., 2.
- Cores, quick freezing preserves fluid contents: Wisenbaker, J. D., 1.
- Correlation-refraction method, seismic surveying: Gilpin, J. A., 1.
- Crystal growth, high temperature-pressure: Friedman, I. I., 1.
- Crystals, non-metal, plastic deformation and recrystallization: Washken, E., 1.
- Cuspidine in system $\text{CaO-SiO}_2\text{-CaF}_2$: McCaughey, W. J., 1.
- Determination, microscopic ore minerals, Clark Fork dist., Idaho: Fairbanks, E. E., 1-a.
- Oil in place and connate water, restored-state method: Bruce, W. A., 1.
- Differential thermal analysis, carbonate minerals: Cuthbert, F. L., 2.
- Siderite, Conn.: Kerr, P. F., 3.
- Electrode potentials and free-energy changes in geology: Chapman, C. A., 1.
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- Products, laboratory alteration: Folk, R. L., 1.
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- Fluid inclusions, fm. temperature: Scott, H. S., 1.
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- Geophysical Lab.: Adams, L. H., 1.
- Glass, ellipsoidal structures in: Osborn, E. F., 1.
- Grossularite, stability relations: Yoder, H. S., Jr., 1.
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- Humic and true organic acids as mineral solvents: Fetzger, W. G., 1.
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- Idaho, Snake River Valley structure from explosion records: Perkins, B., 1.
- Jewel-bearings, materials for, U. S.: Insley, H., 1.
- Klockmannite, artificial CuSe , identical: Earley, J. W., 1.
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- Lineage structure in alkali halide crystals: Tuttle, O. F., 2.
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- Louisville area, Ohio River infiltration: Rorabaugh, M. I., 2.
- Magnetic surveys from helicopter: Lundberg, H. T. F., 2.
- Metamorphism, artificial of minerals: Buerger, M. J., 1.
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- Mineral analysis with X-ray diffraction spectrometer: Carl, H. F., 1.
- Mexico, alunite clays: Knižek, J. O., 2.
- Nature of replacement: Douglas, G. V., 3.
- Nepheline, synthesis: Washken, E., 2.
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- NiAs-NiSb system, intergrowths: Hawley, J. E., 2.
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- Ore horizons, favorable, unfavorable, characteristics: Rove, O. N., 1.
- Organic material into petroleum: Cox, B. B., 1.
- Permafrost research area, Fairbanks, Alaska: Jaillite, W. M., 1.
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- Quartz, secondary Dauphiné twinning and irradiation coloring: Armstrong, E. J., 1.
- Quicksand, supposed suction effect: Smith, E. R., 4.
- Radium content, ultramafic ig. rocks: Davis, G. L., 1.
- Replacement of calcite in copper chloride: Garrels, R. M., 2.
- Rock materials, freezing and thawing durability: Mielenz, R. C., 4.
- Rutile-titanium oxide preparation: Quirke, T. T., 2.
- Seismic results in 3 dimensions: Dix, C. H., 2.
- Seismic returns, high-low velocity explosives: Dobyns, D. R., 1.
- Selenium, availability to plants: Olson, O. E., 2, 3.
- South Dakota soils: Olson, O. E., 3.
- Silica, nonvolatiles, solubility, transfer in steam: Gillingham, T. E., 1.
- Silicate minerals, chem. behavior and crystal structure: Murata, K. J., 3.
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- Single crystals of some magnetic metals: Bozorth, R. M., 1.
- Six-target cold-cathode X-ray diffraction unit: Fairbairn, H. W., 3.
- Smithite, hydrosynthesis: Béland, R., 1.
- Soda-silica-water system in quartz synthesis: Tuttle, O. F., 3.
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- Synthesis of metallic minerals: Smith, F. G., 2.
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- System $\text{H}_2\text{O-H}_2\text{PO}_4\text{-AlPO}_4$: Gruner, J. W., 5.
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- Torsion balance surveys of inundated areas: Hasselmann, K. F., 1.
- Tracks in fine cross-bedded sand: McKee, E. D., 4.
- Under-water explosion waves: Raitt, R. W., 1.
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- Willemite needles, artificial: Ingerson, E., 1.
- Wind erosion of soil cf. roughness of surface: Chepil, W. S., 1.
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- Fluorescent tech., petroleum explor.: De Ment, J. A., 6.
- Methods for oil: Uren, L. C., 1.
- Petroleum, geophys. prosp.: Illing, V. C., 1.
- Photogeology aid in oil explor.: Brundall, L., 1.
- Radioactivity well-logs: Mercier, V. J., 2.
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- Faces of crystals, relative importance: Buerger, M. J., 4.
- Facies logs, micropaleontological: ten Dam, A., 1.
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- Famatinite, Calif., Alpine Co.: Nichols, J. B., 1.
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- Lookout Mtn.: Coulter, D. M., 1.
- Northeast: Burchard, E. F., 1.
- Alaska, argentiferous lead-copper deposits, Slana dist.: Thorne, R. L., 1.
- Cape Mtn. deposits, Seward Penin.: Heide, H. E., 2.
- Copper deposits, Kotsina - Kuskulana dist.: Van Alstine, R. E., 1.
- Iniskin-Chinitna Penin.: Kellum, L. B., 2.
- Matanuska Valley coal field: Barnes, F. F., 1; Payne, T. G., 1.
- Petroleum Naval Reserve No. 4: Foran, W. T., 1.
- Poor Man mine, Prince of Wales Is.: Holt, S. P., 1.
- Rua Cove, Knight Island copper claims: Stefansson, K., 1.
- Sedanka ls. zinc dist.: Webber, B. S., 1.
- Southeast molybdenite deposits: Twenhofel, W. S., 1.
- Southeast, ultrabasic rocks, deposits: Kennedy, G. C., 2.
- Spirit Mtn. nickel mine, Copper River area: Pierce, H. C., 1.
- Alberta, Alexo area: Canada G. S., 1.
- Brûlé area: Lang, A. H., 1.
- West of 5th meridian: Canada G. S., 1.
- Callum Creek area: Douglas, R. J. W., 1.
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- Foothills, Athabaska-Ram Rivers: MacKay, B. R., 2.
 Oil fields: Link, T. A., 2.
 Gregg Lake area: Irish, E. J. W., 1.
 Highwood-Elbow area: Allan, J. A., 2.
 Langford Creek area: Douglas, R. J. W., 2.
 Moberly Creek area: Lang, A. H., 2.
 Saunders map area: Canada C. S., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 Aravaipa deposit, Graham Co.: Denton, T. C., 3.
 Bagdad area: Anderson, C. A., 1.
 Cactus Flat-Artesia area: Halpenny, L. C., 2.
 Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.
 Dragoon Mts.: Cederstrom, D. J., 2.
 Gila Co. asbestos deposits: Stewart, L. A., 2.
 Grand Canyon: Maxson, J. H., 1; Van Gundy, C. E., 1.
 Johnny Bull-Silver Knight deposit: Tainter, S. L., 1.
 Kaibab Plateau, W.: Strahler, A. N., 4.
 Magma copper mine, Superior: Michell, W. D., 1.
 Manganese-silver deposits: Romslo, T. M., 1.
 Mohawk zinc prosp., Pima Co.: Haury, P. S., 1.
 New Planet mine, Yuma Co.: Cummings, J. B., 2.
 Packard fluor spar property, Gila Co.: Cummings, J. B., 1.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Pinal Creek, Globe area: Hazen, G. E., 1.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Safford Basin: Turner, S. F., 2.
 San Manuel copper prosp., Pinal Co.: Chapman, T. L., 1; Steele, H. J., 1.
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 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 Arkansas, Hot Spring Co., Magnet Cove: McElwaine, R. B., 1.
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 Nicola, Kamloops, Yale dists.: Canada G. S., 1.
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 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Salmon Arm area: Rice, H. M. A., 1.
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 Surf Point, Edye Pass mines: Smith, A., 1.
 Whitewater, Lucky Jim mine areas: Hedley, M. S., 1.
 California, Bakersfield Clock Tower, El Tejon Hotel to Lebec: Hackel, O., 1.
 Basement oil production poss.: Cabeen, W. R., 1.
 Bessemer iron deposits, San Bernardino Co.: Wiebelt, F. J., 1.
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 Buena Vista Hills oil pool: Burtner, E., 1.
 Calico Mts. area: Henry, D. J., 1.
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 Capitan, Elwood oil fields: Simonson, R. R., 2.
 Carpinteria to Gaviota, road log: Simonson, R. R., 1.
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 East Mayacmas dist. quicksilver deposits: Yates, R. G., 1.
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 Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Maricopa to Cymric oil field: Woodward, W. T., 1.
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 Mother Lode zone: Heyl, G. R., 1.
 Newhall-Potrero oil field, Los Angeles Co.: Lee, A. T., 1.
 New Idria dist. quicksilver deposits: Eckel, E. B., 1.
 North Elder Creek area chromite: Rynearson, G. A., 1.
 Oak Ridge oil fields, Ventura Co.: Baddley, E. R., 1.
 Owens Lake mineral area: Dub, G. D., 1.
 Oxnard oil field, Ventura area: Hazzard, J. C., 3.
 Palos Verdes Hills: Woodring, W. P., 1.
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 Ridge Route area: Loel, W., 1.
 San Andreas fault area: Hill, M. L., 3; Wallace, R. E., 2.
 San Gabriel Basin, NE. margin: Shelton, J. S., 1; U. S. G. S., 1, no. 63.
 San Joaquin Valley oil fields: Bryan, J. J., 1.
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 San Miguelito, Padre Canyon, Rincon oil fields, Ventura Co.: Redwine, L. E., 2.
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 Santa Rosa Mts. area, Riverside Co.: Wright, L. B., 1.
 Sespe red beds, oil origin and migration: Bailey, T. L., 1.
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 Shasta Dam, Sacramento River: Gardner, W. I., 1.
 Shiells Canyon area, Bardsdale field: Bailey, W. C., 1.
 Ship Mtn. iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 Sierra Nevada-Death Valley sec.: Hopper, R. H., 1.
 Sierra Nevada-Donner Pass zone defm.: Hudson, F. S., 1.
 Sixteen-To-One gold-quartz vein, Al-legheny: Cooke, H. R., Jr., 1.

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Southern, earthquakes: Wood, H. O., 1.
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 Tejon quad. NE., structure: Wiese, J. H., 2.
 Ventura area, Santa Paula, Silver Thread oil fields: Hazzard, J. C., 2.
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 Ventura oil field, Ventura Co.: Arthur, J., 1.
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 Vulcan iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 West Cuyama Valley to Maricopa, road log: Hill, M. L., 1.
 West Mayacmas dist., quicksilver deposits: Bailey, E. H., 1.
 West Newport oil field: Corwin, C. H., 1; Dunlap, W. E., 1, 2.
 Yosemite Valley Nat. Park: Matthes, F. E., 3.
 Canada, Dubuisson-Bourlamaque-Louvi-court area: Norman, G. W. H., 9.
 Flin Flon-Mandy area, Manitoba, Saskatchewan: Stockwell, C. H., 1.
 Kirkland Lake area: Hopkins, H., 1.
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 Labrador, central-Quebec iron deposits: Retty, J. A., 1.
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 Ottawa-St. Lawrence lowland: Wilson, A. E., 4.
 Pinchi Lake quicksilver belt: Armstrong, J. E., 4.
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 Sudbury dist.: Stanley, R. C., 1.
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 Colorado, Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
 Alva Adams Tunnel, Colorado-Thompson project: Heaton, R. L., 1.
 Baca Co., Freezeout Creek fault area: Buehler, K. M., 1.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Cañon City area: Blum, V. J., 1.
 Cement-Mineral Creeks area: Varnes, D. J., 7.
 Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Eureka-Animas Forks area: Burbank, W. S., 11.
 Fluorspar deposits: Cox, D. C., 1.

Faulting and faults—Continued.

Colorado—Continued.

- Front Range: Wahlstrom, E. E., 2.
 Mineral belt: Goddard, E. N., 5.
 Gilman dist., Eagle Co.: Tweto, O. L., 3.
 General geology: Vanderwilt, J. W., 5.
 Golden-Morrison area, Jefferson Co.: LeRoy, L. W., 1.
 Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
 Jamestown dist. fluorspar deposits: Goddard, E. N., 1.
 Kokomo mining dist.: Koschmann, A. H., 1, 3.
 Lake City area, Hinsdale Co.: Burbank, W. S., 13.
 Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
 Pikes Peak area dikes: Roy, C. J., 1.
 Rangely oil and gas field: Bass, N. W., 1; Bench, B. M., 1, 2; Newton, S. M., 3; U. S. G. S. 1, no. 67.
 Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.
 Rico mining dist.: Varnes, D. J., 2.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 Snowmass Mts. area: Vanderwilt, J. W., 6.
 South Silverton area: Varnes, D. J., 6.
 South Telluride area: Varnes, D. J., 3.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Upper Blue River area: Singewald, Q. D., 3.
 Vanadium-bearing ss.: Fischer, R. P., 3.
 Vanadium deposits, Placerville area: Fischer, R. P., 4.
 Costa Rica, Monte Aguacate mine: Rex, R., 1.
 Cross-section, subsurface, Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Cuba, E.: Thayer, T. P., 2.
 Manganese deposits: Straczek, J. A., 1.
 Oriente Prov.: Keijzer, F. G., 3.
 Fracture patterns in rocks: Bucher, W. H., 6.
 Geologic conditions causing coal-mining fatalities: Roley, R. W., 1.
 Geology applied to Imbrian Plain of the moon: Spurr, J. E., 1.
 Georgia, Nottely Dam area: Kellberg, J. M., 2.
 Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.
 Greenland, East, area N. of Muskox Fjord: Büttler, H., 1.
 Kap Hope area: Rosenkrantz, A., 1.
 74°-75°: Vischer, G. A., 1, 2.
 Northeast: Ahlmann, H. W., 1.
 Scoresby Sound area: Rothé, J. P., 1.
 Scoresbyland: Bierther, W., 1.
 West Nûgssuak Peninsula: Munck, S., 2.

Faulting and faults—Continued.

- Guatemala, Petén area: Wadell, H. A., 1.
 Haiti, Jacmel area manganese prospects: Goddard, E. N., 2, 4.
 Morne Macaque manganese deposit: Goddard, E. N., 3.
 Hawaii: Stearns, H. T., 3.
 Waimea, Oahu: Palmer, H. S., 1.
 Idaho, Anderson Ranch Dam, Boise River: Okeson, C. J., 1.
 Blackbird cobalt deposits, Lemhi Co.: Anderson, A. L., 3; Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Clark Fork lead-zinc dist.: Anderson, A. L., 2; Lorain, S. H., 1.
 Coeur d'Alene min. dist.: Sorenson, R. E., 1.
 Geologic map: Ross, C. P., 1.
 Last Chance-Horn silver mines, Lava Creek dist.: Anderson, A. L., 5.
 Little Pittsburg lead-zinc mine: Herdlick, J. A., 1.
 Moyie-Yaak dist.: Anderson, A. L., 1.
 North Rocky Mts. drainage changes: Anderson, A. L., 4.
 Snake-Salmon Rivers area, Idaho Co.: Wagner, W. R., 1.
 Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
 Illinois, Daisy fluorite mine, Hardin Co.: Muir, N. M., 2.
 Pope Co. fluorite, zinc mines: Bishop, O. M., 1.
 Impounding structures control of ore deposits: Mackay, R. A., 1.
 Kentucky, Eva Tanguay mines: Starnes, X. B., 3.
 Hickory Cane, K-K fluorspar prosp.: Hickman, P. C., 1.
 J. D. Price fluorite deposit: Starnes, X. B., 4.
 Krause Estate prosp.: Starnes, X. B., 2.
 Mineral Ridge-Clay Lick fault system fluorite beds: Muir, N. M., 1.
 Moore Hill fluorite: Starnes, X. B., 1.
 Western fluorite area: Lee, F. W., 3.
 Labrador Penin., E. area: Tanner, V., 2.
 Lination: Cloos, E., 1.
 Louisiana, West Tegetate field: Bates, F. W., 3.
 Maine, manganese deposits, Arcostook Co.: Miller, R. L., 2.
 Manitoba, Morton Lake area: Harrison, J. M., 2.
 Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.
 Tramping Lake, N.: Stanton, M. S., 1.
 Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.

Faulting and faults—Continued.

Mexico: Waitz, P., 1.

Antimony deposits locale: White, D. E., 4.

San José mine, near Wadley: González Reyna, J., 9; White, D. E., 1. Tejocotes area, Oaxaca: White, D. E., 2.

Caborca area, NW. Sonora: Cooper, G. A., 1.

Conchos Valley, Chihuahua: King, R. E., 2.

Cuarento dist., Durango: Gallagher, D., 1; Pérez Siliceo, R., 1, 4.

El Moral dist.: González Reyna, J., 10.

Estado Aguascalientes: Lopez G., F., 1.

Estado Michoacán, N.: Blásquez López, L., 4.

Geologic map, N. part: King, P. B., 4.

Iron deposits, N. group: Toron Villegas, L., 1.

Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.

Mineral deposits: González Reyna, J., 11.

Oaxaca guide book: Barrera, T., 1.

Pachuca-Real del Monte silver dist.: Wisser, E. H., 1.

Parícutin Volcano area: Pérez Peña, A., 1.

Plateau: Nye, S. S., 1.

Quicksilver deposits, Mazapil: Pérez Siliceo, R., 2.

San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.

Sierra de la Peña area: Alvarez, M., Jr., 1.

Yaqui Valley, Sonora: Toron Villegas, L., 2.

Michigan, Pine Creek area, Dickinson Co.: Higgins, J. W., 1.

Minnesota, Mesabi range: Jones, R. H. B., 1.

Mississippi, Heidelberg oil field: Reiter, W. A., 1; Stephenson, L. W., 2.

Jackson area: Monroe, W. H., 3; U. S. G. S., 1, no. 65.

Kilmichael dome: Priddy, R. R., 1.

Tinsley field: Shroeder, F. R., 1.

Missouri, Alice zinc mine, Ozark Co.: Needham, A. B., 1.

Morgan Co.: Mather, W. B., 1.

Southeast, post-Dev. igneous activity: Kidwell, A. L., 6.

Winchester zinc deposit, Newton Co.: Ballinger, H. J., 1.

Montana, Bearpaw Mts. area: Reeves, F., 2.

Bitterroot Range front structure: Ross, C. P., 3.

Bull Run prospects, Silver Bow Co.: Roby, R. N., 2.

Clark Fork-Kootenai River devel.: Erdmann, C. E., 1.

Cut Bank-West Kevin fields: Erdmann, C. E., 2.

Faulting and faults—Continued.

Montana—Continued.

Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.

Petroleum geology: Emrick, E. R., 1.

Plains structure map: Dobbin, C. E., 3.

Pre-Cambrian carbonate rocks: Heinrich, E. W., 8.

Pryor Mts. structure, Bighorn Basin: Blackstone, D. L., Jr., 2.

Red Lodge area, chromite: James, H. L., 1.

Running Wolf dist. magnetite: Goodspeed, G. E., 2.

Western, Late Cenozoic: Pardee, J. T., 1.

Nevada, Blue Metal mines, Douglas Co.: Binyon, E. O., 1.

Bristol Range: Wheeler, H. E., 2.

Eureka mining dist.: Sharp, W., 1.

Mount Hope mine, lead-zinc: Matson, E. J., 1.

Osgood Range tungsten mine: Hobbs, S. W., 1.

Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.

Rio Grande deposit, Elko Co.: Matson, E. J., 2.

Segerstrom-Heizer iron mine, Pershing Co.: Kral, V. E., 5.

Steamboat Springs: White, D. E., 5.

Sultan zinc-lead mine, Clark Co.: Geehan, R. W., 3.

New Brunswick, St. Stephen area, Charlotte Co.: Alcock, F. J., 2.

Sussex, Kings and Queens Cos.: Canada G. S., 1.

New England, Chelmsford granite significance: Currier, L. W., 1.

Keene-Brattleboro area: Moore, G. E., 1.

New Hampshire, Bethlehem gneiss structures: Chapman, C. A., 4.

Mt. Washington quad.: Billings, M. P., 2, 3.

Paleozoic magma series: Billings, M. P., 3.

Plymouth quad.: Moke, C. B., 1.

New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.

New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.

Martinsburg slate, cleavage devel.: Broughton, J. G., 1.

New Mexico, Atwood copper group: Huntington, M. G., 1.

Black Range pegmatites: Kelley, V. C., 5.

Capitan quad. effects: Sidwell, R., 1.

Contact manganese mine, Grant Co.: Russell, P. L., 1.

Gallinas dist., Lincoln Co.: Kelley, V. C., 4.

Gran Quivira quad.: Bates, R. L., 3.

Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.

Huckleberry spar mine, Catron Co.: Sur, F. J., 2.

Faulting and faults—Continued.

New Mexico—Continued.

- Iron Mtn. tungsten deposits: Storm, W. R., 2.
 Lake Valley deposits, Sierra Co.: Apell, G. A., 2.
 Lincoln Co. deposits: Sheridan, M. J., 1.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Los Pinos Mts.: Stark, J. T., 1.
 Lucero uplift: Kelley, V. C., 2; U. S. G. S., 1, no. 47.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Nacimiento, San Pedro Mts., adjacent plateaus: Wood, G. H., Jr., 1, U. S. G. S., 1, no. 57.
 Niggerhead manganese deposits: Russell, P. L., 7.
 Paleozoic, Joyita Hills, Los Pinos Mts., Chupadera Mesa: U. S. G. S., 1, no. 61; Wilpolt, R. H., 1.
 Rio Puerco area: Wright, H. E., Jr., 1.
 San Juan oil and gas fields: Colton, R. E., 1.
 Steeple Rock dist., Grant Co.: Russell, P. L., 6.
 Tusas-Tres Piedras area: Butler, A. P., Jr., 1.
 White Eagle fluorspar mine: Soulé, J. H., 2.
 Zuni Mts. fluorspar deposits: Goddard, E. N., 6.
 New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 Lake Sanford area: Stephenson, R. C., 1.
 Shawangunk Mtn. lakes: Myers, R. E., 1.
 Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 Bell Island deposits: Hayes, John J., 1.
 Little Bay area: MacLean, H. J., 1.
 Normal fault structures, and others: Willis, B., 1.
 North America, Cenozoic Rocky Mtn. trenches: Eardley, A. J., 3.
 North Carolina, Cherokee iron deposits: Robertson, A. F., 1.
 Fontana Dam area: Moneymaker, B. C., 2.
 Franklin-Sylva dist.: Olson, J. O., 2.
 Hot springs, origin: Stose, G. W., 3.
 Orange Co., Trias. trough: Harrington, J. W., 2.
 Raleigh graphite, Wake Co.: Harrington, J. W., 1.
 Northwest Territories, Camsell River area: Lord, C. S., 2.
 Chalco Lake area: Stanton, M. S., 2.
 Eldorado mine: Murphy, R., 1.
 Indin Lake gold area: Lilge, E. O., 1.
 Ross Lake area: Fortier, Y. O., 3.
 Yellowknife dist.: Campbell, N., 1; 2; Riley, C., 1.
 Yellowknife-Beaulieu area: Fortier, Y. O., 1.

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- Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.
 Springhill coal field, mine bumps or rock bursts: Phillips, A., 1.
 Strait of Canso area: Ferguson, S. A., 2.
 Ocean deeps, mountain chains, volcanic ranges: Gunn, R., 1.
 Ohio, scenic geology: Carman, J. E., 1.
 Oil fields and oil traps: Illing, V. C., 1.
 Oklahoma, Anadarko Basin: Wheeler, R. R., 3.
 Antioch pool, Garvin Co.: Turk, L. B., 1.
 Cumberland oil field: Cram, I. H., 1.
 Ouachita Mts.: Hendricks, T. A., 1, 2; Howell, J. C., 3; Tulsa Geol. Soc., 1; U. S. G. S., 1, no. 66.
 Southwest Antioch oil field: Swesnik, R. M., 1.
 West Edmond field: McGee, D. A., 1.
 Ontario, Chelmsford area, Sudbury dist.: Canada G. S., 1.
 Cochenour Williams gold mine area: Nowlan, J. P., 1.
 Falconbridge, nickel mine, Sudbury dist.: Canada G. S., 1; Davidson, S. C., 1.
 Gem Lake-Bee Lake area: Minton, M. O., 1.
 Hasaga gold mines: McLaren, D. C., 7.
 Helen iron mine: Kidder, S. J., 1.
 Kenogami Lake area: Ontario Dept. Mines, 2.
 Kirkland Lake-Noranda-Val d'Or area: Thomson, J. E., 2.
 Lake Shore Mines, rock bursts: Robson, W. T., 1.
 Little Longlac-Sturgeon River area prospects: Horwood, H. C., 1.
 McKenzie Is.-East Bay, Red Lake dist.: Bergman, H. J., 1.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Mattawan-Olrig area: Harding, W. D., 1.
 Northeast Timagami Lake area: Moorhouse, W. W., 1.
 Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Parry Sound area: Satterly, J., 1.
 Sudbury area: Cooke, H. C., 2.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Ordovician, Lower Middle, Va.: Tenn.: Prouty, C. E., 1.
 Ore deposits and geologic age: Mihollic, S., 1.
 Oregon, chromite-bearing sands, S. coast: Griggs, A. B., 1.
 Glass Buttes quicksilver deposit: Reed, G. C., 2.
 Horse Heaven quicksilver mine: Lewis, F. E., 1.

Faulting and faults—Continued.

- Panama Canal bed: Bowman, W. G., 1.
 Pennsylvania, Hollidaysburg-Huntington quads.: Butts, C., 1.
 Taconic sequence: Stose, G. W., 2.
 Problems in fault planes: Beckwith, R. H., 2.
 Puerto Rico: McGuinness, C. L., 1.
 Garzas Dam, Vacas River: Money-maker, B. C., 5.
 Quebec, Abitibi region: Norman, G. W. H., 5.
 Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
 Beauchastel Tp., W. half: Ambrose, J. W., 1.
 Bourlamaque, Abitibi Co.: Canada G. S., 1; Norman, G. W. H., 1, 2, 3.
 Canton Carpentier, Abitibi: Tiphane, M., 1.
 Descriptive geology: Dresser, J. A., 1.
 Eastern Tps.: Hawley, J. E., 3.
 Geologic map, NE. Bourlamaque, Abitibi Co.: Canada G. S., 1.
 Megantic to Montreal: Hutt, G. M., 2.
 North shore St. Lawrence area: Claveau, J., 1.
 Northeast Dubuison: Norman, G. W. H., 4.
 Siscoe mine area, Abitibi-East Co.: Auger, P. E., 1.
 Southwest Bourlamaque, Abitibi Co.: Norman, G. W. H., 2.
 Vauquelin, Pershing, Haig Tps.: Norman, G. W. H., 8.
 Relations, kinds of well data and faulting: Suter, H. H., 1.
 Rock bursts, geol. conditions favoring: Boos, M. F., 3.
 Rocky Mtn. area, E.-cent., Idaho: Anderson, A. L., 4.
 Rose Hill oil field, Lee County, Va.: Jilison, W. R., 12.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
 South Dakota, Galena-Roubaix dist.: Berg, J. R., 1.
 Keystone area, Hugo pegmatite: Norton, J. J., 1.
 Structural geology: Nevin, C. M., 1.
 Tennessee, Cades Cove: Neuman, R. B., 1.
 Camden area, reverse: Ross, R. M., 1.
 Eve Mills area, Monroe Co.: Dunlap, J. C., 1.
 Hales Bar Dam foundations: Frink, J. W., 1.
 Iron Mtn. fault, Watauga Dam: Grant, L. F., 2.
 Mascot-Jefferson City dist.: Bridge, J., 1.
 Stiner, Bunch Hollow zinc properties: Sayrs, R. L., 1.
 Watauga Dam site: Grant, L. F., 1, 2.
 Texas, Apco oil field, Pecos Co.: Ellison, S. P., Jr., 2.
 Bexar Co.: Livingston, P. P., 3.
 Buck Hill quad.: Goldich, S. S., 3.

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- Texas—Continued.
 Del Monte field: Clark, G. H., 1.
 Eagle Mtn. fluorspar deposits: Dennis, W. E., 1.
 Houston Co.: Stenzel, H. B., 1.
 Keystone field, Winkler Co.: Mygdal, K. A., 1.
 Llano Uplift sec.: Bullard, F. M., 1.
 Lovell Lake oil field: Wendler, A. P., 1.
 Odem oil field, San Patricio Co.: McCarter, H. C., 1.
 Petroleum and gas occurrence: Sellards, E. H., 3.
 San Antonio Canyon lead-zinc deposits: Dennis, W. E., 4.
 Silver Eagle zinc deposit: Dennis, W. E., 2.
 Spar Valley, fluorspar beds: Gillerman, E., 1.
 Terlingua quicksilver deposit: Evans, A. M., 1.
 TXL oil field, Ector Co.: Cantrell, C. D., Jr. 1; Weber, G., 1.
 Wood Co., Hawkins field: Wendlandt, E. A., 1.
 United States, Appalachian structure: Hietanen, A., 1, 2.
 Atlantic Coast evolution: Thom, W. T., Jr., 3.
 Black Warrior Basin oil poss.: Mellen, F. F., 1.
 Blue Ridge fault-scarp: White, W. A., 1.
 Blue River-South Platte Transmountain Diversion line area: Haff, J. C., 1.
 Colorado drainage basin: Gregory, H. E., 2.
 Elk Basin field, Mont.-Wyo.: McCabe, W. S., 2.
 Guadalupe Mts., N. Mex.-Tex.: West Texas Geol. Soc., 3.
 Gulf Coast oil research: Lowman, S. W., 3.
 Mississippi River Valley, lower: Fisk, H. N., 1.
 Normal and other fault structures: Willis, B., 1.
 Northeast, Basin areas: Lockett, J. R., 1.
 Picher field, Okla.-Kans.: Stoiber, R. E., 1.
 Picher zinc-lead zone, Okla.-Kans.: U. S. G. S., 6.
 Reading overthrust: Miller, B. L., 1.
 Rocky Mtn. area oil geology: Dobbin, C. E., 2, 4.
 Rocky Mtn. thrust faults: Lammers, E. H. C., 1.
 South Appalachian coal field Penn.: Wanless, H. R., 1.
 Structure relations, Tehachapi, Sierra Nevada, Coast Ranges: Buwalda, J. P., 1.
 Western, earthquake record: Blackwelder, E. R., 6.

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- Utah, Alta dist. scheelite deposits: Crawford, A. L., 1.
 Alunite deposits, Marysville, Piute Co.: Hild, J. H., 1.
 Basin Range, Salt Lake City area: Marsell, R. E., 2.
 Cedar City, Parowan Valleys, Iron Co.: Thomas, H. E., 2.
 Drum Mtn. manganese project: King, W. H., 1.
 East Markagunt Plateau: Gregory, H. E., 3.
 Granite Peak area: Ives, R. L., 8.
 Green River Desert-Cataract Canyon area: Baker, A. A., 1.
 Henry Mts. region: Hunt, C. B., 1.
 Iron Springs dist. deposits: Mackin, J. H., 2.
 Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Little Cottonwood area: Ives, R. L., 3.
 Mammoth Mine, Tintic dist.: Welch, R. F., 1.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Ophir Hill Consolidated mine, Tooele Co.: Wideman, F. L., 1.
 Pavant Range, Millard Co.: Maxey, G. B., 1.
 Tintic dist.: Kildale, M. B., 1.
 Wah Wah lead-zinc mine, Beaver Co.: Jones, R. L., 1.
 Wasatch Mts., Provo area: Baker, A. A., 4; U. S. G. S., 2, no. 30.
 Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U. S. G. S., 1, no. 82.
 Zion Nat. Monument: Gregory, H. E., 1.
 Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.
 Orange Co. copper mines: Jacobs, E. C., 2.
 Rock bursts in granite quarries, Barre area: White, W. S., 1.
 Strafford quad.: Doll, C. G., 1.
 Virginia, Catocin fm., cent. Va.: Bloomer, R. O., 2.
 Giles Co.: Krinitzsky, E. L., 1.
 Goodwin Ferry Cave, Giles Co.: Krinitzsky, E. L., 1.
 Lick Mts.: Stose, G. W., 1.
 Pulaski fault, Appalachian Valley: Cooper, B. N., 2; Edmundson, R. S., 2.
 Rose Hill oil field, Lee Co.: Jillson, W. R., 15; Miller, R. L., 1-a; U. S. G. S., 1, no. 76.
 Southwest Cumberland overthrust block: Miller, R. L., 4.
 Staunton fault: Edmundson, R. S., 2.
 Washington, Anderson zinc-lead prospect, Stevens Co.: Lorain, S. H., 2.
 Bi-Metallic Mtn. molybdenum deposit: Storch, R. H., 1.
 Farmer prospect, Stevens Co.: Reed, G. C., 4.

Faulting and faults—Continued.

- Washington—Continued.
 Ross Dam area, Cascade Mts.: Coombs, H. A., 1.
 South Dam, Columbia Basin project: Irwin, W. H., 2.
 Stevens Co.: Campbell, I., 1; Lorain, S. H., 2; Reed, G. C., 1.
 Tungsten res.: Culver, H. E., 1.
 Twin Sisters Mts.: Roberts, M., 1.
 West Bay fault, Yellowknife dist., Northwest Territories: Campbell, N., 1.
 West Indies, Greater Antilles: Meyerhoff, H. A., 3.
 Wisconsin, Baraboo quartzite: Riley, N. A., 1.
 Coughlin, Galena Level zinc mines: Berliner, M. H., 1.
 Wyoming, Barge area: Fremont Co.: U. S. G. S., 1, no. 56; Williams, M. D., 1.
 Central, strat. secs., Mesozoic: Love, J. D., 2.
 Elk Basin anticline oil field: McCabe, W. S., 1.
 Frannie oil field, Park Co.: Brainerd, A. E., 1.
 Gros Ventre Mts., Mt. Leidy Highlands: Foster, H. L., 1.
 Hart Mtn. problem: Bucher, W. H., 4.
 Jackson Hole area: Love, J. D., 1; U. S. G. S., 2, no. 27.
 Lander area phosphate deposits: King, R. H., 3.
 Northwest Wind River Mts.: Baker, C. L., 1.
 Oregon Basin oil field: Walton, P. T., 2, 3.
 Sage Creek Dome area: Sharkey, H. H. R., 1; U. S. G. S., 1, no. 53.
 Wind River Basin, NE.: Tourtelot, H. A., 1; U. S. G. S., 2, no. 22.
 Wind River Mts. N. flank: Weart, R. C., 1.
 Feldspar.
 Alaskite, Capitan Mtn., N. Mex.: Sidwell, R., 3.
 Alteration products, lab. experts: Folk, R. L., 1.
 California, Julian-Cuyamaca area: Creasey, S. C., 1.
 Colorado, Cañon City area: Blum, V. J., 1.
 Construction, nonmetallic materials: U. S. G. S., 3, no. 10.
 Eight Mile Park area pegmatites: Heinrich, E. W., 7.
 Pegmatites: Hanley, J. B., 3.
 Greenland sands, S. coast between Unartok-Tokulinek: Vroman, J., 1.
 Kaolin, related minerals, structure: Perkins, A. T., 1.
 Maine, Topsham area: Shainin, V. E., 2.
 Massachusetts, Blueberry Mtn. quarry: Eisenberg, J. M., 1.
 Melting relations, soda-potash ternary systems: Schairer, J. F., 1.
 Michigan, N., min. collecting: Luoma, W. E., 1.

Feldspar—Continued.

- New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1.
 New Mexico, mica deposits, Pecata, Ojo Caliente, Elk Mtn. dists.: Jahns, R. H., 1.
 Red River dist.: Park, C. F., Jr., 3.
 New York, Bedford dist. minerals: Mann, A., 1.
 Genesee Gorge: Alling, H. L., 1.
 North Carolina, ceramic mineral deposits: Greaves-Walker, A. F., 1.
 Franklin-Sylva dist.: Olson, J. C., 2.
 Industrial minerals: Stuckey, J. L., 1.
 Spruce Pine dist.: Olson, J. C., 1.
 Ontario, Parry Sound area: Satterly, J., 1.
 Purdy Mica Mines Ltd., Mattawan Tp.: Spence, H. S., 2.
 Oregon, weathered to bauxite: Allen, V. T., 7.
 Petrofabric analysis: Snyder, F. G., 2.
 Plagioclase, attack by acids: Gordon, C. L., 1.
 Determination with 4-axis universal stage: Turner, F. J., 1.
 Potash, soda in pegmatite analysis: Munson, G. A., 1.
 Quebec, Abitibi, Temiscamingue Cos.:ingham, W. N., 1.
 Perthite as age indicator: Faessler, C., 1.
 Wettnagami River area, Abitibi East: Fairbairn, H. W., 1.
 Texas, Badu mine, Llano Co.: Huseman, G. W., 1.
 Central min. area: Barnes, V. E., 4.
 Culberson, Hudspeth Cos.: Holt, S. P., 3.
 Mineral res.: Sellards, E. H., 4.
 United States, zoned pegmatites: Cameron, E. N., 3.
 Utah, Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Felsite.
 Missouri, Silver Mine area: Kidwell, A. L., 1.
 Utah, Granite Peak area: Ives, R. L., 8.
 Fenster, Pulaski, Stanton faults, Va.: Edmundson, R. S., 2.
 Ferberite.
 British Columbia, Red Rose tungsten mine: Stevenson, J. S., 1.
 Colorado, Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Fern prints in lava, Hawaii: Palmer, H. S., 2.
 Field and mining geology: Forrester, J. D., 1.
 Field operation of alternating current equipment: Ives, R. L., 1.
 Fire clay. See also Clay.
 Colorado, Cañon City area: Blum, V. J., 1.
 Construction, nonmetallic materials: U. S. G. S., 3, no. 10.
 Missouri, Cheltenham, origin: Keller, W. D., 1.
 Differential thermal analysis: Keller, W. D., 12.
 Prospecting for: Miller, B. K., 1.

Fire clay—Continued.

- Montana, Fergus Co. dickite-clay: Dougan, C. W., 1.
 Ohio: Dunbeck, N. J., 1.
 Pennsylvania, iron minerals: Leatham, E., 1.
 Fish. See Pisces.
 Flint. See also Chert.
 Ohio: Stout, W. E., 2.
 Flint and/or chert horizons, drilling: Johnston, H. R., 1.
 Floras, boreal, postglacial devel.: Raup, H. M., 1.
 Florida.
Economic geology.
 Core barrel for phosphate prosp.: LeBaron, I. M., 1.
 Geology, oil occurrence: Pressler, E. D., 1.
 Multiple refraction shooting: Neuman, L. J., 1.
 North Florida, oil poss.: Todd, J. D., 1.
 Peat deposits: Davis, J. H. Jr., 1.
 Phosphate: Barr, J. A., 1; Schereschewsky, P., 1.
 Silica sand belt, Miami-West Palm Beach: Hudson, W. C., 2.
Historical geology.
 Geology, oil occurrence: Pressler, E. D., 1.
 Western Florida: SE. Geol. Soc., 1.
Mineralogy.
 Beach sands, heavy minerals: Phelps, W. B., 1.
 Silica sand belt, Miami-West Palm Beach: Hudson, W. C., 2.
Paleontology.
 Algae, Eocene: Johnson, J. H., 9.
 Artifacts, beveled: Jenks, A. E., 1.
 Fauna, Miocene, N.: White, T. E., 1.
 Foraminifera, internal structure: Cole, W. S., 2.
 Lower Cret.: Cushman, J. A., 1.
 Fossil man remains, Melbourne and Vero: Stewart, T. D., 1.
 Gastropoda, Scaphopoda, Alum Bluff group: Gardner, J. A., 1.
 Hauerina, Tert.: Cushman, J. A., 1.
 Lingulepis, Camb. or Ord., Dixie Co.: Howell, B. F., 14.
 Marginella, Pliocene, Clewiston: Smith, M., 1.
 Ostracoda, Tert.: Swain, F. M., 3.
 Phyllangia, Miocene coral: Wells, J. W., 2.
 Rodents, Miocene: Wood, A. E., 3.
 Velates, Eocene, Citrus Co.: Richards, H. G., 1.
 Western Florida: SE. G. Soc., 1.
Petrology.
 Artesian ls., Orlando area: Unklesbay, A. G., 2.
 Western Florida: SE. G. Soc., 1.
Physiographic geology.
 Cypress domes: Vernon, R. O., 1.
Underground water.
 Artesian ls., Orlando area: Unklesbay, A. G., 2.
 Cypress domes: Vernon, R. O., 1.

Florida—Continued.

Underground water—Continued.

Ground-water, Orlando area: Unllesbay, A. G., 1.

Springs: Ferguson, G. E., 1.

Floristic assoc., west N. Am., evolution: Mason, H. L., 1.

Flow, homogeneous fluids thro porous media: Calhoun, J. C., Jr., 2.

Flow and creep of rocks: Jacob, C. E., 2.

Fluid inclusions, fm. temperature: Ingerson, E., 2; Scott H. S., 1.

Fluorescence.

Aid in localizing minerals in polished sections: Yagoda, H., 3.

Applied to minerals: Vanderwilt, J. W., 1.

Arizona, Cochise Co. willemities, calcites: Kasey, M. A., 1.

Minerals: Flagg, A. L., 2.

Deweylite, Soldier's Delight, Md.: Tomlinson, W. H., 2.

Diamonds: Shipley, R. M., 1; Switzer, G., 2.

Doublets, triplets, test: Liddicoat, R. T., 1.

Field operation of alternating current equipment: Ives, R. L., 1.

Fluorographic method of oil explor.: Campbell, O. E., 1.

Geodes, Perm., Okla.: Kennedy, M., 2.

Maryland, Soldier's Delight, deweylite: Tomlinson, W. H., 2.

Texas area wernerite: Price, W. E., Jr., 1.

New Jersey, quartz cone in trap boulder, Prospect Park: Hayes, W. H., 2.

Sunrise Mtn., nepheline-syenite: Hayes, W. H., 1.

Pennsylvania, Friedensville zinc minerals: Thomas, C. A., 5.

Ironstone shales, Pottstown: Thomas, C. A., 3.

Kibblehouse quarry minerals: Thomas, C. A., 1.

Precharged luminescences and laws: De Ment, J. A., 3.

Scheelite: Vanderwilt, J. W., 1.

Tables of minerals: Hershey, R. L., 1.

Ultraviolet light, mercury prosp.: De Ment, J. A., 9.

United States, manganese, lead coactivators in halite: Murata, K. J., 2.

Zircon: Foster, W. R., 3.

Fluorescent bead test for uranium: De Ment, J. A., 4.

Fluorescent tech., petroleum explor.: De Ment, J. A., 6.

Fluorescing portable lamp: Lisle, T. O., 2.

Fluorine.

Content, rocks and ocean bottom: Shepherd, E. S., 1.

Distribution in rocks, Yellowstone Park: Barth, T. F. W., 2.

Geochemical cycle: Barth, T. F. W., 1.

Hawaii, in soils: Robinson, W. O., 2.

New Hampshire, Stoddard mine, Cheshire Co.: Bardill, J. D., 1.

Fluorine—Continued.

Sphene containing: Jaffe, H. W., 2.

United States, in soils: Robinson, W. O., 2.

Fluorite and fluorspar.

Arizona, Packard property, Gila Co.: Cummings, J. B., 1.

Colorado: Cox, D. C., 1; Van Alstine, R. E., 2; Vanderwilt, J. W., 5.

Jamestown dist.: Goddard, E. N., 1.

Nonmetallic materials: U. S. G. S., 3, no. 10.

Northgate deposits, Jackson Co.: Warne, J. D., 1.

San Juan region: Burbank, W. S., 6.

Gem: Holmes, R. J., 3.

Illinois, Alton-Chester area, collecting: McClure, S. M., 3.

Daisy mine, Hardin Co.: Muir, N. M., 2.

Lee mine area, Hardin Co.: Bishop, O. M., 1.

Mineral collecting and occurrences: McClure, S. M., 1, 5.

Pope Co. mines: Bishop, O. M., 1.

Kentucky, Eva Tanguay mines, Crittenden Co.: Starnes, X. B., 3.

Hickory Cane, K-K prosp.: Hickman, R. C., 1.

J. D. Price mine, Crittenden Co.: Starnes, X. B., 4.

Krause Estate prosp., Crittenden Co.: Starnes, X. B., 2.

Mineral Ridge-Clay Lick fault system: Muir, N. M., 1.

Moore Hill prosp.: Starnes, X. B., 1.

Missouri, Silver mine area: Kidwell, A. L., 1.

Missouri Valley area: U.S.G.S., 3, no. 1.

Nevada, Crowell mine, Nye Co.: Geehan, R. W., 1.

Valery mine: Kral, V. E., 4.

New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.

McAfee quarry: Zodac, P., 2.

Sheldon quarry, Rudeville: Zodac, P., 5.

Windsor quarry, Rudeville: Zodac, P., 5.

New Mexico: Rothrock, H. E., 1.

Bishop Cap prosp., Doña Ana Co.: Sur, F. J., 1.

Fluorite Ridge dist.: Russell, P. L., 2.

Gallinas deposits, Lincoln Co.: Kelley, V. C., 4; Soulé, J. H., 1.

Gila dist., Grant Co.: Russell, P. L., 4.

Huckleberry spar mine, Catron Co.: Sur, F. J., 2.

Luna Co., crystal formation temperature: Twenhofel, W. S., 2.

Reserves: Benjovsky, T. D., 3.

Sierra Co.: Sheridan, M. J., 2.

White Eagle mine: Soulé, J. H., 2.

Zuni Mts.: Goddard, E. N., 6.

Ohio, Clay Center loc.: McAlister, R. F., 1; Mihelcic, J. F., 1.

Texas, Eagle Mtn. deposits: Dennis, W. E., 1.

Fluorite and fluorspar—Continued.

Texas—Continued.

San Antonio Canyon lead-zinc deposits:
Dennis, W. E., 4.

Spar Valley, replacement beds: Giller-
man, E., 1.

Trans-Pecos area: Evans, G. L., 4.

Utah: Buranek, A. M., 1.

Blue Bell mine, Beaver Co.: Frey, E., 4.

Wildcat Mts. deposits: Buranek, A. M.,
4.

Wyoming, Bear Lodge Mts.: Dunham, W.
C., 1.

Nonmetallics: Clabaugh, S. E., 1; U. S.
G. S., 3, no. 9.

Fluorographic method of oil exploration:

Campbell, O. E., 1.

Fluorologs, use: Campbell, O. E., 2.

Flysich and molasse: Eardley, A. J., 2.

Folding.

Alabama, Lookout Mtn. coking coal: Coul-
ter, D. M., 1.

Alaska, copper deposits, Kotsina-Kuskul-
ana dist.: Van Alstine, R. E., 1.

Matanuska Valley coal field: Payne, T.
G., 1.

Nizina dist.: Miller, D. J., 1.

Petroleum poss.: Reed, J. C., 2.

Prince of Wales Is., Jumbo Basin mine:
Wright, W. S., 1.

Southeast molybdenite deposits: Twen-
hofel, W. S., 1.

Spirit Mtn. nickel mine, Copper River
area: Pierce, H. C., 1.

Ultrabasic rocks, SE.: Kennedy, G. C., 2.

Alberta, Alexo area: Canada G. S., 1.

Brûlé area: Lang, A. H., 1.

West of 5th Meridian: Canada G. S., 1.

Callum Creek area: Douglas, R. J. W., 1.

Cripple Creek area: Erdman, O. A., 1.

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

Foot hills, Athabaska-Ram Rivers: Mac-
Kay, B. R., 2.

Gregg Lake area: Irish, E. J. W., 1.

Highwood-Elbow area: Allan, J. A., 2.

Langford Creek area: Douglas, R. J.
W., 2.

Saunders map area: Canada G. S., 1.

Alpha-folds: Washburne, C. W., 1.

Arizona, Bagdad area: Anderson, C. A., 1.

Dragoon Mts.: Cederstrom, D. J., 2.

Grand Canyon, E. part: Van Gundy,
C. E., 1.

New Planet mine, Yuma Co.: Cum-
mings, J. B., 2.

Arkansas, Hot Springs Co., Magnet Cove:
McElwaine, R. B., 1.

Montgomery Co. barite deposits: McEl-
waine, R. B., 2.

Bellows Falls quad., N. H.-Vt.: Kruger,
F. C., 1, 2.

Bighorn Basin, Wyo-Mont.: Wyoming
Univ., 1.

Rim features: Thom, W. T., Jr., 2.

Tectonic devel.: Fanshawe, J. R., 1.

British Columbia, Britannia mines no. 8
ore bodies: Irvine, W. T., 1.

Folding—Continued.

British Columbia—Continued.

Carbon Creek-Mount Bickford area:

Mathews, W. H., 2.

Cariboo dist.: Holland, S. S., 1.

East Gold mine, electrum-ruby silver
deposit: Fawley, A. P., 1.

Lucky Jim mine area: Hedley, M. S., 2.

Manson Creek, Cassiar dist.: Canada G.
S., 1.

Nanaimo coal field: Buckham, A. F., 2.

Northern: Armstrong, J. E., 2.

Princeton area, Yale, Kamloops, Simil-
kameen, Osoyoos dist.: Canada G.
S., 1.

South half Aiken Lake area: Arm-
strong, J. E., 1.

Whitewater, Lucky Jim mine areas:

Hedley, M. S., 1.

California, Bakersfield Clock Tower, El

Tejon Hotel to Lebec: Hackel, O., 1.

Blue Ledge mine, Siskiyou Co.: Hund-
hausen, R. J., 2.

Buena Vista Hills oil pool: Burtner, E.,
1.

Calico Mts. area: Henry, D. J., 1.

Carpinteria to Gaviota, road logs: Si-
monson, R. R., 1.

Cerro Gordo area, Inyo Co.: Merriam,
C. W., 1.

Cymric oil field, Kern Co.: McMasters,
J. H., 1.

Del Valle, Ramona oil fields: Matter,
J. E., 1.

East Mayacmas dist.: Yates, R. G., 1.

Elwood, Capitan oil fields: Simonson, R.
R., 2.

Inyo Range, Bishop quad.: Maxson, J.
H., 2.

Iron Hat deposits, San Bernardino Co.:
Lamey, C. A., 1.

Kramer borate dist.: Gale, H. S., 1.

Los Angeles-Santa Paula via oil fields:
Hazzard, J. C., 1.

Monterey fm.: Bramlette, M. N., 1.

New Idria dist. quicksilver deposits:
Eckel, E. B., 1.

Oak Ridge oil fields, Ventura Co.:
Baddley, E. R., 1.

Pico anticline, Los Angeles Co.: Arleth,
K., 1.

Pine Creek, Inyo Co.: Bateman, P.
C., 1.

Reef Ridge, Coalinga dist.: Stewart, R.
B., 1.

San Gabriel Basin, NE. margin: Shel-
ton, J. S., 1; U. S. G. S., 1, no. 63.

Sierra Nevada, Donner Pass zone defm.:
Hudson, F. S., 1.

Southern structure: Mayo, E. B., 1.

Sierra Nevada-Death Valley: Hopper, R.
H., 1.

Shasta, California deposits: Lamey, C.
A., 1.

Ship Mtn. iron deposit: Lamey, C. A., 1.

Tejon quad. structure: Wiese, J. H., 2.

Ventura Basin: Bailey, T. L., 2.

Folding—Continued.

California—Continued.

- Ventura to Carpinteria: Redwine, L. E., 1.
 Canada, Dubuisson-Bourlamaque-Louviciourt area: Norman, G. W. H., 9.
 Colorado, Alma, Horseshoe dists. lode deposits: Singewald, Q. D., 2.
 Beaver-Tarryall dist., Park Co.: Singewald, Q. D., 2.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Bonanza (Kerber Creek) dist.: Burbank, W. S., 14.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Front Range: Goddard, E. N., 5; Wahlstrom, E. E., 2.
 General: Vanderwilt, J. W., 5.
 Gilman dist., Eagle Co.: Tweto, O. L., 3.
 Jamestown dist. fluorspar deposits: Goddard, E. N., 1.
 Kokomo mining dist.: Koschmann, A. H., 3.
 Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
 Rangely oil and gas field: Bass, N. W., 1; Bench, B. M., 1, 2; Newton, S. M., 4; U. S. G. S., 1, no. 67.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Vanadium-bearing ss.: Fischer, R. P., 3.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Cuba, Camagüey-Oriente area: Hermes, J. J., 1.
 Eastern: Thayer, T. P., 2.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de 1.
 Georgia, Sand, Lookout Mts. coal deposits: Johnson, V. H., 1.
 Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.
 Greenland, East, 73°-75°: Vischer, G. A., 1.
 Kronprins Christians Land: Nielsen, E., 1.
 Northeast: Ahlmann, H. W., 1.
 Scoresby Sound area: Rothé, J. P., 1.
 Idaho, Blackbird dist., Lemhi Co.: Anderson, A. L., 3; Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Coeur d'Alene min. dist.: Sorenson, R. E., 1.
 Snake-Salmon Rivers area: Wagner, W. R., 1.
 Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
 Illinois, King oil field: Folk, S. H., 1.
 Mattoon oil field: Kniseley, H. B., 1.
 Kansas, central, Siluro-Dev. strata: Taylor, M. H., 1.

Folding—Continued.

Kansas—Continued.

- Genesee uplift: Clark, S. K., 1.
 Labrador Penin., E. area: Tanner, V., 2.
 Lination: Cloos, E., 1.
 Maine, manganese deposits, Aroostook Co.: Miller, R. L., 2.
 Manitoba, McVeigh Lake area: Bateman, J. D., 1.
 Morton Lake area: Harrison, J. M., 2.
 Sherridon area: Canada G. S., 1.
 Snow Lake-Nor-Acme Mine areas: Harrison, J. M., 1.
 Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 2.
 South Mtn. defm.: Cloos, E., 3.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.
 Mexico: Waitz, P., 1.
 Antimony mines, Tejocotes area, Oaxaca: White, D. E., 2.
 El Cuarenta min. zone, Durango: Peréz Siliceo, R., 4.
 San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
 Sierra de Santa Rosa: Willard, M. E., 3.
 Michigan, Crystal Falls-Alpha iron dist.: Pettijohn, F. J., 1.
 Michigan Basin, Traverse group: Cohee, G. V., 2.
 Minnesota, Mesabi range: Jones, R. H. B., 1.
 Mississippi, Kilmichael dome: Priddy, R. R., 1.
 Missouri, Morgan Co.: Mather, W. B., 1.
 Montana, Bearpaw Mts. area: Reeves, F., 2.
 Bear Trap corundum deposit, Madison Co.: Hopkins, J. B., 1.
 Big Belt Range, N.: Lyons, J. B., 1.
 Clark Fork-Kootenai River devel.: Erdmann, C. E., 1.
 Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.
 Petroleum geology: Emrick, E. R., 1.
 Plains structure map: Dobbin, C. E., 3.
 Pre-Cambrian carbonate rocks: Heinrich, E. W., 8.
 Pryor Mts. structure: Blackstone, D. L., Jr., 2.
 Nevada, Eureka min. dist.: Sharp, W., 1.
 New Brunswick: Hutt, G. M., 4.
 Sussex, Kings and Queens Cos.: Canada G. S., 1.
 New England, Chelmsford granite significance: Currier, L. W., 1.
 Major geol. problems: Billings, M. P., 6.
 New Hampshire, Mt. Pawtuckaway quad.: Freedman, J., 1.
 Mt. Washington quad.: Billings, M. P., 1, 2.
 Percy quad.: Chapman, R. W., 3.
 Plymouth quad.: Moke, C. B., 1.
 Western, Bethlehem gneiss: Chapman, C. A., 4.

Folding—Continued.

- New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.
- New Jersey, Martinsburg slate cleavage devel.: Broughton, J. G., 1.
- New Mexico, Gran Quivira quad.: Bates, R. L., 3.
- Guadalupe Co.: U. S. G. S., 1, no. 44.
- Lake Valley deposits: Apell, G. A., 2.
- Las Vegas Basin: Northrop, S. A., 1; U. S. G. S., 1, no. 57.
- Little Hatchet Mts.: Lasky, S. G., 3.
- Lucero uplift: Kelley, V. C., 2; U. S. G. S., 1, no. 57.
- Nacimiento, San Pedro Mts., adjacent plateaus: U. S. G. S., 1, no. 57; Wood, G. H., Jr., 1.
- San Juan Basin oil and gas fields: Colton, R. E., 1.
- Socorro Co., Jones iron deposit: Grant-ham, R. M., 1.
- New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
- Gouverneur area: Engel, A. E. J., 2, 4.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
- Little Bay area: MacLean, H. J., 1.
- Normal fault structures, and others: Willis, B., 1.
- North America, Caribbean Sea area: Bucher, W. H., 3.
- Cenozoic Rocky Mtn. trenches: Eardley, A. J., 3.
- Gulf of St. Lawrence area: Twenhofel, W. H., 4.
- North Carolina, Fontana Dam area: Moneymaker, B. C., 2.
- Franklin-Sylva dist.: Olson, J. C., 2.
- Raleigh graphite, Wake Co.: Harrington, J. W., 1.
- Northwest Territories, Chalco Lake area: Stanton, M. S., 2.
- Eldorado mine: Murphy, R., 1.
- Giant gold mine, Yellowknife dist.: Anonymous, 56.
- Indin Lake gold area: Lilje, E. O., 1.
- Ross Lake area: Fortier, Y. O., 3.
- Yellowknife dist.: Campbell, N., 2.
- Yellowknife-Beaulieu area: Fortier, Y. O., 1.
- Nova Scotia, gold dists., struc. control: Cameron, H. L., 1.
- Guysborough Co.: MacNeil, D. J., 2.
- Strait of Canso area: Ferguson, S. A., 2.
- Ocean deeps, mtn. chains, and volcanic ranges: Gunn, R., 1.
- Oil fields and oil traps: Illing, V. C., 1.
- Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
- Cumberland oil field: Cram, I. H., 1.
- Southern, oil fields: Gouin, F., 1.
- West Ouachita Mts.: Hendricks, T. A., 1; Tulsa Geol. Soc., 1.
- Ontario, Cochenour Willans gold mine: Nowlan, J. P., 1.
- Dome gold mine area: Holmes, T. C., 1.

Folding—Continued.

- Ontario—Continued.
- Falconbridge nickel mine area: Davidson, S. C., 1.
- Hasaga gold mines McLaren, D. C., 7.
- Helen iron mine: Kidder, S. J., 1.
- Kirkland Lake, Noranda-Val d'Or area: Thomson, J. E., 2.
- Little Longlac-Sturgeon River area: Horwood, H. C., 1.
- Madsen Red Lake gold mines: McLaren, D. C., 8.
- Omega gold mine: McLaren, D. C., 4.
- Onakawana lignite, Moose Basin: McLaren, D. C., 5.
- Parry Sound area: Satterly, J., 1.
- Porcupine dist.: Gustafson, J. K., 1.
- Red Lake area: Thomson, R., 2.
- Robb-Jamieson area: Berry, L. G., 1.
- Rush Lake gold mine: Hogg, N., 1.
- Rutherglen dist.: Keith, M. L., 1.
- Sudbury area: Cooke, H. C., 2.
- Timagami Lake area, NE.: Moorhouse, W. W., 1.
- Ordovician, Lower Middle, Tenn., Va.: Prouty, C. E., 1.
- Oregon, chromite sands, S. coast: Griggs, A. B., 1.
- Parallel folds, delineation, stratigraphic measurements, graphical methods: Mertie, J. B., Jr., 1.
- Pennsylvania, Lackawanna Basin origin: Willard, B., 1.
- Pittsburgh area: Leighton, H., 3.
- Puerto Rico: McGuinness, C. L., 1.
- Quebec, Barraute area, Abitibi Co.: Tremblay, L. P., 3.
- Beauchastel Tp., W.: Ambrose, J. W., 1.
- Descriptive geology: Dresser, J. A., 1.
- Desvaux Lake area, Dasserat Tp.: Auger, P. E., 2.
- Eastern Tps.: Hawley, J. E., 3.
- Major faults, Abitibi region: Norman, G. W. H., 5.
- Megantic to Montreal: Hutt, G. M., 2.
- Northeast Bourlamaque, Abitibi Co.: Canada G. S., 1.
- Northeast Dubuisson: Norman, G. W. H., 4.
- North shore, St. Lawrence area: Claveau, J., 1.
- Pershing area, Abitibi Co.: Norman, G. W. H., 7.
- Quebec Central Ry. area: Dawson, A. S., 1.
- Vauquelin, Pershing, Haig Tps., Abitibi Co.: Norman, G. W. H., 8.
- Rock bursts, geol. conditions favoring: Boos, M. F., 3.
- Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
- South Dakota, Galena-Roubiax dist.: Berg, J. R., 1.
- Structural geology: Nevin, C. M., 1.
- Tennessee, Chamberlain-Barnardville iron deposits: McMaster, P. D., 1.

Folding—Continued.

Tennessee—Continued.

- Churchwell-Robinette mines: Warner, A. H., 1.
 Eve Mills area, Monroe Co.: Dunlap, J. C., 1.
 Jefferson City area ore bodies: Brokaw, A. L., 1.
 Mascot-Jefferson City dist.: Bridge, J., 1.
 Texas, Del Monte field: Clark, G. H., 1.
 United States, Appalachian structure: Hietanen, A., 1, 2.
 Atlantic Coast evolution: Thom, W. T., Jr., 3.
 Normal, other fault structures: Willis, B., 1.
 Northeast, Basin areas: Lockett, J. R., 1.
 Rocky Mtn. area, oil and gas fields: Dobbin, C. E., 1, 4.
 Structure relations, Tehachapi, Sierra Nevada, Coast Ranges: Buwalda, J. P., 1.
 Utah, Cedar City, Parowan Valleys, Iron Co.: Thomas, H. E., 2.
 Green River Desert-Cataract Canyon area: Baker, A. A., 1.
 Henry Mts. region: Hunt, C. B., 1.
 Little Cottonwood area: Ives, R. L., 3.
 Pavant Range, Millard Co.: Maxey, G. B., 1.
 San Juan oil field: Colton, R. E., 2.
 San Rafael Swell area: Crawford, A. L., 2.
 Tintic dist.: Kildale, M. B., 1.
 Uinta Basin: Murray, A. N., 1.
 White Horse alunite deposits: Willard, M. E., 1.
 Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.
 Zion Nat. Monument: Gregory, H. E., 1.
 Vermont, Orange Co. copper mines: Jacobs, E. C., 2.
 Strafford quad.: Doll, C. G., 1; Jacobs, E. C., 1.
 Virginia, Frederick Co. lss.: Bass, C. E., 1.
 Lick Mts.: Stose, G. W., 1.
 Rockbridge Co. tectonic shale intrus.: Bloomer, R. O., 1.
 Washington, Colville batholith, E.: Campbell, C. D., 2.
 Grand Coulee: Koester, C. R., 1.
 Republic mining dist.: Wright, L. B., 2.
 Stevens Co.: Campbell, I., 1.
 Tungsten area: Culver, H. E., 1.
 West Indies, Greater Antilles: Meyerhoff, H. A., 3.
 Wisconsin, Baraboo quartzite: Riley, N. A., 1.
 Wyoming, Bargee area, Fremont Co.: U.S.G.S., 1, no. 56; Williams, M. D., 1.
 Central, strat. secs., Mesozoic: Love, J. D., 2.
 East Lance Creek, Little Buck Creek oil fields: Swan, B. G., 2.

Folding—Continued.

Wyoming—Continued.

- Frannie oil field, Park Co.: Brainerd, A. E., 1.
 Grass Creek oil field: McCanne, R. W., 1.
 Gros Ventre Mts., Mt. Leidy Highlands, Teton Co.: Foster, H. L., 1.
 Hamilton Dome oil field: Krampert, E. W., 2.
 Lander area phosphate deposits: King, R. H., 3.
 Oregon Basin field: Walton, P. T., 2, 3.
 Sage Creek dome area: Sharkey, H. H. R., 1; U.S.G.S., 1, no. 53.
 Wind River Basin, NE.: Tourtelot, H. A., 1; U.S.G.S., 2, no. 22.
 Wind River Mts. N. flank: Weart, R. C., 1.
 Footprints: See Tracks and Trails.
 Foraminifera.
 Alabama, Cocoa sand fauna: Cushman, J. A., 4.
 Southeast: MacNeil, F. S., 1; SE. Geol. Soc., 2.
 Alaska, Amchitka Is. Pliocene, Pleist. fauna: Cushman, J. A., 1.
 Ammobaculites paleocenicus for A. midwayensis: Cushman, J. A., 1.
 Arkansas, Arkadelphia marl Cret. fauna: Cushman, J. A., 1.
 Paleocene: Cushman, J. A., 1.
 Upper Cret., new forms: Lalicker, C. G., 1.
 Bibliography of new forms, 1944-45 and suppls.: Thalmann, H. E., 1.
 Bolivina dissentiata for B. imporcata: Cushman, J. A., 1.
 Bulimina, related genera, Cret., Tert., N. Am.: Cushman, J. A., 7.
 California, Eocene, Contra Co.: Nicholson, P. R., 1.
 Gaviota to Santa Maria: Hughes, A. W., 1.
 Los Angeles Basin: Wissler, S. G., 2.
 Palos Verdes Hills fauna: Woodring, W. P., 1.
 Timms Point Pliocene: Cushman, J. A., 1.
 Ceratobulimina, genus and species, N. Am.: Cushman, J. A., 1.
 Chapmanina, Eocene genus: Frizzell, D. L., 1.
 Collections, national: Henbest, L. G., 2.
 Cuba, Camagüey Prov. faunas: Albear y Franquiz, J. F., de 1; Wessem, A., 1.
 Camagüey-Oriente area: Hermes, J. J., 1.
 Oriente Prov. faunal, floral lists: Vletter, D. R., de 1.
 Small, Oligocene: Bellen, R. C. van. 1: Keijzer, F., 1.
 Deaderick collection, Cret., Ark.: Henbest, L. G., 1.
 Dentalina jamaicensis for D. jarvisi: Cushman, J. A., 1.
 Discocyclinidae, Eocene, and others, Cuba: Cole, W. S., 1.

Foraminifera—Continued.

- Dominican Republic, small Tert.: Bérnandez y Hernández, P. J., 1.
Ecology, fossil and recent: Phleger, F. B., Jr., 3.
Endothyra, Missn. Indiana Fusulinidae: Scott, H. W., 2.
Facies logs, micropaleontological: ten Dam, A., 1.
Faunas, E. Oriente Prov., Cuba: Keijzer, F. G., 3.
Little Hatchet Mts., N. Mex.: Lasky, S. G., 3.
Pennsylvanian, Tex.: Plummer, F. B., 3.
Florida, Cret., Lower: Cushman, J. A., 1.
Internal structure: Cole, W. S., 2.
Western: SE. G. Soc., 1.
Fossil lists, Pittsburgh, Pa. area: Leighton, H., 3.
Fusulinidae, Perm., Calif.: Thompson, M. L., 1.
Georgia, E.-cent. Coastal Plain fauna: La Moreaux, P. E., 1.
Globigerina, described between 1839-50: Cushman, J. A., 1.
Greenland, Kronprins Christians Land: Nielsen, E., 1.
Northeast, Scoresbyland: Bierther, W., 1.
West, faunas: Joergensen, K. D., 1; Laursen, D., 1.
Guatemala, Petén area: Wadell, H. A., 1.
Gulf of Mexico, fauna in sediments: Trask, P. D., 3.
Hauerina, Oligocene, Miss., Puerto Rico: Cushman, J. A., 1.
Tertiary, Fla.: Cushman, J. A., 1.
Homonyms in genera erected since 1940: Thalmann, H. E., 2.
During 1946: Thalmann, H. E., 1.
Illinois, Porters Creek fauna, corrections: Stephenson, M. B., 3.
Invertebrata in Penn. correls.: Weller, J. M., 2.
Kinderhook microfaunas, U. S.: Cooper, C. L., 4.
Lepidorbitoides and Orbitocyclina synonyms: Rutten, M. G., 1.
Lingulina naheolensis for L. minuta, Cushman: Cushman, J. A., 1.
Manitoba, S., Boyne Upper Cret. beds: Wickenden, R. T. D., 1.
Mexico, Cret., Peñuela, Orizaba lss., Veracruz: Mullerried, 5.
Microfauna, Kinkaid Missn., Ill.: Cooper, C. L., 2.
Microfossils, Cret., Vermilion area, Alberta: Nauss, A. W., 1.
Oligocene, Miocene, Onslow Co., N. C.: McLean, J. D., Jr., 1.
Role in Penn. correls.: Cooper, C. L., 3.
Miscellanea, peripheral apertures: Vaughan, T. W., 1.
Mississippi, Byram marl type loc. fauna: Cushman, J. A., 1.
Cretaceous: Cushman, J. A., 1.

Foraminifera—Continued.

- Mississippi—Continued.
Vicksburg area, Oligocene: Todd, M. R., 1.
North America, Gulf Coastal region, Cret.: Cushman, J. A., 2.
North Atlantic submarine cores: Phleger, F. B., Jr., 1.
North Dakota, Nesson anticline: Laird, W. M., 1.
Nubecularia, Penn., Perm., Kans.: Johnson, J. H., 7.
Ohio, Bone Beds, Mid. Dev.: Stewart, G. A., 1.
Orbitoididae, synopsis of: Rutten, M. G., 2.
Oregon, Coos Bay, Lower Tert.: Detling, M. R., 1.
Nethalem River Basin: Warren, W. C., 1.
St. Helens quad, faunas: Wilkinson, W. D., 1.
Parafusulina, Perm., Alaska: Dunbar, C. O., 2.
Pennsylvania, Pittsburgh area, fossil lists: Leighton, H., 3.
Recent literature: Cushman, J. A., 1.
Rotalia, Cuba, Tert., Cret.: Cushman, J. A., 1.
Sigmoilina, Tert., N. Am., W. Indies: Cushman, J. A., 1.
Sigmoilina victoriensis for S. sigmoidea var. compressa Cushman: Cushman, J. A., 1.
Siphogenerinoides, Cret., N. Am.: Stone, B., 1.
Texas, central, lower Penn.: Spivey, R. C., 1.
Cretaceous: Cushman, J. A., 1; Keijzer, F., 2.
Llano Uplift, Penn.: Plummer, F. B., 2; Thompson, M. L., 2.
Type Pepper Cret. sh.: Loeblich, A. R., Jr., 1.
Weches Eocene fm., Smithville: Stephenson, M. B., 1.
Trinidad, Cret.: Cushman, J. A., 1.
Lizard Springs fm. fauna: Cushman, J. A., 6.
St. Croix Oligocene fm. fauna: Cushman, J. A., 8.
United States, E. Gulf area micropaleontology status: Howe, H. V., 2.
Gulf Coast, Woodbine: Cushman, J. A., 1.
Paleocene, SE.: Cushman, J. A., 1.
Permian correls. King, P. B., 1.
Utah, Morgan Penn. fm., Split Mtn.: McCann, F. T., 1.
Verneulinidae, supp. to monograph: Cushman, J. A., 5.
Virgin Islands, St. Croix, Tert.: Cushman, J. A., 3.
Washita group, Okla.-Tex.: Loeblich, A. R., Jr., 2.
West Indies, St. Croix fm., Trinidad, fauna: Cushman, J. A., 8.
Trinidad, Lizard Springs fm. fauna: Cushman, J. A., 6.

- Forecasting earthquakes: Macelwane, J. B., 2.
 Formation resistivities, apparent, factors affecting: Pirson, S. J., 4.
 Formations. See Geologic formations, tables.
 Fort Collins Extension oil field, Colo.: Wilson, J. H., 2.
 Fossil plants: Janssen, R. E., 2.
 Fossil pollen cf. herbarium pollen: Buell, M. F., 3.
 Fossil resins in Utah coals: Buranek, A. M., 3.
 Fossils. See Paleontology; Paleobotany.
 Foundry sand.
 Oregon, Eugene area: Lowry, W. D., 1.
 Texas, Eocene Rockdale fm.: Hoeman, E. C., 1.
 Fourier synthesis, electronic method: Birks, L. S., 1.
 Fractography: Zapffe, C. A., 1.
 Frannie oil field, Park Co., Wyo.: Brainerd, A. E., 1.
 Free-fall coring tube for gravity bottom samples: Hvorslev, M. J., 1.
 Freezing, quick, preserves fluid contents of cores: Wisenbaker, J. D., 1.
 Freieslebenite, Clark Fork dist., Idaho: Anderson, A. L., 2.
 Frobergite, Quebec, new min.: Thompson, R. M., 2.
 Froya Glacier, NE, Greenland: Ahlmann, H. W., 2.
 Frozen ground, cryopedology, study: Bryan, K., 1.
 Fuchsite, chrome micas: Whitmore, D. R. E., 1.
 Maryland, Campbell quarry: Levey, H., 1.
 Fulgurites.
 California, San Clements Is.: Griesbach, J. O., 1.
 Sand, enclosing lechatelierite: Rogers, A. F., 1.
 Lightning bolt on Detroit, Mich., sidewalk: Hill, J., 1.
 Michigan: Franz, H., 1.
 Nevada, min. collection: McLeod, E., 1.
 Fuller's earth.
 Colorado, construction, nonmetallic materials: U.S.G.S., 3, no. 10
 Georgia, E-cent. Coastal Plain: La Moreaux, P. E., 1.
 Illinois, collecting minerals: McClure, S. M., 1.
 North Dakota, construction materials, nonmetallics: Shride, A. F., 1;
 U.S.G.S., 3, no. 14.
 Ohio, min. res.: Stout, W. E., 3.
 United States, Missouri Valley area:
 U. S. G. S., 3, no. 1.
 Fumaroles.
 California, The Geysers, Sonoma Co.: Bradley, W. W., 4; Vonsen, M., 1.
 Lassen Volcanic Nat. Park: Killinger, P. E., 1.
 Fun with fossils: Palmer, K. E. H. V., 3.
 Functions, vertebrate paleontology in earth sciences: Colbert, E. H., 6.
 Fundamentals, earth science: Thompson, H. D., 1.
 Fused wood-ash stones in burnt trees: Milton, C., 4.
 Fusulinidae. See also Foraminifera.
 California, Perm.: Thompson, M. L., 1.
 Invertebrata in Penn. corals: Weller, J. M., 2.
 Texas, central, Lower Penn.: Spivey, R. C., 1.
 Llano Uplift, Penn.: Plummer, F. B., 2;
 Thompson, M. L., 2.
 United States, Perm., corals. by King, P. B., 1.
 Future, petroleum geology: Holman, E., 1.
 Gabbro.
 California, Julian-Cuyamaca area, San Diego Co.: Creasey, S. C. 1.
 Ramona quad.: Merriam R. H., 1.
 Southern, batholith rocks: Larsen, E. S., 2.
 Tungsten Hills, pseudo-bedding: Bateman, P. C., 2.
 Canada, Capsisit Lake area, Abitibi East: Gilbert, J. E., 1.
 Flin Flon-Mandy area, Manitoba-Saskatchewan: Stockwell, C. H., 1.
 Cuba, Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Mexico, Parícutin Volcano area: Williams, H., 2.
 New York, Lake Sanford area: Stephenson, R. C., 1.
 Post-anorthosite gabbro, Avalanche Lake: Jaffe, H. W., 1.
 Ontario, Tp. 47, Missinaibi area: Bruce, E. L., 3.
 Quebec, N. shore St. Lawrence area: Claveau, J., 1.
 Wetnetnagami Lake and River area, Abitibi East: Fairbairn, H. W., 1; Graham, R. B., 1.
 Gahmite, Craigmont deposit, Ontario: Eardley-Wilmot, V. L., 1.
 Galena.
 Alaska, Mountain View tungsten deposit, Hyder: Erickson, A. W., 1.
 British Columbia: Hutt, G. M., 6.
 Britannia mines, No. 8 ore bodies: Irvine, W. T., 1.
 Highland Bell mine: Staples, A. B., 1, 2.
 Lucky Jim mine area: Hedley, M. S., 2.
 Manson Creek, Cassiar dist.: Canada G. S., 1.
 Canada, Sudbury dist.: Stanley, R. C., 1.
 Colorado, Front Range mineral belt: Goddard, E. N., 5.
 Jamestown dist., fluorospar deposits: Goddard, E. N., 1.
 Silverton area collecting: Hudson, K., 1.
 Costa Rica, Monte Aguacate mine: Rex, R., 1.
 Greenland ore minerals: Pauly, H., 1.
 Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
 Idaho, Clark Fork dist. lead-silver mineralization: Anderson, A. L., 2.

Galena—Continued.

Idaho—Continued.

Clark Fork lead-zinc dist.: Lorain, S. H., 1.

Snake-Salmon River area, Idaho Co.: Wagner, W. R., 1.

Wilbert mine, Dome dist.: Anderson, A. L., 5-a.

Illinois, mineral collecting: McClure, S. M., 1.

Kentucky, Eva Tanguay mines, Crittenden Co.: Starnes, X. B., 3.

J. D. Price fluorite deposit, Crittenden Co.: Starnes, X. B., 4.

Krausse Estate prosp., Crittenden Co.: Starnes, X. B., 2.

Mexico, Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.

Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.

Mineral res.: Keller, W. D., 2.

Morgan Co.: Mather, W. B., 1.

Buckshot Mine: Kidwell, A. L., 2.

Phelps lease, Jasper Co.: Brichta, L. C., 1.

Silver Mine area: Kidwell, A. L., 1.

New Mexico, Peerless lead-zinc mine, Grant Co.: Soulé, J. H., 4.

North America, desert minerals: Belz, C. A., 2.

Northwest Territories, Eldorado mine: Murphy, R., 1.

Ross Lake area poss.: Fortier, Y. O., 3.

Texas, San Antonio Canyon lead-zinc deposits: Dennis, W. E., 4.

Washington, Anderson zinc-lead prospect, Stevens Co.: Lorain, S. H., 2.

Farmer prospect, Stevens Co.: Reed, G. C., 4.

Wisconsin, Crow Branch diggings, Grant Co.: Lincoln, F. C., 1.

New Dale Rundell zinc mine: Lincoln, F. C., 1.

Tennyson dist., Grant Co.: Apell G. A., 1.

Gallium, rare metal: De Ment, J. A., 1.

Gamma-ray studies, potassium salts, saline fms.: Spicer, H. C., 1.

Ganister, Pennsylvania, Hollidaysburg-Huntington quads: Butts, C., 1.

Garnet.

Alaska, SE.: Shaw, V., 1.

Arizona, Mohawk zinc prosp., Pima Co.: Haury, P. S., 1.

California, Jacksonville area, uvarovite: Trainer, J. N., 2.

Los Banos dist. ss.: Daviess, S. N., 1.

Placer Co. pseudo jade: Rogers, A. F., 5.

Canada, Orford area, uvarovite: Trainer, J. N., 2.

Colorado, Nathrop area spessartite: Elmermeier, G. B., 3.

Connecticut, Roxbury, W. Redding locs.: Yedlin, L. N., 1.

Corundum, distinction: Butler, G. M., 1.

Gem: Holmes, R. J., 3.

Garnet—Continued.

Greenland sands, S. coast between Unartok-Tokulinek: Vroman, J., 1.

Grossularite, stability relations: Yoder, H. S., Jr., 1.

Idaho, Latah Co.: Dake, H. C., 4.

Massachusetts, Purgatory Chasm: Wiley, J., 1.

Mexico, Bolson de Mapimi area: Estlack, J. C., 1.

New York, Barton mine paragenesis: Shaub, B. M., 3.

Bedford dist.: Mann, A., 1.

Eastern State Parkway min. locs.: Zodac, P., 7.

North America, cerium and thorium: Roots, E. F., 1.

New occurrences: Trainer, J. S., 3.

North Carolina, Spruce Pine dist: Olson, J. C., 1.

Ontario, Craigmont deposit: Eardley-Wilmot, V. L., 1.

Parry Sound area: Satterly, J., 1.

Oregon, SW. coast black beach, river sands: Twenhofel, W. H., 2.

Pyrope garnet and red spinel, distinction: Anderson, B. W., 1.

United States, uvarovite: Trainer, J. H., 1.

Utah, Granite Peak area: Ives, R. L., 8.

Washington, Sultan Basin deposits: Carithers, L. W., 1.

Wyoming, collecting, Encampment area: Platt, R. E., 1.

Garnet and corundum, distinction: Butler, G. M., 1.

Gastropoda. See also Mollusca; Invertebrata (general).

Arctic America, Ellesmere Land Camb.-Ord. faunas: Poulsen, C., 2.

Arizona, Grand Canyon Camb. fauna: Resser, C. E., 1.

Bathymetric distrib. of genera: Durham, J. W., 1.

Bellerophon muscle scars: Knight, J. B., 3.

British Columbia, Carbon Creek-Mount Bickford area: Mathews, W. H., 2.

California, Palos Verdes Hills fauna: Woodring, W. P., 1.

Reef Ridge fauna: Stewart, R. B., 1.

Calipyrgula, Pliocene, Calif., Okla.: Leonard, A. B., 1.

Canada, fauna, SW. Arctic Archipelago, Ord.: Miller, A. K., 6.

Conularids, Ord., Quebec: Sinclair, G. W., 6.

Ctenobranchia, Aspidobranchia, Scaphopoda, Fla., Ga.: Gardner, J. A., 1.

Cypræidae, west N. Am. check list: Ingram, W. M., 1.

Cypræidae check-list, N. Am.: Ingram, W. M., 1.

Egan collection, Sil. Invertebrata, N. Am.: Ball, J. R., 1.

Eoconularia, Ord., Canada: Sinclair, G. W., 1.

Faunas, Glen Dean Carb. fm., Ind.: Haas, O., 2.

Little Hatchet Mts., N. Mex.: Lasky, S. G., 3.

Gastropoda—Continued.

Faunas—Continued.

Pennsylvanian, Tex.: Plummer F. B., 3.
Fossil lists, Pittsburgh Pa., area: Leighton, H., 3.

Georgia, E.-cent. Coastal Plain fauna:
La Moreaux, P. E., 1.

Greenland, East, 74°-75°: Vischer, G. A., 2.

Scoresbyland, NE.: Bierther, W., 1.

West, faunas: Laursen, D., 1.

Guatemala, Petén area: Wadell, H. A., 1.
Hyolithidae, Camb., new names for homonym species: Howell, B. F., 1.

Hyolithes, nomenclature: Sinclair G. W., 3.

Hyolithes comptus for H. ornatellus Resser: Howell, B. F., 1.

Hyolithes cooperi, new name: Williams, J. S., 1.

Hyolithes endoi for H. orantus Resser and Endo: Howell, B. F., 1.

Hyolithes resseri for H. exilis Resser: Howell, B. F., 1.

Hyolithes walcotti for H. curvatus Walcott: Howell, B. F., 1.

Illinois, Marine pool, Madison Co.: Lowenstam, H. A., 1.

Invertebrata, Atlantic Coastal Plain, U. S., deep-well fauna: Richards, H. G., 3.

Kansas, Pleist. pupillids: Leonard, A. B., 1.

Marginella, Pliocene, Fla: Smith, M., 1.

Mexico, Caborca area, NW. Sonora: Cooper, G. A., 1.

Miopleiona, Miocene, Oreg.: Simon, L. F., 1.

Mississippi, Cret. macrofossils from deep wells: Stephenson, L. W., 5.

Lee Co. faunas: Vestal, F. E., 1.

Mollusca, Pleist., Calif.: Berry, S. S., 1.
New York, Catskill, Kaaterskill quads, faunas: Chadwick, G. H., 1.

Clinton, W., cent. fauna: Gillette, T., 1.

Ohio, Cincinnati area: Bucher, W. H., 1.
Oregon, St. Helens quad. faunas: Wilkinson, W. D., 1.

Pennsylvania, Hollidaysburg-Huntington quads. fauna: Butts, C., 1.

Pittsburgh area, fossil lists: Leighton, H., 3.

Phylogeny: Knight, J. B., 4.

Proteonchs: Smith, B., 1.

Pupilla, Pleist., Clark Co., Kans.: Franzén, D. S., 1.

Pupillidae, Pleist., Pliocene, Kans.: Franzén, D. S., 2, 4.

Quebec, faunas: Dresser, J. A., 1.

Simard area faunas: McGerrigle, H. W., 1.

Two recent landslides exposing fauna:

Clark, T. H., 2.

Tennessee, Great Smoky Mts. Nat. Park fauna: Neuman, R. B., 2.

Texas, Lower Ordovician: Bridge, J., 3.

Gastropoda—Continued.

Texas—Continued.

Lower Penn., Llano region: Plummer, F. B., 2.

Pennsylvanian, Franklin Mts.: Nelson, L. A., 1.

Trinidad, Miocene Mollusca, Springvale beds: Rutsch, R. F., 1.

United States, bellerophon, Camb.: Knight, J. B., 1.

Comanche faunas: Stanton, T. W., 1.

Utah, Trias, freshwater: Yen, T.-C., 2.
Whirlwind Valley: Ives, R. L., 5.

Velates, Eocene, Citrus Co., Fla.: Richards, H. G., 1.

Velates vokesi for Neritina? grandis Cooke: Cooke, C. W., 2.

Virginia, Shenandoah Valley Ord. faunas: Cooper, B. N., 1.

West Indies, Curaçao Tert. Mollusca: Regteren Altena, C. O. v., 1.

Wyoming, nonmarine Eocene, Hot Springs Co.: Yen, T.-C., 6.

Gato Ridge oil field, Calif.: Hughes, A. W., 1.
Gehlenite, thermal-equilibrium relations: Goldsmith, J. R., 1; Smalley, R. G., 1.

Geiger-Mueller counter tube: Anonymous, 49.
Geiger-Mueller counters applied to mining:

Knoerr, A. W., 2.

Gem-identification handbook: Liddicoat, R. T., Jr., 2.

Gemology in North America: Kraus, E. H., 2.
Gems. See also Precious stones and individual varieties.

Arkansas, list: Anonymous, 17.

Beryl: Gibbs, H. L., 1.

Color in gem stones: Anonymous, 60.

Colorado, Nathrop, spessartite garnets: Ellermeier, G. B., 3.

Diamonds, fluorescent: Shipley, R. M., 1.
Single crystal forms: Lonsdale, K., 1.

Gem hunter's guide: McFall, R. P., 1.

Gem materials: Kraus, E. H., 3.

Gemology in N. Am.: Kraus, E. H., 2.

Gemstones, X-ray identifying method: Gordon, S. G., 3.

Idaho, gem minerals: Fernquist, C. O., 1.
Sapphires: Anonymous, 58.

Star garnets: Dake, H. C., 4.

Identification by X-ray apparatus: Switzer, G., 4.

Identification handbook: Liddicoat, R. T., Jr., 2.

Irradiation by X-ray: Pough, F. H., 1.

Luminescence in gem science: De Ment, J. A., 11.

Maine, history of industry: Wallace, J. H., 1.

Nebraska, W., moss opal: Mitchell, R., 2.

North American turquoise: Cross, J. L., 1.
Oklahoma, azate, selenite crystals: Reed, F. T., 1.

Opal, Malpai Mesa, Ariz., area: Schell, B. E., 1.

Moisture content, crystal structure: Miller, S., 1.

Queretaro, Mex. fields: Major, D. M., 1.

Gems—Continued.

- Oregon, map of min. deposits: Oregon Dept. Geol. Min. Indust., 1.
 Sagenite agate: Anonymous, 23.
 Precious stones, key: Spencer, L. J., 1.
 Topaz, Thomas Range, Utah: Ives, R. L., 21.
 Turquoise, color and fading: Wade, F. B., 1.
 Nugget, King mine, Colo.: Pearl, R. M., 1.
 United States, gem hunter's guide: McFall, R. P., 1.
 Green garnets, uvarovites: Trainer, J. N., 1.
 Wood, Kans., Colo.: Graffham, A. A., 3.
 Wyoming jade, green: Branham, A. W., 1, 2.
 Lander area: Branham, A. W., 1; Anonymous, 20.
 X-ray identification apparatus: Switzer, G., 1.
 Zeolites, thomsonite, natrolite: Pearl, R. M., 2.
 Genesee uplift, Kans. fields: Clark, S. K., 1.
 Genesis, petroleum: Schaffer, F. X., 1.
 Genetic systematics of intrusive bodies, theses: Polkanov, A. A., 1.
 Genetics and origin of species: Dobzhansky, T., 1.
 Geobotanical prospecting: Leach, P., 1.
 Indicator plants: Rankama, K. K., 4.
 Geobotany, explor. by plant analysis: Lundberg, H. T. F., 6.
 Geochemical prospecting: Leach, P., 1.
 Disturbing factors: Pirson, S. J., 2.
 Emanometric oil and gas prosp.: Pirson, S. J., 1.
 U. S. Geol. Survey unit: Hawkes, H. E., Jr., 5, 6.
 Geochemistry.
 Application to econ. geology: Stadnichenko, T. M., 1.
 Asthenosphere, nature: Daly, R. A., 2.
 Bacteria, role in fm., transfm. petroleum hydrocarbons: ZoBell, C. E., 1.
 Basic research, indust. minerals and rocks: Gillson, J. L., 1.
 Beryllium determination in ores: Stevens, R. E., 1.
 Biogeochemical prospecting: Rankama, K. K., 4.
 Biotite micas of ig. rocks, chem. composition and paragenesis: Nockolds, S. R., 1.
 Calcium orthosilicate, solid phase inversion: Zerkow, S., 1.
 Chemical elements, devel. of: Heinrich, E. W., 5.
 Chromium separated from vanadium with ethyl acetate: Foster, M. D., 2.
 Columbium: Rankama, K. K., 3.
 Contributions: Wells, R. C., 1.
 Definition: Rankama, K. K., 1.
 Dolomitization: Johnston, W. D., Jr., 2.
 Electrode potentials and free-energy changes in geology: Chapman, C. A., 1.

Geochemistry—Continued.

- Emanometric oil and gas prosp.: Pirson, S. J., 1.
 Exfoliation from chem. weathering, Mexico: Dodge, T. A., 1.
 Fluorine, distribution in rocks: Barth, T. F. W., 2.
 Geochemical cycle: Barth, T. F. W., 1.
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 Vulcan iron deposit, San Bernardino Co.: Lamey, C. A., 1.
 Walibu quicksilver mine, Kern Co.: Bailey, E. H., 2.
 West Cuyama Valley to Maricopa, road log: Hill, M. L., 1.
 Western Mayacmas dist., quicksilver deposits: Bailey, E. H., 1.
 Canada, Capiisit Lake area: Gilbert, J. E., 1.
 Coal fields: MacKay, B. R., 1.
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 Dubuissou-Bourlamaque-Louvicoourt area: Norman, G. W. H., 9.
 Flin Flon-Mandy area, Manitoba-Saskatchewan: Stockwell, C. H., 1.
 Gaspé: McGerrigle, H. W., 1, 2.
 Ottawa-Cornwall area: Canada G. S., 1.
 Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
 Sudbury dist.: Stanley, R. C., 1.
 Western, limestones: Goudge, M. F., 1.
 Canadian Arctic, Victor Is. area: Washburn, A. L., 1.
 Central America: Mullerried, 1.
 Colorado, Alma, Horseshoe dists.: Singewald, Q. D., 1.
 Big Sandy area: McLaughlin, T. G., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Climax mine, Lake Co.: Vanderwilt, J. W., 3.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Eureka-Animas Forks area: Burbank, W. S., 11.
 Front Range: Wahlstrom, E. E., 2.
 Mineral belt: Goddard, E. N., 5.
 General geology: Vanderwilt, J. W., 5.
 Jamestown dist. fluor spar deposits: Goddard, E. N., 1.

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- Kokomo mining dist.: Koschmann, A. H., 1, 3.
 La Plata dist.: Eckel, E. B., 2.
 Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
 Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
 Mining areas: Vanderwilt, J. W., 4.
 Mining dists., min. deposits: Burbank, W. S., 4.
 Park Co., NW.: Singewald, Q. D., 4.
 Pegmatites: Hanley, J. B., 3.
 Rangely oil and gas field: Newton, S. M., 3, 4.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Upper Blue River area: Singewald, Q. D., 3.
 Vanadium deposits: Fischer, R. P., 4;
 Huleatt, W. P., 1.
 Connecticut, Stafford Springs area: White, S. E., 1.
 Beryl resources: Cameron, E. N., 2.
 Conodoguinet Creek, Pa., meanders: Strahler, A. N., 1.
 Cuba: Brodermann y Vignier, J., 1, 2.
 Camagüey-Oriente area: Hermes, J. J., 1.
 Central Camagüey Prov.: Wessem, A., 1.
 Eastern: Thayer, T. P., 2.
 Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de, 1.
 Florida, W.: SE. Geol. Soc., 1.
 Forest City Basin, U. S.: Lee, W., 1;
 U. S. G. S., 1, no. 48.
 Gaspé Penin., Canada: Bates, F. W., 2.
 Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.
 Lookout Mtn., Sand Mtn. coal seams: Johnson, V. H., 1; Troxell, J. R., 1.
 Murray Co. talc area: Furcron, A. S., 1.
 Petroleum and gas poss.: Peyton, G., 1.
 Tertiary, Quat. fms.: U.S.G.S., 1, no. 72.
 Georgia Strait area, British Columbia-Wash.: Mathews, W. H., 4.
 Graphic locator for geol. mapping: Varnes, D. J., 1.
 Great Salt Lake, Utah: Lisonbee, L. P., 1.
 Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
 East: Büttler, H., 1; Kleiber, K., 1;
 Rosenkrantz, A., 1; Stauber, H., 2;
 Vischer, G. A., 2.
 Kronprins Christians Land: Nielsen, E., 1.
 Northeast: Ahlmann, H. W., 1.
 Nügssuak Penin.: Munck, S., 2.
 Scoresby Sound area: Rothé, J. P., 1.
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 Svartenhuk Penin.: Rosenkrantz, A., 2.
 Guadalupe Mts., N. Mex.-Tex.: West Tex. Geol. Soc., 3.

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- Haiti, manganese deposits: Goddard, E. N., 2, 3, 4.
 Materials for Portland cement plant: López, V. M., 1.
 Hawaii: Stearns, H. T., 1, 3.
 Haleakala Volcano: Macdonald, G. A., 2.
 Honolulu Pleist. ser., Oahu: Winchell, H., 3.
 Island of Molokai: Macdonald, G. A., 5;
 Stearns, H. T., 4, 5.
 Mauna Loa rift zone: Macdonald, G. A., 1.
 Idaho: Ross, C. P., 1.
 Blackbird cobalt deposits, Lemhi Co.: Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Clark Fork lead-zinc dist.: Lorain, S. H., 1.
 Gold deposits: Staley, W. W., 3.
 Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
 Little Pittsburg lead-zinc mine: Herdlick, J. A., 1.
 Orofino area: Johnson, C. H., 1.
 Snake-Salmon Rivers area, Idaho Co.: Wagner, W. R., 1.
 Teton Co. coal deposits: Staley, W. W., 1.
 Illinois: Weller, J. M., 1.
 Hardin Co., Lee mine area: Bishop, O. M., 1.
 Northwest, zinc-lead dist.: Willman, H. B., 2.
 Preglacial erosion surfaces: Horberg, C. L., 1.
 Jamaica, Kingston dist.: Matley, C. A., 1.
 Kansas, Barton Co. buried hills: Walters, R. F., 1.
 Elm Creek Valley, Barber Co.: Williams, C. C., 1.
 Grant, Haskell, Stevens Cos.: McLaughlin, T. G., 2.
 Scott Co.: Waite, H. A., 1.
 Trego Co. construction materials: Byrne, F. E., 1.
 Wabaunsee coals: Schoewe, W. H., 1.
 Kentucky, Tip Top sand and Meramec-Chester boundary: Ray, L. L., 2.
 Louisiana: Wallace, W. E., Jr., 1.
 North, oil and gas fields: Shreveport Geol. Soc., 1.
 Maine, Catherine Mtn. molybdenite: Trefethen, J. M., 4.
 Katahdin pyrrhotite area: Miller, R. L., 1.
 Manitoba: Canada G. S., 1.
 Barrington Lake area: Minton, M. C., 2.
 Lyn Lake area: Allan, J. D., 1.
 McVeigh Lake area: Bateman, J. D., 1.
 Mikanagan Lake area: Canada G. S., 1.
 Morton Lake area: Harrison, J. M., 2.
 Prospecting areas: de Wet, J. P., 1.
 Sherridon area: Canada G. S., 1.
 Snow Lake, Nor-Acme areas: Harrison, J. M., 1.
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- Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 2.
 South Mtn. fold, defm.: Cloos, E., 3.
 Washington, D. C., area, sed. rocks: Darton, N. H., 1.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.
 Mexico: Waitz, P., 1.
 Antimony deposits, San Juan and Oaxaca: Guiza, R., Jr., 1; White, D. E., 2.
 Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
 Conchos Valley, lower, Chihuahua: King, R. E., 2.
 Cuarento dist., Durango: Gallagher, D., 1.
 El Cuarenta min. zone, Durango: Pérez Siliceo, R., 4.
 El Moral dist.: González Reyna, J., 10.
 Huitzoco, Guerrero: Hernández Ortiz, D., 1.
 Iron deposits, N. group: Toron Villegas, L., 1.
 Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.
 Northern: King, P. B., 4.
 Nuevo León: Mullerried, 6.
 Oaxaca guide book: Barrera, T., 1.
 San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
 Temascaltepec: Cardenas, S., 1.
 Tin deposits: Foshag, W. F., 1.
 Tlaxcala: Blásquez López, L., 1.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Michigan, Crystal Falls-Alpha iron dist., Iron Co.: Pettijohn, F. J., 1.
 Ice Lake-Chicagon Creek area, Iron Co.: James, H. L., 2.
 Pine Creek area, Dickinson Co.: Higgins, J. W., 1.
 Southeast, well-cores: Cohee, G. V., 1.
 Traverse group, Afton-Onaway area: Kelly, W. A., 1.
 Traverse group, Michigan Basin: Cohee, G. V., 2; U. S. G. S., 2, no. 28.
 Military geology: Bevan, A. C., 2.
 Minnesota, NE.: Thiel, G. A., 2.
 Mississippi, Itawamba Co.: Vestal, F. E., 2.
 Jackson area: Monroe, W. H., 3; U.S.G.S., 1, no. 65.
 Lee County: Vestal, F. E., 1.
 Neshoba Co., pre-Selma Upper Cret. fms.: Eargle, D. H., 3.
 Oil and gas fields: Shreveport Geol. Soc., 1.
 Missouri: Grohskopf, J. G., 1.
 Post-Dev. ig. activity, SE.: Kidwell, A. L., 6.
 Montana, Bearpaw Mts. area: Reeves, F., 2.
 Beartooth region, dating by heavy minerals: Stow, M. H., 1.
 Bear Trap corundum deposit: Hopkins, J. B., 1.
 Big Horn Basin: Andrews, D. A., 2.

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- Montana—Continued.
 Bozeman corundum mine, Gallatin Co.: O'Brien, R. D., 1.
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 Clark Fork-Kootenai River devel.: Erdmann, C. E., 1.
 Cut Bank-West Kevin fields: Erdmann, C. E., 2; U. S. G. S., 8.
 Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.
 Fergus County clay deposits: Dougan, C. W., 1.
 Gallatin Co. corundum: O'Brien, R. D., 2.
 Great Plains, sed. rocks: Perry, E. S., 1.
 Kevin-Sunburst oil fields: U. S. G. S., 8, 12, 13.
 Moffet-Johnston copper area: Roby, R. N., 1.
 Plains structure contour map: Dobbin, C. E., 3.
 Queen Mary copper project, Missoula Co.: Brinton, W. H., 1.
 Nebraska, Box Butte Co.: Cady, R. C., 1.
 Pleistocene deposits: Condra, G. E., 1.
 Scotts Bluff Co.: Wenzel, L. K., 1.
 Nevada, Blue Metal mines, Douglas Co.: Binyon, E. O., 1.
 Eureka min. dist.: Sharp, W., 1.
 Mount Hope lead-zinc mine, Eureka Co.: Matson, E. J., 1.
 Osgood Range tungsten deposits: Hobbs, S. W., 1.
 Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.
 New Brunswick, Honeydale area: Alcock, F. J., 3.
 St. Stephen area, Charlotte Co.: Alcock, F. J., 2.
 Sussex, Kings and Queens Cos.: Canada G. S., 1.
 New England, Conn. Valley: Jahns, R. H., 2.
 New Hampshire, Mt. Washington quad.: Billings, M. P., 1, 2.
 Oliverian magma ser.: Chapman, C. A., 2.
 Paleozoic magma ser.: Billings, M. P., 3.
 Plymouth quad.: Moke, C. B., 1.
 New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.
 New Jersey, Franklin Furnace quad. dikes: Milton, C., 3.
 Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
 New Mexico, Atwood Copper group, Lordsburg dist.: Huntington, M. G., 1.
 Black Range pegmatites: Kelley, V. C., 5.
 Fluorspar area: Rothrock, H. E., 1.
 Gallinas dist., Lincoln Co.: Kelley, V. C., 4.
 Gran Quivira quad.: Bates, R. L., 3.
 Guadalupe Co.: Gorman, J. M., 1; U.S.G.S., 1, no. 44.
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- Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U. S. G. S., 1, no. 54.
- Little Hatchet Mts. area: Lasky, S. G., 3.
- Los Pinos Mts.: Stark, J. T., 1.
- Lower Rio Puerco area: Wright, H. E., Jr., 1.
- Lucero uplift: Kelley, V. C., 2; U. S. G. S., 1, no. 47.
- Mica deposits, Pecata, Ojo Caliente, Elk Mtn. dists.: Jahns, R. H., 1.
- Nacimiento San Pedro Mts., adjacent plateaus: U. S. G. S., 1, no. 57; Wood, G. H., Jr., 1.
- Northwest Quay Co: Dobrovolsky, E., 1; U. S. G. S., 1, no. 62.
- Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: Wilpolt, R. H., 1.
- Socorro Co., Jones iron deposit: Grant-ham, R. M., 1.
- Tucumcari area, eolian sand dam: Dobrovolsky, E., 2.
- New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
- Edwards, Balmat mines, porosity: Brown, J. S., 2, 3.
- Lake Sanford area: Stephenson, R. C., 1.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
- Little Bay area: MacLean, H. J., 1.
- North America, Cordilleran geosyncline: Eardley, A. J., 1.
- Glacial map: Flint, R. F., 1.
- Niagara Penin. change in 100 years: Watson, J. W., 1.
- North Carolina, Buck Creek corundum deposits, Clay Co.: Ballard, T. J., 3.
- Corundum Hill mine, Macon Co.: Ballard, T. J., 2.
- Guilford County: Murdock, T. G., 3.
- Halifax area: Mundorff, M. J., 2.
- Hot Springs area: Stose, G. W., 3.
- Neuse River Basin: Mundorff, M. J., 3.
- Spruce Pine dist.: Olson, J. C., 1.
- Vermiculite deposits: Murdock, T. G., 2.
- North Dakota, Flora quad.: Branch, J. R., 1.
- Lake Dakota area: Rasmussen, W. C., 1.
- North and South Dakota: Anonymous, 40.
- Northwest Territories, Cambsell River area: Lord, C. S., 2.
- Chalco Lake area: Stanton, M. S., 2.
- Great Slave Lake area: Bateman, J. D., 2.
- Indian Lake gold area: Lilge, E. O., 1.
- Lac de Gras: Folinsbee, R. E., 1.
- Ross Lake area: Fortier, Y. O., 3.
- Yellowknife dist.: Campbell, N., 1, 2.
- Yellowknife-Beaulieu area: Fortier, Y. O., 1.
- Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.
- Guysborough Co.: MacNeil, D. J., 2.
- Mira-Framboise area: Weeks, L. J., 1.
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- Ohio: Bownocker, J. A., 1; Carman, J. E., 1.
- Berea sands: Pepper, J. F., 1, 3.
- Canton area: Schaefer, E. J., 1.
- Fayette Co.: Bernhagen, R. J., 1.
- Tuscarawas County: Cummins, J. W., 1.
- Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
- North-central: Okla. City Geol. Soc., 1.
- Northeast: Moore, C. A., 3.
- Ouachita Mtn area: Hendricks, T. A., 1, 2; Tulsa Geol. Soc., 1; U. S. G. S., 1, no. 66.
- Southwest Antioch oil field: Swesnik, R. M., 1.
- West Ouachita Mts., Stanley-Jackfork fms.: Harlton, B. H., 1.
- Ontario: Ontario Dept. Mines, 3.
- Bancroft area paragneisses: Gummer, W. K., 1.
- Brazeau magnetites, vanadium bearing: Harding, W. D., 2.
- Calumet Island mines: McLaren, D. C., 1.
- Chelmsford area, Sudbury dist.: Canada G. S., 1.
- Cochenour Willans gold mine area: Nowlan, J. P., 1.
- Copper deposits, Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
- Eagle Lake area: Moorhouse, W. W., 2.
- Falconbridge, Sudbury dist.: Canada G. S., 1.
- Gem Lake-Bee Lake area: Minton, M. O., 1.
- Helen iron mine: Kidder, S. J., 1.
- Kenogami Lake area: Ontario Dept. Mines, 2.
- Kirkland Lake dist.: Thomson, J. E., 1.
- Little Longlac-Sturgeon River area: Horwood, H. C., 1.
- McKenzie Is.-East Bay, Red Lake dist.: Bergman, H. J., 1.
- Mattawan-Olrig area: Harding, W. D., 1.
- Northeast Timagami Lake area: Moorhouse, W. W., 1.
- Orilla area: Deane, R. E., 1.
- Parry Sound area: Satterly, J., 1.
- Pleistocene, Sutton, Barrie areas: Deane, R. E., 2.
- Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
- Rutherglen dist.: Keith, M. L., 1.
- Sudbury area: Cooke, H. C., 2.
- Teck Tp.: Ont. Dept. Mines, 1.
- Township 47, Missinabi area: Bruce, E. L., 3.
- Windsor-Sarnia area Paleozoic: Caley, J. F., 1.
- Ordovician, Lower Middle, Va.-Tenn.: Prouty, C. E., 1.
- Oregon, Columbia Co.: Kelly, J. V., 2.
- Chromite-bearing sands, S. coast: Griggs, A. B., 1.
- Coos Bay area: Hundhausen, R. J., 1.
- Mount Reuben min. dist., Josephine Co.: Youngberg, E. A., 1.

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St. Helens quad.: Wilkinson, W. D., 1.
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Pennsylvania: Foose, R. M., 2.

Conodoguinet Creek area: Strahler, A. N., 1.

High-calcium ls. deposits: Swain, F. M., 1.

Holidaysburg-Huntington quads.: Butts, C., 1.

North Strabane area: Fettke, C. R., 1.
Pittsburgh area: Leighton, H., 3.

Smicksburg quad.: Shaffner, M. N., 1.

White Rocks area: Foose, R. M., 1.

Pre-Cambrian Shield: Koulomzine, T., 1.

Quebec, Bachelor Lake area: Longley, W. W., 3.

Barraute area, Abitibi Co.: Tremblay, L. P., 3.

Beauchastel Tp., W. half: Ambrose, J. W., 1.

Bourlamaque, Abitibi Co.: Norman, G. W. H., 1, 3.

Castagnier area, Abitibi East Co.: Longley, W. W., 2.

Descriptive geology: Dresser, J. A., 1.

Desvaux Lake area: Auger, P. E., 2.

Gaspé, oil residuals, volcanic rocks: Alcock, F. J., 1.

Haig, Abitibi Co.: Canada G. S., 1.

Lacorne area: Tremblay, L. P., 1, 2.

Major fault area, Abitibi region: Norman, G. W. H., 5.

North shore St. Lawrence area: Claveau, J., 1.

Northeast Bourlamaque, Abitibi Co.: Canada G. S., 1.

Northwest Dubuisson: Norman, G. W. H., 4.

Pershing area, Abitibi Co.: Norman, G. W. H., 7.

Rouyn-Beauchastel area: Wilson, M. E., 1.

St. Lawrence Valley: Rasetti, F., 3.

Simard area, Chicoutimi Co.: Denis, B. T., 1.

Siscoe mine area, Abitibi-East Co.: Auger, P. E., 1.

Southwest Bourlamaque, Abitibi Co.: Norman, G. W. H., 2.

Tonnancourt-Holmes area, Abitibi Co.: Longley, W. W., 1.

Vauquelin area, Abitibi Co.: Norman, G. W. H., 6, 8.

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Rottenstone Lake area: Mawdsley, J. B., 1.

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South Carolina, ground-water invs.: Siple, G. E., 1.

South Dakota, Galena-Roubidax dist.: Berg, J. R., 1.

James Basin: Rothrock, E. P., 2.

Missouri Valley: Petsch, B. C., 1.

Sioux Falls area: Rothrock, E. P., 3.

Western, deep well borings: Baker, C. L., 2.

Structure of the Americas: Stille, H. W., 1.

Tectonics report: King, P. B., 3.

Tennessee, Eve Mills area, Monroe Co.: Dunlap, J. C., 1.

Jefferson City area ore bodies: Brokaw, A. L., 1.

Mascot-Jefferson City dist.: Bridge, J., 1.

Texas, Badu feldspar, Llano Co.: Huseman, G. W., 1.

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Celestite deposits: Evans, G. L., 3.

Central: Barnes, V. E., 2, 3, 4, 5, 7, 8.

Building stones: Barnes, V. E., 8.

Devonian: Barnes, V. E., 7.

Feldspar: Barnes, V. E., 4.

Comal County: George, W. O., 4.

Ellenberger group: Cloud, P. E., Jr., 1; Goldich, S. S., 2.

Glass Mts-Marathon Basin trip: West - Tex. Geol. Soc., 2.

Houston County: Stenzel, H. B., 1.

Llano Uplift section: Bullard, F. M., 1.

Lampasas Co.: Damon, H. G., 1.

Manganese deposits: Warren, L. E., 1.

Pennsylvanian, N.-cent.: Cheney, M. G., 3.

Petroleum and gas occurrences: Sellards, E. H., 3.

Rustler Springs sulfur deposits: Evans, G. L., 1.

Trans-Pecos area: Evans, G. L., 4.

Wood Co., Hawkins field: Wendlandt, E. A., 1.

Tuscaloosa Co., Ala.-Neshoba Co., Miss., pre-Selma Upper Cret. fms.: Eargle, D. H., 2.

United States, Appalachian structure: Hietanen, A., 1.

Appalachians, central, drainage, Newark series: Carlson, C. W., 1.

Atlantic-Gulf Coastal Plain Tert.: Le-riche, M., 1.

Berea sands: Demarest, D. F., 1; Pepper, J. F., 1, 3; U.S.G.S., 1, no. 49, 69.

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 Missouri Valley area: Dow, D. H., 1.
 North Appalachian structures: Hietanen, A., 2.
 Northeast, Basin areas: Lockett, J. R., 1.
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 Picher zinc-lead zone, Okla.-Kans.: U. S. G. S., 6.
 Pre-Selma Upper Cret., Ala.-Miss.: Conant, L. C., 2; U.S.G.S., 1, no. 64.
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 Southern Appalachian coal field Penn.: Wanless, H. R., 1.
 Southwest, intertonguing marine, non-marine Cret. deposits: Pike, W. S., Jr., 1.
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 Tungsten mineralization: Kerr, P. F., 1.
 Utah, alunite deposits, Marysville, Plute Co.: Hild, J. H., 1.
 Cedar City, Parowan Valleys, Iron Co.: Thomas, H. E., 2.
 Duchesne River area: Huddle, J. W., 2.
 Granite Peak area: Ives, R. L., 8.
 Green River Desert-Canyon City area: Baker, A. A., 1, 2; U.S.G.S., 1, no. 55.
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 Tintic dist.: Kildale, M. B., 1.
 Vanadium area: Huleatt, W. P., 1.
 Wah Wah lead-zinc mine, Beaver Co.: Jones, R. L., 1.
 White Horse alunite deposits, Marysville: Willard, M. E., 1.
 Whiterocks River-Ashley Creek area, Uintah Co.: Kinney, D. M., 2; U. S. G. S., 1, no. 82.
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 Vermont, Barre area: White, W. S., 1.
 Strafford quad.: Doll, C. G., 1; Jacobs, E. C., 1.
 Virginia, Lick Mts.: Stose, G. W., 1.
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- Washington, D. C., area, sed. rocks: Darton, N. H., 1.
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 Buckhorn Mtn. iron dist.: Zoldok, S. W., 1.
 Republic mining dist.: Wright, L. B., 2.
 Stevens County, Cambrian: Campbell, C. D., 1.
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 Oysters, Eocene, Coastal Plain: Tomkins, I. R., 1.
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- Chatuge Reservoir, basic intrusives: Kellberg, J. M., 1.
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 Sillimanite deposits: Hudson, W. C., 3.
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- Chatuge Reservoir, basic intrusives: Kellberg, J. M., 1.
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- "Carolina Bays": Frost, W. P., 3.
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- Geothermal gradients, frequency distrib.: Landsberg, H., 1.
- Germanium, rare metal: De Ment, J. A., 1.
- Geyserite, Nev., mineral collection: McLeod, E., 1.
- Geysers. See also Underground water, general.
- California, Volcan Springs onyx deposits: Walker, L. W., 1.
- Deposits, character: Bauer, C. M., 3.
- Ground water: Keller, W. D., 6.
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- Gilbertown oil field, Ala.: Current, A. M., 1.
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- Brûlé area: Lang, A. H., 1.
- Canadian Pacific Ry. area: Hutt, G. M., 3.
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- Ashcroft area: Duffell, S., 1.
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- Kootenay Lake origin: Schofield, S. J., 1.
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- Manson Creek, Cassiar dist.: Canada G. S., 1.
- Northern: Armstrong, J. E., 2, 5.
- Origin of tuyas: Mathews, W. H., 3.
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- Canada, eskers N. of Great Slave Lake: Wilson, J. Tuzo, 1.
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- Giant glacial grooves, NW.: Smith, H. T. U., 3.
- Montreal to Port Arthur: Hutt, G. M., 1.
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- Canada—Continued.
- Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
- Canadian Arctic, Victor Is. area: Washburn, A. L., 1.
- Carbon dioxide, plants, and an Ice Age: Dunlap, K., 1.
- Cause and sequence of glaciation: Lewis, G. N., 1.
- Clavering Island, N.-E. Greenland: Ahlmann, H. W., 1.
- Colorado, Climax mine, Lake Co.: Vanderwilt, J. W., 3.
- Estes Park origin: Quam, L. O., 1.
- Front Range: Wahlstrom, E. E., 2.
- Glacial bastions, N.: Ives, R. L., 15.
- Leadville mining dist., Lake Co.: Loughlin, G. F., 1.
- Park Co., NW.: Singewald, Q. D., 4.
- San Juan region: Burbank, W. S., 6.
- Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
- Connecticut, Stafford Springs area: White, S. E., 1.
- Greenland, deglaciation: Hobbs, W. H., 4.
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- Ice-cap invs.: Wade, F. A., 1.
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- West: Laursen, D., 1.
- Cracking of rocks, glacial microrelief, land-ice border: Jahn, A., 2.
- Hawaii: Stearns, H. T., 3.
- Hypothesis, continental glaciation: Stewart, R. W., 1.
- Ice ages: Hendricks, T. A., 3; Umbgrove, J. H. F., 1.
- Past and present: Evans, E. H., 1.
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- Ice sheets and glaciers: Odell, N. E., 1.
- Idaho, Borah Peak quad.: Ross, C. P., 2.
- Moyie-Yaak dist.: Anderson, A. L., 1.
- Ideas, emergence, illus. by geology: Ashley, G. H., 2.
- Illinois, ancient Miss. Valley Pleist. aquifers: Horberg, C. L., 3.
- Cherry Valley area: Smith, V. R., 1.
- Tazewell tills, 4, Money Creek: Ekblaw, G. E., 1.
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- Indiana, Cataract Falls, Owen Co. strata: Malott, C. A., 1.

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Effect on agricultural productivity: Anderson, J. R., 1.

Sluiceways, S. lacustrine plains: Thornbury, W. D., 1.

Soils: Bushnell, T. K., 1.

State Parks: Freeman, O. W., 1.

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Clark Fork-Kootenai River devel.: Erdmann, C. E., 1.

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Recent conglomer. from glacial fms.: Alcock, F. J., 4.

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Connecticut Valley floods: Jahns, R. H., 2.

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New Hampshire, Lost River, Flume gorges, effect: McNair, A. H., 1.

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Glacial map: Flint, R. F., 1, 2.

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- Gulf of St. Lawrence area: Twenhofel, W. H., 4.
 Niagara Penin. change in 100 years: Watson, J. W., 1.
 Pleistocene: Flint, R. F., 3.
 St. Lawrence River buried channel: Wilson, A. E., 5.
 Submarine canyons: Kuenen, P. H., 3.
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 Flora quad.: Branch, J. R., 1.
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 Canton area: Schaefer, E. J., 1.
 Geologic map: Bownocker, J. A., 1.
 Nimishillen Creek, aquifers: Van Tuyl, D. W., 2.
 Scenic geology: Carman, J. E., 1.
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 Descriptive geology: Dresser, J. A., 1.
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- Megantic to Montreal: Hutt, G. M., 2.
 North shore St. Lawrence area: Claveau, J., 1.
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 Shawinigan area: Laverdière, J. W., 1.
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 Simard map area, Chicoutimi Co.: Denis, B. T., 1.
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- Wyoming, Gros Ventre Mts., Mt. Leidy Highland: Foster, H. L., 1.
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- Glacial geology and the Pleistocene epoch: Flint, R. F., 3.
- Glacial history, Iowa, reinterpretation: Hobbs, W. H., 3.
- Glacial lakes. See also Beaches; Lakes, extinct; Shore lines; Terraces.
- Barlow-Ojibway, Quebec: Longley, W. W., 2.
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- Kootenay Lake origin: Schofield, S. J., 1.
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- Sluiceways, lacustrine plains, S.: Thornbury, W. D., 1.
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- Lake Agassiz, N. Am., life history: Niki-foroff, C. C., 3.
- North Dakota area: Akin, P. D., 1; Dennis, P. E., 2.
- Lake Albany, N. Y.: Chadwick, G. H., 1.
- Lake Algonquin, N. Am.: Deane, R. E., 1; Hutt, G. M., 7; Stanley, G. M., 1.
- Lake Bonneville, Utah: Ives, R. L., 2, 7, 17; Maxey, G. B., 1; Relyea, G. M., 1.
- Lake Chicago, Ind.: Freeman, O. W., 1.
- Lake Dakota, N. Dak.: Rasmussen, W. C., 1.
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- Lake Iroquois, Ontario: Hutt, G. M., 7.
- Lake Kiskatow, N. Y.: Chadwick, G. H., 1.
- Lake Leverett, Ky.: Jillson, W. R., 6.
- Lake Maumee, Mich. and Ohio: Bingham, M. T., 1; Bownocker, J. A., 1.
- Lake Westkill, N. Y.: Chadwick, G. H., 1.
- Maine, Moosehead Lake Basin: Lougee, R. J., 1.
- Michigan, Douglas Lake sediments: Wilson, I. T., 1.
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- North America, dual-drainage, N. areas: Cabot, E. C., 1.
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- Great Basin, N., post-glacial flora: Hansen, H. P., 5.

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- Susquehanna Valley, N. Y.-Pa., post-glacial lakes: Young, A. E., 1.
- United States, St. Louis area, Pleist.: Robertson, P., 1.
- Utah, Cup Butte: Ives, R. L., 17.
- Fumarole Butte, Sevier Desert, Juan Co.: Ives, R. L., 20.
- Great Salt Lake: Relyea, G. M., 1.
- Lake Bonneville spurious levels: Ives, R. L., 2.
- Little Cottonwood, Bell Canyon Glaciers and Lake Bonneville relations: Marsell, R. E., 3.
- Pavant Range and Valley: Dennis, P. E., 1; Maxey, G. B., 1.
- Stansbury Island, Great Salt Lake: Ives, R. L., 7.
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- Alaska, Great Sitkin Volcano, Aleutians: Simons, F. S., 1.
- Muir Inlet, Glacier Bay, recessions: Field, W. O., Jr., 1.
- Pavlov Volcano area, Aleutians: Kennedy, G. C., 5.
- Umnak Island, Aleutians: Byers, F. M., Jr., 1.
- Alberta, Brûlé area: Lang, A. H., 1.
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- East, ice: Koch, L., 2.
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- Hydrology and economic geology: Meinzer, O. E., 2.
- Ice sheets and glaciers: Odell, N. E., 1.
- Muir, Adams, Casement, Plateau, McBride glaciers, recession, Muir Inlet, Glacier Bay, Alaska: Field, W. O., Jr., 1.
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- Tree-dating, prehistoric glacial fluctuations: Lawrence, D. B., 1.
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- Yukon, Wolf Creek area, St. Elias Range: Sharp, R. P., 2.

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- Ellipsoidal structures: Osborn, E. F., 1.
- Jewel-bearings, materials, U. S.: Insley, H., 1.
- Structures by crystal chem. principles: Lukesh, J. S., 1.

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- Florida, silica-sand belt, Miami-West Palm Beach: Hudson, W. C., 2.
 Georgia, McLeod glass-sand pits: Hudson, W. C., 1.
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 Industrial minerals: Dott, R. H., 5.
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 Glauconite, unit cell: Ferguson, R. B., 2.
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 Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.
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 Alaska, copper-sulfur deposits, Prince of Wales Is.: Fosse, E. L., 1.
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 East, Kap Hope area: Rosenkrantz, A., 1.
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 Massachusetts, Shelburne Falls gneiss dome: Balk, R., 1.
 Michigan, Pine Creek area, Dickinson Co.: Higgins, J. W., 1.
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 Stoddard fluorine mine: Bardill, J. D., 1.
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 New Mexico, Apache mica mine, Rio Arriba Co.: Holmquist, R. J., 3.
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 North Carolina, Franklin-Sylva dist.: Olson, J. C., 2.
 Halifax Co. molybdenum deposits: Robertson, A. F., 2.
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 Nepheline rocks, origin: Shand, S. J., 1.
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- Washington, Methow Valley rocks, Barksdale, J. D., 2.
 Wyoming, Laramie Range, origin: Newhouse, W. H., 1.
 Gnomonic, linear heptaxial 2-circle calculations: Parsons, A. L., 1.
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 Alaska, Cleveland Penin.: Shaw, V., 2.
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 Britannia mines No. 8 ore bodies: Irvine, W. T., 1.
 Cariboo dist.: Holland, S. S., 1.
 East gold mine, electrum-ruby silver deposit: Fawley, A. P., 1.
 Highland-Bell mine ores: Staples, A. B., 2.
 McConnell Creek area: Lord, C. S., 1.
 Manson Creek, Cassiar dist.: Canada G. S., 1.
 New type deposits: Warren, H. V., 5.
 Nicola, Kamloops, Yale dists.: Canada G. S., 4.
 North: Armstrong, J. E., 2.
 Placer mining: Brit. Col. Dept. Mines, 1.
 Porcher Island ore deposits: Smith, A., 2.
 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Surf Point, Edye Pass mines: Smith, A., 1.
 California, Akos mine, Mariposa Co.: Wiebelt, F. J., 2.
 Blue Ledge mine, Siskiyou Co.: Hundhausen, R. J., 2.
 Maps, 1848-1857: Wheat, C. I., 1.
 Mesothermal veins: Helke, A., 1.
 Mother Lode fault zone, Sierra Nevada: Heyl, G. R., 1.
 Placers: Averill, C. V., 1.
 Sixteen-To-One gold-quartz vein, Alleghany Co.: Cooke, H. R., Jr., 1.

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- Canada, Capsisit Lake area, poss.: Gilbert, J. E., 1.
 Exploration, prosp. increased min. output: Hoffman, R. D., 1.
 Flin Flon-Mandy area: Stockwell, C. H., 1.
 Keith Tp. devels.: Hogg, N., 2.
 Kirkland-Noranda-Val d'Or area: Norman, G. W. H., 10; Wilson, M. E., 2.
 Kirkland Lake area: Hopkins, H., 1.
 Lode gold areas: Cooke, H. C., 1.
 Prospecting: Irwin, A. B., 1; Koulomzine, T., 2.
 Chalco Lake area, Northwest Territories: Stanton, M. S., 2.
 Chrome micas: Whitmore, D. R. E., 1.
 Colorado, Alma, Horseshoe dists. lode deposits: Singewald, Q. D., 1.
 Beaver-Tarryall dist., Park Co.: Singewald, Q. D., 2.
 Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Cement-Mineral Creeks area: Varnes, D. J., 7.
 Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
 Eureka-Animas Forks area: Burbank, W. S., 11.
 Front Range mineral belt: Goddard, E. N., 5.
 Gilman dist., Eagle Co.: Tweto, O. L., 3.
 Gold Hill dist.: Myers, R. E., 2.
 Iron Springs dist., San Miguel Co.: Varnes, D. J., 4.
 Jamestown dist. fluorspar deposits: Goddard, E. N., 1.
 Lake City area, Hinsdale Co.: Burbank, W. S., 13.
 La Plata dist.: Eckel, E. B., 2.
 Leadville dist., Lake Co.: Loughlin, G. F., 1.
 Metallic min. deposits: Fischer, R. P., 1; U. S. G. S., 3, no. 8.
 Metals: Vanderwilt, J. W., 5.
 Mineral Point-Poughkeepsie-Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
 Mt. Wilson dist., San Miguel Co.: Varnes, D. J., 5.
 Northwest Park Co.: Singewald, Q. D., 4.
 San Juan dist.: Burbank, W. S., 6, 7.
 Silverton area collecting: Hudson, K., 1.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 South Silverton area: Varnes, D. J., 6.
 South Telluride area: Varnes, D. J., 3.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Upper Blue River area, Summit Co.: Singewald, Q. D., 3.
 Costa Rica, Monte Aguacate Mine: Rex, R., 1.
 Cuba, minerals: Calvache, A., 1.

Gold—Continued.

- Distribution in veins: Bichan, W. J., 1.
 Guatemala, Baja Verapaz, Alta Verapaz and Quiché Depts.: Manó, J. C., 1.
 Huehuetenango Dept.: Manó, J. C., 1.
 Idaho, Blackbird dist., Lemhi Co.: Anderson, A. L., 3.
 Clark Fork lead-zinc dist.: Lorain, S. H., 1.
 Coeur d'Alene min. dist.: Sorenson, R. E., 1.
 Idaho deposits: Staley, W. W., 3.
 Silver City area minerals: Dake, H. C., 1.
 Snake-Salmon Rivers area: Staley, W. W., 4; Wagner, W. R., 1.
 Impounding structures control of ore deposits: Mackay, R. A., 1.
 Lost Arch mine, Calif.: Shaw, V., 3.
 Lost Brefogle mine, Calif.: Shaw, V., 3.
 Lost Dutch Oven mine found, Calif.: Shaw, V., 3.
 Lost Dutchman mine, Superstition Mts., Ariz.: Shaw, V., 3.
 Lost Papuan diggings, Ariz.: Shaw, V., 3.
 Lost Pegleg Smith mine, Calif.: Shaw, V., 3.
 Lost Portal mine, Ariz.: Shaw, V., 3.
 Lost Tub Placer mine, Calif.: Shaw, V., 3.
 Maine, Swift River Valley placers, poss.: Pratt, E., 1.
 Manitoba, Barrington Lake area: Minton, M. C., 2.
 McVeigh Lake area: Bateman, J. D., 1.
 Morton Lake area: Harrison, J. M., 2.
 Prospecting areas: de Wet, J. P., 1.
 Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.
 Tramping Lake, N. part, poss.: Stanton, M. S., 1.
 Mexico, Chihuahua min. res.: González Reyna, J., 3-a.
 Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.
 Oaxaca guide book: Barrera, T., 1.
 Pachuca y Real del Monte dists.: Turban, F., 1.
 Placers, Guadalupe, Puerto del Aire: González Reyna, J., 3.
 San Ignacio dist., Sinaloa: Martínez Pérez, F., 1.
 Typical deposits: González Reyna, J., 12.
 Urique min. zone, Chihuahua: González Reyna, J., 7.
 Zacatecas, reserves: González Reyna, J., 2.
 Montana, metallic min. deposits: Chace, F. M., 1; U. S. G. S., 3, no. 16.
 Southern Cross deposits, Deer Lodge Co.: Wimmeler, N. L., 1.
 Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 Eureka mining dist.: Binyon, E. O., 1; Sharp, W., 1.
 Osgood Range tungsten deposits: Hobbs, S. W., 1.

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Nevada—Continued.

Steamboat Springs area: Gianella, V. P., 3; White, D. E., 5.

New Mexico: Wells, E. H., 1.

Atwood copper group, Lordsburg dist.: Huntington, M. G., 1.

Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.

Headstone mining dist.: Benjovsky, T. D., 2.

Lake Valley deposits, Sierra Co.: Apell, G. A., 2.

Little Hatchet Mts. area: Lasky, S. G., 3.

Mineral res.: Benjovsky, T. D., 3.

Peerless lead-zinc mine, Grant Co.: Soule, J. H., 4.

Steeple Rock dist., Grant Co.: Russell, P. L., 6.

Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

North America, desert minerals: Belz, C. A., 2.

North Carolina, Cabarrus Co., Cline mine: Beck, W. A., 2.

Guilford County: Murdock, T. G., 3.

Northwest Territories, Giant gold mine, Yellowknife dist.: Anonymous, 56.

Indin Lake area: Lilge, E. O., 1.

Possibilities: Denis, H. B., 1.

Ross Lake area poss.: Fortier, Y. O., 3.

Yellowknife dist.: Campbell, N., 1, 2;

Fortier, Y. O., 1; Henderson, J. F., 1;

Riley, C., 1.

Yellowknife-Beaulieu area: Fortier, Y. O., 1.

Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.

Gold dists., ore-body structure control: Cameron, H. L., 1.

Guysborough Co. congloms., poss.: MacNeil, D. J., 2.

Ontario, Calumet Island mines: McLaren, D. C., 1.

Cochénour Willans mine: Nowlan, J. P., 1.

Dome mine: Holmes, T. C., 1.

Hasaga mines: McLaren, D. C., 17.

Kirkland Lake, Noranda-Val d'Or area: Thomson, J. E., 2.

Little Longlac-Sturgeon River area prospects: Horwood, H. C., 1.

McKenzie Island-East Bay, Red Lake dist.: Bergman, H. J., 1.

Madsen Red Lake gold mines: McLaren, D. C., 8.

Mamen mines group, Bee Lake area: Thomson, R., 1.

Matachewan Consolidated mine: McLaren, D. C., 2.

Northern Empire mine, Beardmore area: Benedict, P. C., 1.

Omega mine: McLaren, D. C., 4.

Perry Sound area minerals: Satterly, J., 1.

Porcupine dist.: Gustafson, J. K., 1.

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Ontario—Continued.

Red Lake area: Thomson, R., 2; de Wet, J. P., 2.

Robb-Jamieson area poss.: Berry, L. G., 1.

Rush Lake mine: Hogg, N., 1.

Timagami Lake area, NE.: Moorhouse, W. W., 1.

Township 47, Missinaibi area: Bruce, E. L., 3.

Oregon, map of min. deposits: Oregon Dept. Geol. Min. Indust., 1.

Mount Reuben min. dist.: Youngberg, E. A., 1.

Pacific Northwest min. res.: Appleton, J. B., 1.

Quebec, Abitibi, Temiscamingue Cos., 1944 min. devel.: Ingham, W. N., 1.

Barrute area, Abitibi Co.: Tremblay, L. P., 3.

Beauchastel Tp. W. half: Ambrose, J. W., 1.

Bourlamaque, NW. Abitibi Co.: Norman, G. W. H., 1.

Desvaux Lake area, Dasserat Tp., poss.: Auger, P. E., 2.

Lacorne area: Tremblay, L. P., 1.

Major faults, Abitibi region: Norman, G. W. H., 5.

Montbrayite, new telluride: Peacock, M. A., 8.

Northeast Bourlamaque, Abitibi Co., geol. map: Canada G. S., 1.

Pershing area, Abitibi Co.: Norman, G. W. H., 7.

Siscoe mine area, Abitibi East Co.: Auger, P. E., 1.

Southwest Bourlamaque, Abitibi Co.: Norman, G. W. H., 2.

Vauquelin area, Abitibi Co.: Norman, G. W. H., 6, 8.

Saskatchewan, Athabasca Lake area: Sask. Dept. Nat. Res., 1.

South Dakota, Homestake mine, Black Hills: Helke, A., 1.

Metallic min. deposits: Fischer, R. P., 2; U. S. G. S., 3, no. 13.

Texas, cent. min. region collecting: Moore, J. R., III, 1.

United States, Missouri Valley: Dow, D. H., 1; U. S. G. S., 3, no. 1.

Ore deposits: Helke, A., 1.

Southern Appalachians, crystals: Taber, S., 3.

Utah, Granite Peak area: Ives, R. L., 8.

Henry Mts. poss.: Hunt, C. B., 1.

Kelly's Hole, Dugway Range: Ives, R. L., 16.

Mammoth Mine, Tintic dist.: Welch, R. F., 1.

Mercur mining dist.: Young, E. B., 1.

Mineral res.: Schneider, H., 1.

Tintic dist.: Kildale, M. B., 1.

Washington, Republic mining dist.: Wright, L. B., 2.

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Washington—Continued.

- Sultan Basin deposits: Carithers, L. W., 1.
 Yukon, Dezadeash: Kindle, E. D., 2.
 Goldfieldite is tellurium tetrahedrite: Thompson, R. M., 1.
 Goniometer, two-circle: Makas, A. S., 1.
 Gopher, pocket, as geol. agent in erosion: Ellison, L., 1.
 Grabens.

- Arizona, W. Kaibab Plateau: Strahler, A. N., 3.
 California, San Miguelito, Padre Canyon, Rincon oil field: Redwine, L. E., 2.
 Greenland, E. faulted area N. of Muskox Fjord: Büttler, H., 1.
 Haiti, manganese deposits: Goddard, E. N., 2, 3.
 Mississippi, Kilmichael dome: Priddy, R. R., 1.
 North America, Cenozoic Rocky Mtn. trenches: Eardley, A. J., 3.

Grahamite.

- Oklahoma, asphaltite deposits: Beach, J. O., 2.
 United States, min. res. map, Neb.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Grain roundness, a valuable geol. tool: Ritzenhouse, G., 2.
 Grain-shape fabrics, clastic quartz: Rowland, R. A., 1.
 Grain size in carbonate rocks: DeFord, R. K., 2.

Granite.

- Alaska, Lost River tin deposit, Seward Penin.: Heide, H. E., 1.
 Alaska Railroad belt: Waring, G. A., 2.
 California, Iron Hat deposits, San Bernardino Co.: Lamey, C. A., 1.
 Pine Creek, Adamson mines, Inyo Co.: Bateman, P. C., 1.
 Southern, batholith rocks: Larsen, E. S. Jr., 2.
 Crystalline rocks: Miller, W. J., 1.
 Canada, Capsisit Lake area: Gilbert, J. E., 1.
 Flin Flon-Mandy area: Stockwell, C. H., 1.
 Colorado, Alva Adams Tunnel: Heaton, R. L., 1.
 Greenland, Amitsoq Island: Wegmann, C. E., 1.
 Clavering Island, Payer Land: Mittelholzer, A. E., 1.
 Eastern: Kleiber, K., 1; Rittman, A., 1.
 Maine, Columbia Falls quad.: Terzaghi, R. D., 1.
 Manitoba, Barrington Lake area: Minton, M. C., 2.
 Maryland, linear analysis, medium-grained: Chayes, F., 1.
 Mexico, Durango, El Cuarenta min. zone: Pérez Siliceo, R., 1.
 Michigan, Pine Creek area, Dickinson Co.: Higgins, J. W., 1.

Granite—Continued.

- Missouri, Silver Mine area: Kidwell, A. L., 1.
 New Hampshire, Mt. Washington quad.: Billings, M. P., 2.
 Stoddard fluorine mine: Bardill, J. D., 1.
 New Mexico, Gallinas fluorspar deposits: Soulé, J. H., 1.
 White Eagle fluorspar deposits: Soulé, J. H., 2.
 New York, Storm King, Bear Mtn.: Lowe, K. E., 4.
 North Carolina, Guilford County: Murdock, T. G., 3.
 Halifax Co.: Robertson, A. F., 2.
 Northwest Territories, Yellow Knife area: Riley, C., 1.
 Nova Scotia, Guysborough Co.: MacNeil, D. J., 2.
 Oklahoma: Soukup, J. J., 1.
 Industrial minerals: Dott, R. H., 5.
 Ontario, Rutherglen dist.: Keith, M. L., 1.
 Quebec: Hutt, G. M., 5.
 Wetetnagami Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.
 Rhode Island, NE.: Quinn, A. W., 1.
 Rock bursts, geol. conditions favoring: Boos, M. F., 3.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
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 Missouri Valley area: U.S.G.S., 3, no. 1.
 Virginia-North Carolina tungsten deposits: Espenshade, G. H., 1.
 Utah, Mineral Range tungsten deposits: Crawford, A. L., 3.
 Vermont, min. industries: Jacobs, E. C., 4.
 Rock bursts in quarries, Barre area: White, W. S., 1.
 Strafford quad.: Doll, C. G., 1.
 Virginia, Red Oak granite, Buggs Is. Damsite: McGill, W. M., 4.
 Washington, Foster Creek Dam site: Cary, A. S., 1.
 Wyoming, construction materials, non-metallics: U.S.G.S., 3, no. 9.
 Granodiorite.
 British Columbia, Coast Range batholith: Phemister, T. C., 1.
 California, S.: Larsen, E. S., 2; Miller, W. J., 1.
 Idaho, Clark Fork lead-zinc dist.: Lorain, S. H., 1.
 Mexico, Urique min. zone, Chihuahua: González Reyna, J., 7.
 Nevada, Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.
 Northwest Territories, Ross Lake area: Fortier, Y. O., 3.
 Quebec, Abitibi, Temiscamingue Cos., 1944 min. devel.: Ingham, W. N., 1.
 Wetetnagami Lake and River area: Fairbairn, H. W., 1; Graham, R. B., 1.
 Graphic locator for geol. mapping: Varnes, D. J., 1.

Graphite.

- Colorado: U. S. G. S., 3, no. 10.
 El Salvador: Basauri, D., 1.
 Montana, pre-Camb. carbonate rocks: Heinrich, E. W., 8.
 New Jersey, Atlas quarry, Hardystoneville: Zodac, P., 6.
 McAfee quarry: Zodac, P., 2.
 Sheldon quarry, Rudeville: Zodac, P., 3.
 Windsor quarry, Rudeville: Zodac, P., 5.
 North Carolina, Raleigh fm., Wake Co.: Harrington, J. W., 1.
 Ontario, Renfrew Co. locs.: Eisenberg, J. M., 2.
 Pennsylvania, Chester Co.: Thomas, C. A., 6.
 Texas, cent. min. region collecting: Moore, J. R., III, 1.
 Wyoming, nonmetallics: U.S.G.S., 3, no. 9.
 Graphs to obtain true thickness of vein or bed: Miller, F. S., 1.
 Graptolitoidea.
 Arctic America, Ellesmere Land Camb.-Ord. faunas: Poulsen, C., 2.
 Montana, Amsden, Heath fms. faunas: Gardner, L. S., 1.
 New York, Clinton fauna: Gillette, T., 1.
 North America: Ruedemann, R., 1.
 Ohio, Cincinnati area: Bucher, W. H., 1.
 Oklahoma, Big Canyon fauna: Decker, C. E., 4.
 Pennsylvania, Hollidaysburg - Huntington quads. fauna: Butts, C., 1.
 Quebec, faunas: Dresser, J. A., 1.
 Simard map area fauna: McGerrigle, H. W., 1.
 Tennessee, Camb.: Decker, C. E., 5.
 Virginia, Shenandoah Valley Ord. faunas: Cooper, B. N., 1.
 Yukon, Ord., Sil. faunas: Decker, C. E., 3.
 Grass Creek oil field, Wyo.: McCanne, R. W., 1.
 Gravel.
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 Citronelle fm., SW.: Carlston, C. W., 2.
 Southeast. MacNeil, F. S., 1.
 Alaska, Nenana coal field: Marstrander, H. J. K., 1.
 Arizona, Cactus Flat-Artesia area: Halpenny, L. C., 2.
 Duncan Basin: Halpenny, L. C., 1.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Western, Paleozoic seaways: McKee, E. D., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 British Columbia: Hutt, G. M., 6.
 California, Palos Verdes Hills: Woodring, W. P., 1.
 Placer gold mining: Averill, C. V., 1.
 Submarine geology, S. coast: Emery, K. O., 5.
 Tehama County: O'Brien, J. C., 1.
 Canada, Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.

Gravel—Continued.

- Colorado: U. S. G. S., 3, no. 2; Vanderwilt, J. W., 5; Varnes, H. D., 1.
 Construction materials: Larrabee, D. M., 5.
 Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.
 Illinois, S.: Parmelee, C. W., 1.
 Indiana, Buddha outlier: Malott, C. A., 2.
 Soils: Bushnell, T. K., 1.
 Iowa: Hershey, H. G., 1.
 Kansas, Arkansas River Valley: Williams, C. C., 2.
 Trego County: Byrne, F. E., 1.
 Kentucky, Gulf Embayment area: Roberts, J. K., 2.
 Manitoba, McVeigh Lake area: Bateman, J. D., 1.
 Maryland, Carroll, Frederick Cos.: Stose, A. J., 2.
 Mexico, Conchos Valley, Chihuahua: King, R. E., 2.
 Cuarento dist., Durango: Gallagher, D., 1; Pérez Siliceo, R., 1.
 Mississippi, Itawamba and Lee Counties: Vestal, F. E., 1, 2.
 Missouri agates: Grimstead, L., 1.
 Montana: Larrabee, D. M., 4; U. S. G. S., 3, no. 6.
 Nebraska Pleist. deposits: Condra, G. E., 1.
 Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 New Brunswick: Hutt, G. M., 4.
 New Mexico, Rio Puerco area: Wright, H. E., Jr., 1.
 North America: Roots, E. F., 1.
 North Dakota: Larrabee, D. M., 1; U. S. G. S., 3, no. 3.
 Ohio: Baker, G. C., 1; Stout, W. E., 3.
 Ontario, Barrie, Orilla, Sutton areas: Deane, R. E., 1, 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Oregon, map of min. deposits: Oregon Dept. Geol. Min. Indust., 1.
 Weathered: Allen, V. T., 3.
 Pennsylvania, Pittsburgh area: Leighton, H., 3.
 Quebec, Lacorne area: Tremblay, L. P., 1, 2.
 Megantic to Montreal: Hutt, G. M., 2.
 Wetetnagami River area, Abitibi East: Fairbairn, H. W., 1.
 South Dakota: Larrabee, D. M., 2; U. S. G. S., 3, no. 4.
 Sioux Falls area: Rothrock, E. P., 3.
 White River deposits: Caddes, E. E., 1.
 Texas, Waller, Harris Cos.: Beckelhymer, R. L., 1.
 Texas and Oklahoma, Trinity River area: Weissenborn, A. E., 1.
 United States, Missouri Valley area: Dow, D. H., 1; U. S. G. S., 3, no. 1.
 Southern, fms. below Smackover ls.: Hazzard, R. T., 2.
 Utah, Henry Mts. area: Hunt, C. B., 1.
 Vermont: Jacobs, E. C., 4.

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- Washington, weathered: Allen, V. T., 3.
 Wyoming: Larrabee, D. M., 3; U. S. G. S., 3, no. 5.

Gravity anomalies and surveys. See also Geophysical prospecting.

- Airborne magnetometer survey, Ind.: McGrain, P., 1.

- Ambiguity in gravity interpretations: Skeels, D. C., 1.

- Atlantic Coastal Plain, U. S., secs. at Cape May, New York, Woods Hole: Ewing, W. M., 4.

- Calculations for quantitative interpretation, gravity prosp.: Hammer, C. I., 3.

- Colorado, Fort Collins Extension oil field: Wilson, J. H., 2.

- Deflections of vertical: Lambert, W. D., 1.

- Distribution, oceans, continents: Woolnough, W. G., 1.

- Geoid study: Heiskanen, W., 1.

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- Gravity meter, new: Zenor, H. M., 1.

- Helicopter aids oil search: Deegan, C. J., 3.

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- New Brunswick: Miller, A. H., 1, 2.

- New York, Star Lake magnetite: Miller, W. T., 1.

- North America, Caribbean Sea Basin: Ewing, W. M., 3.

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- Texas Gulf Coast, oil structures survey: Neumann, G., 1.

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- United States, Washington, D. C. base stations: Hammer, S. I., 1.

- West Indies, island arcs: Hess, H. H., 1.

- Wyoming, Hartville iron dist.: Frey, E., 3.

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- Alaska, Yakobi Island nickel deposits: Kennedy, G. C., 1.

- Canada, Flin Flon-Mandy area: Stockwell, C. H., 1.

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- Utah, Hat Island, Great Salt Lake: Blackwelder, E., 3.

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- Great Salt Lake, Utah: Relyea, G. M., 1.

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- Surveys, North Greenland: Koch, L., 1.
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- Ore minerals, microscopic exam.: Pauly, H., 1.

Historical geology.

- Basalt plateau, N.: Noe-Nygaard, A., 2.
 Clavering Island, Payer Land: Mittelholzer, A. E., 1.

- East Greenland: Kleiber, K., 1.

- Basaltic rocks: Krokström, T., 1.

- Coast and islands, 73°-75°: Maync, W., 1.

- Devonian faulted area N. of Muskox Fjord: Büttler, H., 1.

- Eruptives: Rittman, A., 1.

- Post-Devonian structure: Vischer, G. A., 1, 2.

- Jamesonland lowlands: Stauber, H., 1.

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- Northeast Greenland: Ahlmann, H. W., 1.

- Nügssuak Penin. intrus., W.: Munck, S., 2.

- Permian, E., Wollaston Forland-Keijzer Franz Josephs Fjord: Maync, W., 2.

- Quaternary: Boegvad, R., 1; Laursen, D., 1.

- Sands, younger, NE.: Huebacher, H., 1.

- Scoresby Sound, Scoresbyland area: Bierth-er, W., 1; Rothé, J. P., 1.

- Svartenhuk Penin.: Rosenkrantz, A., 2.

- Triassic, E. Greenland: Stauber, H., 2.

Mineralogy.

- Garnets: Trainer, J. N., 3.

- Ore minerals, microscopic exams.: Pauly, H., 1.

- Ramsayite, lorenzenite analyses: Sahama, T. G., 1.

- Thomsenolite, pachnolite, crystallog.: Ferguson, R. B., 1.

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- Ammonites, Cret., East: Spath, L. F., 1.

- Cyclolobus, Perm., East: Miller, A. K., 1.

- Dolichometopinae, Camb. Trilobita: Kobayashi, T., 1.

- East Greenland, 74°-75°: Vischer, G. A., 2.

- Fauna, Ice Age and postglacial, W.: Jensen, Ad. S., 1.

- Fish, Trias., East: Nielsen, E., 2.

- Flora, Trias., Juras., East: Harris, T. M., 1.

- Foraminifera, West Greenland: Joergensen, K. D., 1.

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- Permian, Upper, East, Wollaston Forland-Keijzer Franz Josephs Fjord: Maync, W., 2.

- Productids, Mallemuk fm., East: Fiebold, H., 1.

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California, Hirz Mtn. iron deposit: Lamey, C. A., 1.
Iron Hat deposits: Lamey, C. A., 1.
Ship Mtn. iron deposit: Lamey, C. A., 1.
Vulcan iron deposit: Lamey, C. A., 1.
Colorado, Dunmore mine, Ouray Co.: Kelley, V. C., 3.
Kansas, Plattsburg ls.: Grafton, A. A., 1.
Martite, Va., dimorph: Pegau, A. A., 1.
Michigan, min. res.: Zuidema, H. P., 2.
Northern, collecting: Luoma, W. E., 1.
New Jersey, Sussex Co. mines: Lynch, V. J., 1.
New Mexico, Gallinas dist.: Kelley, V. C., 4.
Ohio, iron-ore fms.: Stout, W. E., 1.
Ontario, Iron Island, Lake Nipissing: Knight, C. W., 1.
Steeprock Lake ore: Tanton, T. L., 2.
Pennsylvania, Hollidaysburg-Huntington quads.: Butts, C., 1.
Vandergrift min. locs.: Hamilton, H. V., 1.
Wheatley mines area: Thomas, C. A., 7.
Tennessee, Chamberlain-Barnardville iron deposits: McMaster, P. D., 1.
Utah, McCarthy well, Grand Co.: Stringham, B. F., 2.*
Wisconsin, W. Gogebic range, iron fms.: Zinner, P., 2.
Hessite, W. Canada: Warren, H. V., 6.
Heulandite, Paterson quarry, N. J.: Hayes, W. H., 3.
Hexagonal 4-index symbols: Donnay, J. D. H., 1.
Hexagonal zone equations: Parsons, A. L., 3.
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High potential areas, N. Am.: Ives, R. L., 6.
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Historical (stratigraphic) geology. For areal see names of States. See also the different systems; Correlations; Geologic formations, tables.
Analysis of stratigraphy: Kay, G. M., 1.
Common-sense geology: Price, G. M., 1.
Continents, oceans, distribution: Woolnough, W. G., 1.
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General: Hussey, R. C., 1; Rose, B., 1.
Museum exhibits: Chadwick, G. H., 6.
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Paleontologist, invertebrate, relations to: Weller, J. M., 3.
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Birds, N. Am.: Mayr, E., 1.
Fossil, origin, devel.: Howard, H., 3.
British Columbia, placer mining: Brit. Col. Dept. Mines, 1.
California, Canal oil field, geophys. prosp.: Shoemaker, R. W., 1.
North Coles Levee oil field, geophys. prosp.: LeConte, J., 1.
Raisin City oil field, Kern Co., geophys. prosp.: Sloat, J., 2.
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Canada, exploration, prospecting to increase mineral output: Hoffman, R. D., 1.
Geological Survey: Alcock, F. J., 5.
Salt industry: Wilson, H. W., 1.
Colorado, geologic work: Koschmann, A. H., 2.
Cranbrook Inst. Sci., Mich., mineral collections: Hatt, R. T., 1.
Cuba, min. res.: Calvache, A., 1.
Ducktown copper area, Tenn.: Barclay, R. E., 1.
Equus, origin, devel. of horse: Stock, C., 3.
Great Salt Lake, Utah: Wooley, R. R., 1.
Greenland, North, survey: Koch, L., 1.
Houston Geol. Soc.: Ellis, A. C., 1.
Indiana Acad. Sci., first 5 years: Edington, W. E., 2.
Lake Agassiz, Minn.: Nikiforoff, C. C., 3.
Louisiana, Lake St. John oil field, geophys. prosp.: Smith, N. J., 1.
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Lyell-Darwin letters, referring to Powell: Zuidema, H. P., 5.
Maine, gem industry: Wallace, J. H., 1.
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North American turquoise: Cross, J. L., 1.
Oklahoma, Guthrie oil field, geophys. prosp.: Swan, B. G., 3.
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Parícutin Volcano, Mexico: Bullard, F. M., 3.
Petroleum geology in W. Canada to 1945: Sanderson, J. O. G., 1.
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Rangely oil field, Colo.: Newton, S. M., 1.
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History—Continued.

- Science, bibliography: Geiser, S. W., 2.
 Smithsonian Institution, 1846-1946: True, W. P., 1.
 Stratigraphic units: Moore, R. C., 1.
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 East Field, oil, geophys. prosp.: Hollingsworth, W. E., 1.
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 Oil-hunting: Tait, S. W., Jr., 1.
 Utah, Tintic dist.: Kildale, M. B., 1.
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 Hornblende.
 Alaskaite, Capitan Mtn., N. Mex.: Sidwell, R., 3.
 Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
 Idaho, Orofino area: Johnson, C. H., 1.
 Montana, monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
 Ontario, Craigmont deposit: Eardley-Wilmot, V. L., 1.
 Washington, Mt. Rainier Nat. Park: Danner, T., 2.
 Hornfels.
 California, Gorman tin dist.: Wiese, J. H., 1.
 Pine Creek, Adamson mines, Inyo Co.: Bateman, P. C., 1.
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 Alaska, Great Sitkin Volcano, Aleutians: Simons, F. S., 1.
 California, Agua Caliente, San Diego Co.: South, M., 1.
 "The Geysers," Sonoma Co.: Bradley, W. W., 4; Vonsen, M., 1.
 Lassen Volcanic Nat. Park: Killinger, P. E., 1.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 West Mayacmas dist. quicksilver deposits: Bailey, E. H., 1. ^o
 Deposits, character: Bauer, C. M., 3.
 Greenland, East, Kap Hope area: Rosenkrantz, A., 1.

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- Mexico, optical calcite crystals occurrence: King, C. R., 1.
 North Carolina, Hot Springs, origin: Stose, G. W., 3.
 Okmok Volcano, Umnak Island, Alaska: Byers, F. M., Jr., 1.
 United States, Natl. Parks: Melbo, I. R., 1.
 Tungsten mineralization: Kerr, P. F., 1.
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 Utah, Fumarole Butte, Sevier Desert: Ives, R. L., 20.
 Wyoming, Hot Springs Co., Brutch sulfur deposit: Majors, F. H., 1.
 Houston Geological Society, history: Ellis, A. C., 1.
 How old is the Colorado River?: Longwell, C. R., 2.
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 Colorado, Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Missouri, Silver Mine area: Kidwell, A. L., 1.
 United States, tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
 Hugoton gas field devel., Tex.-Okla.-Kans.: Mercier, V. J., 3.
 Hutchinsonite, X-ray measurements: Nuffield, E. W., 1.
 Hyalite, formation: Copisarow, A. C., 1.
 Hydrocarbons fm., from fatty acids by alpha-particle bombardment: Sheppard, C. W., 1.
 Hydrology and economic geology: Meinzer, O. E., 2.
 Hydromagnesite, Nev.: Hurlbut, C. S., Jr., 1.
 Hydrosynthesis of smithite: Béland, R., 1.
 Hydrothermal alteration.
 Arizona, Castle Dome copper deposit: Peterson, N. P., 1.
 San Manuel copper deposit, Pinal Co.: Chapman, T. L., 1.
 California, Sixteen - To - One gold-quartz vein, Alleghany: Cooke, H. R., Jr., 1.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 West Mayacmas dist. quicksilver deposits: Bailey, E. H., 1.
 Connecticut, Branchville pegmatite: Shainin, V. E., 1.
 Hydrothermal ores, deposition: Hulin, C. D., 2.
 Lake Superior soft iron ore devel.: Tyler, S. A., 1.
 Montana, Running Wolf dist. magnetite: Goodspeed, G. E., 2.
 Nevada, Steamboat Springs area: White, D. E., 6.
 New Mexico, Santa Rita copper mine: Kerr, P. F., 5.
 Ontario, Hasaga gold mines: McLaren, D. C., 7.
 Porcupine dist., chloritoid: Gustafson, J. K., 1.
 Steeprock Lake iron ores: Tanton, T. L., 2.

Hydrothermal alteration—Continued.

- Ore genesis, metallurgical interpret.: Brown, J. S., 4.
 Oregon, Glass Buttes mercury deposit: Reed, G. C., 2.
 United States, porphyry copper deposits: Schwartz, G. M., 1.
 Vermont, Strafford Tp.: Jacobs, E. C., 3.
 Virginia, Piney River ilmenite: Davidson, D. M., 2.
 Hydrozincite, Goodsprings, Nev.: Ramsdell, L. S., 3.
 Hydrozoa. See also Coelenterata.
 Greenland, Offley Island Sil. fm. fauna: Poulsen, C., 1.
 Jellyfish preservation: Richards, H. G., 8.
 New York, Clinton fauna, W., cent.: Gillette, T., 1.
 Oklahoma, Big Canyon fauna: Decker, C. E., 4.
 Quebec, faunas: Dresser, J. A., 1.
 Exposed in recent landslides: Clark, T. H., 2.
 Hyolithes comptus for *H. ornatellus* Resser: Howell, B. F., 1.
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 Hypertetrahedral faces, charting variables: Mertie, J. B., Jr., 3.
 Hypogene deposits, downward limits: Johnston, W. D., Jr., 2.
 Hypotheses integration, coral reefs: Stearns, H. T., 2.
 Hypothesis, continental glaciation: Stewart, R. W., 1.
 Crustal movements: De Lury, J. S., 1.
 IBM technique, tabulating drilling data: Parker, M. A., 1.
 Ice caves, Greenland, S. and SE.: Boegvad, R., 1.
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Areas described.

Borah Peak quad.: Ross, C. P., 2.

Economic geology.

- Avon mica dist., Latah Co.: Reed, G. C., 1.
 Benson clay deposit, Latah Co.: Allen, V. T., 5.
 Blackbird cobalt deposit, Lemhi Co.: Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Clark Fork lead-silver dist.: Anderson, A. L., 2, 2-a.
 Clark Fork lead-zinc dist.: Lorain, S. H., 1.
 Coal fields: Andrews, D. A., 1; Staley, W. W., 1.

Idaho—Continued.

Economic geology—Continued.

- Cobalt mineralization, Blackbird dist.: Anderson, A. L., 3.
 Coeur d'Alene mining dist.: Sorenson, R. E., 1.
 Epithermal mineralization, Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
 Fine gold, Snake, Salmon Rivers areas: Staley, W. W., 4.
 Galena, Wilbert mine, Dome dist.: Anderson, A. L., 5-a.
 Gem minerals: Fernquist, C. O., 1.
 Gold deposits: Staley, W. W., 3.
 Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
 Lead deposits: Anderson, A. L., 1, 2, 2-a; Herdlick, J. A., 1; Lorain, S. H., 1.
 Lead-silver deposits, Clark Fork dist.: Anderson, A. L., 2, 2-a.
 Lead-zinc deposits: Anderson, A. L., 1; Lorain, S. H., 1.
 Little Pittsburg lead-zinc mine, Shoshone Co.: Herdlick, J. A., 1.
 Mining industry, 1945-46: Campbell, A., 1.
 Moyie-Yaak dist., lead-zinc deposits: Anderson, A. L., 1.
 Sapphires: Anonymous, 58.
 Snake-Salmon Rivers area, Idaho Co.: Wagner, W. R., 1.
 Star garnets: Dake, H. C., 4.
 Sulfur deposits: Staley, W. W., 2.
 Tungsten, Ima mine, Lemhi Co.: Anderson, A. L., 7.

Historical geology.

- Blackbird cobalt deposits: Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Clark Fork dist.: Anderson, A. L., 1, 2, 2-a; Lorain, S. H., 1.
 Coal deposits: Staley, W. W., 1.
 Cobalt deposits, Blackbird dist.: Anderson, A. L., 3.
 Coeur d'Alene min. dist.: Sorenson, R. E., 1.
 Geologic map: Ross, C. P., 1.
 Gold deposits: Staley, W. W., 3.
 Igneous metamorphism, Orofino area: Johnson, C. H., 1.
 Last Chance-Hornsilver mines, Lava Creek dist., geol. map: Anderson, A. L., 2.
 Lead-silver mineralization, Clark Fork dist.: Anderson, A. L., 2.
 Little Pittsburg lead-zinc mine, Shoshone Co.: Herdlick, J. A., 1.
 Phosphate rock, Georgetown area: Deiss, C. F., 2.
 Snake-Salmon River area: Wagner, W. R., 1.
 Sulfur deposits: Staley, W. W., 2.

Mineralogy.

- Avon mica dist., Latah Co.: Reed, G. C., 1.
 Benson clay deposit, Latah Co.: Allen, V. T., 5.
 Blackbird cobalt deposit, Lemhi Co.: Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.

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Mineralogy—Continued.

- Clark Fork mining dist.: Anderson, A. L., 1, 2, 2-a; Fairbanks, E. E., 1-a; Lorain, S. H., 1.
- Coal: Staley, W. W., 1.
- Cobalt, Blackbird dist.: Anderson, A. L., 3.
- Coeur d'Alene min. dist.: Sorenson, R. E., 1.
- Epithermal mineralization, Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
- Fine gold, Snake, Salmon Rivers areas: Staley, W. W., 4.
- Galena, Wilbert mine, Dome dist.: Anderson, A. L., 5-a.
- Gem minerals: Fernquist, C. O., 1.
- Gold deposits: Staley, W. W., 3.
- Halite, red fluorescing: Murata, K. J., 4.
- Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
- Lead deposits: Anderson, A. L., 1, 2, 2-a; Herdlick, J. A., 1; Lorain, S. H., 1.
- Lead-silver deposits, Clark Fork dist.: Anderson, A. L., 2, 2-a.
- Lead-zinc deposits: Anderson, A. L., 1; Lorain, S. H., 1.
- Little Pittsburg lead-zinc mine, Shoshone Co.: Herdlick, J. A., 1.
- Sapphires: Anonymous, 58.
- Silver City collecting area: Dake, H. C., 1.
- Snake-Salmon Rivers area: Wagner, W. R., 1.
- Star garnets: Dake, H. C., 4.
- Sulfur deposits: Staley, W. W., 2.
- Tungsten mine, Lemhi Co.: Anderson, A. L., 7.
- Vanadium in chert, Lemhi area: Shoup, G. E., 1.

Paleontology.

- Mollusca, fresh-water Tert., SE.: Yen, T. C., 5.
- Polyspores, Tert.: Andrews, H. N., Jr., 7.
- Tempskya, other plants, Cret.: Andrews, H. N., Jr., 9.
- Vertebrata, Miocene, Lemhi Valley: Wilson, J. A., 1.

Petrology.

- Anderson Ranch Dam, Boise River: Oke-son, C. J., 1.
- Avon mica dist., Latah Co.: Reed, G. C., 1.
- Borah Peak quad.: Ross, C. P., 2.
- Galena, Wilbert mine, Dome dist.: Anderson, A. L., 5-a.
- Igneous metamorphism, Orofino area: Johnson, C. H., 1.
- Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
- Lead-silver deposits, Clark Fork dist.: Anderson, A. L., 2.
- Palisades Dam site, Idaho Falls: Harshman, E. N., 1.
- Phosphate rocks, Georgetown area: Deiss, C. F., 2.
- Queenstone: Wetmer, E., 1.

Idaho—Continued.

Petrology—Continued.

- Sandstone fusion by intrusive andesite, Palisades Dam: Mielenz, R. C., 3.
- Snake-Salmon Rivers area: Wagner, W. R., 1.

Physical geology.

- Anderson Ranch Dam, Boise River: Oke-son, C. J., 1.
- Avon mica dist., Latah Co.: Reed, G. C., 1.
- Benson clay deposits, origin, Latah Co.: Allen, V. T., 5.
- Blackbird cobalt deposit, Lemhi Co.: Reed, G. C., 3.
- Borah Peak quad.: Ross, C. P., 2.
- Clark Fork lead-zinc dist., Bonner Co.: Lorain, S. H., 1.
- Cobalt deposit, Blackbird dist.: Anderson, A. L., 3.
- Coeur d'Alene min. dist.: Sorenson, R. E., 1.
- Craters of the Moon: Andrews, H. N., Jr., 4.
- Drainage diversion, N. Rocky Mts.: Anderson, A. L., 4.
- Epithermal mineralization, Last Chance-Hornsilver mines: Anderson, A. L., 5.
- Galena, Wilbert mine, Dome dist.: Anderson, A. L., 5-a.
- Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
- Igneous metamorphism, Orofino area: Johnson, C. H., 1.
- Lead-silver mineralization, Clark Fork dist.: Anderson, A. L., 2.
- Little Pittsburg lead-zinc mine, Shoshone Co.: Herdlick, J. A., 1.
- Moyie-Yaak lead-zinc dist.: Anderson, A. L., 1.
- Palisades Dam site, Idaho Falls: Harshman, E. N., 1.
- Sandstone fusion by intrusive andesite, Palisades Dam area: Mielenz, R. C., 3.
- Snake River Valley structure: Perkins, B., 1.
- Snake-Salmon Rivers area: Wagner, W. R., 1.
- Tungsten deposit, Lemhi Co.: Anderson, A. L., 7.

Physiographic geology.

- Borah Peak quad.: Ross, C. P., 2.
- Drainage diversion, N. Rocky Mts.: Anderson, A. L., 4.
- Moyie-Yaak lead-zinc dist.: Anderson, A. L., 1.

Ideas, emergence, illus. by geology: Ashley, G. H., 2.

Identification, qualitative chem. analysis of minerals: Smith, O. C., 2.

Idocrase.

- California, Placer Co. pseudo jade: Rogers, A. F., 5.
- Vermont, Eden Mills quarry: Frondel, C., 2.

Igneous and volcanic rocks. See also Batholiths; Dikes; Intrusions; Laccoliths; Magmas; Petrology; Sills; Stocks.

Igneous and volcanic rocks—Continued.

- Alaska: Bruet, E., 1.
 Adak Island, Aleutians: Coats, R. R., 1.
 Agattu, Aleutians: Sharp, R. P., 1.
 Argentiferous lead-copper deposits, Slana dist.: Thorne, R. L., 1.
 Chromite deposits, Red Mtn., Kenai Penin.: Rutledge, F. A., 1.
 Copper deposits, Kotsina - Kuskulana dist.: Van Alstine, R. E., 1.
 Copper-sulfur deposits, Prince of Wales Is.: Fosse, E. L., 1.
 Funter Bay, Admiralty Is.: Holt, S. P., 2.
 Kanaga Island, Aleutians: Coats, R. R., 2.
 Kasaan Penin. ore deposits: Warner, L. A., 1.
 Lost River tin deposit, Seward Penin.: Heide, H. E., 1.
 Mount Eielson zinc-lead deposits: Muir, N. M., 3.
 Nizina dist. deposits: Miller, D. J., 1.
 Pavlof Volcano area, Aleutians: Kennedy, G. C., 5.
 Prince of Wales Island: Wright, W. S., 1.
 Rua Cove, Knight Island copper claims: Stefansson, K., 1.
 Southeast: Shaw, V., 1.
 Molybdenite deposits: Twenofel, W. S., 1.
 Ultrabasic rocks: Kennedy, G. C., 2.
 Southwest, quicksilver deposits: Weber, B. S., 2.
 Umnak Island, Aleutians: Byers, F. M., Jr., 1.
 Yakobi Island nickel deposits: Kennedy, G. C., 1.
 Alberta, Cripple Creek area: Erdman, O. A., 1.
 Fall Creek area: Canada G. S., 1.
 Aluminum in rock-forming silicates: Thompson, J. B., Jr., 1.
 Anderson Ranch Dam, Boise River, Idaho: Okeson, C. J., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 Amargosa deposit, Pima Co.: Tainter, S. L., 3.
 Aravaipa deposit, Graham Co.: Denton, T. C., 3.
 Bagdad area: Anderson, C. A., 1.
 Castle Dome copper deposit: Peterson, N. P., 1.
 Copper Butte mine, Mineral Creek: Phelps, H. D., 1.
Dragoon Mts.: Cederstrom, D. J., 2.
Grand Canyon Cambrian: McKee, E. D., 1.
 Johnny Bull-Silver Knight deposit: Tainter, S. L., 1.
 New Planet mine, Yuma Co.: Cummings, J. B., 2.
 Old Reliable copper mine: Denton, T. C., 2.
 Paradise Valley, Maricopa, Co.: McDonald, H. R., 1.

Igneous and volcanic rocks—Continued.

- Arizona—Continued.
 Peoples Valley: Babcock, H. M., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Safford Basin: Turner, S. F., 2.
 Salt River Valley: McDonald, H. R., 2.
 Santa Cruz Basin: Turner, S. F., 1.
 Wellton-Mohawk area: Babcock, H. M., 3.
 Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
 Arkansas, Magnet Cove deposits: Spencer, R. V., 1.
 Barren and productive: Johnston, W. D., Jr., 2.
 Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.
 Bighorn Basin, Mont.-Wyo.: Stow, M. H., 2.
 Biotite micas, chem. composition and paragenesis: Nockolds, S. R., 1.
 British Columbia: Hutt, G. M., 6.
 Ashcroft area: Duffell, S., 1, 2.
 Britannia mines, No. 8 ore bodies: Irvine, W. T., 1.
 Coast Range batholith: Phemister, T. C., 1.
 Lucky Jim mine area: Hedley, M. S., 2.
 McConnell Creek area: Lord, C. S., 1.
 Manson Creek, Cassiar dist.: Canada G. S., 1.
 Nanaimo coal field: Buckham, A. F., 1.
 Nicola, Kamloops and Yale dists.: Canada G. S., 1.
 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Salmon Arm area: Rice, H. M. A., 1.
 South half Aiken Lake area: Armstrong, J. E., 1.
 Surf Point, Edye Pass mines: Smith, A., 1.
 Texada Island: Mathews, W. H., 1.
 Whitewater, Lucky Jim mine areas: Hedley, M. S., 1.
 California, Bessemer iron deposits: Wiebelt, F. J., 1.
 Caliente Range: Hill, M. L., 2.
 Chromite deposits, N. Coast Ranges: Dow, D. H., 2.
 Cuyamaca Peak quad. batholith units: Everhart, D. L., 2.
 East Mayacmas dist. quicksilver deposits: Yates, R. G., 1.
 Glendora volcanics: Shelton, J. S., 2.
 Gorman tin dist.: Wiese, J. H., 1.
 Guide Book Field Trip Mar. 1947, oil fields: **A.A.P.G., 1.**
 Hirz Mtn. iron deposit: Lamey, C. A., 1.
 Iron Hat deposits: Lamey, C. A., 1.
 Ivanpah quad.: Hewett, D. F., 1.
 Kern River Basin, Sierra Nevada: Webb, R. W., 1.
 Kramer borate dist.: Gale, H. S., 1.
 Los Angeles Basin: Driver, H. L., 1.

Igneous and volcanic rocks—Continued.

California—Continued.

- Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Minarets deposit, Madera Co.: Severy, C. L., 2.
 Monterey fm.: Bramlette, M. N., 1.
 New Idria dist. quicksilver deposits: Eckel, E. B., 1.
 North Elder Creek chromite area: Rynearson, G. A., 1.
 Oxnard oil field: Hazzard, J. C., 3.
 Palos Verdes Hills: Woodring, W. P., 1.
 Pine Creek, Adamson mines: Bateman, P. C., 1.
 Ramona quad.: Merriam, R. H., 1.
 Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
 Ridge Route area: Loel, W., 1.
 San Gabriel Basin, NE. margin: Shelton, J. S., 1; U.S.G.S., 1, no. 63.
 San Juan Bautista quad.: Allen, J. E., 3.
 Santa Rosa Mts. area: Wright, L. B., 1.
 Shasta, California deposits: Lamey, C. A., 1.
 Shasta Dam, Sacramento River: Gardner, W. I., 1.
 Ship Mtn. iron deposit: Lamey, C. A., 1.
 Sierra Nevada-Death Valley: Hopper, R. H., 1.
 Sierra Nevada structure, S.: Mayo, E. B., 1.
 Southern, batholith, crystalline rocks: Larsen, E. S., 2; Miller, W. J., 1.
 Ventura Basin: Bailey, T. L., 2.
 Vulcan iron deposit: Lamey, C. A., 1.
 West Mayacmas dist., quicksilver deposits: Bailey, E. H., 1.
 Canada, Capsisit Lake area: Gilbert, J. E., 1.
 Dubuisson-Bourlamaque-Louvicourt area: Norman, G. W. H., 9.
 Flin Flon-Mandy area: Stockwell, C. H., 1.
 Keith Tp. devels.: Hogg, N., 2.
 Kirkland Lake area: Hopkins, H., 1.
 Lode gold areas: Cooke, H. C., 1.
 Montreal to Port Arthur: Hutt, G. M., 1.
 Ottawa-Cornwall area: Canada G. S., 1.
 Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
 Rocky Mts.: Williams, M. Y., 2.
 Sudbury dist.: Stanley, R. C., 1.
 Central America: Woodring, W. P., 2.
 Colorado, Alva Adams Tunnel: Heaton, R. L., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Canyon City area: Blum, V. J., 1.
 Climax molybdenum mine: Vanderwilt, J. W., 3; Anonymous, 61.
 Construction, nonmetallic materials: U.S.G.S., 3, no. 10.
 Cripple Creek dist., Teller Co.: Koschmann, A. H., 4.
 Eureka-Animas Forks area: Burbank, W. S., 11.

Igneous and volcanic rocks—Continued.

Colorado—Continued.

- Fluorspar deposits: Cox, D. C., 1.
 Front Range: Wahlstrom, E. E., 2.
 Mineral belt: Goddard, E. N., 5.
 General geology: Vanderwilt, J. W., 5.
 Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.
 Iron Springs mining dist.: Varnes, D. J., 4.
 Jamestown dist. fluorspar: Goddard, E. N., 1.
 Jewell Tunnel mine, Chaffee Co.: Ames, E. W., 1.
 Kokomo mining dist., Summit Co.: Koschmann, A. H., 1, 3.
 Lake City area, Hinsdale Co.: Burbank, W. S., 13.
 La Plata dist.: Eckel, E. B., 2.
 Leadville dist., Lake Co.: Loughlin, G. F., 1.
 Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
 Model anticline, Las Animas Co.: Bass, N. W., 3; U.S.G.S., 1, no. 68.
 Mt. Wilson dist.: Varnes, D. J., 5.
 Red Mtn. dist., Ouray Co.: Burbank, W. S., 10.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 South Silverton area, San Juan Co.: Varnes, D. J., 6.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Upper Blue River area, Summit Co.: Singewald, Q. D., 3.
 Vanadium-bearing ss.: Fischer, R. P., 3.
 Cuba: Brodermann y Vignier, J., 1.
 Camagüey, Oriente Provs.: Guild, P. W., 1; Hermes, J. J., 1; Vletter, D. R., de, 1; Wessem, A., 1.
 Central Camagüey Prov.: Wessem, A., 1.
 Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 West, middle Oriente Prov.: Wessem, A., 1.
 Georgia, Coastal Plain, E.-cent.: La Moreaux, P. E., 1.
 Murray Co.: Furcron, A. S., 1.
 Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
 East, basaltic, eruptive rocks: Krokström, T., 1; Rittman, A., 1.
 Faulted area N. of Muskox Fjord: Büttler, H., 1.
 Sedimentary petrology: Kleiber, K., 1.
 74°-75°: Vischer, G. A., 1, 2.
 Triassic: Stauber, H., 2.
 Wollaston Forland-Franz Josefs Fjord: Maync, W., 2.
 Groenne Dal-Ika area nepheline syenites: Callisen, K., 1.
 Jamesonland lowlands: Stauber, H., 1.
 Kronprinz Christians Land: Nielsen, E., 1.

Igneous and volcanic rocks—Continued.

Greenland—Continued.

- North, plateaus: Noe-Nygaard, A., 2.
 Northeast: Ahlmann, H. W., 1.
 Basalts: Backlund, H. G., 1.
 Scoresbyland: Bierther, W., 1.
 Scoresby Sound area: Rothé, J. P., 1.
 Skaergaard intrusion: Wager, L. R., 1.
 Thule dist.: Muck, S., 1.
 West, Svartenhuk Penin.: Rosenkrantz, A., 2.
 Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
 Alta, Baja Verapaz, Quiché Depts.: Manó, J. C., 2.
 Haiti, manganese deposits: Goddard, E. N., 2, 3, 4.
 Hawaii: Stearns, H. T., 1, 3.
 Haleakala Volcano: Macdonald, G. A., 2.
 Molokai Island: Stearns, H. T., 4, 5.
 Idaho, Avon mica dist.: Reed, G. C., 1.
 Blackbird cobalt dist.: Anderson, A. L., 3; Reed, G. C., 3.
 Borah Peak quad.: Ross, C. P., 2.
 Gold deposits: Staley, W. W., 3.
 Last Chance-Hornsilver mines: Anderson, A. L., 5.
 Little Pittsburg lead-zinc mine: Herdlick, J. A., 1.
 Orofino area: Johnson, C. H., 1.
 Snake River Valley structure: Perkins, B., 1.
 Snake-Salmon River areas: Wagner, W. R., 1.
 Sulfur deposits area: Staley, W. W., 2.
 Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Kansas, Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Barton Co., buried hills: Walters, R. F., 1.
 Labrador Penin., E.: Tanner, V., 2.
 Magmas: Bowen, N. L., 1.
 Maine, Columbia Falls quad.: Terzaghi, R. D., 1.
 Katahdin pyrrhotite deposit: Miller, R. L., 1.
 Swift River Valley: Pratt, E., 1.
 Topsham area pegmatites: Shainin, V. E., 2.
 Manitoba, Barrington Lake area: Minton, M. C., 2.
 Geologic map: Canada G. S., 1.
 Lynn Lake area: Allan, J. D., 1.
 McVeigh Lake area: Bateman, J. D., 1.
 Morton Lake area: Harrison, J. M., 2.
 Prospecting areas: de Wet, J. P., 1.
 Sherridon area: Canada G. S., 1.
 Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.
 Tramping Lake, N. part: Stanton, M. S., 1.
 Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.
 Mexico: Waitz, P., 1.

Igneous and volcanic rocks—Continued.

Mexico—Continued.

- Altar dist., Sonora: Arellano, A. R. V., 2.
 Antimony deposits, Oaxaca: White, D. E., 2.
 San Juan: Guiza, R., R., Jr., 1.
 Batopilas, Chihuahua silver mines: González Reyna, J., 8.
 Bolson de Mapimi area: Estlack, J. C., 1.
 Caborea area, NW. Sonora: Cooper, G. A., 1.
 Chihuahua min. res.: González Reyna, J., 3-a.
 Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
 Conchos Valley, Michoacán: Flores, T., 1.
 Cuarento min. dist., Durango: Gallagher, D., 1; Pérez Siliceo, R., 1, 4.
 El Moral dist.: González Reyna, J., 10.
 Estado Aguascalientes: Lopez G., F., 1.
 Estado Michoacán, N. area: Blásquez López, L., 4.
 Iron deposits, N. group: Toron Villegas, L., 1.
 Isla Margarita, Baja Calif.: González Reyna, J., 4.
 Maravatio-Zitacuaro dists.: Flores, T., 1.
 Northern, geologic map: King, P. B., 4.
 Nuevo León: Mullerried, 6.
 Oaxaca guide book: Barrera, T., 1.
 Parícutin area: Pérez Peña, A., 1.
 Placers, Guadalupe, Puerto del Aire, Chihuahua: González Reyna, J., 2.
 Sierra de la Peña area: Alvarez, M., Jr., 1.
 State of Zacatecas, min. res.: González Reyna, J., 2.
 Tlaxcala: Blásquez López, L., 1.
 Urique min. zone, Chihuahua: González Reyna, J., 7.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Michigan, Crystal Falls-Alpha iron dist.: Pettijohn, F. J., 1.
 Mineral resources: Zuidema, H. P., 2.
 Pine Creek area, Dickinson Co.: Higgins, J. W., 1.
 Mineral deposits, magmatic origin: Guimarães, D., 1.
 Minnesota, Lake Superior shore NE. of Two Harbors: Grogan, R. M., 2.
 Northeast: Thiel, G. A., 2.
 Missouri, Morgan Co.: Mather, W. B., 1.
 Southeast, post-Camb. ig. activity: Kidwell, A. L., 7.
 Ste. Genevieve, St. Francis Cos.: Kidwell, A. L., 6.
 Montana, Bearpaw Mts. area: Reeves, F., 2.
 Big Belt Range, N.: Lyons, J. B., 1.
 Bozeman corundum mine, Gallatin Co.: O'Brien, R. D., 1.
 Bull Run prospects, Silver Bow Co.: Roby, R. N., 2.
 Chromite deposits, Red Lodge area: James, H. L., 1.

Igneous and volcanic rocks—Continued.

Montana—Continued.

- Monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
 Plains, structure map: Dobbin, C. E., 3.
 Queen Mary copper deposit, Missoula Co.: Brinton, W. H., 1.
 South-central Paleozoic, Mesozoic rocks: Gardner, L. S., 1.
 Montreal, Canada: Clark, T. H., 1.
 Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 Osgood Range tungsten deposits: Hobbs, S. W., 1.
 Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.
 Rio Grande deposit, poss.: Matson, E. J., 2.
 Segerstrom-Heizer iron mine, Pershing Co.: Kral, V. E., 5.
 New Brunswick, Honeydale area: Alcock, F. J., 3.
 St. Stephen area, Charlotte Co.: Alcock, F. J., 2.
 Sussex, Kings and Queens Cos.: Canada G. S., 1.
 New England, Keene-Brattleboro area: Moore, G. E., 1.
 New Hampshire, Lost River, Flume gorges, jointing effect: McNair, A. H., 1.
 Monadnock area: Billings, K. S. F. L., 1.
 Mt. Pawtuckaway quad.: Freedman, J., 1.
 Mt. Washington quad.: Billings, M. P., 2, 4.
 Oliverian magma ser.: Chapman, C. A., 2.
 Paleozoic magma series: Billings, M. P., 3.
 Percy quad.: Chapman, R. W., 3.
 Plymouth quad.: Moke, C. B., 1.
 Stoddard fluorite mine: Bardill, J. D., 1.
 New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.
 New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
 New Mexico, Apache mica mine: Holmquist, R. J., 3.
 Atwood copper group, Lordsburg dist.: Huntington, M. G., 1.
 Capitan quad., dikes, displacements, effects: Sidwell, R., 1.
 Contact manganese mine, Grant Co.: Russell, P. L., 1.
 Fluorspar area: Rothrock, H. E., 1.
 Gallinas Mts.: Kelley, V. C., 6.
 Gran Quivira quad.: Bates, R. L., 3.
 Guadalupe Co.: Gorman, J. M., 1; U.S.G.S., 1, no. 44.
 Headstone mining dist.: Benjovsky, T. D., 2.
 Huckleberry spar mine, Catron Co.: Sur, F. J., 2.
 Iron Mtn. tungsten deposits: Storms, W. R., 2, 3.
 Lake Valley deposits: Apell, G. A., 2.

Igneous and volcanic rocks—Continued.

New Mexico—Continued.

- Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U.S.G.S., 1, no. 54.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Los Pinos Mts.: Stark, J. T., 1.
 Lucero uplift: Kelley, V. C., 2; U.S.G.S., 1, no. 47.
 McCartys basalt flow, Valencia Co.: Nichols, R. L., 1.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Mica deposits, Pecata, Ojo Caliente, Elk Mtn. dists.: Jahns, R. H., 1.
 Nacimiento, San Pedro Mts., adjacent plateaus: U.S.G.S., 1, no. 57; Wood, G. H., Jr., 1.
 Niggerhead manganese deposits: Russell, P. L., 7.
 Northwest Quay Co.: Dobrovolsky, E., 1; U.S.G.S., 1, no. 57.
 Paleozoic, Joyita Hills, Los Pinos Mts., Chupadera Mts.: U.S.G.S., 1, no. 61; Wilpolt, R. H., 1.
 Peerless lead-zinc mine, Grant Co.: Soulé, J. H., 4.
 Socorro Co., Jones iron deposit: Grantham, R. M., 1.
 Steeple Rock dist.: Russell, P. L., 6.
 Tin deposits, Catron, Sierra Cos.: Volin, M. E., 1.
 White Eagle fluorspar mine: Soulé, J. H., 2.
 New York, Balmat area zinc mines: Brown, J. S., 2, 3; Marvin, T., 1.
 Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 Stissing Mtn.: Knopf, E. F. B., 3.
 Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 Eastern area: Twenhofel, W. H., 3.
 Niggli-Becke process for rock analysis: Bacon, C. S., Jr., 1.
 North America, Cordilleran geosyncline: Eardley, A. J., 1.
 Gulf of St. Lawrence area: Twenhofel, W. H., 4.
 Tungsten, abundance: Sandell, E. B., 1.
 North Carolina, Buck Creek corundum deposits: Ballard, T. J., 3.
 Cherokee iron deposits: Robertson, A. F., 1.
 Franklin-Sylva dist.: Olson, J. C., 2.
 Guilford Co.: Murdock, T. G., 3.
 Halifax Co. molybdenum deposits: Robertson, A. F., 2.
 Neuse River Basin: Mundorff, M. J., 3.
 Northwest Territories, Camsell River area: Lord, C. S., 2.
 Chalco Lake area: Stanton, M. S., 2.
 Eldorado mine: Murphy, R., 1.
 Indin Lake gold area: Lilge, E. O., 1.
 Ross Lake area: Fortier, Y. O., 3.
 Yellowknife area: Riley, C., 1.
 Yellowknife-Beaulieu area: Fortier, Y. O., 1.

Igneous and volcanic rocks—Continued.

- Nova Scotia, Barasois-Indian Brook area:
Douglas, G. W., 4.
Guysborough Co.: MacNeil, D. J., 2.
Halifax xenoliths, contacts: Douglas, G. V., 2.
Strait of Canso area: Ferguson, S. A., 2.
Oklahoma, NE. Morrow ser.: Moore, C. A., 3.
Southwest Antioch oil field: Swesnik, R. M., 1.
Ontario: Hutt, G. M., 7.
Bancroft area paragneiss: Gummer, W. K., 1.
Beatty Tp.: Armstrong, H. S., 1.
Calumet Island mines: McLaren, D. C., 1.
Cochenour Willans gold mine area: Nowlan, J. P., 1.
Dome gold mine deposits: Holmes, T. C., 1.
Eagle Lake area: Moorhouse, W. W., 2.
Falconbridge, Sudbury dist.: Canada G. S., 1.
Gem Lake-Bee Lake area: Minton, M. O., 1.
Geologic map: Ontario Dept. Mines, 3.
Hasaga gold mines: McLaren, D. C., 7.
Kenogami Lake area: Ontario Dept. Mines, 2.
L. Mamen group, Bee Lake area: Thomson, R., 1.
Lake Shore mines, rock bursts: Robson, W. T., 1.
Little Long Lac "porphyry": Bruce, E. L., 2.
McKenzie Island-East Bay, Red Lake dist.: Bergman, H. J., 1.
Madsen-Red Lake gold mines: McLaren, D. C., 8.
Matachewan Consolidated gold mines: McLaren, D. C., 2.
Mattawan-Olrig area: Harding, W. D., 1.
Nepheline rocks, origin: Shand, S. J., 1.
Northern Empire gold mine: Benedict, P. C., 1.
Omega gold mine: McLaren, D. C., 4.
Parry Sound area: Satterly, J., 1.
Purdy Mica Mines, Ltd., Mattawan Tp.: Spence, H. S., 2.
Red Lake area: Thomson, R., 2.
Robb-Jamieson area: Berry, L. G., 1.
Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
Rush Lake gold mine: Hogg, N., 1.
Rutherglen dist.: Keith, M. L., 1.
Sudbury area: Cooke, H. C., 2.
Timagami Lake area: Moorhouse, W. W., 1.
Timiskaming silver-cobalt area: Reid, J. A., 1.
Township 47, Missinaibi area: Bruce, E. L., 3.
Oregon, chromite-bearing sands, S. coast: Griggs, A. B., 1.
Glass Buttes mercury deposit: Reed, G. C., 2.

Igneous and volcanic rocks—Continued.

Oregon—Continued.

- Horse Heaven quicksilver mine: Lewis, F. E., 1.
Mount Reuben min. dist., Josephine Co.: Youngberg, E. A., 1.
Nehalem River Basin: Warren, W. C., 1.
Perlite deposits, Wasco Co.: Allen, J. E., 2.
St. Helens quad.: Wilkinson, W. D., 1.
Oregon-Washington, Columbia River sands: Kelly, J. V., 1.
Post-glacial volcanic activity: Hansen, H. P., 6.
Panama Canal bed: Bowman, W. G., 1.
Pennsylvania, Hollidaysburg-Huntington quads.: Butts, C., 1.
Southeast, mineral isograds: McKinstry, H. E., 2.
White Rocks area: Foose, R. M., 1.
Petrofabrics, analysis by feldspars: Snyder, F. G., 2.
Puerto Rico: McGuinness, C. L., 1.
Garzas power tunnel: Moneymaker, B. C., 5.
Quebec: Hutt, G. M., 5.
Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
Bachelor Lake area: Longley, W. W., 3.
Barraute area, Abitibi Co.: Tremblay, L. P., 3.
Beauchastel Tp., W. half: Ambrose, J. W., 1.
Bourlamaque area: Norman, G. W. H., 1, 3.
Canton Carpentier, Abitibi: Tiphane, M., 1.
Castagnier area, Abitibi-East Co.: Longley, W. W., 2.
Descriptive geology: Dresser, J. A., 1.
Desvaux Lake area, Dasserat Tp.: Auger, P. E., 2.
Eastern Tps., serpentine belt: Faessler, C., 3.
Gaspé, oil residuals, volcanic rocks: Alcock, F. J., 1.
Haig, Abitibi Co., geol. map: Canada G. S., 1.
Lacorne area: Tremblay, L. P., 1, 2.
Major faults, Abitibi region: Norman, G. W. H., 5.
Megantic to Montreal: Hutt, G. M., 2.
North Shore St. Lawrence area: Claveau, J., 1.
Northeast Dubuisson: Norman, G. W. H., 4.
Pershing area, Abitibi: Norman, G. W. H., 7.
Perthite as age indicator: Faessler, G., 1.
Quebec Central Ry. area: Dawson, A. S., 1.
Shawinigan area: Laverdière, J. W., 1.
Simard map area, Chicoutimi Co.: Denis, B. T., 1.
Siscoe mine area, Abitibi-East: Auger, P. E., 1.
Southwest Bourlamaque, Abitibi: Norman, G. W. H., 2.

Igneous and volcanic rocks—Continued.

Quebec—Continued.

- Tonnancourt-Holmes area, Abitibi Co.: Longley, W. W., 1.
- Vauquelin area, Abitibi: Norman, G. W. H. 6, 8.
- Wettnagami Lake and River area: Fairbairn, H. W., 1; Graham, R. B., 1.
- Radium content, ultramafic rocks: Davis, G. L., 1.
- Rarer metals: De Ment, J. A., 1.
- Rock bursts, geol. conditions favoring: Boos, M. F., 3.
- Rock norms used in geophys. invs.: Daly, R. A., 2.
- Rocks, classn. by age-ratio: Lane, A. C., 4.
- Classification for highway engineers: Runner, D. G., 1.
- Rocks and rock minerals: Pirsson, L. V., 1.
- Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
- Selenium content: Beath, O. A., 1.
- South Dakota, Galena-Roubiax dist.: Berg, J. R., 1.
- Metallic mineral deposits: Fischer, R. P., 2; U.S.G.S., 3, no. 13.
- Structural geology: Nevin, C. M., 1.
- System $\text{NaAlSi}_3\text{O}_8$ - $\text{Ca}_2\text{Al}_2\text{SiO}_7$, equilibrium relations: Smalley, R. G., 1.
- Texas, Apco oil field, Pecos Co.: Ellison, S. P., Jr., 2.
- Buck Hill quad.: Goldich, S. S., 3.
- Central mineral area: Barnes, V. E., 3, 4.
- Eagle Mtn. fluorspar deposits: Dennis, W. E., 1.
- Glass Mts.-Marathon Basin Trip: West Tex. Geol. Soc., 2.
- Llano iron deposits: Evans, A. M., 2.
- Reeves Co.: Knowles, D. B., 1.
- Terlingua quicksilver deposit: Evans, A. M., 1.
- United States, Appalachian structure: Hietanen, A., 1, 2.
- Blue River-South Platte Transmountain Diversion line area: Haff, J. C., 1.
- Missouri Valley area: Dow, D. H., 1; U.S.G.S., 3, no. 1.
- North Gulf Coastal Plain: Moody, C. L., 3.
- Rocky Mtn. area oil geology: Dobbin, C. E., 2.
- Soils, origin, distribution, identification by airphotos.: Jenkins, D. S., 1.
- Tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
- Mineralization: Kerr, P. F., 1.
- West, high-alumina clays fm.: Allen, V. T., 1.
- Utah, Alta dist. scheelite deposits: Crawford, A. L., 1.
- Alunite deposits, Marysville: Hild, J. H., 1.
- Central: Spieker, E. M., 1.
- Granite Peak area: Ives, R. L., 8.
- Henry Mts. area: Hunt, C. B., 1.

Igneous and volcanic rocks—Continued.

Utah—Continued.

- Kelly's Hole, Dugway Range: Ives, R. L., 16.
- Little Cottonwood area: Ives, R. L., 3.
- Markagunt Plateau: Gregory, H. E., 3.
- Mineral Range tungsten deposits: Crawford, A. L., 3.
- Mineral res.: Schneider, H., 1.
- Pavant Range and Valley, Millard Co.: Dennis P. E., 1; Maxey, G. B., 1.
- Tintic dist.: Kildale, M. B., 1.
- Zion Nat. Monument: Gregory, H. E., 1.
- Vermont, Ascutney Mtn.: Hooker, M., 1.
- Derby area plutonites: Maynard, J. E., 2.
- Orange Co. copper mines: Jacobs, E. C., 2.
- Strafford quad.: Doll, C. G., 1; Jacobs, E. C., 1.
- Virginia, Catoctin fm.: Bloomer, R. O., 2.
- Central, Blue Ridge core: Bloomer, R. O., 3.
- Charlottesville Mtg. Field Trip, 1947: Pegau, A. A., 2.
- Washington, Buckhorn Mtn. dist. iron deposits: Zoldok, S. W., 1.
- Colville batholith, E. border structure: Campbell, C. D., 2.
- Methow quad.: Barksdale, J. D., 2, 3.
- Mt. Rainier Nat. Park: Danner, T., 2.
- Olympic Penin.: Park, C. F., Jr., 1.
- Republic mining dist.: Wright, L. B., 2.
- Ross Dam area, Cascade Mts.: Coombs, H. A., 1.
- Stevens County: Campbell, C. D., 1; Reed, G. C., 4.
- Sultan Basin deposits: Carithers, L. W., 1.
- Tungsten res.: Culver, H. E., 1.
- Washington-Oregon postglacial volcanic activity: Hansen, H. P., 6.
- Wisconsin, Utley metarhyolite rocks: Gram, O. E., 1.
- Wyoming, Absaroka volcanic field, Bighorn Basin: Rouse, J. T., 1.
- Construction materials, nonmetallics: U.S.G.S., 3, no. 9.
- Hartville iron dist.: Frey, E., 3.
- Iron Mtn. deposits: Frey, E., 2.
- Jackson Hole area: Love, J. D., 1; U.S.G.S., 2, no. 27.
- Owl Creek Mts.: Engel, A. E. J., 3.
- Shanton iron deposit: Frey, E., 1.
- Stratigraphic secs., Mesozoic: Love, J. D., 2.
- Wind River Mts., NW.: Baker, C. L., 1.
- Igneous minerals and rocks: Patton, L. T., 2; Shand, S. J., 2; Wahlstrom, E. E., 1.
- Igneous rocks and favorable structures: Johnston, W. D., Jr., 2.
- Illinois.
- State Geological Survey: Leighton, M. M., 2, 4.
- In war-minerals research: Leighton, M. M., 1.

Illinois—Continued.

Economic geology.

- Coal field diamond-drill explor.: Cady, G. H., 1.
 Daisy fluorite mine, Hardin Co.: Muir, N. M., 2.
 Developments, oil and gas, 1946: Bell, A. H., 3.
 Fluorite, zinc: Bishop, O. M., 1.
 Gray, Bautsch lead, zinc deposits: Zinner, P., 1.
 King oil field, Jefferson Co.: Folk, S. H., 1.
 Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Mattoon oil field: Kniseley, H. B., 1.
 Mineral industries, 1944-45: Voskuil, W. H., 1.
 Mineral reserves: Ill. G. S., 1.
 Novaculite and gravel for silica refractories: Parmelee, C. W., 1.
 Petroleum and gas developments, 1945-46: Bell, A. H., 2.
 Zinc-lead dist., NW.: Willman, H. B., 2.

Historical geology.

- Cherry Valley area: Smith, V. R., 1.
 Coal-field diamond-drill explor.: Cady, G. H., 1.
 Correlation, coal beds by plant fossils: Kosanke, R. M., 1.
 Cyclothem system, Penn. classn.: Cady, G. H., 2.
 Daisy fluorite mine, Hardin Co.: Muir, N. M., 2.
 Fluorite, Hardin Co.: Bishop, O. M., 1.
 Geologic map, cross-sections: Weller, J. M., 1.
 Gray, Bautsch lead, zinc deposits: Zinner, P., 1.
 King oil field, Jefferson Co.: Folk, S. H., 1.
 McLeansboro group coal beds, pollen corals.: Kosanke, R. M., 1.
 Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Mattoon oil field: Kniseley, H. B., 1.
 Preglacial erosion surfaces: Horberg, C. L., 1.
 Shoal Creek and Carlinville lss., age: Simon, J. A., 1.
 Zinc-lead dist., NW.: Willman, H. B., 2.

Mineralogy.

- Alton-Chester area mineral collecting: McClure, S. M., 1.
 Fluorite, zinc, mines: Bishop, O. M., 1.
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Gran Quivira quad.: Bates, R. L., 3.

Grey Eagle, Grandview, Royal John claims: Hills, R. S., 1.

Guadalupe Co.: Gorman, J. M., 1; U. S. G. S., 1, no. 44.

Harding deposits, Taos Co.: Soulé, J. H., 3.

Iron Mtn. tungsten deposits: Storms, W. R., 3.

Lithium-tantalum pegmatites: Jahns, R. H., 4.

Little Hatchet Mts.: Lasky, S. G., 3.

Los Pinos Mts.: Stark, J. T., 1.

Santa Rita copper mines: Kerr, P. F., 5.

Socorro Co., Jones iron deposit: Grantham, R. M., 1.

White Eagle fluorspar mine: Soulé, J. H., 2.

New York, Edwards, Balmat zinc mines: Brown, J. S., 3.

Lake Sanford area: Stephenson, R. C., 1.

Storm King granite, Bear Mtn.: Lowe, K. E., 4.

New York City, deep tunnels: Berkey, C. P., 2.

Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

Little Bay area: MacLean, H. J., 1.

North America, Gulf of St. Lawrence area: Twenhofel, W. H., 4.

North Carolina, Buck Creek corundum deposits: Ballard, T. J., 3.

Guilford Co.: Murdock, T. G., 3.

Halifax Co. molybdenum deposits: Robertson, A. F., 2.

Spruce Pine dist.: Olson, J. C., 1.

Northwest Territories, Camsell River area: Lord, C. S., 2.

Chalco Lake area: Stanton, M. S., 2.

Eldorado mine: Murphy, R., 1.

Indin Lake gold area: Lilge, E. O., 1.

Ross Lake area: Fortier, Y. O., 3.

Yellowknife dist.: Campbell, N., 2; Riley, C., 1.

Yellowknife-Beaulieu area: Fortier, Y. O., 1.

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- Nova Scotia, Barasos-Indian Brook area:
 Douglas, G. V., 4.
 Guysborough Co.: MacNeil, D. J., 2.
 Halifax xenoliths, contacts: Douglas, G. V., 2.
 Strait of Canso area: Ferguson, S. A., 2.
 Oil fields and oil traps: Illing, V. C., 1.
 Ontario, Bancroft area: Gummer, W. K., 1.
 Beatty Tp.: Armstrong, H. S., 1.
 Bryce area: Moorhouse, W. W., 3.
 Calumet Is. and mines: McLaren, D. C., 1.
 Cochenour Willans gold area: Nowlan, J. P., 1.
 Dome gold mine deposits: Holmes, T. C., 1.
 Eagle Lake area: Moorhouse, W. W., 2.
 Falconbridge nickel mine area: Davidson, S. C., 1.
 Hasaga gold mines: McLaren, D. C., 7.
 Helen iron mine: Kidder, S. J., 1.
 Kirkland Lake, Noranda-Val d'Or area: Thomson, J. E., 2.
 Little Long Lac "porphyry": Bruce, E. L., 2.
 Little Long Lac-Sturgeon River area: Horwood, H. C., 1.
 Lyndoch beryl deposit: McLaren, D. C., 3.
 McKenzie Is.-East Bay, Red Lake dist.: Bergman, H. J., 1.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Purdy Mica Mines, Ltd., Mattewan Tp.: Spence, H. S., 2.
 Red Lake area: Thomson, R., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
 Rush Lake gold mine: Hogg, N., 1.
 Rutherglen dist.: Keith, M. L., 1.
 Sudbury area: Cooke, H. C., 2.
 Timagami Lake area, NE.: Moorehouse, W. W., 1.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Township 47, Missinaibi area: Bruce, E. L., 3.
 Oregon, Coast Ranges, cent.: Baldwin, E. M., 1.
 Horse Heaven quicksilver mine: Lewis, F. E., 1.
 Perlite deposits, Wasco Co.: Allen, J. E., 2.
 Pennsylvania, Bucks Co. quarry: Weiss, J., 2.
 Quebec, Abitibi, Temiscamingue Cos.:ingham, W. N., 1.
 Bachelor Lake area: Longley, W. W., 3.
 Barraute area, Abitibi Co.: Tremblay, L. P., 3.

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- Quebec—Continued.
 Beauchastel Tp. W. half: Ambrose, J. W., 1.
 Bourlamaque, NW. Abitibi Co.: Norman, G. W. H., 1.
 Geologic map: Canada G. S., 1.
 Canton Carpentier, Abitibi: Tiphane, M., 1.
 Descriptive geology: Dresser, J. A., 1.
 Desvaux Lake area, Dasserat Tp.: Auger, P. E., 2.
 Eastern Tps., serpentine belt epigenesis: Faessler, C., 3.
 Gaspé, oil residuals, volcanic rocks: Alcock, F. J., 1.
 Lacorne area: Tremblay, L. P., 1, 2.
 Major faults, Abitibi region: Norman, G. W. H., 5.
 North shore St. Lawrence area: Claveau, J., 1.
 Northeast Dubuisson: Norman, G. W. H., 4.
 Orford area chromite: Fortier, Y. O., 2.
 Pershing area, Abitibi Co.: Norman, G. W. H., 7.
 Perthite as age indicator: Faessler, C., 1.
 Quebec Central Ry. area: Dawson, A. S., 1.
 Siscoe mine area, Abitibi-East: Auger, P. E., 1.
 Tonnancourt-Holmes area, Abitibi Co.: Longley, W. W., 1.
 Vauquelin area, Abitibi Co.: Norman, G. W. H., 6, 8.
 Wetetnagami Lake and River areas: Fairbairn, H. W., 1; Graham, R. B., 1.
 Rhode Island, NE.: Quinn, A., 1.
 Salt intrusions: Guyod, H. C., 1.
 Saskatchewan, Athabaska Lake area: Sask. Dept. Nat. Res., 1.
 Cypress Lake area: Furnival, G. M., 1.
 Rottenstone Lake area: Mawdsley, J. B., 1.
 Source of ores: Thompson, G. A., 1.
 South Dakota, Keystone area: Norton, J. J., 1.
 Metallic min. deposits: Fischer, R. P., 2; U. S. G. S., 3, no. 13.
 Structural geology: Nevin, C. M., 1.
 Terrestrial dynamics: Willis, B., 2.
 Texas, Buck Hill quad.: Goldich, S. S., 3.
 Central mining area: Barnes, V. E., 3, 4.
 Llano iron deposits: Evans, A. M., 2.
 United States, Missouri Valley area: U. S. G. S., 3, no. 1.
 North Appalachian structures: Hietanen, A., 2.
 North Gulf Coastal Plain: Moody, C. L., 3.
 Rocky Mtn. oil and gas fields: Dobbin, C. E., 1, 2.
 Tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
 Tungsten mineralization: Kerr, P. F., 1.

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- Utah, Alta dist. scheelite deposits: Crawford, A. L., 1.
 Drum Mtn. manganese deposit: King, W. H., 1.
 Granite Peak area: Ives, R. L., 8.
 Henry Mts. area: Hunt, C. B., 1.
 Iron Co. iron deposits: Young, W. E., 1.
 Iron Springs dist. deposits: Mackin, J. H., 2.
 Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Little Cottonwood area: Ives, R. L., 3.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Ophir Hill Consolidated mine: Wideman, F. L., 1.
 Tintic dist.: Kildale, M. B., 1.
 White Horse alunite deposits: Willard, M. E., 1.
 White Pine Canyon near Alta: Buranek, A. M., 2.
 Wilcat Mts. fluorspar deposits: Buranek, A. M., 4.
 Vermont, Ascutney Mtn.: Hooker, M., 1.
 Derby area plutonites: Maynard, J. E., 2.
 Strafford quad.: Jacobs, E. C., 1.
 Virginia, Catoclin fm. cent. Va.: Bloomer, R. O., 2.
 Central Blue Ridge core: Bloomer, R. O., 3.
 Piney River ilmenite: Davidson, D. M., 2.
 Rockbridge Co. tectonic shale intrus.: Bloomer, R. O., 1.
 Washington, Anderson zinc-lead prospect: Lorain, S. H., 2.
 Bi-Metallic Mtn. molybdenum deposit: Storch, R. H., 1.
 Methow quad. and Valley rocks: Barksdale, J. D., 2, 3.
 Mt. Rainier Nat. Park: Danner, T., 2.
 Stevens Co., Farmer prospect: Reed, G. C., 4.
 Sultan Basin deposits: Carithers, L. W., 1.
 Wisconsin, Defense zinc mines, Iowa Co.: Lincoln, F. C., 2.
 Wyoming, Absaroka volcanic field, Big-horn Basin: Rouse, J. T., 1.
 Iron Mtn. deposits, Albany Co.: Frey, E., 2.
 Shanton iron deposits, Albany Co.: Frey, E., 1.
 Invertebrata (general). See also the various classes of invertebrates.
 American-European, Missn.: Moore, R. C., 4.
 Arizona, Coal Mine Canyon: Brady, L. F., 1.
 Coconino ss. tracks: Brady, L. F., 2.
 Arthropoda in onyx marble, N. Ariz.: McKee, E. D., 2.
 British Columbia, Pardonet Hill, Trias.: McLearn, F. H., 3.
 California, Gaviota to Santa Maria: Hughes, A. W., 1.

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- California—Continued.
 Rancho La Brea, Pleist. fossils: Stock, C., 1.
 Distribution, fossil fresh-water mollusks: Yen, T.-C., 7.
 Gastropod protoconchs: Smith, B., 1.
 Greenland, Kronprins Christians Land: Neilsen, E., 1.
 Illinois, Alton-Chester area, collecting: McClure, S. M., 1.
 Silurian fauna, Thomas A. Greene Mem. Mus.: Greacen, K. F., 1.
 Mexico, Bolson de Mapimi area: Estlack, J. C., 1.
 New Mexico, Nacimiento, San Pedro Mts., adjacent plateaus: U.S.G.S., 1, no. 57.
 North America, Gulf of Mexico, catastrophism: Gunter, G., 3.
 Pennsylvanian problems and correlations: Wanless, H. R., 2; Weller, J. M., 2.
 Phylogenetic terms, analysis redefinitions: Haas, O., 4.
 Progress, paleont. research, Pacific Coast, 1917-44: Stock, C., 4.
 Quebec, Simard area, Chicoutimi Co.: Denis, B. T., 1.
 Techniques in paleont. studies: Rasetti, F., 7.
 Texas, Glass Mts., Perm.: Cooper, G. A., 2.
 United States, Atlantic Coastal Plain deepwell fauna: Richards, H. G., 3.
 West Virginia, Pocahontas Co. paleont. notes: Tilton, J. L., 1.
 Iodine.
 Guatemala, Magdalena: Manó, J. C., 3.
 South Carolina, sources, distrib. in soil, rocks: Mitchell, J. H., 1.
 Iowa.
 Sediment deposition, Iowa River at Iowa City: Péwé, T. L., 1.
 Turbidity errors, stream sediment discharge: Benedict, P. C., 1.
 Economic geology.
 Forest City Basin devel.: U.S.G.S., 1, no. 48.
 Resources, mineral: Hershey, H. G., 1; Midwest Research Inst., 1.
 Historical geology.
 Glacial, glacio-fluvial, glacio-eolian deposits: Hobbs, W. H., 5.
 Pleistocene problems: Trowbridge, A. C., 3.
 Paleontology.
 Cardiocarpon, Carb. seed: Reed, F. D., 1.
 Coal balls: Andrews, H. N., Jr., 2.
 Conodonts, Sheffield Dev. fm.: Youngquist, W. L., 3.
 Sweetland Creek Dev. shale: Miller, A. K., 16; Youngquist, W. L., 5.
 Upper Devonian: Youngquist, W. L., 3.
 Corals, Independence shale: Stainbrook, M. A., 1.
 Medullosa, Des Moines Carb. coal ball: Andrews, H. N., Jr., 1.
 Pachyvera from coal ball, Oskaloosa: Hoskins, J. H., 1.

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- Plant microfossils, Carb.: Wilson, L. R., 1.
Seeds, Carb., from coal balls: Kern, E. M., 1.

Petrology.

- Clay minerals in soils: Peterson, J. B., 1.
Glacial, glacio-fluvial, glacio-eolian deposits: Hobbs, W. H., 2.
Mankato drift plain, low moraines and types: Gwynne, C. S., 1.

Physical geology.

- Glacial history, reinterpretation: Hobbs, W. H., 3.
Ventifacts, pebble band, Linn Co. till: Wilson, L. R., 2.

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Iowan drift border, NW. Iowa: Smith, G. D., 1.
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Nebraskan, Kansan glacial lobes: Hobbs, W. H., 2.
Pleistocene problems: Trowbridge, A. C., 3.
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Underground water.

- Ground-water invs.: Hershey, H. G., 2.
Irazú Volcano, Costa Rica, eruption: Stocking, H. E., 1.

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Iron.

- Alabama, Red Mtn. fm. deposits: Burchard, E. F., 1.
Alaska, chromite deposits, Red Mtn., Kenai Penin.: Rutledge, F. A., 1.
Copper-sulfur deposits, Prince of Wales Is.: Fosse, E. L., 1.
Poor Man mine, Prince of Wales Is.: Holt, S. P., 1.
Prince of Wales Is., Jumbo Basin mine: Wright, W. S., 1.
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Arizona, Apache deposit, Navajo Co.: Stewart, L. A., 1.
New Planet mine, Yuma Co.: Cummings, J. B., 2.
Arsenides: Holmes, R. J., 1.
British Columbia, Ashcroft area: Duffell, S., 2.
Highland-Bell mine ores: Staples, A. B., 2.
Manson Creek, Cassiar dist.: Canada G. S., 1.
Nicola, Kamloops, Yale dists., min. res.: Canada G. S., 4.
California, Bessemer mines, San Bernardino Co.: Wiebelt, F. J., 1.
Gorman tin dist.: Wiese, J. H., 1.
Hardpan, claypan in San Joaquin soil: Nikiforoff, C. C., 1.
Hirz Mtn. deposit: Lamey, C. A., 1.

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- Iron Hat deposits, Shasta Co.: Lamey, C. A., 1.
Minarets deposit: Severy, C. L., 2;
Trask, P. D., 2.
Shasta, California deposits: Lamey, C. A., 1.
Ship Mtn. deposit: Lamey, C. A., 1.
Vulcan mine, San Bernardino Co.: Lamey, C. A., 1.
Canada, Central Labrador-New Quebec deposits: Retty, J. A., 1.
Exploration, prosp. to increase mineral output: Hoffman, R. D., 1.
Geophysical prosp.: Koulomzine, T., 2.
Keith Tp. devels.: Hogg, N., 2.
Colorado: Vandervilt, J. W., 5.
San Juan mining dist.: Burbank, W. S., 6, 7.
Upper Blue River area: Singewald, Q. D., 3.
Cuba, minerals: Calvache, A., 1.
Functions in evolution of life: Francis, W. D., 1.
Greenland, basaltic rocks, East: Krokström, T., 1.
Ore minerals: Pauly, H., 1.
Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
Alta, Baja Verapaz, Quiché, Depts.: Manó, J. C., 2.
Idaho, Last Chance-Hornsilver mines: Anderson, A. L., 5.
Iowa, min. res.: Hershey, H. G., 1.
Lake Superior type deposits, origin: Moore, E. S., 3.
Maine, Katahdin pyrrhotite deposit: Miller, R. L., 1.
Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 2.
Melillites, iron-bearing in quaternary system: Schairer, J. F., 2.
Meteorites: Mehl, R. F., 1.
Composition: Brown, H. S., 1; Buddhue, J. D., 1, 6.
Mexico, Chihuahua min. res.: González Reyna, J., 3-a.
Durango, El Cuarenta min. zone: Pérez Siliceo, R., 1.
Estado Aguascalientes: Lopez G., F., 1.
Magnetic pisolites: Vincienne, H., 1.
Northern group: Toron Villegas, L., 1.
Typical deposits: González Reyna, J., 12.
Urique min. zone, Chihuahua: González Reyna, J., 7.
Zacatecas, reserves: González Reyna, J., 2.
Michigan, Crystal Falls-Alpha dist., Iron Co.: Pettijohn, F. J., 1.
Ice Lake-Chicagon Creek area poss.: James, H. L., 2.
Marquette, Gogebie ranges: Gruner, J. W., 3.
Mineral collecting locs.: Parsons, W. H., 1.
Mineral res.: Zuidema, H. P., 2.

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- Minnesota, Mesabi range: Gruner, J. W., 1; Jones, R. H. B., 1.
 Miquelon, min. res.: Aubert de la Rue, E., 1.
 Missouri, Alice zinc mine, Ozark Co.: Needham, A. B., 1.
 Bourbon magnetic anomaly, Crawford, Co.: McMillan, W. D., 1.
 Montana, Chateau deposits: Wimpler, N. L., 2.
 Running Wolf dist.: Goodspeed, G. E., 2.
 Southern Cross deposits: Wimpler, N. L., 1.
 Mount Andrew iron deposit, Kasaan Penin., Alaska: Wright, W. S., 3.
 Nevada, Buena Vista deposit, Churchill Co.: Kral, V. E., 6.
 Eureka Corp'n. mines: Binyon, E. O., 1.
 McCoy deposit, Lander Co.: Kral, V. E., 1.
 Modarelli deposit: Kral, V. E., 3.
 Nye Co. deposit: Kral, V. E., 2.
 Segerstrom-Heizer mine, Pershing Co.: Kral, V. E., 5.
 Steamboat Springs minerals: Gianella, V. P., 3.
 New Hampshire, ludlamite: Wolfe, C. W., 1.
 New Jersey, Sussex Co. mines: Lynch, V. J., 1.
 New Mexico, Gallinas Mts. and dist.: Kelley, V. C., 4, 6.
 Jones deposit, Socorro Co.: Grantham, R. M., 1.
 Lincoln Co. deposits: Sheridan, M. J., 1.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Mineral res.: Benjovsky, T. D., 3.
 New York, Adirondack Mts., Ti-Fe relations in magmatic processes: Ev-rard, P., 1.
 Clinton hematite ores, diagenesis: Al-ling, H. L., 2.
 Lake Sanford area: Stephenson, R. C., 1.
 Magnetic explor., Adirondack iron ore: Hawkes, H. E., Jr., 4.
 Star Lake area: Millar, W. T., 1; Reed, D. F., 1.
 Newfoundland, Bell Island deposits: Hayes, John J., 1.
 North Carolina, Cherokee deposits: Rob-ertson, A. F., 1.
 Spruce Pine dist.: Olson, J. C., 1.
 Northwest Territories poss.: Denis, H. T., 1.
 Ohio, min. res.: Stout, W. E., 1, 3.
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 Helen mine: Kidder, S. J., 1.
 Iron Is., Lake Nipissing hematite boul-ders: Knight, C. W., 1.
 McKenzie Is.-East Bay, Red Lake dist.: Bergman, H. J., 1.
 Northwest, prosp.: Bartley, M. W., 1.
 Parry Sound area: Satterly, J., 1.
 Rush Lake gold mine: Hogg, N., 1.

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 Steeprock Lake ore: Tanton, T. L., 2.
 Timagami Lake area: Moorhouse, W. W., 1.
 Oregon, Columbia Co. mines: Kelly, J. V., 2.
 Dayton soils concretions: Drosdorff, M., 1.
 Northwest, ferruginous bauxite deposits: Libbey, F. W., 1.
 Oregon - Washington, Columbia River sands: Kelly, J. V., 1.
 Ores, formation: Sanger, A., 1.
 Pennsylvania, fire clays, minerals: Leath-am, E., 1.
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 Smicksburg quad.: Shaffner, M. N., 1.
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 Quebec, diamond drilling: Jones, G., 1.
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 St. Pierre, min. res.: Aubert de la Rue, E., 1.
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 South Dakota, metallic min. deposits: Fischer, R.P., 2; U.S.G.S., 3, no. 13.
 Tennessee, Chamberlain-Barnardville mine: McMaster, P. D., 1.
 Churchillwell-Robinette mines: Warner, A. H., 1.
 Eve Mills area, Monroe Co.: Dunlap, J. C., 1.
 Texas, Llano uplift area: Evans, A. M., 2.
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 Rusk area, Cherokee Co.: Evans, A. M., 3.
 Texas-Oklahoma, Trinity River area: Weis-senborn, A. E., 1.
 United States, future needs: Hotchkiss, W. O., 1.
 Lake Superior dist.: Davis, E. W., 1.
 Mineral res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Missouri Valley area: Dow, D. H., 1; U. S. G. S., 3, no. 1.
 Reserves: Park, C. F., Jr., 2.
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 Utah, Alta dist. scheelite deposits: Craw-ford, A. L., 1.
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 Volatile transfer in effusives and in-trusives: Lane, A. C., 5.
 Washington, Buckhorn Mtn. dist.: Zoldok, S. W., 1.
 Sultan Basin deposits: Carithers, L. W., 1.
 Wisconsin, Coughlin, Galena Level zinc mines: Berliner, M. H., 1.

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Defense zinc mines, Iowa Co.: Lincoln, F. C., 2.

Gogebic range iron fms.: Zinner, P., 2.

Wyoming, Good Fortune mine: Frey, E., 4.

Hartville dist.: Frey, E., 3.

Iron Mtn. deposits, Albany Co.: Frey, E., 2.

Shanton deposit: Frey, E., 1.

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Iron-bearing melilitites: Schairer, J. F., 2.

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Arizona, E. part Grand Canyon: Van Gundy, C. E., 1.

California, Aliso Canyon oil field: Leach, C. E., 1.

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Coalinga oil field: Kaplow, E. J., 1.

Del Valle, Ramona oil fields: Matter, J. E., 1.

Oak Canyon oil field: Bell, G. R., 1.

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Pico anticline: Arleth, K., 1.

Raisin City oil field: Sloat, J., 2.

Shiells Canyon area, Bardsdale field: Bailey, W. C., 1.

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Colorado, Gramp's oil field: Waldschmidt, W. A., 1.

Model anticline, Las Animas Co.: Bass, N. W., 3; U. S. G. S., 1, no. 68.

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Guthrie field, Okla.: Swan, B. G., 3.

Illinois, King oil field: Folk, S. H., 1.

Marine pool, Madison Co.: Lowenstam, H. A., 1.

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Louisiana, Delhi field: Bloomer, P. A., Jr., 1.

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Michigan, Traverse group, Mich. Basin: Cohee, G. V., 2; U. S. G. S., 2, no. 28.

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New Mexico, Rattlesnake field: Hinson, H. H., 1.

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Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.

Delaware Childers oil field: Johnston, K. H., 1.

West Edmond field: McGee, D. A., 1.

Ontario, Windsor-Sarnia area: Caley, J. F., 1.

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Pennsylvania, high-calcium ls. deposits: Swain, F. M., 1.

Lackawanna Basin origin: Willard, B., 1.

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Rangely oil and gas field, Colo.: Bench, B. M., 2.

Rhode Island, Providence area: Roberts, C. M., 1, 2.

Sunniland oil field, Fla.: Pressler, E. D., 1.

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Wood Co., Hawkins field: Wendlandt, E. A., 1.

United States, Berea, Corry, Cussewago ss. relations: de Witt, W., Jr., 1; U. S. G. S., 2, no. 21.

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Wyoming, East Lance Creek, Little Buck Creek oil fields: Swan, B. G., 2.

Elk Basin anticline oil field: McCabe, W. S., 1.

Frannie oil field, Park Co.: Brainerd, A. E., 1.

Grass Creek oil field: McCanne, R. W., 1.

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Distribution, oceans and continents: Longwell, C. R., 3.

Earth's crust: Alexander, J., 1.

General: Bowie, W., 1.

Geoid study: Heiskanen, W., 1.

- Isostructural relationships, AlPO_4 and SiSiO_4 :**
 Gruner, J. W., 4.
- Isotope ratios, age of marine sediments:**
 Wickman, F. E., 1.
- Jacob Boll's collecting, Tex. Perm.:** Geiser, S. W., 1.
- Jacob Staff, measurements of strat. sequences:**
 Broggi, J. A., 1.
- Jade.**
 California, Monterey Co. coast: Henley, R. F., 1.
 Magic and lore: Dake, M., 1.
 Mineral collecting, Wash. - Oreg. - Wyo.: Bateman, E. S., 1.
 Wyoming, found in 1936: Dake, H. C., 5.
 Green: Branham, A. W., 1, 2.
 Lander area: Dake, H. C., 8; Anonymous, 20.
- Jamaica. See also West Indies.**
Historical geology.
 Kingston dist.: Matley, C. A., 1.
- Paleontology.*
 Fossils in laterite and bauxite: Shrock, R. R., 8.
 Pleurodonite, Miocene, Bowden area: Kimball, D., 1.
- Petrology.*
 Aluminum lateritic ore: Bramlette, M. N., 2.
- Jamesonite, W., Canada:** Warren, H. V., 6.
- Jarahueco oil and gas field, Cuba:** Noguera, M. A., 1.
- Jarlite, study of:** Ferguson, R. B., 3.
- Jasper.**
 California, Alpine Co. collecting: Nicholas, J. B., 1.
 Coyote Point: Lisle, T. O., 5.
 Eagle Crags collecting area: Henry, D. J., 2.
 Kern Co. collecting: Henry, D. J., 3.
 Mineral collecting locs.: Hagar, D., 1.
Haiti, Jacmel area: Goddard, E. N., 4.
 Manganese deposits: Goddard, E. N., 2, 3.
 Montagnes de la Hotte poss.: Burbank, W. S., 1.
 Origin of deposits, S. penin.: Burbank, W. S., 2.
 Idaho, gem: Fernquist, C. O., 1.
 Kansas, crystals, locs.: Graffham, A. A., 2.
 Ontario, Jasper conglomerate: Bay, J. W., 1.
 Vermont, Milton area: Rex, R., 2.
 Washington, Olympic Mts. min. collecting: Danner, T., 1.
- Job of the geophysicist:** Anonymous, 19.
- Jointing and joints.**
 Alaska, Prince of Wales Is., Jumbo Basin mine: Wright, W. S., 1.
 Anderson Ranch Dam, Boise River, Idaho: Okeson, C. J., 1.
 British Columbia, Porcher Is. ore deposits: Smith, A., 2.
 Surf Point, Edye Pass mines: Smith, A., 1.
 California, Sierra Nevada, S.: Mayo, E. B., 1.
- Jointing and joints—Continued.**
 California—Continued.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 Colorado, Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Cuba, Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Fracture patterns in rocks: Bucher, W. H., 6.
 Georgia, Nottely Dam area: Kellberg, J. M., 2.
 Haiti, surficial breccias from Eocene ls.: Shrock, R. R., 3.
 Idaho, Blackbird dist.: Anderson, A. L., 3.
 Snake-Salmon Rivers area: Wagner, W. R., 1.
 Indiana, Spring Mill State Park: Anonymous, 29.
 Maine, Columbia Falls quad.: Terzaghi, R. D., 1.
 Massachusetts, gneiss dome, Shelburne Falls: Balk, R., 1.
 Mexico, Cuarento dist.: Gallagher, D., 1.
 Michigan, Pine Creek area: Higgins, J. W., 1.
 New Albany shale: Campbell, G., 1.
 New Hampshire, Lost River, Flume gorges, effect: McNair, A. H., 1.
 Stoddard fluorite mine: Bardill, J. D., 1.
 New Jersey, Martinsburg slate cleavage devel.: Broughton, J. G., 1.
 New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 Lake Sanford area: Stephenson, R. C., 1.
 Shawangunk Mtn. lakes: Myers, R. E., 1.
 Storm King granite, Bear Mtn.: Lowe, K. E., 4.
 North Carolina, Fontana Dam area: Moncymaker, B. C., 2.
 Ohio, scenic geol.: Carman, J. E., 1.
 Ontario, Tp. 47, Missinaibi area: Bruce, E. L., 3.
 Ore deposits and geologic age: Miholić, S., 1.
 Puerto Rico, Dos Bocas Dam: Money-maker, B. C., 3.
 Quebec, Wetnetnagami Lake area: Graham, R. B., 1.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
 South Dakota, Sioux Falls area: Rothrock, E. P., 3.
 Structural geology: Nevin, C. M., 1.
 Tennessee, Hales Bar Dam foundation: Frink, J. W., 1.
 United States, N. Appalachian structures: Hietanen, A., 2.
 Utah, Henry Mts.: Hunt, C. B., 1.
 Three Peaks laccolith: Mackin, J. H., 4.
 Zion Nat. Monument: Gregory, H. E., 1.
 Virginia, Giles Co.: Krinitzsky, E. L., 1.
 Washington, Metaline dist.: Sampson, E., 1.
 Ross Dam area: Coombs, H. A., 1.
 Jordanite, Clark Fork dist., Idaho: Anderson, A. L., 2.

Joseite, W. Canada: Warren, H. V., 6.

Junior homonyms, new names: Anonymous, 50.
Jurassic. See also Paleontology, *Jurassic*.

Alabama, Vick fm., Coastal Plain: Conant, L. C., 1.

Alaska, Iniskin-Chinitna Penin.: Kellum, L. B., 2.

Mountain View tungsten deposit, Hyder: Erickson, A. W., 1.

Southeast, molybdenite deposits: Twenhofel, W. S., 1.

Southwest, oil poss.: Kellum, L. B., 3.

Alberta, Brûlé area: Canada G. S., 1; Lang, A. H., 1.

Cripple Creek area: Erdman, O. A., 1.

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

Highwood-Elbow area: Allan, J. A., 2.

Jurassic-Cretaceous boundary: Brown, R. W., 3.

Langford Creek area: Douglas, R. J. W., 2.

Moberly Creek area: Lang, A. H., 2.

Saunders map area: Canada G. S., 1.

Arizona, Coal Mine Canyon: Brady, L. F., 1.

Bighorn Basin, Mont.-Wyo.: Downs, G. R., 1; Thom, W. T., Jr., 2.

British Columbia, Ashcroft area: Duffel, S., 1, 2.

Carbon Creek-Mount Bickford area: Mathews, W. H., 2.

Coast Range batholith: Phemister, T. C., 1.

Electrum-ruby silver deposit, East Gold mine: Fawley, A. P., 1.

Kootenay Lake origin: Schofield, S. J., 1.

McConnell Creek area: Lord, C. S., 1.

Manson Creek, Cassiar dist.: Canada G. S., 1.

Nanaimo coal field: Buckham, A. F., 1, 2.

Nicola, Kamloops, Yale dists.: Canada G. S., 1.

Northern: Armstrong, J. E., 2.

Porcher Island: Smith, A., 2.

Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.

Salmon Arm area: Rice, H. M. A., 1.

South half Aiken Lake area: Armstrong, J. E., 1.

Surf Point, Edey Pass mines: Smith, A., 1.

Texada Island: Mathews, W. H., 1.

California, basement oil production poss.: Cabeen, W. R., 1.

Channel Island region: Clements, T. D., 2.

Coast Ranges chromite deposits: Dow, D. H., 2.

Cuyamaca Peak quad.: Everhart, D. L., 2.

East Mayacmas dist. quicksilver deposits: Yates, R. G., 1.

Gaviota to Santa Maria: Hughes, A. W., 1.

Gorman tin dist.: Wiese, J. H., 1.

Jurassic—Continued.

California—Continued.

Hirz Mtn. iron deposit, Shasta Co.: Lamey, C. A., 1.

Julian-Cuyamaca area: Creasey, S. C., 1.
Kern River Basin, Sierra Nevada: Webb, R. W., 1.

Kramer borate dist.: Gale, H. S., 1.

Los Angeles Basin: Driver, H. L., 1; Wissler, S. G., 2.

Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.

Minarets deposits, Madera Co.: Severy, C. L., 2.

New Idria dist. quicksilver deposits: Eckel, E. B., 1.

North Elder Creek area chromite: Rynearson, G. A., 1.

Palos Verdes Hills: Woodring, W. P., 1.
Reef Ridge, Coalinga dist.: Stewart, R. B., 1.

Ridge Route area: Loel, W., 1.

San Juan Bautista quad.: Allen, J. E., 3.
Santa Maria dist.: Hughes, A. W., 3.

Shasta, California deposits: Lamey, C. A., 1.

Sierra Nevada-Death Valley section: Hopper, R. H., 1.

Southern, crystalline rocks: Miller, W. J., 1.

Southern Sierra Nevada, structure: Mayo, E. B., 1.

Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.

Ventura Basin: Bailey, T. L., 2.

West Mayacmas dist.: Bailey, E. H., 1.

Canada, Rocky Mts.: Williams, M. Y., 2.

Western, limestones: Goudge, M. F., 1.

Caribbean Sea area: Bucher, W. H., 2.

Central America, geol. map: Mullerried, 1.

Colorado, Baca Co., Freezeout Creek fault area: Buehler, K. M., 1.

Big Four zinc-silver mine, Summit Co.: McCulloch, R. B., 1.

General: Vanderwilt, J. W., 5.

Golden-Morrison area: LeRoy, L. W., 1.

Gramp's oil field, Archuleta Co.: Waldschmidt, W. A., 1.

La Plata dist.: Eckel, E. B., 2.

Mineral Point, Poughkeepsie, Upper Un-

compahgre dists.: Kelley, C. V., 1.

Rangely oil and gas field: Bench, B. M.,

1; Bosco, F. N., 1; Pickering, W. Y.,

1; U. S. G. S., 1, no. 67.

Rico mining dist.: Varnes, D. J., 2.

San Juan region: Burbank, W. S., 6, 7.

Silverton volcanic center: Burbank, W. S., 9.

Snowmass Mtn. area: Vanderwilt, J. W., 6.

Uncompahgre mining dist., Ouray Co.: Burbank, W. S., 8.

Vanadium deposits: Fischer, R. P., 3, 4.

Correlation revision, Utah-Ariz., N. Mex.-

Colo.: Baker, A. A., 3.

Cross-section, subsurface, Ness Co., Kans.-

Lincoln Co., Colo.: Maher, J. C., 1.

Jurassic—Continued.

Cross-section—Continued.

Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.

Cuba, Camagüey dist. fauna and stratigraphy: Albear y Franquiz, J. F. de, 1.

Geologic map: Brodermann y Vignier, J., 2.

Soils: González, A. de J., 1.

Florida: Pressler, E. D., 1.

Western: SE. Geol. Soc., 1.

Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.

Greenland, East: Kleiber, K., 1; Maync, W., 1; Rosenkrantz, A., 1; Stauber, H., 2; Vischer, G. A., 2.

Jamesonland lowlands: Stauber, H., 1.

Northeast: Ahlmann, H. W., 1; Backlund, H. G., 1; Bierther, W., 1.

Scoresbyland: Bierther, W., 1.

Scoresby Sound area: Rothé, J. P., 1.

Gulf of Mexico region: Imlay, R. W., 1.

Idaho, geol. map: Ross, C. P., 1.

Teton County coal deposits: Staley, W. W., 1.

Louisiana, Delhi field: Bloomer, P. A., Jr., 1.

Manitoba, geol. map: Canada G. S., 1.

Mexico, Altar dist., Sonora: Arellano, A. R. V., 2.

Antimony deposits, San Juan, Oaxaca: Guiza, R., Jr., 1; White, D. E., 2.

Caborca area, Sonora: Cooper, G. A., 1.

Chihuahua min. res.: González Reyna, J., 3-a.

Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.

Conchos Valley, Chihuahua: King, R. E., 2.

Iron deposits, N. group: Toron Villegas, L., 1.

Nuevo León: Mullerried, 6.

Plateau: Nye, S. S., 1.

State of Zacatecas: González Reyna, J., 2.

Mississippi, Tinsley field: Shroeder, F. R., 1.

Montana Cat Creek oil field: Perry, E. S., 2.

Cut Bank-West Kevin fields: Erdmann, C. E., 2; U. S. G. S., 8.

Great Plains sed. rocks: Perry, E. S., 1.

Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.

Jurassic-Cretaceous boundary: Brown, R. W., 3.

Kevin-Sunburst oil fields: U. S. G. S., 12, 13.

North Big Belt Range: Lyons, J. B., 1.

Petroleum geology: Emrick, E. R., 1.

Plains structure map: Dobbin, C. E., 3.

South-central, Paleozoic, Mesozoic rocks: Gardner, L. S., 1.

Montreal, Canada: Clark, T. H., 1.

Nevada, S., Aztec ss. bleaching: Longwell, C. R., 5.

Jurassic—Continued.

New Hampshire, Plymouth quad.: Moke, C. B., 1.

Mt. Washington quad.: Billings, M. P., 1.

New Jersey, Piedmont, Coastal Plain post-Trias. devel.: Thom, W. T., Jr., 4.

New Mexico, Capitan quad.: Sidwell, R., 1.

Guadalupe Co.: U. S. G. S., 1, no. 44.

Lower Rio Puerco area: Wright, H. F., Jr., 1.

Lucero uplift: U. S. G. S., 1, no. 47.

Nacimiento, San Pedro Mts. area: U. S. G. S., 1, no. 57.

Quay Co., NW.: Dobrovolsky, E., 1; U. S. G. S., 1, no. 62.

Rattlesnake field, San Juan Co.: Hinson, H. H., 1.

North Dakota, Nesson anticline: Laird, W. M., 1.

Oregon, Mount Reuben min. dist.: Youngberg, E. A., 1.

Saskatchewan, Cypress Lake area: Furnival, G. M., 1.

South Dakota, Missouri Valley: Petsch, B. C., 1.

Western, deep well borings: Baker, C. L., 2.

Texas, Carthage gas field: Foster, F. K., 1.

Occurrence, oil and gas: Sellards, E. H., 3.

United States, Black Hills area correl.: Imlay, R. W., 2.

Continental shelf explor.: Leë, F. W., 1.

East Gulf Coast oil poss.: Todd, J. D., 2.

Mississippi River Valley, lower: Fisk, H. N., 1.

Rocky Mtn. area, oil and gas fields:

Dobbin, C. E., 1, 2, 4.

Petroleum pos.: Bartram, J. G., 1.

Utah, Cedar City, Parowan Valley: Thomas, H. E., 2.

Central: Spieker, E. M., 1.

Duchesne River area: U.S.G.S., 1, no. 75.

Green River Desert-Cataract Canyon area: Baker, A. A., 1; U.S.G.S., 1, no. 55.

Henry Mts.: Hunt, C. B., 1.

Iron deposits, Iron Co.: Young, W. E., 1.

Mineral Range tungsten deposits: Crawford, A. L., 3.

Pavant Range, Millard Co.: Dennis, P. E., 1; Maxey, G. B., 1.

San Juan oil field: Colton, R. E., 2.

Uinta Mts. stratigraphy: Thomas, H. D., 1.

Wasatch Mts., Provo area: Baker, A. A., 1; U. S. G. S., 2, no. 30.

Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.

Zion Nat. Monument: Gregory, H. E., 1.

Zion Park hinterland: Ives, R. L., 19.

Washington-Oregon biostratigraphy: Beck, R. S., 1.

West Indies, Greater Antilles: Meyerhoff, H. A., 3.

Jurassic—Continued.

- Wyoming, Bargee area, Fremont Co.: U. S. G. S., 1, no. 56.
 Central, strat. secs.: Love, J. D., 2.
 Jackson Hole area Ranges: Wanless, H. R., 5.
 Lander area: Branham, A. W., 1.
 Oregon Basin oil field: Walton, P. T., 3.
 Sage Creek dome area: U. S. G. S., 1, no. 53.
 Wind River Basin, S.: U. S. G. S., 1, nos. 51, 60.
 Wind River Mts., N.W.: Baker, C. L., 1.
 Kames, Stafford Springs area, Conn.: White, S. E., 1.

Kansas.

Areas described.

- Grant, Haskell, Stevens Cos.: McLaughlin, T. G., 2.

Economic geology.

- Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Cemented ss., Dakota, Kiowa fms.: Swineford, A., 3.
 Coal: Abernathy, G. E., 1, 2; Schoewe, W. H., 1.
 Construction materials, Trego Co.: Byrne, F. E., 1.
 Cross-sections, subsurface, Ford Co., Kans.-Dallam Co., Tex.: Edson, F. C., 1.
 Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Crude oils and stratigraphy: Tulsa G. Soc., 1.
 Exploration for oil and gas, W. Kans., 1945-46: Ver Wiebe, W. A., 1.
 Forest City Basin devel.: U. S. G. S., 1, no. 48.
 Genesee uplift: Clark, S. K., 1.
 Hugoton gas field: Morgan, L. C., 1.
 Kinderhook dolomite: Ver Wiebe, W. A., 2.
 Kraft-Prusa oil field: Walters, R. F., 3.
 Petroleum, gas devels.: Jewett, J. M., 1.
 Resources: Frye, J. C., 1: Kans. Industr. Devel. Comm., 1; Midwest Research Inst., 1.

Salt beds: Taft, R., 1.

Siluro-Devonian, cent. Kans.: Taylor, M. H., 1.

Historical geology

- Arbuckle dolomite: Clair, J. R., 1.
 Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Buried pre-Cambrian hills: Walters, R. F., 2.
 Coal, reserves: Abernathy, G. E., 2.
 Strip mines, SE.: Abernathy, G. E., 1.
 Wabaunsee group, E. Kans.: Schoewe, W. H., 1.
 Construction materials, Trego Co.: Byrne, F. E., 1.
 Crawford Co., SE.: Dryer, R. M., 3.
 Cretaceous, Belvidere area: Latta, B. F., 1.

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Historical geology—Continued.

- Cross-sections, subsurface, Ford Co., Kans.-Dallam Co., Tex.: Edson, F. C., 1.
 Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 2.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Crude oils and stratigraphy, relationship: Neumann, L. M., 1; Tulsa Geol. Soc., 1.
 Dakota, Kiowa fms.: Swineford, A., 3.
 Elm Creek Valley, Barber Co.: Williams, C. C., 1.
 Genesee uplift: Clark, S. K., 1.
 Grant, Haskell, Stevens Cos., geology, ground water: McLaughlin, T. G., 2.
 Ground water, Arkansas River Valley: Williams, C. C., 2.
 Indian Cave ss., Pottawatomie Co.: Harned, C. H., 1.
 Kanopolis Dam site: Happ, S. C., 5.
 Kinderhook dolomite, Sedgwick Co.: Carmody, R. A., 1; Ver Wiebe, W. A., 2.
 Kraft-Prusa oil field: Walters, R. F., 3.
 Lansing group fm. structure: Chelikowsky, J. R., 1.
 Laverne fm.: Schoff, S. L., 1.
 Limestones, Mid. Ord., central: Taylor, M. H., 2.
 Loess, Pleist.: Frye, J. C., 6.
 Ordovician, Upper: Taylor, M. H., 3.
 Pennsylvanian-Permian unconformity, Pottawatomie Co.: Harned, C. H., 1.
 Pleistocene deposits: Frye, J. C., 2.
 Pre-Cambrian hills, buried: Walters, R. F., 1.
 Scott Co.: Waite, H. A., 1.
 Silicified rock in Ogallala fm.: Frye, J. C., 4.
 Siluro-Devonian, Cent. Kans.: Taylor, M. H., 1.
 Viola fm. zones, W.: Ver Wiebe, W. A., 4.
- Mineralogy.*
 Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Crystals, localities: Graffham, A. A., 2.
 Mineral res.: Kans. Industr. Devel. Comm., 1.
 Plattsburg ls. minerals: Graffham, A. A., 1.
 Salt beds: Taft, R., 1.
 Selenite crystals: Kennedy, M., 1.
- Paleontology.*
 Amphibia: Lane, H. H., 1.
 Cameloid, Eschatus, Pleist.: Riggs, E. S., 1.
 Cretaceous, Belvidere area: Latta, B. F., 1.
 Crinoidea, Virgin Carb., SE.: Strimple, H. L., 1.
 Fish, Cret.: Anonymous, 43.
 Gastropoda, pupillid, Pleist.: Franzen, D. S., 2; Leonard, A. B., 2.
 Gem wood: Graffham, A. A., 3.
 Geomys, Rexroad Pliocene fauna: Franzen, D. S., 3.
 Lime-secreting Algae, Penn., Perm.: Johnson, J. H., 4.

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Paleontology—Continued.

- Mammalia, Tert., Quat.: Lane, H. H., 1.
 Micropycnodon, Upper Cret. fish: Dunkle, D. H., 2.
 Monarchopemmatites for Pseudopemmatites: De Laubenfels, M. W., 1.
 Nubecularia, Penn., Perm.: Johnson, J. H., 7.
 Pupilla, Pleist., Clark Co.: Franzen, D. S., 1.
 Pupillidae (Gastropoda), fossil, living: Franzen, D. S., 2, 4.

Petrology.

- Arbuckle dolomite, lithologic subdivisions: Clair, J. R., 1.
 Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Belvidere area Cret.: Latta, B., 1.
 Construction materials, Trego Co.: Byrne, F. E., 1.
 Cross-sections, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Dakota, Kiowa fms. cemented ss.: Swineford, A., 3.
 Kanopolis Dam site: Happ, S. C., 5.
 Kinderhook dolomite, Sedgwick Co.: Ver Wiebe, W. A., 2.
 Lime-secreting Algae, Penn., Perm.: Johnson, J. H., 4.
 Limestones, Mid. Ord., cent. Kans.: Taylor, M. H., 1.
 Pre-Cambrian buried hills, Barton Co.: Walters, R. F., 1.
 Silicified rock in Ogallala fm.: Frye, J. C., 4.
 Siluro-Devonian, cent. Kans.: Taylor, M. H., 1.
 Solution features, Cret. ss.: Frye, J. C., 5.
 Viola fm. zones: Ver Wiebe, W. A., 4.
 Volcanic ash, Pliocene cf. Pleist.: Swineford, A., 2.

Physical geology.

- Bala intrusive, Riley Co.: Dreyer, R. M., 1.
 Cross-sections, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.
 Erosion, accelerated Cimarron River Valley: McLaughlin, T. G., 4.
 Genesee uplift: Clark, S. K., 1.
 High Plains surface: Frye, J. C., 3.
 Kraft-Prusa oil field: Walters, R. F., 3.
 Levee foundation near Kansas City, electric-resistivity prosp.: Happ, S. C., 2.
 Pennsylvanian-Permian unconformity, Potawatomi Co.: Harned, C. H., 1.
 Pre-Cambrian hills, buried, Barton Co.: Walters, R. F., 1.
 Siluro-Devonian, cent. Kans.: Taylor, M. H., 1.
 Solution features, Cret. ss.: Frye, J. C., 5.

Physiographic geology.

- Cimarron River Valley, accelerated erosion: McLaughlin, T. G., 4.

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Physiographic geology—Continued.

- Ground water, Arkansas River Valley: Williams, C. C., 2.
 High Plains surface: Frye, J. C., 3.
 Karst topog., subsurface: Ver Wiebe, W. A., 3.
 Pre-Cambrian buried hills: Walters, R. F., 1.
Underground water.
 Arkansas River Valley, ground water: Williams, C. C., 2.
 Elm Creek Valley ground water: Williams, C. C., 1.
 Grant, Haskell, Stevens Cos.: McLaughlin, T. G., 2.
 Investigations: Fishel, V. C., 2.
 Resources: Fishel, V. C., 1.
 Wichita area: Williams, C. C., 3.
 Hugoton gas field: Morgan, L. C., 1.
 Scott County: Waite, H. A., 1.

Kaolin. See also Clays.

- Arkansas, bauxite-kaolin relations: Goldsman, M. I., 1.
 Feldspar, products. lab. alteration: Folk, R. L., 1.
 Georgia: Munyan, A. C., 1.
 Mexico, Tlaxcala: Blásquez López, L., 1.
 Zacataecas min. res.: González Reyna, J., 2.
 Montana, Fergus Co. clay deposits: Dougan, C. W., 1.
 Montmorillonite minerals: Ross, C. S., 1.
 North Carolina: Greaves-Walker, A. F., 1; Stuckey, J. L., 1, 2.
 Spruce Pine dist. clays: Olson, J. C., 1; Parker, J. M., III, 1.
 Tennessee, Clarksburg area, Carroll Co.: Whitlatch, G. I., 1.
 United States, min. res. map, Nebr.-Iowa-Kans. - Mo. - Okla. - Ark.: Midwest Research Inst., 1.
 Utah, Drum Mtn. manganese: King, W. H., 1.
 Vermont, min. industries: Jacobs, E. C., 4.
 Kaolinite.
 Hawaii, soils, differential thermal analysis: Dean, L. A., 1.
 Illinois, collecting minerals: McClure, S. M., 1.
 Iowa, clay minerals in soils: Peterson, J. B., 1.
 Missouri, fire clays: Keller, W. D., 12.
 United States, SE. Coastal Plain soils, clays: Coleman, R., 1.
 West Virginia, Pittsburg coal seam concretions: Foster, W. D., 1.

Karst topography.

- Kansas, subsurface: Ver Wiebe, W. A., 3.
 Mexico, hydrology: Osorio Tafall, B. F., 1.
 Yucatan Penin.: Shrock, R. R., 4.
 New Mexico, Guadalupe Co.: Gorman, J. M., 1; U. S. G. S., 1, no. 44.
 Katy oil and gas field, Tex.: Allison, A. P., 1.
 Kentucky.

Economic geology.

- Berea sands: Pepper, J. F., 1, 3; U.S.G.S., 1, no. 69, 79.

Kentucky—Continued.

Economic geology—Continued.

- Big Six gas field, Licking River: Jillson, W. R., 2-a.
 Cannel coal: Anonymous, 37.
 Clinton Co. oil and gas pools: Jillson, W. R., 5.
 Fluorite: Hickman, R. C., 1; Muir, N. M., 1; Starnes, X. B., 1, 2, 3, 4.
 Oil developments, 1946: Jones, D. Jonathan, 2.
 Well-sample records described: Martens, J. H. C., 1.

Historical geology.

- Berea sands: Pepper, J. F., 1, 3; U.S.G.S., 1, no. 69, 79.
 Brassfield fm., Sil., correls.: Branson, E. B., 1.
 Clinton Co. oil and gas pools: Jillson, W. R., 5.
 Easterday abandoned channel, Ohio River: Jillson, W. R., 1.
 English abandoned channel, Kentucky River: Jillson, W. R., 2.
 Faults by geophys. methods, fluorspar area: Lee, F. W., 3.
 Fluorite deposits: Starnes, X. B., 1, 2, 3, 4.
 Gulf Embayment area: Roberts, J. K., 2.
 Louisville area ground-water res.: Rorabaugh, M. I., 1.
 Kentucky River abandoned channels, Pliocene: Jillson, W. R., 13.
 Nonesuch Pliocene channel: Jillson, W. R., 9.
 Providence channel: Jillson, W. R., 7.
 Warwick channel: Jillson, W. R., 10.
 Tip Top area sand, and Meramec-Chester boundary: Ray, L. L., 2.
 Trenton Perryville fm.: McFarlan, A. C., 1.

Mineralogy.

- Cannel coal: Anonymous, 37.
 Edmonton meteorite: Henderson, E. P., 2.
 Fluorite deposits: Muir, N. M., 1; Starnes, X. B., 1, 2, 3, 4.

Paleontology.

- Big bones explor., Lower Blue Lick Spring: Jillson, W. R., 8.
 Bison, Blue Lick Spring: Jillson, W. R., 4.
 Conodonts, Sil., Brassfield fm.: Branson, E. B., 1.
 Deer, Blue Lick Spring: Jillson, W. R., 4.
 Diestoceras, Ord.: Jillson, W. R., 14.
 Elk, Blue Lick Spring: Jillson, W. R., 4.
Mammalia, Pleist., Blue Lick Spring: Jillson, W. R., 3.

- Mammoth, mastodon: Jillson, W. R., 4, 11.
 Pterotocrinus, Carb.: Weller, J. M., 4.
 Kinkaid Missn. fm.: Gutschick, R. C., 2.
 Spore floras, Penn.: Cross, A. T., 1.

Petrology.

- Gulf Embayment area: Roberts, J. K., 2.
 Mineral Ridge-Clay Lick faults system, fluorite deposits: Muir, N. M., 1.

Physical geology.

- Faults, fluorspar area: Lee, F. W., 3.
 Fluorite deposits: Hickman, R. C., 1; Muir, N. M., 1; Starnes, X. B., 1, 2.

Kentucky—Continued.

Physical geology—Continued.

- Mammoth Cave: Lix, H. W., 1.
 Tip Top sand and Meramec-Chester unconformity: Ray, L. L., 2.
Physiographic geology.
 Kentucky River, abandoned channels, English: Jillson, W. R., 2.
 Nonesuch abandoned channel: Jillson, W. R., 9.
 Pliocene channels: Jillson, W. R., 13.
 Warwick abandoned channel: Jillson, W. R., 10.
 Lake Leverett, glacial: Jillson, W. R., 6.
 Ohio River, Easterday abandoned channel: Jillson, W. R., 1.

Underground water.

- Ground water, Louisville area: Guyton, W. F., 1; Rorabaugh, M. I., 1; Sublett, H. E., 1.
 Limestone, solutional features, Lexington area: Hamilton, D. K., 1.
 Mammoth Cave: Lix, H. W., 1.
 Ohio River infiltration, Louisville area: Rorabaugh, M. I., 2.
 Kernite, Kramer borate dist., Calif.: Gale, H. S., 1.
 Kevin-Sunburst oil fields, Mont.: U.S.G.S., 8, 12, 13.
 Keystone oil and gas field, Winkler Co., Tex.: Mygdal, K. A., 1.
 Kieserite, Grand Co., Utah: Stringham, B. F., 2.
 King, Clarence, and Henry Adams, friendship: Dickason, D. H., 1.
 Influence on U. S. Geol. Survey: Manning, T. G., 1.
 King, Powell, and the U. S. Geol. Survey: Smith, H. N., 1.
 King oil field, Jefferson Co., Ill.: Folk, S. H., 1.
 Klockmannite, artificial CuSe, identical: Earley, J. W., 1.
 Kodachrome slides, use in teaching: Meen, V. B., 1.
 Kosmochlor, meteoritic mineral: Neuerburg, G. J., 1.
 Kraft-Prusa oil field, Kans.: Walters, R. F., 3.
Kyanite.
 Georgia, massive: McVay, T. N., 1.
 North Carolina: Olson, J. C., 1; Stuckey, J. L., 1; Walker, A. F., 1.
 Sillimanite minerals: Snedden, H. D., 1.
 Wyoming, nonmetallics: U. S. G. S., 3.

no. 9.

Labrador.

Historical geology.

- Eastern area: Tanner, V., 2.
 Wisconsin ice sheet: Tanner, V., 1.

Paleontology.

- Cambrocyathus amourensis, Camb., interval structure: Okulitch, V. J., 2.

Physiographic geology.

- Eastern area: Tanner, V., 1, 2.
 Wisconsin ice sheet covered completely: Tanner, V., 1.

- Labyrinthodontia, review: Romer, A. S., 3.

Laccoliths. See also Intrusions.

- Canada, Montreal to Port Arthur: Hutt, G. M., 1.
- Colorado, Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Kelley, V. C., 1.
- Uncompahgre mining dist., Ouray Co.: Burbank, W. S., 8.
- Montana, Running Wolf dist.: Goodspeed, G. E., 2.
- New Mexico, Gallinas Mts.: Kelley, V. C., 6.
- Utah, Henry Mts.: Hunt, C. B., 1.
- Iron Co. iron deposits: Young, W. E., 1.
- Iron Springs dist.: Mackin, J. H., 2.
- Three Peaks: Mackin, J. H., 4.
- La Gloria oil and gas field, Tex.: Woolley, W. C., 1.
- La Goleta (Moore) gas field, Calif.: Simonson, R. R., 1.
- Lake Bonneville, Utah: Relyea, G. M., 1.
- Shorelines on Stansbury Is., Great Salt Lake: Ives, R. L., 7.
- Terraces, Utah: Marsell, R. E., 1.
- Lake Cochise, Ariz.: Jones, R. S., 1.
- Lake Maumee, Mich.-Ohio: Bingham, M. T., 1; Bownocker, J. A., 1.
- Lake St. John oil field, La.: Smith, N. J., 1.
- Lakes.
- Alaska, N. Coastal Plain: Cabot, E. C., 2.
- Douglas, Mich., colloidal gel, bottom deposit: Phinney, H. K., 1.
- El Salvador: Basauri, D., 1.
- Great Salt Lake, Utah: Lisonbee, L. P., 1; Wooley, R. R., 1.
- Michigan, soil profiles, recession, extinction: Veatch, J. O., 1.
- United States Nat. Parks: Melbo, I. R., 1.
- Lakes, extinct. See also Glacial lakes.
- Arizona, Wilcox Basin: Jones, R. S., 1.
- British Columbia, Kootenay Lake origin: Schofield, S. J., 1.
- California, Kramer borate dist.: Gale, H. S., 1.
- Ridge Route area: Loel, W., 1.
- Sierra Nevada-Death Valley area: Hopper, R. H., 1.
- Canada, glacial Lake Agassiz beaches: Johnston, W. A., 1.
- Montreal to Port Arthur: Hutt, G. M., 1.
- Evolution, desert playas: Blackwelder, E., 4.
- Indiana, Cataract Falls area: Malott, C. A., 1.
- State Parks: Freeman, O. W., 1.
- Kentucky, Lake Leverett: Jillson, W. R., 6.
- Lake Agassiz, N. Am., life history: Nikiforoff, C. C., 3.
- Lake Bonneville, Utah: Relyea, G. M., 1.
- Terraces: Marsell, R. E., 1.
- Lake Cahuilla, or Blake Sea, Calif.: Cockerell, T. D. A., 1, 2.
- Lake Chicago, Ind.: Freeman, O. W., 1.
- Lake Cochise, Ariz.: Jones, R. S., 1.
- Lake Leverett, Ky.: Jillson, W. R., 6.
- Lake Maumee, Ohio: Bownocker, J. A., 1.

Lakes, extinct—Continued.

- Lake Nipigon area, N. Am., peat-bog pollen: Wilson, L. R., 4.
- Maine, Moosehead Lake Basin, glacial water planes: Lougee, R. J., 1.
- Michigan lakes, soil profiles, extinction: Veatch, J. O., 1.
- North Carolina, Jerome bog: Buell, M. F., 1.
- Ontario, Orilla area: Deane, R. E., 1.
- Oregon, early man, age: Allison, I. S., 1.
- South Dakota, James Basin glacial lakes: Rothrock, E. P., 2.
- Susquehanna Valley, N. Y.-Pa., post-glacial lakes: Young, A. E., 1.
- Utah, Cedar Mts., Moroni's Postpile: Ives, R. L., 14.
- Cup Butte: Ives, R. L., 17.
- Drum Mtn.: King, W. H., 1.
- Kelly's Hole, Dugway Range: Ives, R. L., 16.
- Little Cottonwood, Bell Canyon Glaciers and Lake Bonneville relations: Marsell, R. E., 3.
- Pavant Valley, Millard Co.: Dennis, P. E., 1.
- Stansbury Is., Great Salt Lake: Ives, R. L., 7.
- Lamprophyre, East Greenland eruptives: Rittman, A., 1.
- Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.
- Land-mine detection: Russell, L. S., 2.
- Landslides.
- California, Del Valle, Ramona oil fields: Matter, J. E., 1.
- Palos Verdes Hills: Woodring, W. P., 1.
- Sierra Nevada-Death Valley section: Hopper, R. H., 1.
- Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
- Ventura Ave. oil field: Leach, C. E., 2.
- West Mayacmas dist. quicksilver deposits: Bailey, E. H., 1.
- Canadian Arctic, Victor Is. area: Washburn, A. L., 1.
- Hawaii: Stearns, H. T., 3.
- Mexico, Valley of Yahuehche, 1937: Waitz, P., 2.
- Montana, Bearpaw Mts. area: Reeves, F., 2.
- New England, Conn. Valley, floods: Jahns, R. H., 2.
- New Mexico, Rio Puerco area: Wright, H. E., Jr., 1.
- Panama, Canal bed: Bowman, W. G., 1.
- Parícutin Volcano, Mex.: Bullard, F. M., 2.
- Quebec, Saint Louis area, clays: Morin, L. G., 1.
- Recent slides: Clark, T. H., 2.
- Yamaska River: Laverdière, J. W., 2.
- Texas, Georgetown area, valley devel.: Blank, H. R., 1.
- Utah, Cedar City, Parowan Valleys: Thomas, H. E., 2.
- Zion Nat. Monument: Gregory, H. E., 1.
- Water effect on clays in landslides: Auger, P. E., 4.

- Lantern slides, preparation: Zuloaga, G., 1.
 Laterite, Columbia Co., Oreg.: Kelly, J. V., 2.
 Latite, White Horse deposits, Utah: Willard, M. E., 1.
 Lattice in crystallography: Donnay, J.D.H., 4.
 Lavas and lava flows. See also Intrusions.
 Alaska, Aleutian Islands, W.: Coats, R. R., 3.
 Great Sitkin Volcano, Aleutians: Simons, F. S., 1.
 Nizina dist.: Miller, D. J., 1.
 Pavlof Volcano area, Aleutians: Kennedy, G. C., 5.
 Rua Cove, Knight Is. copper: Stefanson, K., 1.
 Umnak Is., Aleutians: Byers, F. M., Jr., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 San Manuel copper deposit, Pinal Co.: Chapman, T. L., 1.
 British Columbia, Ashcroft area: Duffell, S., 2.
 California, Caliente Range: Hill, M. L., 2.
 Glendora volcanics: Shelton, J. S., 2.
 Kern Co. collecting: Henry, D. J., 3.
 Kramer borate dist.: Gale, H. S., 1.
 Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Middle Kern River Basin, Sierra Nevada: Webb, R. W., 1.
 Monterey fm.: Bramlette, M. N., 1.
 New Idria dist. quicksilver deposits: Eckel, E. B., 1.
 San Gabriel Basin, NE. margin: Shelton, J. S., 1; U.S.G.S., 1, no. 63.
 Ship Mtn. iron deposit: Lamey, C. A., 1.
 Sierra Nevada structure, S: Mayo, E. B., 1.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 West Mayacmas dist.: Bailey, E. H., 1.
 Wiley Well dist. collecting: Henry, D. J., 4.
 Colorado, Eureka-Animas Forks area, San Juan Co.: Burbank, W. S., 11.
 Front Range: Wahlstrom, E. E., 2.
 South Silverton area: Varnes, D. J., 6.
 Crust-breaking by meteorites, moon and earth: Kelly, A. O., 1.
 Cuba, E. Oriente Prov.: Keijzer, F. G., 3.
 Geologic phenomena seen in steel plants: Sosman, R. B., 1.
 Glass, ellipsoidal structures: Osborn, E. F., 1.
 Greenland, N., plateaus: Nee-Nygaard, A., 2.
 Hawaii: Stearns, H. T., 3.
 Fern prints in lava: Palmer, H. S., 2.
 Haleakala Volcano: Macdonald, G. A., 2.
 Honolulu ground-water supply: Palmer, H. S., 3.
 Pleistocene ser., Oahu: Winchell, H., 3.
 Island of Molokai: Macdonald, G. A., 5.
 Kilauea, Puna rift system: Finch, R. H., 2.
 Koolau basalt ser., Oahu: Wentworth, C. K., 2.
- Lavas and lava flows—Continued.
 Hawaii—Continued.
 Mauna Loa, summit rift zone: Macdonald, G. A., 1.
 Idaho, Borah Peak quad.: Ross, C. P., 2.
 Craters of the Moon: Andrews, H. N., Jr., 4.
 Snake-Salmon Rivers area: Wagner, W. R., 1.
 Igneous minerals and rocks: Wahlstrom, E. E., 1.
 Labrador Peninsula, E. area: Tanner, V., 2.
 Manitoba, McVeigh Lake area: Bateman, J. D., 1.
 Prospecting areas: de Wet, J. P., 1.
 Mexico: Waitz, P., 1.
 "Cerrito," Tepozotlán area: Mullerried, I.-B.
 Coal beds, Sonora: Wilson, I. F., 1.
 Conchos Valley, lower: King, R. E., 2.
 Cuarento dist., Durango: Gallagher, D., 1.
 Durango, El Cuarenta min. zone: Pérez Siliceo, R., 1.
 Parícutin Volcano area: Foshag, W. F., 2; Jones, A. E., 1; Pérez Peña, A., 1; Williams, H., 2; Zies, E. G., 1.
 Minnesota, Lake Superior shore NE. of Two Harbors: Grogan, R. M., 2.
 Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 Nye Co., Tert. volcanic rocks: Callaghan, E., 1.
 New Hampshire, Monadnock area: Billings, K.S.F.L., 1.
 New Mexico, Atwood copper group, Lordsburg dist.: Huntington, M. G., 1.
 Huckleberry spar mine, Catron Co.: Sur, F. J., 2.
 McCartys basalt flow, Valencia Co.: Nichols, R. L., 1.
 Mica deposits, Pecata, Ojo Caliente, Elk Mtn. dists.: Jahn, R. H., 1.
 Tin deposits, Catron, Sierra Cos.: Volin, M. E., 1.
 Tusas-Tres Piedras area: Butler, A. P., Jr., 1.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 Little Bay area: MacLean, H. J., 1.
 Northwest Territories, Eldorado mine: Murphy, R., 1.
 Indin Lake gold area: Lilge, E. O., 1.
 Yellowknife area: Riley, C., 1.
 Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Dome gold mine deposits: Holmes, T. C., 1.
 Helen iron mine: Kidder, S. J., 1.
 Kenogami Lake area: Ontario Dept. Mines, 2.
 Little Longlac-Sturgeon River area prospects: Horwood, H. C., 1.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Mamen group, Bee Lake area: Thomson, R., 1.

Lavas and lava flows—Continued.

Ontario—Continued.

- Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Porcupine dist.: Gustafson, J. K., 1.
 Red Lake area: Thomson, R., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rush Lake gold mine: Hogg, N., 1.
 Sudbury area: Cooke, H. C., 2.
Oregon, Horse Heaven quicksilver mine: Lewis, F. E., 1.
 Perlite deposits, Wasco Co.: Allen, J. E., 2.
 Pitch pine in lava: De Ment, J. A., 2.
 St. Helens quad.: Wilkinson, W. D., 1.
 Upper Nehalem River Basin: Warren, W. C., 1.
Paricutin Volcano, Mex.: Bullard, F. M., 2; Foshag, W. F., 2; Jones, A. E., 1; Pérez Peña, A., 1; Williams, H., 2; Zies, E. G., 1.
 Activity in Jan. 1946: Krauskopf, K. B., 2.
 Perlite, source of synthetic pumice: Ralston, O. C., 1.
Quebec, Abitibi, Temiscamingue Cos.: Ingham, W. N., 1.
 Bachelor Lake area: Longley, W. W., 3.
 Beauchastel Tp., W. half: Ambrose, J. W., 1.
 Descriptive geology: Dresser, J. A., 1.
 North shore St. Lawrence area: Claveau, J., 1.
 Siscoe mine area, Abitibi-East Co.: Auger, P. E., 1.
 Wetetnagami River and Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.
 Rocky Mtn. area: Dobbin, C. E., 2.
 Texas, Buck Hill quad.: Goldich, S. S., 3.
 Reeves Co.: Knowles, D. B., 1.
 Utah, Basalt fm. Jericho area: Anonymous, 42.
 Cedar Mts., Moroni's Postpile: Ives, R. L., 14.
 Fumarole Butte, Sevier Desert, Juan Co.: Ives, R. L., 20.
 Jericho field: Hayes, J. J., 2.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Pavant Range, Millard Co.: Maxey, G. B., 1.
 Tintic dist.: Kildale, M. B., 1.
 White Horse alunite deposits, Marysville: Willard, M. E., 1.
 Zion Nat. Monument: Gregory, H. E., 1.
 Zion Park hinterland: Ives, R. L., 19.
 Volcanoes: Coleman, S. N. M., 1.
 Washington, Grand Coulee: Koester, C. R., 1.
 Mt. Rainier Natl. Park: Danner, T., 2.
 Olympic Penin.: Park, C. F., Jr., 1.
 South Dam, Columbia Basin project: Irwin, W. H., 2.
 Wisconsin, Douglas Co. copper: Smith, M. C., 1.
 Utley metarhyolite rocks: Gram, O. E., 1.

Lavas and lava flows—Continued.

Wyoming, Absaroka volcanic field, Big-horn Basin: Rouse, J. T., 1.

Lawsonite, Calif. Coast Ranges: Switzer, G., 5.
Lead.

Alaska, argentiferous lead-copper deposits, Slana dist.: Thorne, R. L., 1.

Mount Eielson deposits: Muir, N. M., 3.

Southeast: Shaw, V., 1.

U. S. Geol. Survey min. invs., 1943-44: Reed, J. C., 1.

Arizona, Aravaipa deposit, Graham Co.: Denton, T. C., 3.

Iron King mine, Prescott: Mills, H. F., 1.

Johnny Bull-Silver Knight deposit: Tainter, S. L., 1.

Wallapai mining dist., Mohave Co.: Haury, P. S., 2.

Arkansas, Magnet Cove deposits: Spencer, R. V., 1.

British Columbia: Hutt, G. M., 6.

Ashcroft area: Duffell, S., 2.

Highland-Bell mine: Staples, A. B., 2.

McConnell Creek area: Lord, C. S., 1.

Manson Creek, Cassiar dist.: Canada G. S., 1.

Nicola, Kamloops, Yale dists. min. res.: Canada G. S., 1.

Northern: Armstrong, J. E., 2.

Whitewater, Lucky Jim mine areas: Hedley, M. S., 1.

California, Akoz mine, Mariposa Co.: Wiebelt, F. J., 2.

Canada, eastern, Kirkland-Val d'Or area: Norman, G. W. H., 10.

Quebec, Ontario, mines, prospects: Bonham, W. M., 1.

Western, tellurides: Warren, H. V., 2.

Colorado, Alma, Horseshoe dists.: Singewald, Q. D., 1.

Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.

Cement-Mineral Creeks area: Varnes, D. J., 7.

Dunmore mine, Ouray Co.: Kelley, V. C., 3.

Eureka-Animas Forks area: Burbank, W. S., 11.

Front Range mineral belt: Goddard, E. N., 5.

Gilman dist., Eagle Co.: Tweto, O. L., 3.

Gold Hill dist.: Myers, R. E., 2.

Iron Springs mining dist.: Varnes, D. J., 4.

Kokomo mining dist.: Koschmann, A. H., 1, 3.

Lake City area, Hinsdale Co.: Burbank, W. S., 13.

La Plata dist.: Eckel, E. B., 2.

Leadville mining dist., Lake Co.: Loughlin, G. F., 1.

Metallic mineral deposits: Fischer, R. P., 1; U.S.G.S., 3, no. 8.

Metals: Vanderwilt, J. W., 5.

Lead—Continued.

Colorado—Continued.

- Mineral Point, Poughkeepsie-Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Mt. Wilson dist., San Miguel Co.: Varnes, D. J., 5.
- Rico mining dist., Dolores Co.: Varnes, D. J., 2.
- San Juan mining dist.: Burbank, W. S., 6, 7.
- Silverton volcanic center dists.: Burbank, W. S., 9.
- Snowmass Mtn. area, Gunnison Co.: Vanderwilt, J. W., 6.
- South Silverton area: Varnes, D. J., 6.
- South Telluride area: Varnes, D. J., 3.
- Uncompahgre mining dist., Ouray Co.: Burbank, W. S., 8.
- Upper Blue River area, Summit Co.: Singewald, Q. D., 3.
- Genesis of ores: Senftle, F. E., 2.
- Geological aspects of prosp., zinc-lead dist., Ill.: Willman, H. B., 1.
- Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
- Quiché, Alta, Baja Verapaz depts.: Manó, J. C., 2.
- Idaho, Clark Fork dist.: Anderson, A. L., 2, 2-a; Lorain, S. H., 1.
- Coeur d'Alene min. dist.: Sorenson, R. E., 1.
- Gold deposits: Staley, W. W., 3.
- Little Pittsburg mine: Herdlick, J. A., 1.
- Moyie-Yaak dist.: Anderson, A. L., 1.
- Illinois, Jo Daviess Co. mines: Zinner, F., 1.
- Northwest, zinc-lead dist.: Willman, H. B., 2.
- Impounding structures control of ore deposits: MacKay, R. A., 1.
- Iowa min. res.: Hershey, H. G., 1.
- Kentucky, Krausse Estate prosp.: Starnes, X. B., 2.
- Maryland, Carroll, Frederick Cos. min. res.: Singewald, J. T., Jr., 2.
- Mexico, Chihuahua min. res.: González Reyna, J., 3-a.
- Maravatio-Zitacuaro dists.: Flores, T., 1.
- Nuevo León: Mullerried, 6.
- Oaxaca guide book: Barrera, T., 1.
- Practical indications of: Mullerried, 3.
- San Zenón dist., Sinaloa: Martínez Pérez, F., 1.
- Typical deposits: González Reyna, J., 12.
- Urique min. zone, Chihuahua: González Reyna, J., 7.
- Zacatecas min. res.: González Reyna, J., 2.
- Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.
- Jasper Co.: Ballinger, H. J., 2.
- Lead belt: Wagner, R. E., 1.
- Morgan Co.: Mather, W. B., 1.
- O'Jack Mining Co. mines, Jasper Co.: Brichta, L. C., 2.
- Phelps lease, Jasper Co.: Brichta, L. C., 1.

Lead—Continued.

- Montana, metallic min. deposits: Chace, F. M., 1; U.S.G.S., 3, no. 16.
- Nevada, Argenta mine, Clark Co.: Geehan, R. W., 2.
- Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
- Eureka Co. mines: Binyon, E. O., 1; Sharp, W., 1.
- Mount Hope mine, Eureka Co.: Matson, E. J., 1.
- Sultani mine, Clark Co.: Geehan, R. W., 3.
- New Mexico, Grey Eagle, Grand View, Royal John claims: Hill, R. S., 1.
- Lake Valley deposits: Apell, G. A., 2.
- Little Hatchet Mts. area: Lasky, S. G., 3.
- Mineral res.: Benjovsky, T. D., 3.
- Peerless mine, Grant Co.: Soulé, J. H., 4.
- Steeple Rock dist., Grant Co.: Russell, P. L., 6.
- North America, desert minerals: Belz, C. A., 2.
- Northwest Territories, poss.: Denis, H. B., 1.
- Oklahoma, indust. minerals: Dott, R. H., 5.
- Ontario, Calumet Island mines: McLaren, D. C., 1.
- Grenville fm. mines: Bonham, W. M., 1.
- Robb-Jamieson area poss.: Berry, L. G., 1.
- Sudbury area: Cooke, H. C., 2.
- Pacific Northwest min. res.: Appleton, J. B., 1.
- Quebec, Federal mine, Gaspé: Auger, P. E., 3.
- Grenville fm. mines: Bonham, W. M., 1.
- Northeast Bourlamaque, Abitibi Co. geol. map: Canada G. S., 1.
- Radioactive, in tourmaline: López de Azcona, J. M., 1.
- Red fluorescence in halite, coactivators: Murata, K. J., 2.
- South Dakota, metallic min. deposits: Fischer, R. P., 2; U.S.G.S., 3, no. 13.
- Texas, Bird mine, Brewster Co.: Redfield, R. C., 2.
- Central min. region collecting: Moore, J. R., III, 1.
- Mineral res.: Sellards, E. H., 4.
- San Antonio Canyon deposits: Denis, W. E., 4.
- Silver Eagle mine: Dennis, W. E., 2.
- Texas and Ohio, Trinity River area min. res.: Weissenborn, A. E., 1.
- United States, great mines: Ingalls, W. R., 1.
- Mineral res. map. Neb.-Iowa-Kans.-Okla.Ark.: Midwest Research Inst., 1.
- Missouri Valley area: Dow, D. H., 1; U.S.G.S., 3, no. 1.
- Ore deposits: Helke, A., 1.
- Picher zinc-lead zone, Okla.-Kan.: U.S.G.S., 6.
- Tri-State reserve: Ruhl, O., 1.
- Utah, Granite Peak area: Ives, R. L., 8.
- Kelly's Hole, Dugway Range: Ives, R. L., 16.

Lead—Continued.

Utah—Continued.

- Mineral res.: Schneider, H., 1.
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 Tintic dist.: Kildale, M. B., 1.
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 Feldspar, products, lab. alteration: Folk, R. L., 1.
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 Canada, W.: Cowie, W. G., 1.
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 Illinois, Jo Daviess Co.: Zinner, P., 1.
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 Central area: Taylor, M. H., 1, 2.
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- Orizaba lss., Veracruz, Cret. fossils: Mullerried, 5.
- Minnesota, SE.: Thiel, G. A., 1.
- Missouri, Missn. algal lss., St. Louis area: Johnson, J. H., 1.
- Phelps lease, Jasper Co.: Brichta, L. C., 1.
- Montana, Judith Basin: Walton, P. T., 1.
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- Nevada, Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.
- New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
- McAfee quarry: Zodac, P., 2.
- Sheldon quarry, Rudeville: Zodac, P., 3.
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- White Eagle fluorspar mine: Soulé, J. H., 2.
- New York, Balmat area zinc mines: Marvin, T., 1.
- Genesee Gorge sediments: Alling, H. L., 1.
- North Carolina, east: Berry, E. W., 3.
- Raw materials for cement: Adair, R. B., 1.
- North Dakota: Powers, W. E., 2.
- Construction materials, nonmetallic min. res.: Shride, A. F., 1; U.S.G.S., 3, no. 14.
- Riprap: Truesdell, P. E., 1; U.S.G.S., 3, no. 20.
- Nova Scotia, Strait of Canso area: Ferguson, S. A., 2.
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- Johns Valley sh. erratic boulders: Rea, H. C., 1.
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- Ontario, Calumet Is. mines: McLaren, D. C., 1.
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- Oregon, St. Helens quad.: Wilkinson, W. D., 1.
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- Hollidaysburg-Huntington quads.: Butts, C., 1.
- Pittsburgh area: Leighton, H., 3.
- Taconic sequence: Stose, G. W., 2.
- Vandergrift min. locs.: Hamilton, H. V., 1.

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- Quebec, N. Shore St. Lawrence area: Claveau, J., 1.
- Simard map area: Denis, B. T., 1; McGerrigle, H. W., 1.
- South Dakota, riprap: Truesdell, P. E., 1; U.S.G.S., 3, no. 20.
- Spectrochemical sample logging of lss.: Sloss, L. L., 2.
- Tennessee, Hales Bar Dam foundations: Frink, J. W., 1.
- Knox Co., Longview mbr., Kingsport fm.: Allen, A. T., Jr., 1.
- Shallow Ore mine, New Market: Black, W., 1.
- Texas, Damon Mound, Brazoria Co.: Hurlbut, E. M., Jr., 1.
- Ellenburger group: Cloud, P. E., Jr., 1.
- Llano Co.: Goldich, S. S., 2.
- Hockley gypsum mine, Harris Co.: Stenzel, H. B., 2.
- Resources: Cunningham, W. A., 1; Sel-lards, E. H., 4.
- Silver Eagle zinc deposit: Dennis, W. E., 2.
- Texas and Oklahoma, Trinity River area res.: Weissenborn, A. E., 1.
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- United States, Missouri Valley area: Dow, D. H., 1; U.S.G.S., 3, no. 1.
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- Utah, Granite Peak area: Ives, R. L., 8.
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- Morgan Penn. fm., Split Mtn.: McCann, F. T., 1.
- Ophir Hill Consolidated mine: Wideman, F. L., 1.
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- Frederick Co.: Bass, C. E., 1.
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 - Vulcan iron deposit: Lamey, C. A., 1.
 - Cuba, minerals: Calvache, A., 1.
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 - Pseudomorphs: Anonymous, 26.
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Columbia Falls quad.: Terzaghi, R. D., 1.

Katahdin pyrrhotite area: Miller, R. L., 1.

Pegmatites, Freeport - Friendship coast: Trefethen, J. M., 8.

Topsham area: Shainin, V. E., 2.

Swift River Valley: Pratt, E., 1.

Physical geology.

Aroostook Co. manganese deposits: Miller, R. L., 2.

Columbia Falls quad.: Terzaghi, R. D., 1.

Katahdin pyrrhotite area: Miller, R. L., 1.

Physiographic geology.

Glacial water-planes, Moosehead Lake Basin: Lougee, R. J., 1.

Gulf of Maine topog.: Murray, H. W., 2.

Katahdin pyrrhotite area: Miller, R. L., 1.

Messalonskee River course changes: Lougee, R. J., 2.

Polygonboden, Mount Desert Island: Butler, A. P., Jr., 2.

Malachite.

Arizona, Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.

California, Wiley Well dist. collecting: Henry, D. J., 4.

Idaho, Snake-Salmon Rivers area: Wagner, W. R., 1.

New Jersey, Flemington copper mine: Zodac, P., 1.

New Mexico, Stauber copper mine, Guadalupe Co.: Holmquist, R. J., 2.

Unit cell: Ramsdell, L. S., 4.

Utah, Kelly's Hole, Dugway Range: Ives, R. L., 16.

Wyoming, collecting, Encampment area: Platt, R. E., 1.

Mammalia.

Artifacts with fossil bison, Plainview, Tex.: Sellards, E. H., 5.

Mammalia—Continued.

Bison, Great Plains: Schultz, C. B., 1.

Bison quarry, Plainview, Tex.: Sellards, E. H., 1, 5.

Pleistocene, N. Am.: Skinner, M. F., 1.

Breameryx, Pleist. antelope, Rancho La Brea, Calif.: Furlong, E. L., 1.

California, carnivores, Black Hawk Ranch: Macdonald, J. R., 2.

Dire wolf group podiales, Pleist.: Nigra, J. O., 1.

Palos Verdes Hills fauna: Woodring, W. P., 1.

Rancho La Brea, Pleist. fossils: Stock, C., 1, 8, 9.

Center of origin theory: Metcalf, Z. P., 1.

Colorado, Dinosaur Nat. Monument area: Crowder, F., 1.

Folsom artifacts with bison bones, San Luis Valley: Hurst, C. T., 1.

Edentates, Pliocene: Orr, P. C., 1.

Elephants, Pleist., Channel Islands, Calif.: Stock, C., 2.

Eohippus, Big Horn Basin, Wyo.: Stock, C., 11.

Equus, origin, devel.: Stock, C., 3.

Pleistocene, Ill.: Galbreath, E. C., 1.

Eschatius, Pleist. cameloid, SW. Kans.: Riggs, E. S., 1.

Fauna, Miocene, N. Fla.: White, T. E., 1.

Folsom artifacts with bison bones, San Luis Valley, Colo.: Hurst, C. T., 1.

Geomys, Rexroad Pliocene fauna, Kans.: Franzen, D. S., 3.

Greenland, West, faunas: Laursen, D., 1.

Haramiya for Microcleptus, preoccupied: Simpson, G. G., 11.

Kansas, Tert., Quat.: Lane, H. H., 1.

Kentucky, Blue Lick Spring Pleist. mastodon, etc.: Jillson, W. R., 3, 4, 8.

Limnocoeus, Miocene shrew, Nebr.: Macdonald, J. R., 1.

Machaeoides, Bridger Eocene saber-tooth creodont, Wyo.: Gazin, C. L., 1.

Mammoth, Pleist., Ky.: Jillson, W. R., 11.

Marsupial "tiger", Pliocene, Nebr.: Zuidema, H. P., 4.

Marychyiinae, Miocene oreodonts, west U. S.: Schultz, C. B., 2.

Mastodon, "hair" is algae: Eiseley, L. C., 1.

Mastodon, SW. Ontario: Russell, L. S., 5.

Megalonyx, Pleist., Okla.: Savage, D. E., 1.

Mexico, Estado Aguascalientes: Lopez G., F., 1.

Myth and mammoth in archaeology: Eiseley, L. C., 5.

Nebraska, Pleist. deposit fossil lists: Condra, G. E., 1.

North America-Eurasia, Cenozoic migrations: Simpson, G. G., 8.

Palaeogale, Plesiogale, Plesiictis, redefinitions: Simpson, G. G., 4.

Ondatra, triangles in teeth: Galbreath, E. C., 2.

Oregon, Beatty Buttes Miocene: Wallace, R. E., 1.

Mammalia—Continued.

Oregon—Continued.

John Day fossils, Tert.: Stock, C., 7.

Mammoth bones and artifacts, Willamette Valley: Cressman, L. S., 1.

Ovis canadensis, Pleist., N. Mex.: Stovall, J. W., 1.

Palaeogale, Plesiogale, Plesictis, redefinition: Simpson, G. G., 4.

Paramyidae. Tert. rodents: Wood, A. E., 4.

Pennsylvania, Hollidaysburg - Huntington quads. fauna: Butts, C., 1.

Platygonus, extinct peccary, Cherokee Cave, Mo.: Simpson, G. G., 5.

Rodents, Miocene, Fla.: Wood, A. E., 3.

Smilodon, Pleist., disease incidence: Stock, C., 12.

Tapirs, Pleist. and Recent N. Am.: Simpson, G. G., 1.

Tarsus, artiodactyl, origin, function: Schaeffer, B., 1.

Teeth, variability: Simpson, G. G., 9.

Tertiary time chart, continental: Simpson, G. G., 10.

Texas, Brazos Co., recent Pleist.: Peterson, R. L., 1.

Tranquillity site, Fresno Co., man, extinct animals: Hewes, G. W., 1.

United States, W., Duchesnean fauna and Eocene-Oligocene boundary: Simpson, G. G., 3.

Utah, Dinosaur Nat. Monument area: Crowder, F., 1.

Wyoming, Bridger fm. near Lonetree, coprolites: Bradley, W. H., 2.

Man, fossil.

Alaska, Alcan Highway survey, artifacts: Johnson, F., 1.

Arizona, Tolchaco sites, Little Colorado Valley: Bartlett, K., 1.

Artifacts, Alaska: Hibben, F. C., 1.

Big Bend area, Tex. Quat.: Kelley, J. C., 1.

Bison, fossil, Colo. found with: Hurst, C. T., 1, 2.

Texas, Plainview Bison quarry: Sellards, E. H., 1.

Folsom man, Colo.: Hurst, C. T., 1; Roberts, F. H. H., Jr., 1.

Raised beaches, Lake Huron, Ontario: Greenman, E. F., 1.

Central America, early man: Sellards, E. H., 6.

Colorado, Dinosaur Nat. Monument area: Crowder, F., 1.

Tabeguache Creek area artifacts: Hurst, C. T., 2.

Early man, Great Salt Lake area, Utah: Smith, E. R., 1.

Early relations of man to plants: Sauer, C. O., 1.

Finley site, Wyo., with Yuma points: Howard, E. B., 1.

Florida, beveled artifacts, cf. Clovis, N. Mex.: Jenks, A. E., 1.

Melbourne and Vero remains: Stewart, T. D., 1.

Man, fossil—Continued.

Folsom man: Crowder, F., 1.

Artifacts with Bison bones, Colo.: Hurst, C. T., 1.

Montana, Glendive area early points: Mulloy, W., 1.

North America, poss. of postglacial extinction: Eiseley, L. C., 4.

Texas, Abilene, west-central areas: Ray, C. N., 1, 3.

Fort Rock Basin, Summer Lake area, Oregon, artifacts: Allison, I. S., 1.

Human evolution trend: Weidenreich, F., 2.

Lost Americans: Eiseley, L. C., 2; Hibben, F. C., 2.

Massachusetts, Boylston Street fishweir, Boston: Antevis, E. V., 1.

Mexico, ancient man in Valley of Mexico: Arellano, A. R. V., 1.

Archaeology, dating method: Deevey, E. S., Jr., 1.

"Cerrito", Tepetzotlan area: Mullerried, 1-b.

Tepexpan, Valley of Mexico: Terra, H. de, 2.

Valley of Mexico, Pleist.: Terra, H. de, 3.

Montana, Folsom, Yuma, early points, Glendive area: Mulloy, W., 1.

Myth and mammoth in archaeology: Eiseley, L. C., 5.

New Mexico, artifacts in sand dunes, alluvium, Grants area: Bryan, K., 3.

Clovis site area: Price, W. A., 1-a.

San José, non-ceramic culture: Bryan, K., 2.

Sandia Cave occupants: Eiseley, L. C., 3.

New World antiquity: McCown, T. D., 1.

Nicaragua, fossil plants and human footprints: Brown, R. W., 7.

North America, early man: Sellards, E. H., 6.

Folsom man: Martin, P. S., 1.

Indians before Columbus: Martin, P. S., 1; Strong, W. D., 1.

Origin: Steinmann, G., 1.

Oregon, mammoth bones and artifacts. Willamette Valley: Cressman, L. S., 1.

Paleolithic man, food: Lechler, G., 1.

Skeleton, Pleist., Tepexpan, Mex.: Terra, H. de, 1; Weinreich, F., 1.

Stone images by ancient man, Henderson Co., Tex.: Sellards, E. H., 1-a.

Texas, Abilene region, middens: Ray, C. N., 1.

Big Bend area artifacts: Setzler, F. M., 1.

Folsom blades, cent.-west: Ray, C. N., 3.

Plainview Bison quarry, with artifacts: Sellards, E. H., 1.

Tranquillity site, Fresno Co., Calif., human bones with extinct animals: Hewes, G. W., 1.

United States, ancient sites: Fischel, H. E., 1.

Man, fossil—Continued.

United States—Continued.

- Great Plains artifact sites: Schultz, C. B., 1-a.
 Missouri River Basin: Wedel, W. R., 1.
 Utah, Dinosaur Nat. Monument area: Crowder, F., 1.
 Ventana Cave site, Ariz.: Haury, E. W., 1.
 Yuma man: Crowder, F., 1.
 Yuma points at Finley site, Wyo.: Howard, E. B., 1.

Manganese.

- Alabama, Walnut Grove dist.: Barnes, C. W., 1.
 Arizona: Romslo, T. M., 1.
 British Columbia, Highland-Bell mine: Staples, A. B., 2.
 California, Wiley Well dist. collecting: Henry, D. J., 4.
 Colorado: Vanderwilt, J. W., 5.
 Cuba: Calvache, A., 1; Straczek, J. A., 1.
 Georgia, Piedmont belt: Beck, W. A., 1.
 Guatemala, Quiché, Alta, Baja Verapaz Depts.: Manó, J. C., 2.
 Haiti: Burbank, W. S., 1, 2; Goddard, E. N., 2, 3, 4.
 Maine, Aroostook Co.: Miller, R. L., 2.
 Mexico, Baja Calif.: Pierce, R. V., 1.
 Oxides: Ortiz Mena, R., 1.
 Teloloapan, Arcella area: González Reyna, J., 5.
 Zacatecas res.: González Reyna, J., 2.
 Montana, deposits: Chace, F. M., 1; U. S. G. S., 3, no. 16.
 Pre-Cambrian carbonate rocks: Heinrich, E. W., 8.
 New Mexico, Contact mine, Grant Co.: Russell, P. L., 1.
 Doña Ana Co., Morgan mines: Russell, P. L., 5.
 Ellis deposit, Sierra Co.: Russell, P. L., 3.
 Lake Valley deposits: Apell, G. A., 2.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Niggerhead deposits, Socorro Co.: Russell, P. L., 7.
 Reserves: Benjovsky, T. D., 3.
 Oregon, Dayton soils concretions: Drosdorff, M., 1.
 Pennsylvania: Foose, R. M., 2.
 White Rock area: Foose, R. M., 1.
 Red fluorescence in halite, coactivators: Murata, K., 3.
 South Carolina, Piedmont belt: Beck, W. A., 1.
 South Dakota, deposits: Fischer, R. P., 2; U. S. G. S., 3, no. 13.
 Texas: Sellards, E. H., 4; Warren, L. E., 1.
 Central min. region collecting: Moore, J. R., III, 1.
 United States, min. res. map. Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.

Manganese—Continued.

United States—Continued.

- Missouri Valley area: U. S. G. S., 3, no. 1.
 Southwest: Fleischer, M., 1.
 Utah, Drum Mtn. project: King, W. H., 1.
 Strategic minerals locs.: Buranek, A. M., 1.
 Washington, Olympic Penin.: Park, C. F., Jr., 1.
 Wisconsin, W. Gogebic range iron fms.: Zinner, P., 2.
 Manganocalcite, Olympic Mts., Wash., collecting: Danner, T., 1.

Manitoba.

Economic geology.

- Barrington Lake area: Minton, M. C., 2.
 Bentonite, Miami-Deerwood area: Cameron, E. L., 1.
 Granville Lake area: Brown, E. L., 1.
 Limestones: Goudge, M. F., 1.
 Lode gold areas: Cooke, H. C., 1.
 Lynn Lake area: Allan, J. D., 1.
 McVeigh Lake area: Bateman, J. D., 1.
 Mineral map: Canada G. S., 2.
 Mineral res.: Cole, G. E., 1.
 Morton Lake area: Harrison, J. M., 2.
 Petroleum: Cole, G. E., 1.
 Prospecting areas: de Wet, J. P., 1.
 Sherridon area, geol. map: Canada G. S., 1.
 Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.

Historical geology.

- Barrington Lake area: Minton, M. C., 2.
 Churchill area: Williams, M. Y., 3.
 Flin Flon-Mandy area: Stockwell, C. H., 1.
 Geological map: Canada G. S., 1.
 Granville Lake area: Brown, E. L., 1.
 Lynn Lake area: Allan, J. D., 1.
 McVeigh Lake area: Bateman, J. D., 1.
 Mikanagan Lake area geol. map: Canada G. S., 1.
 Morton Lake area: Harrison, J. M., 2.
 Prospecting areas: de Wet, J. P., 1.
 Sherridon area, geol. map: Canada G. S., 1.
 Snow Lake, Nor-Acme mine areas geol. maps: Harrison, J. M., 1.
 Tramping Lake, geol. map: Canada G. S., 1.

Northern part: Stanton, M. S., 1.

Mineralogy.

- Barrington Lake area: Milton, M. C., 2.
 Granville Lake area: Brown, E. L., 1.
 Lynn Lake area: Allan, J. D., 1.
 McVeigh Lake area: Bateman, J. D., 1.
 Mineral map: Canada G. S., 2.
 Morton Lake area: Harrison, J. M., 2.
 Prospecting areas: de Wet, J. P., 1.
 Sherridon area: Canada G. S., 1.
 Tramping Lake, N. part: Stanton, M. S., 1.

Paleontology.

- Cephalopoda, Ord., Hudson Bay, W. shore: Miller, A. K., 14.

Manitoba—Continued.

Paleontology—Continued.

Foraminifera, Boyne Upper Cret. beds:
Wickenden, R. T. D., 1.

Petrology.

Barrington Lake area: Minton, M. C., 2.
McVeigh Lake area: Bateman, J. D., 1.
Sherridon area: Canada G. S., 1.
Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.

Physical geology.

Barrington Lake area: Minton, M. C., 2.
Churchill area: Williams, M. Y., 3.
Lynn Lake area: Allan, J. D., 1.
McVeigh Lake area: Bateman, J. D., 1.
Metamorphism, regional: Harrison, J. M., 3.
Morton Lake area: Harrison, J. M., 2.
Prospecting areas: de Wet, J. P., 1.
Sherridon area: Canada G. S., 1.
Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.
Tramping Lake, N. part: Stanton, M. S., 1.

Physiographic geology.

Barrington Lake area: Minton, M. C., 2.
Churchill area: Williams, M. Y., 3.
McVeigh Lake area: Bateman, J. D., 1.
Prospecting area: de Wet, J. P., 1.

Mansfieldite-scorodite series, Hobart Butte,
Oreg.: Allen, V. T., 4.

Map and aerial photograph reading: Mil. Ser.
P. C., 1.

Map Information Office, U.S.G.S.: Fuechsel,
C. F., Jr., 1.

Map projection demonstration apparatus: Collins, R. F., 1.

Marble.

Arizona, N., onyx: McKee, E. D., 2.
California, Pine Creek, Adamson mines,
Inyo Co.: Bateman, P. C., 1.

Colorado, construction materials: U. S. G.
S., 3, no 10.

Nonmetals: Vanderwilt, J. W., 5.

Snowmass Mtn. area: Vanderwilt, J.
W., 6.

Idaho, Orofino area: Johnson, C. H., 1.

Maryland, Campbell quarry, Texas: Levey,
H., 1.

Carroll, Frederick Cos.: Singewald, J.
T., Jr., 2.

Mexico, Tlaxcala: Blásquez López, L., 1.

Missouri: Hinchey, N. S., 1.

Montana, pre-Cambrian carbonate rocks:
Heinrich, E. W., 8.

New York, Gouverneur talc dist.: Engel,
A. E. J., 4.

North Carolina, ceramic min. deposits:
Greaves-Walker, A. F., 1.

Spruce Pine dist.: Olson, J. C., 1.

United States, Missouri Valley area: Dow,
D. H., 1; U. S. G. S., 3, no. 1.

Vermont: Jacobs, E. C., 1, 4.

Wyoming: U. S. G. S., 3, no. 9.

Marcasite.

Idaho, Last Chance-Hornsilver mines: Anderson, A. L., 5.

Illinois, S.: McClure, S. M., 5.

Marcasite—Continued.

Manitoba, Tramping Lake, N. poss.: Stanton, M. S., 1.

Michigan, N., min. collecting: Luoma, W. E., 1.

Missouri, Fredericktown mining dist.: Kidwell, A. L., 4.

Ohio, Clay Center collecting: Mihelcic, J. F., 1.

Oregon, Horse Heaven deposit: Lewis, F. E., 1.

Pennsylvania, fire clays, minerals: Leatham, E., 1.

Vandergrift min. locs.: Hamilton, H. V., 1.

Marine animals and salinity: Gunter, G., 1, 2.

Marine ecology as related to paleontology: Ladd, H. S., 1.

Marine microbiology: ZoBell, C. E., 2.

Mariposite, chrome micas: Whitmore, D. R. E., 1.

Marl.

Greenland, East, Kap Hope area: Rosenkrantz, A., 1.

Mississippi, Lee Co.: Vestal, F. E., 1.

North Carolina: Adair, R. B., 1; Berry, E. W., 3.

Utah, Whirlwind Valley: Ives, R. L., 5.

Virginia, New Kent Co.: Hickman, R. C., 3.

Marmatite, N. Mich., collecting: Luoma, W. E., 1.

Marshes, Glynn Co., Ga.: Gibson, C. D., 1.

Martinique. See West Indies.

Maryland.

Magnetic surveys, Worcester Co., ground vs. airplane: Kuehn, H. E., 1.

Areas described.

Carroll, Frederick Cos.: Stose, A. J., 1.

Economic geology.
Asbestos: Bangs, H., 1.

Carroll, Frederick Cos.: Singewald, J. T., Jr., 1, 2.

Chromite: Ostrander, C. W., 1.

Clay, Penn., W.: Waage, K. M., 1.

Historical geology.
Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.

Clay, Penn., W.: Waage, K. M., 1.

Sedimentary fms., Washington, D. C., area: Darton, N. H., 1.

South Mtn. fold, oölite defm.: Cloos, E., 3.

Mineralogy.
Campbell quarry minerals, Texas: Levey, H., 1.

Carroll, Frederick Cos. res.: Singewald, J. T., Jr., 1, 2.

Chromite: Ostrander, C. W., 1.

Comparative weathering, common heavy minerals: Dryden, A. L., Jr., 1.

Gold mine, abandoned, Great Falls: Zodac, P., 10.

Granite, Woodstock, linear analysis Chayes, F., 1.

Maryland—Continued.

Mineralogy—Continued.

Liberty copper mine, Frederick Co.: Miller, V. J., 1.

Rutile, Harford Co.: Tomlinson, W. H., 1.
Wernerite, fluorescent, Texas area: Price, W. E., Jr., 1.

Paleontology.

Fulpia, Upper Cret. mollusk: Stephenson, L. W., 1.

Ostracoda, Eocene, Cret.: Schmidt, R. A. M., 2.

Pearl, Pleist., Pt. Lookout: Brown, R. W., 1.

Petrology.

Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 2.

Clay, Penn., W.: Waage, K. M., 1.

Deweylite, fluorescent, Soldier's Delight: Tomlinson, W. H., 2.

Granite, Woodstock, linear analysis: Chayes, F., 1.

South Mtn. fold, oölite defm.: Cloos, E., 3.

Stylolites in sandstone: Andrews, D. A., 3.

Physical geology.

Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.

Caves: Muma, M. H., 2.

Comparative weathering, common heavy minerals: Dryden, A. L., Jr., 1.

Magnetic anomalies, Worcester, Wicomico Cos.: Balsley, J. R., Jr., 3; U. S. G. S., 1, no. 46.

Magnetic surveys, Worcester Co., ground vs. airplane: Kuehn, H. E., 1.

South Mtn. fold, oölite defm.: Cloos, E., 3.

Underground water.

Carroll, Frederick Cos. ground-water res.: Bennett, R. R., 1.

Ground water, Baltimore area: Geyer, J. C., 1.

Mascagnite, "The Geysers", Calif.: Vonsen, M., 1.

Massachusetts.

Historical geology.

Chelmsford granite: Currier, L. W., 1.
Cooperative geol. program, U.S.G.S.-Mass.

Dept. Pub. Works: Currier, L. W., 3.

Gneiss dome, Shelburne Falls: Balk, R., 1.

Pothole devel. time-measurement, Westfield: Lougee, R. J., 4.

Mineralogy.

Blueberry Mtn. quarry minerals: Eisenberg, J. M., 1.

Granite St. quarry, Somerville: Palache, C., 3.

Holland St. quarry, Somerville: Palache, C., 3.

Medford quarry. calcite, barite: Palache, C., 3.

Mystic quarries. Somerville: Palache, C., 3.

Olivine, Chester area: Palache, C., 3.

Purgatory Chasm minerals: Wiley, J. 1.

Massachusetts—Continued.

Mineralogy—Continued.

Warren St. quarry, Brighton: Palache, C., 3.

Petrology.

Beach, Ipswich, textural changes: Schalk, M., 1.

Chelmsford granite: Currier, L. W., 1.
Gneiss dome, Shelburne Falls: Balk, R., 1.

Paleontology.

Boylston Street fishweir, Boston: Antevs, E. V., 1.

Physical geology.

Cape Cod shoreline changes from storms, 1944-45: Chute, N. E., 1.

Chelmsford granite: Currier, L. W., 1.
Gneiss dome, Shelburne Falls: Balk, R., 1.

Grassy ls., Taunton River: Johnson, F., 2.

Mystic quarries, Somerville: Palache, C., 3.

Pothole development, Westfield: Lougee, R. J., 4.

Physiographic geology.

Cape Cod shoreline changes from storms, 1944-45: Chute, N. E., 1.

Mastodon "hair" is algae: Eiseley, L. C., 1.

Mattoon oil field, Ill.: Kniseley, H. B., 1.

Meanders.

Alluvial rivers: Friedkin, J. F., 1.

Alaska, N. Coastal Plain: Cabot, E. C., 2.

Great Valley, Pa., elongate entrenched,

Martinsburg sh.: Strahler, A. N., 1.

Kansas, Arkansas River Valley: Williams, C. C., 2.

Mississippi River meander belts: Russell, R. J., 2.

Pennsylvania, Conodoguinet Creek, Martinsburg sh.: Strahler, A. N., 1.

Meaning of evolution: Miller, D. L., 1.

Measure for powders used in spectrography: Feldman, C., 1.

Measurement, alpha index of refraction, micaceous minerals: Lindberg, M. L. L., 1.

Measurement, geologic time: Lane, A. C., 2.

Mechanical aids to prospecting: Gayer, R. B., 1.

Mechanical analysis.

Pennsylvania, Lehigh River flood deposit, Bethlehem, May 1942: Gault, H. R., 1.

Sieve shakers, comparison: Swineford, A., 1.

Meetings. See Associations.

Melanterite.

California, Alpine Co. collecting: Nichols, J. B., 1.

"The Geysers": Vonsen, M., 1.

West Virginia, Pittsburgh coal seam concretions: Foster, W. D., 1.

Melilites, isomorphic phenomena: Goldsmith, J. R., 2.

Melonite, Montray mines, Quebec, crystal structure: Peacock, M. A., 1.

Melting relations, soda-potash feldspars:

Schairer, J. F., 1.

Meneghinite, Canada, W.: Warren, H. V., 6.

Meneghinite—Continued.

- Idaho, Clark Fork dist. lead-silver mineralization: Anderson, A. L., 2.
- Mercury. See Quicksilver.
- Mercury valve for Thoulet, Sonstadt solutions: Sud, C. P., 1.
- Merrillite, exclusively meteoritic mineral: Neuerburg, G. J., 1.
- Mesa oil field, Calif.: Simonson, R. R., 1.
- Mesozoic (undifferentiated).
- Arizona, Ajo mining dist.: Gilluly, J., 1.
- Wilcox Basin, Cochise, Graham Cos.: Jones, R. S., 1.
- British Columbia, Red Rose tungsten mine, Hazelton: Stevenson, J. S., 1.
- California, Ivanpah quad.: Hewett, D. F., 1.
- United States, Missouri Valley area: U. S. G. S., 3, no. 1.
- Wyoming, Gros Ventre Mts., Mt. Leidy Highlands: Foster, H. L., 1.
- Wind River Mts. N. flank: Weart, R. C., 1.
- Meta-andesite, Wetetnagami River area, Quebec: Fairbairn, H. W., 1.
- Metagabbro, Bucks Co. quarry, Pa.: Weiss, J., 2.
- Metamorphic rocks.
- Virginia, Charlottesville Mtg. Field Trip, 1947: Pegau, A. A., 2.
- Washington, Methow Valley rocks: Barksdale, J. D., 2.
- Metamorphism.
- Alaska, Spirit Mtn. nickel mine: Pierce, H. C., 1.
- Southeast: Kennedy, G. C., 2; Shaw, V., 1.
- Yakobi Island nickel deposits: Kennedy, G. C., 1.
- Arizona, Ajo mining dist.: Gilluly, J., 1.
- Aravaipa deposit, Graham Co.: Denton, T. C., 3.
- Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.
- British Columbia, Ashcroft area: Duffell, S., 2.
- Coast Range batholith: Phemister, T. C., 1.
- California, Coast Ranges, glaucophane schists: Switzer, G., 5.
- Edison oil field: Beach, J. H., 2.
- Iron Hat deposits: Lamey, C. A., 1.
- Monterey fm.: Bramlette, M. N., 1.
- North Elder Creek area chromite: Ryneerson, G. A., 1.
- Ramona quad.: Merriam, R. H., 1.
- Shasta, California deposits: Lamey, C. A., 1.
- Canada, Flin Flon-Mandy area: Stockwell, C. H., 1.
- Montreal: Clark, T. H., 1.
- Sudbury dist.: Stanley, R. C., 1.
- Carbon-ratio theory: Deegan, C. J., 7.
- Colorado, Beaver-Tarryall dist., Park Co.: Singewald, Q. D., 2.
- Iron Springs mining dist.: Varnes, D. J., 4.

Metamorphism—Continued.

- Colorado—Continued
- Uncompahgre mining dist.: Burbank, W. S., 8.
- Contact metamorphic minerals in melting optical glass: Parsons, W. H., 3.
- Cuba, cent. Camagüey Prov.: Wessem, A., 1.
- Eastern Oriente Prov.: Keijzer, F. G., 3.
- West, middle Oriente Prov.: Vletter, D. R., de, 1.
- Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
- East, eruptives: Rittman, A., 1.
- Kronprins Christians Land: Nielsen, E., 1.
- West Nûgssuak Penin.: Munck, S., 2.
- Guatemala, Quiché, Alta and Baja Verapaz Depts.: Manó, J. C., 2.
- Idaho, Orofino area: Johnson, C. H., 1.
- Iron ore devel. from silicated iron fm.: Tyler, S. A., 1.
- Labrador Penin. E. area: Tanner V., 2.
- Maine, Columbia Falls quad.: Terzaghi, R. D., 1.
- Katahdin pyrrhotite deposit area: Miller, R. L., 1.
- Manitoba, Barrington Lake area: Minton, M. C., 2.
- Northern, regional: Harrison, J. M., 3.
- Massachusetts, Chelmsford granite: Currier, L. W., 1.
- Mexico, Caborca area, NW. Sonora: Cooper, G. A., 1.
- Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
- Nuevo León; Mullerried, 6.
- San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
- Mineral deposits, magmatic origin: Guimarães, D., 1.
- Minerals: Buerger, M. J., 1.
- Minnesota, Mesabi range: Jones, R. H. B., 1.
- Montana, chromite, Red Lodge area: James, H. L., 1.
- Nevada, Eureka area: Gianella, V. P., 2.
- Riley tungsten mine: Holmes G. H., Jr., 1.
- New England, Chelmsford granite, significance: Currier, L. W., 1.
- Keene-Brattleboro area: Moore, G. E., 1.
- New Hampshire, Mt. Pawtuckaway quad.: Freedman, J., 1.
- Mt. Washington quad.: Billings, M. P., 2.
- Percy quad.: Chapman, R. W., 3.
- New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 2.
- New Mexico, Capitan quad.: Sidwell, R., 1.
- Iron Mtn. tungsten deposits. Storms, W. R., 3.
- Little Hatchet Mts. area: Lasky, S. G., 3.
- Los Pinos Mts.: Stark, J. T., 1.
- Socorro Co., Jones iron deposit: Grantham, R. M., 1.

Metamorphism—Continued.

- New York, Gouverneur area: Engel, A. E. J., 2.
 Postanorthosite gabbro, Avalanche Lake: Jaffe, H. W., 1.
 Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 Little Bay area: MacLean, H. J., 1.
 Niggli-Becke process for rock analysis: Bacon, C. S., Jr., 1.
 North America, Cordilleran geosyncline: Eardley, A. J., 1.
 North Carolina, Cherokee iron deposits: Robertson, A. F., 1.
 Raleigh graphite, Wake Co.: Harrington, J. W., 1.
 Nova Scotia, Guysborough Co.: MacNeil, D. J., 2.
 Halifax xenoliths: Douglas, G. V., 2.
 Ontario, Bancroft area paragneisses: Gummer, W. K., 1.
 Brazeau vanadium-bearing magnetites: Harding, W. D., 2.
 Calumet Island mines: McLaren, D. C., 1.
 Rutherglen dist.: Keith, M. L., 1.
 Pennsylvania, Bucks Co. quarry: Weiss, J., 2.
 Puerto Rico: McGuinness, C. L., 1.
 Quebec, Canton Carpentier, Abitibi: Tiphane, M., 1.
 Eastern Tps.: Faessler, C., 3.
 Simard area: Denis, B. T., 1.
 Vauquelin, Pershing, Haig Tps.: Norman, G. W. H., 8.
 Wetnetnami River area: Fairbairn, H. W., 1.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
 South Dakota, Galena-Roubidoux dist.: Berg, J. R., 1.
 Texas, Llano iron deposits: Evans, A. M., 2.
 United States, Appalachian structure: Hietanen, A., 1, 2.
 Tungsten mineralization: Kerr, P. F., 1.
 Utah, Granite Peak area: Ives, R. L., 8.
 Henry Mts. region: Hunt, C. B., 1.
 Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Vermont, Orange Co.: Jacobs, E. C., 2.
 Strafford quad.: Jacobs, E. C., 1, 2.
 Virginia, Pulaski fault, Appalachian Valley: Cooper, B. N., 2.
 Washington, Buckhorn Mtn. dist.: Zoldok, S. W., 1.
 Sultan Basin deposits: Carithers, L. W., 1.
 Metasomatic processes: Holser, W. T., 1.
 Metasomatic nature of replacement: Douglas, G. V., 3.
 Meteor craters.
 Arizona, Meteor Crater origin: Blackwelder, E., 1, 1-a; Darton, N. H., 2; Leonard, F. C., 6; Lewis, W. S., 1.
 Barringer meteorite crater, Canyon Diablo, Ariz.: Nininger, H. H., 6.

Meteor craters—Continued.

- Indiana, Kentland disturbed area: Dietz, R. S., 3.
 Meteoritic impact origin of moon's surface features: Dietz, R. S., 2.
 Moon's cf. earth's craters: Dietz, R. S., 2.
 Meteorites.
 Aerolites, identifying criteria: Leonard, F. C., 17.
 Allen aerolite, Collin Co., Tex.: Monnig, O. E., 2.
 Aleutian Is. meteorite crater (?), Alaska: La Paz, L., 3.
 Arizona, Crater Mound origin: Lewis, W. S., 1.
 Barringer meteorite crater, Canyon Diablo, Ariz.: Nininger, H. H., 6.
 Bradfordwoods, Allegheny Co., Pa., 1886: Leighton, H., 2; Stone, R. W., 1.
 Canyon Diablo, Ariz., possibly destroyed Cliff Dwellers: Newton, A. M., 1.
 Carolina Bays not of meteoritic origin: Barringer, B., 1.
 Catalog, meteoritic falls of the world: Leonard, F. C., 9, 15.
 Cedartown, Ga.: Perry, S. H., 2.
 Chips from the blasted moon: Nininger, H. H., 4.
 Coincidental falls, probability: Hoel, P. G., 1.
 Contraterrene and atomic explosion luminescence: De Ment, J. A., 5.
 Coordinate nos. for meteoritic falls: Leonard, F. C., 8.
 Crater Mound, Ariz.: Leonard, F. C., 6.
 Cryptovolcanic explosion vs. meteorite impact, Kentland area, Ind.: Dietz, R. S., 3.
 Drum Mtn., Utah siderite: Hayes, J. J., 3; Anonymous, 9.
 Edmonton, Ky.: Henderson, E. P., 2.
 Ehrenburg, Yuma Co., Ariz.: Leonard, F. C., 7.
 Electromagnetic cane for finding meteorites: La Paz, L., 1.
 Elements, chemical: Brown, H. S., 2; Buddhue, J. D., 3.
 Elements not found in: Buddhue, J. D., 2.
 Etching, preserving, metallic: Nininger, H. H., 1.
 Fairplay, Mo.: Perry, S. H., 1.
 Falls, time distrib.: Russell, J. A., 1.
 Fire caused by? Tulsa, Okla.: Mather, L. B., Jr., 1.
 Glass from atomic bombs cf. tektites, N. Mex.: Khan, A. R., 1.
 Hawaii, Lanai crater: Buddhue, J. D., 7.
 Identification: Nininger, H. H., 3.
 Iron: Mehl, R. F., 1.
 Iron meteorites, affected by earth's magnetic field: Rhoads, W. A., 1.
 Composition: Brown, H. S., 1.
 Specific gravity: Buddhue, J. D., 5.
 Marathon, Tex., achondritic fall: Monnig, O. E., 1.
 Meteor Crater, Ariz., origin: Blackwelder, E. R., 1, 1-a; Leonard, F. C., 6.

Meteorites—Continued.

- Meteoritic falls, and coordinate numbers:
Leonard, F. C., 4, 5, 8, 9, 15, 16.
- Meteoritic impact origin of moon's surface features: Dietz, R. S., 2.
- Meteoritic iron composition: Buddhue, J. D., 1.
- Meteoritic matter, nature, hypothesis: Anyzeski, V., 1.
- Minerals, exclusive: Neuerburg, G. J., 1.
- Moon cf. earth, craters: Kelly, A. O., 1.
- Moon, origin and topog: Daly, R. A., 1.
- Surface features, origin: Dietz, R. S., 2.
- New Westville, Ohio: Henderson, E. P., 1.
- Nickel in, tests: Anonymous, 10, 11.
- Numbering in collections: Leonard, F. C., 1.
- Observed, unobserved falls, all classes, nos. and percents: Leonard, F. C., 5.
- Oregon, meteoritic falls, Portland area: Pruett, J. H., 1.
- Paragould, Ark., 2/17/30: Nelson, H. E., 1.
- Peña Blanca, Brewster Co., Tex.: Lonsdale, J. T., 1; Monnig, O. E., 1.
- Puente-Ladron aerolite, N. Mex.: La Paz, L., 2, 4; Nininger, H. H., 5; Smith, C. H., 1.
- Rockets vs. meteorites: Watson, F., 1.
- Sedimentary (?) ss. and lss.: Cross, F. C., 1.
- Siderites, Rockwell hardness: Buddhue, J. D., 6.
- Smithonia, Oglethorpe Co., Ga.: Leonard, F. C., 10, 11.
- South Dixon, Ill.: Wilson, B. H., 1.
- Stony meteorites, composition: Brown, H. S., 1.
- Structures, geol., poss. related to lunar craters: Dietz, R. S., 1.
- Study course: Nininger, H. H., 3.
- Tektites cf. to glass from atomic bombs, N. Mex.: Kahn, A. R., 1.
- Temperature in interplanetary space: Leonard, F. C., 12.
- Terms, definitions: Leonard, F. C., 3.
- United States, W., falls: Leonard, F. C., 14; Perry, S. H., 3.
- Utah: Roach, S. P., 1.
- Zodiacal light and counter glow: Leonard, F. C., 2.
- Methods, concepts, geologic, in search for ore deposits: Chace, F. M., 2.

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Areas described.

- Estado Aguascalientes: Lopez G., F., 1.
- Chihuahua, uranium, gold placers: González Reyna, J., 3.
- El Moral, Jalisco quicksilver deposits: González Reyna, J., 10.
- Sonora, Santa Clara, coal beds: Wilson, I. F., 1.

Economic geology.

- Alunite and clays: Knížek, J. O., 1.
- Año Nuevo coal mine, Chihuahua: Cantero Pérez, E., 1.
- Antimony deposits: González Reyna, J., 6, 9; Guiza, R., Jr., 1; White, D. E., 1, 2, 4.

Mexico—Continued.

Economic geology—Continued.

- Calcite crystals, optical: King, C. R., 1.
- Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
- El Cuarenta-min. zone, Durango: Pérez Siliceo, R., 1.
- Estado Aguascalientes: Lopez, G., F., 1.
- Estado Michoacán, N. area: Blásquez López, L., 4.
- Hidalgo dists., deep mineralization: Turban, F., 1.
- Iron deposits, N. group: Toron Villegas, L., 1.
- Lead, zinc, indications: Mullerried, 3.
- Magnetite, Isla Margarita, Baja Calif.: González Reyna, J., 4.
- Manganese: González Reyna, J., 5; Ortiz Mena, R., 1; Pierce, R. V., 1.
- Manganese-silver oxides: Ortiz Mena, R., 1.
- Maravatio-Zitacura dists., Michoacán: Flores, T., 1.
- Mineral deposits: González Reyna, J., 11, 12.
- Mineral industry and resources: González Reyna, J., 3-a; Pérez Siliceo, R., 3.
- Nuevo León: Mullerried, 6.
- Oaxaca, geol. guide book: Barrera, T., 1.
- Oil fields and oil traps: Illing, V. C., 1.
- Opal fields, Queretaro: Major, D. M., 1.
- Pachuca y Real del Monte min. dists.: Turban, F., 1.
- Petroleum devels. 1946: Weeks, L. J., 2.
- Plateau orogeny, relation to ore, oil, ground water: Nye, S. S., 1.
- Quicksilver deposits: González Reyna, J., 10; Hernández Ortiz, D., 1; Pérez Siliceo, R., 2, 4.
- El Cuarenta: Gallagher, D., 1.
- Salt industry: Lozano García, R., 1.
- San Ignacio dist. Sinaloa: Martínez Pérez, F., 1.
- San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
- Sierra de Santa Rosa, Coahuila: Willard, M. E., 3.
- Silver deposits, Batopilas: González Reyna, J., 8.
- Temascaltepec: Cardenas, S., 1.
- Structural geology and mining, Pachuca-Real del Monte dist.: Wissner, E. H., 1.
- Sulfur: González Reyna, J., 1.
- Tin deposits: Foshag, W. F., 1.
- Tlaxcala, hydrology, nonmetallic minerals: Blásquez López, L., 1.
- Uranium, gold, origin in placers, Chihuahua: González Reyna, J., 3.
- Urique mineral zone, Chihuahua: González Reyna, J., 7.
- Zacatecas, min. res.: González Reyna, J., 2.
- Historical geology.
- Altar dist., Sonora: Arellano, A. R. V., 2.
- Ancient man, Valley of Mexico: Arellano, A. R. V., 1.
- Año Nuevo coal mine, Chihuahua: Cantero Pérez, E., 1.

Mexico—Continued.

Historical geology—Continued.

Antimony deposits: González Reyna, J., 9;
Guiza, R., Jr., 1; Hernández Ortiz,
D., 1; White, D. E., 1, 2.

Caborca area, NW. Sonora: Cooper, G.
A., 1.

Coal beds, Santa Clara, Sonora: Wilson,
I. F., 1.

Conchos Valley, Chihuahua: King, R. E., 2.
Cuarento quicksilver dist., Durango: Gal-
lagher, D., 1.

Estado Michoacán, N. area: Blásquez
López, L., 4.

Geologic map, N. part: King, P. B., 4.

Iron deposits, N. group: Toron Villegas,
L., 1.

Maravatio-Zitacuaro dists., Michoacán:
Flores, T., 1.

Mineral industry and reserves, Chihuahua:
González Reyna, J., 3-a.

Neuvo León: Mullerried, 6.

Oaxaca, geol. guide book: Barrera, T., 1.
Paricutin Volcano: Pérez Peña, A., 1;
Williams, H., 2.

Plateau orogeny, relation to ore, oil,
ground water: Nye, S. S., 1.

Pollen analysis and archaeology: Deevey,
E. S., Jr., 1.

Provinces, geog., geol.: Ordoñez, E., 2-a.
Quicksilver deposits: Gallagher, D., 1;
González Reyna, J., 10; Hernández
Ortiz, D., 1; Pérez Siliceo, R., 2.

San Ignacio dist., Sinaloa: Martínez
Pérez, F., 1.

San José antimony dist., Wadley: White,
D. E., 1.

Sierra de la Peña area: Alvarez, M., Jr., 1.
Sierra de Santa Rosa, Coahuila: Willard,
M. E., 3.

Tectonic lines and structures: Waitz, P., 1.
Tin deposits: Foshag, W. F., 1.

Tlaxcala, hydrology, nonmetallic minerals:
Blásquez López, L., 1.

Valley of Mexico, Pleist.: Terra, H. de, 3.
Velasco Cret. shale: Cushman, J. A., 6-a.

Velasco shale age, Tert. or Cret.: Grims-
dale, T. F., 1.

Yaqui Valley, Sonora: Toron Villegas, L.,
2.

Zacatecas, min. res.: González Reyna, J., 2.

Mineralogy.

Adamsite, Ojuella mine, Durango: Mayers,
D. E., 1.

Agates, Bolson de Mapimi: Estlack, J. C., 1.
Alunite and clays: Křížek, J. O., 1.

Antimony deposits, Oaxaca: White, D. E.,
2.

San José, Wadley: González Reyna, J.,
6; White, D. E., 1.

San Juan Mixtepec: Guiza, R., Jr., 1.

Coal beds, Chihuahua: Cantero Pérez, E.,
1.

Santa Clara, Sonora: Wilson, I. F., 1.

Daubréelite, crystal structure: Lundquist,
D., 1.

Mexico—Continued.

Mineralogy—Continued.

El Cuarenta min. zone, Durango: Pérez
Siliceo, R., 1.

Estado Aguascalientes: Lopez, G., F., 1.
Hidalgo dists., deep mineralization: Tur-
ban, F., 1.

Iron deposits, N. group: Toron Villegas,
L., 1.

Magnetic pisolites: Vincienne, H., 1.

Lead, zinc, indications: Mullerried, 3.

Magnesite, Isla Margarita, Baja Calif.:
González Reyna, J., 4.

Manganese deposits: González Reyna, J., 5.

Manganese-silver oxides: Ortiz Mena, R., 1.

Maravatio-Zitacuaro dists., Michoacán:
Flores, T., 1.

Mineral deposits: González Reyna, J., 11,
12.

Mineral industry and res., Chihuahua:
González Reyna, J., 3-a.

Opals, discovery 1853: Anonymous, 24.

Pachuca y Real del Monte min. dists.:
Turban, F., 1.

Quicksilver deposits: Gallagher, D., 1;
González Reyna, J., 10; Hernández
Ortiz, D., 1; Pérez Siliceo, R., 2, 4.

Salt industry: Lozano García, R., 1.

San Ignacio dist., Sinaloa: Martínez Pérez,
F., 1.

Sierra de Santa Rosa, Coahuila: Willard,
M. E., 3.

Silver deposits: Cardenas, S., 1; Gon-
zález Reyna, J., 8.

Structural geology and mining, Pachuca-
Real del Monte dist.: Wissner, E. H., 1.

Tin deposits: Foshag, W. F., 1.

Tlaxcala, nonmetallic minerals: Blásquez
López, L., 1.

Uranium, gold, origin in placers: Chi-
huahua: González Reyna, J., 3.

Urique mineral zone, Chihuahua: Gon-
zález Reyna, J., 7.

Zacatecas, min. res.: González Reyna, J., 2.

Paleontology.

Agates, Bolson de Mapimi fossils: Est-
lack, J. C., 1.

Ammonoidea, Perm., S.: Guiza, R., Jr., 2.

Ancient man, Valley of Mexico: Arellano,
A. R. V., 1; Terra, H., de, 2, 3.

Caborca area, NW. Sonora: Cooper, G. A.,
1.

Cephalopoda, Missn. Caballero fm.: Mil-
ler, A. K., 8.

Ceratobulimina, genus and species: Cush-
man, J. A., 1.

"Cerrito," Tepozotlán area: Mullerried,
1-B.

Coal beds, Santa Clara, Sonora: Wilson,
I. F., 1.

Conchos Valley, Chihuahua: King, R. E., 2.

Coral, Jurua, Cret.: Wells, J. W., 1.

Estado Aguascalientes: Lopez, G., F., 1.

Foraminifera, Upper Cret., Gulf Coastal
area: Cushman, J. A., 2.

Fossils, Cret. lss., Veracruz area: Muller-
ried, 5.

Mexico—Continued.

Paleontology—Continued.

- Human skeleton, Pleist., Tepexpan: Terra, H., de, 1.
 Man, Pleist., Tepexpan: Weidenreich, F., 1.
 Neoradiolites, Cret.: Mullerried, 8.
 Pollen analysis and archaeology: Deevey, E. S., Jr., 1.
 Sierra de la Peña area: Alvarez, M., Jr., 1.
 Sierra de Santa Rosa, Coahuila: Willard, M. E., 3.
 Stegocephalia, genera census: Case, E. C., 1.
 Tortuga, Chiapas, Cret.: Mullerried, 1-a.

Petrology.

- Altar dist., Sonora: Arellano, A. R. V., 2.
 Antimony beds, Oaxaca: White, D. E., 2.
 Caborca area, NW. Sonora: Cooper, G. A., 1.
 Chert lenses in lss., Soyatal: White, D. E., 3.
 Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
 Conchos Valley, Chihuahua: King, R. E., 2.
 Cuarento quicksilver dist., Durango: Gallagher, D., 1.
 El Cuarenta min. zone, Durango: Pérez Siliceo, R., 1.
 Estado Aguascalientes: Lopez G., F., 1.
 Estado Michoacán, N. area: Blásquez López, L., 4.
 Iron deposits, N. group: Toron Villegas, L., 1.
 Magnesite, Isla Margarita, Baja Calif.: González Reyna, J., 4.
 Maravatio - Zitacuaro dists., Michoacán: Flores, T., 1.
 Nuevo León: Mullerried, 6.
 Oaxaca, geol. guide book: Barrera, T., 1.
 Parícutin Volcano area: Jones, A. E., 1; Pérez Peña, A., 1; Shrock, R. R., 5; Williams, H., 2.
 Quicksilver deposits, El Cuarenta, Durango: Pérez Siliceo, R., 4.
 El Moral deposits, Jalisco: González Reyna, J., 10.
 Silver deposits, Chihuahua: González Reyna, J., 8.
 Tlaxcala, nonmetallic min. deposits: Blásquez López, L., 1.
 Uranium, gold, origin in placers, Chihuahua: González Reyna, J., 3.
 Urique min. zone, Chihuahua: González Reyna, J., 7.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Zacatecas, min. res.: González Reyna, J., 2.

Physical geology.

- Altar dist., Sonora: Arellano, A. R. V., 2.
 Antimony beds: Guiza, R., Jr., 1, 9; White, D. E., 2, 4.
 Caborca area, NW. Sonora: Cooper, G. A., 1.
 Cacahuamilpa Cave: Craun, V. S., 1.
 "Cerrito," Tepetzotlán area: Mullerried, 1-B.

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Physical geology—Continued.

- Chert in lenses in lss., origin: White, D. E., 3.
 Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
 Conchos Valley, Chihuahua: King, R. E., 2.
 Cuarento quicksilver dist., Durango: Gallagher, D., 1.
 El Cuarenta min. zone, Durango: Pérez Siliceo, R., 1.
 Eolian erosion, Isth. Tehuantepec and Chapas: Mullerried, 7.
 Estado Aguascalientes: Lopez G., F., 1.
 Exfoliation from chemical weathering, Hollingsworth mine, Sonora: Dodge, T. A., 1.
 Hydrology and karst areas: Osorio Tafall, B. F., 1.
 Iron deposits, N. group: Toron Villegas, L., 1.
 Isla Margarita, Baja Calif.: González Reyna, J., 4.
 Iztaccíhuatl, glaciation, morphology: Robles Ramos, R., 1.
 Jorullo Volcano: Webber, J. W., 2.
 Karst features, Maya region, Yucatan Penin.: Shrock, R. R., 4.
 Landslides, Valley of Yahuiche, 1937: Waitz, P., 2.
 Maravatio-Zitacuaro dists., Michoacán: Flores, T., 1.
 Mineral deposit areas: González Reyna, J., 3-a, 11.
 Nuevo León: Mullerried, 6.
 Oaxaca, geol. guide book: Barrera, T., 1.
 Ocean deep, mtn. chains and volcanic ranges: Gunn, R., 1.
 Pachuca y Real del Monte min. dists.: Turban, F., 1.
 Parícutin Volcano area, activity, deposits, temperatures: Aubert de la Rüe, E., 2; Belz, C. A., 3; Bullard, F. M., 2, 3; Coleman, S. N. M., 1; Foshag, W. F., 2, 3; Jones, A. E., 1; Kennedy, G. C., 3; Krauskopf, K. B., 1, 2, 3; Lester, J. G., 1; Lowdermilk, W. C., 1; Ordoñez, E., 2, 3; Pérez Peña, A., 1; Rosalsky, M. B., 2; Segerstrom, K., 1; Shrock, R. R., 5; Webber, J. W., 1; Wilcox, R. E., 1; Williams, H., 2; Zies, E. G., 1.
 Plateau of Mexico: Nye, S. S., 1.
 Provinces, geog., geol.: Ordoñez, E., 2-a.
 Quicksilver areas: González Reyna, J., 10; Pérez Siliceo, R., 2, 4.
 San José antimony mines near Wadley: González Reyna, J., 9; White, D. E., 1.
 Sierra de la Peña area: Alvarez, M., Jr., 1.
 Sierra de Santa Rosa, Coahuila: Willard, M. E., 3.
 Structural geology and mining, Pachuca-Real del Monte dist.: Wissner, E. H., 1.
 Tectonic lines and structures: Waitz, P., 1.
 Terán area, subsidence, Aug. 1944: Mullerried, 2.
 Tlaxcala area: Blásquez López, L., 1.

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Physical geology—Continued.

- Uranium, gold placers, Chihuahua: González Reyna, J., 3.
 Urique mineral zone, Chihuahua: González Reyna, J., 7.
 Volcanoes: Coleman, S. N. M., 1.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Zacatecas area: González Reyna, J., 2.

Physiographic geology.

- Ancient man in Valley of Mexico: Arelano, A. R. V., 1.
 "Cerrito," Tepozotlán area: Mullerried, 1-B.
 Conchos Valley, Chihuahua: King, R. E., 2.
 El Cuarenta area, Durango: Pérez Siliceo, R., 1.
 Estado Aguascalientes: Lopez G., F., 1.
 Iztaccihuatl, glaciation, morphology: Robles Ramos, R., 1.
 Maravatio - Zitacuaro dists., Michoacán: Flores, T., 1.
 Morphologic regions: Tamayo, J. L., 2.
 Nuevo León area: Mullerried, 6.
 Oaxaca, geol. guide books: Barrera, T., 1.
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- Igneous minerals and rocks: Wahlstrom, E. E., 1.
- Impounding structures control of ore deposits: Mackay, R. A., 1.
- Index X-ray powder spectra, ore minerals: Peacock, M. A., 8.
- Infrared light for min. determination: Bailly, R., 1.
- Interference figures, demonstration: Winchell, H., 4.
- Model to aid explanation: Willard, M. E., 2.
- Iron meteorites, composition: Brown, H. S., 1; Mehl, R. F., 1.
- Iron-bearing melilites in quat. system: Schairer, J. F., 2.
- Kaolin, related minerals, structure: Perkins, A. T., 1.
- Klockmannite, artificial CuSe , identical: Earley, J. W., 1.
- Kodachrome slides, use in teaching: Meen, V. B., 1.
- Leadhillite, twinning: Gordon, S. G., 2.
- Liquid inclusions, measurement: Ingerson, E., 2.
- Luminescence, aid in localizing minerals in polished sections: Yagoda, H., 3.
- Malachite, unit cell: Ramsdell, L. S., 4.

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- Measure for powders used in spectrography: Feldman, C., 1.
- Measurement of minerals: Buerger, M. J., 1.
- Melilites, isomorphic phenomena: Goldsmith, J. R., 2.
- Meteorites, metallic, etching, preserving: Ninninger, H. H., 1.
- Minerals: Neuburg, G. J., 1.
- Meteoritic iron composition: Buddhue, J. D., 1.
- Microanalysis, X-ray diffraction: Donnay, J. D. H., 3.
- Mineral collecting, Pa.: Myers, R. E., 3.
- Mineral key: Graves, H. B., Jr., 1.
- Mineral oxidation: Winchell, A. N., 1.
- Mineral shape, factors in quantitative microscopic analysis: Foster, W. R., 2.
- Minerals, chem. analyses: Burwell, A. L., 3.
- Minerals, silicate, internal structure: Murata, K. J., 1.
- Minerals, story: Whitlock, H. P., 1.
- Moissanite, crystal structure: Ramsdell, L. S., 1.
- Monochromatic light source for petrographic microscope: Townsend, R. C., 1.
- Montmorillonite minerals: Ross, C. S., 1.
- Naming of microscopic ore minerals: Fairbanks, E. E., 4.
- Nature, certain ore-forming solutions: Gratton, L. C., 1.
- Nature of replacement: Douglas, G. V., 3.
- Nepheline structure: Buerger, M. J., 5.
- Nepheline synthesis: Winkler, H. G. F., 1.
- Nevada, Majuba Hill clinoclase: Palache, C., 2.
- NiAs-NiSb system intergrowths: Hawley, J. E., 2.
- Nickel in meteorites, tests: Anonymous, 10, 11.
- Nonsulfide vein minerals, transport, deposition: Smith, F. G., 1.
- Norbergite, chondrodite, synthesis by dry fusion: Rankama, K. K., 2.
- Opal, moisture content, crystal structure: Miller, S., 1.
- Opal formation: Copisarow, A. C., 1.
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- Ore-mineral identification by punched cards: Fairbanks, E. E., 3.
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- Ore minerals, microscopic examination: Pauly, H., 1.
- Oxidation, mineral: Winchell, A. N., 1.
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- Piezoelectricity, apparatus for detecting: Stokes, R. G., 1.

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- Pitchblende and uraninite: Rogers, A. F., 4.
- Platinum wire, electrically heated, for lab. use: Milton, C., 1.
- Precharged luminescences and laws: De Ment, J. A., 3.
- Proustite and xanthoconite, artificial: Peacock, M. A., 6.
- Punched-card identification, ore minerals: Fairbanks, E. E., 3.
- Pyrope garnet and red spinel, distinction: Anderson, B. W., 1.
- Quartz, secondary Dauphiné twinning and irradiation coloring: Armstrong, E. J., 1.
- Quartz oscillator plates, anomalous thermal effect: Bottom, V. E., 1.
- Radiocolloid aggregates, uranium minerals: Yagoda, H., 2.
- Rammelsbergite, structure: Kaiman, S., 1.
- Rare-earth elements and compounds: Yost, D. M., 1.
- Rare earths: Lortie, L., 1.
- Rarer metals: De Ment, J. A., 1.
- Reaction, clay minerals, organic cations: Grim, R. E., 3.
- Red phosphorus, new crystallographic form: Klein, G. E., 1.
- Rocks and rock minerals: Pirsson, L. V., 1.
- Roscoelite, composition: Wells, R. C., 1.
- Rubidium, thallium association: Ahrens, L. H., 3.
- Rutile titanium oxide preparation: Quirke, T. T., 3.
- Salt deposits, fm., geol. history: Weaver, P., 2.
- Sampling, analysis, mineral materials: Oakes, M. C., 2.
- Siderites, Rockwell hardness: Buddhue, J. D., 6.
- Silica, nonvolatile, solubility, transfer in steam: Gillingham, T. E., 1.
- Silicate minerals, chem. behavior and crystal structure: Murata, K. J., 3.
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- Silicon carbide, studies: Ramsdell, L. S., 2.
- Type V. crystal structure: Ramsdell, L. S., 1.
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- Single crystals of some magnetic metals: Bozorth, R. M., 1.
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- Smithite, artificial, natural, crystallog.: Peacock, M. A., 2.
- Smithsonian, pioneer in American geology: Bassler, R. S., 2.
- Space group by morphol. data: Donnay, J. D. H., 5.
- Spectrochemical analysis, rocks, minerals: Claffy, E. W., 1.
- Spectroscope in determinative mineralogy: Peterson, M. J., 1.
- Stony meteorites, composition: Brown, H. S., 1.

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- Structure, internal, silicate minerals: Murata, K. J., 1.
- Svanbergite, woodhouseite, alunite computations: Pabst, A., 3.
- System Fe_2O_4 - Mn_2O_4 - ZnMn_2O_4 - ZnFe_2O_4 , phase relations: Mason, B., 2.
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- Tellurides, pyrosynthesis: Thompson, R. M., 4.
- Temperature in mineralogy: Buerger, M. J., 7.
- Terms, definitions, for meteorites: Leonard, F. C., 3.
- Textbooklet: Canadian Legion Educ. Serv., 1.
- Thallium, rubidium assoc. in minerals: Ahrens, L. H., 3.
- Thin sections, cutting, polishing: Meyer, C., 1.
- Tourmaline group in sediments: Krynine, P. D., 1.
- Tungsten: Hedley, M. S., 3.
- Field test: North, V., 2.
- Unit cells, space groupings, childrenite, lindgrenite and probertite: Barnes, W. H., 1.
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- Uranium hunting with Geiger counter: De Ment, J. A., 12.
- Uranium, thorium in polished secs., alpha rays: Yagoda, H., 1.
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- Vanadium, determination by peroxide method: Foster, M. D., 1.
- Separated from chromium with ethyl acetate: Foster, M. D., 2.
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- Weberite and jarlite study: Ferguson, R. B., 3.
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- Minerite, Calif.: Heinrich, E. W., 1.
- Mining and geology: Joralemon, I. B., 1.
- Sales, R. H., 1.
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- Geologic training: Longwell, C. R., 1.
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- Mining industry and geophys. prosp.: Joesting, H. R., 1.
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- Northeast, geology, ground water: Thiel, G. A., 2.

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- Mesabi range, magnetic explor.: Jones, R. H. B., 1.
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- Geologic structure: Ver Steeg, K., 3.
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- Alluviation, Whitewater Valley: Happ, S. C., 4.
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Physiographic geology—Continued.

- Lake Agassiz, life history: Nikiforoff, C. C., 3.
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- Moraines, minor: Gwynne, C. S., 2.
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- Miquelon, mineral deposits: Aubert de la Rüe, E., 1.

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- Lee County: Vestal, F. E., 1.

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- Black Warrior Basin, oil geology: Mellen, F. F., 1.
- Contouring fault planes: Reiter, W. A., 1.
- Cranfield oil and gas field: Zebal, G. P., 1.
- Itawamba Co.: Vestal, F. E., 2.
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- Mineral res.: Highsaw, R. B., 1.
- New Home salt dome: Nettleton, L. L., 1.
- Oil and gas fields: Shreveport Geol. Soc., 1.
- Rowell well no. 1, Heidelberg field, faulting: Stephenson, L. W., 2.
- Tinsley oil field: Shroeder, F. R., 1.

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- Cenozoic, Gulf Coast: Murray, G. E., Jr., 1.
- Correlation, pre-Selma Upper Cret. fms., Tuscaloosa Co.-Neshoba Co.: Eargle, D. H., 2; U. S. G. S., 2, no. 20.
- Cranfield oil and gas field: Zebal, G. P., 1.
- Cretaceous, subsurface: Alexander, C. W., 2.
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- Jackson area: Monroe, W. H., 3; U. S. G. S., 1, no. 65.
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- Marine sed. Tert. cycles, Gulf Coast, Miss. Embayment: Bornhauser, M., 1.
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Paleontology.

- Buntonia Ostracoda, revision: Howe, H. V., 3.
- Ceratobulimina, genus and species: Cushman, J. A., 1.

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Paleontology—Continued.

- Foraminifera, Byram marl type loc.: Cushman, J. A., 1.
 Cretaceous: Cushman, J. A., 1.
 Oligocene, Vicksburg area: Todd, M. R. 1.
 Woodbine age: Cushman, J. A., 1.
 Glyptobairdia, new Ostracoda genus: Stephenson, M. B., 2.
 Hauerina, Oligocene, Byram marl: Cushman, J. A., 1.
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 Macrofossils, Upper Cret., wells: Stephenson, L. W., 5.
 Rowell well no. 1, Heidelberg field: Stephenson, L. W., 2.

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 Itawamba Co.: Vestal, F. E., 2.
 Jackson area: Monroe, W. H., 3; U. S. G. S., 1, no. 65.
 Kilmichael dome, N.-cent.: Priddy, R. R., 1.
 Lee County: Vestal, F. E., 1.
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 Rowell well no. 1, Heidelberg field, faulting: Stephenson, L. W., 2.
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Physiographic geology.

- Itawamba Co.: Vestal, F. E., 2.
 Kilmichael dome: Priddy, R. R., 1.
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Underground water.

- Ground water: Highsaw, R. B., 1.

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- Relation, industry and State Survey: Smith, G. C., 1.
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- Alice zinc mine, Ozark Co.: Needham, A. B., 1.
 Barite deposits: Frank, A. J., 1; Kidwell, A. L., 2; Mather, W. B., 2.
 Bourbon iron prosp., Crawford Co.: McMillan, W. D., 1.
 Fire clays: Keller, W. D., 12; Miller, B. K., 1.
 Forest City Basin devel.: U. S. G. S., 1, no. 48.
 Fredericktown mining dist. minerals: Kidwell, A. L., 4.
 Lead belt geology: Wagner, R. E., 1.
 Marble: Hinchey, N. S., 1.
 Mineral deposits, Morgan Co.: Mather, W. B., 1.
 Mineral res.: Keller, W. D., 2; Midwest Research Inst., 1.

Missouri—Continued.

Economic geology—Continued.

- O'Jack mining Co., zinc, lead deposits: Brichta, L. C., 2.
 Petroleum and gas poss.: Greene, F. C., 1.
 Phelps lease, Jasper Co.: Brichta, L. C., 1.
 Pyrite deposits: Brown, J. S., 1.
 Zinc deposits: Ballinger, H. J., 1; Kidwell, A. L., 3.

Historical geology.

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 Barite deposits: Mather, W. B., 2.
 Fern Glen fm., correl.: Mehl, M. G., 1.
 Gulf Coastal Plain in SE.: Grohskopf, J. G., 2.
 Jasper Co. lead deposits: Brichta, L. C., 2.
 Lead-belt geology: Wagner, R. E., 1.
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 Petroleum and gas poss.: Greene, F. C., 1.
 Platin fm.: Peery, T. E., 1.
 Pleistocene glacial problems: Holmes, C. D., 3.
 Post-Cambrian ig. activity: Kidwell, A. L., 7.
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Mineralogy.

- Agates from glacial source: Grimstead, L., 1.
 Alice zinc mine, Ozark Co.: Kidwell, A. L., 3; Needham, A. B., 1.
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 Calcite fm. in old mine: Kidwell, A. L., 8.
 Fairplay meteorite: Perry, S. H., 1.
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 Iron prosp., Bourbon, Crawford Co.: McMillan, W. D., 1.
 Lead belt: Wagner, R. E., 1.
 Lead-zinc deposits, Jasper Co.: Ballinger, H. J., 2; Brichta, L. C., 2.
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 Pyrite deposits: Brown, J. S., 1; Herbert, P., Jr., 1.
 Quartz, crystalline. Boulder City area: Patterson, T. A., 1.
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 Sulfide replacement, fossil fern fruit: Keller, W. D., 9.
 Twinned pseudomorphs after pyrite. Kings's Butte: Ellis, M. W., 1.

Paleontology.

- Actinocrinus parvus, St. Louis ls.: Kirk, E., 4.
 Algal lss., Missn., St. Louis area: Johnson, J. H., 1.

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Paleontology—Continued.

- Beyrichoceras, Missn. Boone fm. goniatites: Miller, A. K., 7.
 Bryozoa, Sil., Dev.: Loeblich, A. R., Jr., 3.
 Cephalopoda, Ord.: Miller, A. K., 2.
 Pennsylvanian Winterset ls., Jackson Co.: Miller, A. K., 13.
 Conodonts, Dutchtown Ord. fm.: Youngquist, W. L., 2.
 Fern Glen fm.: Mehl, M. G., 1.
 Fish, Lower Ord.: Miller, A. K., 5.
 Illaenus, muscle scars: Sinclair, G. W., 10.
 Platygonus, extinct peccary from Cherokee Cave: Simpson, G. G., 5.

Petrology.

- Cheltenham fire clays, shales, origin: Keller, W. D., 1.
 Cherts, Columbia area: Trefethen, J. M., 2.
 Contact deposits at unconformities: Branson, E. B., 4.
 Mineral deposits, Morgan Co.: Mather, W. B., 1.
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 Pyrite deposits, origin: Herbert, P., Jr., 1.

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 Barite deposits: Mather, W. B., 2.
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 Columbia area cherts: Trefethen, J. M., 1, 2.
 Earthquakes, NE. Ozarks, 1933-45: Heinrich, R. R., 1.
 Levee foundation, Kansas City, elec.-resistivity prosp.: Happ, S. C., 2.
 Post-Cambrian ig. activity: Kidwell, A. L., 7.
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 Pyrite deposit: Brown, J. S., 1; Herbert, P., Jr., 1.
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- Agates from glacial sources: Grimstead, L., 1.
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 Preglacial topog.: Grohskopf, J. G., 1.
Underground water:
 Ground water: Anderson, K. E., 1; Grohskopf, J. G., 1.
 Pyrite deposits: Brown, J. S., 1.
 Rymer ebb and flow spring, Current River: Keller, W. D., 3.
 Well contamination: Anderson, K. E., 2.

Moissanite, silicon carbide, Type V, crystal structure: Ramsdell, L. S., 1.

Molasse and flysch: Eardley, A. J., 2.

Molding sand. See also Sand.

- Clays, bonding action: Grim, R. E., 2.
 Ohio, min. res.: Stout, W. E., 3.

Molding sand—Continued.

Reaction, clay minerals-organic cations: Grim, R. E., 3.

Mollusca. See also Cephalopoda; Gastropoda; Invertebrata (general); Pelecypoda; Scaphopoda.

Alabama: SE. Geol. Soc., 2.

Southeast: MacNeil, F. S., 1.

Arizona, Island Mesa Dev. fauna: Stoyanow, A. A., 1.

Aspidobranchia, etc., Fla., Ga.: Gardner, J. A., 1.

Bermuda, preglacial faunas: Moore, H. B., 1.

Biometrical analysis of assemblages: Schenck, H. G., 1.

California, Los Angeles Pliocene: Willett, G., 1.

Newport Bay area, Pleist.: Bruff, S. C., 1.

Palos Verdes Hills fauna: Woodring, W. P., 1.

Reef Ridge fauna: Stewart, R. B., 1.

Ctenobranchia, etc., Fla., Ga.: Gardner, J. A., 1.

Cuba, Tert.: Aguayo, C. G., 1, 2.

Curaçao, West Indies, Tert.: Regteren Altena, C. O., van, 1.

Distribution, fossil fresh-water mollusks: Yen, T.-C., 7.

Fauna, Gatun fm., Panama Canal Zone: Keen, A. M., 1.

Florida, western: SE. Geol. Soc., 1.

Fulpia, Tert., Md., Upper Cret.: Stephenson, L. W., 1.

Genera of Brugièra, names: Dodge, H., 1.
 Greenland, West, faunas: Laursen, D., 1.
 Idaho, SE., Tert. fresh-water: Yen, T.-C., 5.

Mexico, Caborca area, NW. Sonora: Cooper, G. A., 1.

Mississippi, Lee Co., faunas: Vestal, F. E., 1.

New York, Clinton, W. cent., fauna: Gillette, T., 1.

North America, Jackson Eocene, Miss. Embayment, Sabine, Alabama Rivers: Harris, G. D., 1.

Oregon, upper Nehalem River Basin: Warren, W. C., 1.

Ostreidae, nomenclatural synopsis: Stenzel, H. B., 5.

Pearl, Pleist., Md.: Brown, R. W., 1.

Quebec, Shipshaw area, Pleist.: Leggett, R. F., 1.

Scaphopoda, Fla., Ga.: Gardner, J. A., 1.

Trinidad, Miocene Springvale beds fauna: Rutsch, R. F., 1.

United States, Atlantic Coast, N. J.-Ga., macrofossils: Richards, H. G., 6.

Great Plains, Mo. Valley Pleist. fauna: Leonard, A. B., 3.

Univalves, Jackson Eocene, Miss. Embayment, U. S.: Palmer, K. E. H. V., 1, 2.

Utah, central: Spieker, E. M., 1.

Pliocene Salt Lake fm., Logan: Yen, T.-C., 8.

Mollusca—Continued.

- West Indies, Curaçao, Tert.: Regteren Altena, C. O., van, 1.
Wyoming, Sage Creek, Lower Cret.: Yen, T.-C., 4.
Sheridan Co., Paleocene: Yen, T.-C., 1.
Sublette Co., Juras. fresh-water: Yen, T.-C., 3.

Molybdenite.

- Alaska, SE.: Shaw, V., 1; Twenhofel, W. S., 1.
U. S. Geol. Survey min. invs. 1943-44: Reed, J. C., 1.
Wrangell dist., Groundhog Basin: Gault, H. R., 3.
Arizona, San Manuel copper prospect: Steele, H. J., 1.
Maine, Catherine Mtn.: Trefethen, J. M., 4.
New Jersey, McAfee quarry: Zodac, P., 2.
North America, desert minerals: Belz, C. A., 2.
Ontario, Renfrew Co. locs.: Eisenberg, J. M., 2.
Quebec, Barraute area, Abitibi Co.: Tremblay, L. P., 3.
Lacorne map area, Abitibi: Tremblay, L. P., 1, 2.

Molybdenum.

- Alaska, SE.: Shaw, V., 1.
Arizona, Amargosa deposit, Pima Co.: Tainter, S. L., 3.
British Columbia, Ashcroft area: Duffell, S., 2.
California, Pine Creek, Adamson mines: Bateman, P. C., 1.
Colorado, Climax mine: Vandervilt, J. W., 3; Anonymous, 61.
Kokomo mining dist.: Koschmann, A. H., 1.
Metallic min. deposits: Fischer, R. P., 1; U.S.G.S., 3, no. 8.
Metals: Vandervilt, J. W., 5.
El Salvador: Basauri, D., 1.
New Mexico, min. res.: Benjovsky, T. D., 3.
North Carolina, Halifax Co.: Robertson, A. F., 2.
Oregon, Clackamas Co., ilsemannite:
Staples, L. W., 2.
Rarer metals: De Ment, J. A., 1.
Single crystals of some magnetic metals: Bozorth, R. M., 1.
Texas: Moore, J. R., III, 1; Sellards, E. H., 4.
United States, Missouri Valley: U.S.G.S., 3, no. 1.
Utah, strategic mineral locs.: Buranek, A. M., 1.
White Pine Canyon near Alta: Buranek, A. M., 2.
Washington, Bi-Metallic Mtn. deposit: Storch, R. H., 1.
Monadnocks, Kans., Barton Co. buried hills: Walters, R. F., 1.
Monarchopemmatites for Pseudopemmatites: De Laubenfels, M. W., 1.

Monazite, N. Am., cerium and thorium: Roots, E. F., 1.

Monochromatic light source for petrographic microscope: Townsend, R. C., 1.

Montana.***Economic geology.***

- Bear Trap corundum deposit: Hopkins, J. B., 1.
Bighorn Basin Field Conference, Aug. 5-8, 1947: Wyoming Univ., 1.
Bighorn Basin oil and gas fields: Pierce, W. G., 1; U.S.G.S., 1, no. 74.
Bull Run copper deposit, Silver Bow Co.: Roby, R. N., 2.
Carbonate pre-Camb. rocks: Heinrich, E. W., 8.
Cat Creek oil field: Perry, E. S., 2.
Choteau titaniferous magnetite deposit, Teton Co.: Wimmeler, N. L., 2.
Chromite, Red Lodge area: James, H. L., 1.
Copper, Moffet-Johnston area, Madison Co.: Roby, R. N., 1.
Corundum, Gallatin Co.: O'Brien, R. D., 2.
Cut Bank-West Kevin-border oil, gas fields: Erdmann, C. E., 2; U.S.G.S., 8.
Devonian, NW. Mont., oil poss.: Sloss, L. L., 1; U.S.G.S., 2, no. 25.
Dickite clay deposits: Dougan, C. W., 1.
Elk Basin oil and gas field: McCabe, W. S., 2.
History, oil and gas devel., Big Horn Basin: Hares, C. J., 3.
Kevin-Sunburst oil fields, Toole Co.: U. S. G. S., 12, 13.
Magnetite, Running Wolf dist.: Goodspeed, G. E., 2.
Metallic mineral deposits: Chace, F. M., 1; U.S.G.S., 3, no. 16.
Overthrusting and oil accumulation: Blackstone, D. L., Jr., 3.
Petroleum geology: Emrick, E. R., 1.
Petroleum poss., Dev.: Sloss, L. L., 4.
Plains structure contour map: Dobbin, C. E., 3.
Queen Mary copper project, Missoula Co.: Brinton, W. H., 1.
Sand, gravel deposits: Larrabee, D. M., 4; U.S.G.S., 3, no. 6.
Southern Cross iron deposits, Deer Lodge Co.: Wimmeler, N. L., 1.
Historical geology.
Bear Trap corundum deposit, Madison Co.: Hopkins, J. B., 1.
Big Belt Range, N.: Lyons, J. B., 1.
Bighorn Basin area: Andrews, D. A., 2; Downs, G. R., 1; Fanshawe, J. R., 1; Mackin, J. H., 1; Thom, W. T., Jr., 2.
Bitterroot Range front structure: Ross, C. P., 3.
Cat Creek oil field: Perry, E. S., 2.
Choteau titaniferous magnetite deposit, Teton Co.: Wimmeler, N. L., 2.
Chromite, Red Lodge area: James, H. L., 1.
Clark Fork-Kootenai River devel. plan: Erdmann, C. E., 1.

Montana—Continued.

Historical geology—Continued.

- Copper, Moffet-Johnston area, Madison Co.: Roby, R. N., 1.
- Corundum deposits, Gallatin Co.: O'Brien, R. D., 2.
- Cut Bank-West Kevin-border oil, gas fields: Erdmann, C. E., 2; U.S.G.S., 8.
- Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.
- Dating by heavy minerals, Beartooth region: Stow, M. H., 1.
- Devonian: Laird, W. M., 4.
- Central and NW.: Sloss, L. L., 4.
- Northwest Montana, oil poss.: Sloss, L. L., 1; U.S.G.S., 2, no. 25.
- Dickite clay deposits: Dougan, C. W., 1.
- Elk Basin oil and gas field: McCabe, W. S., 2.
- Faulting, Late Cenozoic, W.: Pardee, J. T., 1.
- Formation names, Bighorn Basin: Sielaff, R. L., 1.
- Heavy-mineral studies, Bighorn Basin: Stow, M. H., 2.
- Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.
- Kevin-Sunburst oil fields, Toole Co.: U.S.G.S., 12, 13.
- Paleozoic, Upper, Mesozoic rock secs., S.-cent.: Gardner, L. S., 1.
- Petroleum geology: Emrick, E. R., 1.
- Plains, structure contour map: Dobbin, C. E., 3.
- Plants, fossil, Juras.-Cret. boundary: Brown, R. W., 3.
- Pryor Mts. structure, Bighorn Basin: Blackstone, D. L., Jr., 2.
- Queen Mary copper project, Missoula Co.: Brinton, W. H., 1.
- Sedimentary rocks, distrib., Great Plains: Perry, E. S., 1.
- Tertiary, early, strat. correl.: Jepsen, G. L., 1.
- Thrust faults, Bearpaw Mts. area origin: Reeves, F., 2.

Mineralogy.

- Bighorn Basin Field Conf., Aug. 5-8, 1947: Wyoming Univ., 1.
- Chromite, Red Lodge area: James, H. L., 1.
- Clinohumite, Dillon: Lindberg, M.L.L., 3.
- Copper prospects: Brinton, W. H., 1; Roby, R. N., 1, 2.
- Corundum, Gallatin Co.: O'Brien, R. D., 1.
- Dickite clay deposits: Dougan, C. W., 1.
- Drusy vugs, monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
- Heavy-mineral studies, Bighorn Basin: Stow, M. H., 2.
- Magnetite deposits: Goodspeed, G. E., 2; Wimmeler, N. L., 2.
- Metallic mineral deposits: Chace, F. M., 1; U.S.G.S., 3, no. 16.
- Pegmatites, alkalic, Bearpaw Mts.: Pecora, W. T., 2.
- Southern Cross iron deposits, Deer Lodge Co.: Wimmeler, N. L., 1.

Montana—Continued.

Mineralogy—Continued.

- Spectrographic prosp. for beryllium in pegmatite dikes: Perry, E. S., 3.
- Xanthophyllite, Butte area: Felts, W. M., 2.

Paleontology.

- Ammonite, giant Cret.: Miller, A. K., 4.
- Brachiopod, Upper Dev., Three Forks area: Laird, W. M., 3.
- Dinosaur, carnivorous, Lance fm.: Gilmore, C. W., 5.
- Fauna, Amsden, Heath fms.: Gardner, L. S., 1; Sloss, L. L., 3.
- Folsom, Yuma, early points, Glendive area: Mulloy, W., 1.
- Microfossils, Ft. Union coal, Red Lodge area: Wilson, L. R., 5.
- Paleopsephurus, other polydontid fish, Upper Cret.: MacAlpin, A. J., 1.
- Plants, Juras.-Cret. boundary: Brown, R. W., 3.

Petrology.

- Big Belt Range: Lyons, J. B., 1.
- Caliche in glacial chronology: Howard, A. D., 1.
- Carbonate pre-Camb. rocks: Heinrich, E. W., 8.
- Chromite, Red Lodge area: James, H. L., 1.
- Copper deposits, Madison Co.: Roby, R. N., 1.
- Devonian oil poss., NW.: Sloss, L. L., 1; U.S.G.S., 2, no. 25.
- Drusy vugs, monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
- Heavy-mineral studies, Bighorn Basin: Stow, M. H., 2.
- Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.
- Magnetite, Running Wolf dist.: Goodspeed, G. E., 2.
- Paleozoic, Upper, Mesozoic rock secs.: Gardner, L. S., 1.
- Pegmatites, alkalic, Bearpaw Mts. min. assoc.: Pecora, W. T., 2.
- Sand concretions: Thompson, A. R., 1.
- Spectrographic prosp. for beryllium, pegmatite dikes: Perry, E. S., 3.
- Thrust faults, Bearpaw Mts. area: Reeves, F., 2.

Physical geology.

- Bear Trap corundum deposit, Madison Co.: Hopkins, J. B., 1.
- Big Belt Range: Lyons, J. B., 1.
- Bighorn Basin area: Andrews, D. A., 2; Fanshawe, J. R., 1; Mackin, J. H., 1; Thom, W. T., Jr., 2; U.S.G.S., 1, no. 71.
- Bighorn Basin Field Conf., Aug. 5-8, 1947: Wyoming Univ., 1.
- Bitterroot Range front structure: Ross, C. P., 3.
- Bull Run copper prosp.: Roby, R. N., 2.
- Carbonate pre-Camb. rocks: Heinrich, E. W., 8.
- Chromite, Red Lodge area: James, H. L., 1.

Montana—Continued.

Physical geology—Continued.

- Clark Fork-Kootenai River devel. plan: Erdmann, C. E., 1.
 Conchoidal weathering: Murdock, H. E., 1.
 Copper deposit, Madison Co.: Roby, R. N., 1.
 Corundum deposit, Gallatin Co.: O'Brien, R. D., 2.
 Cut Bank-West Kevin-border oil, gas fields: Erdmann, C. E., 2.
 Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.
 Dating by heavy minerals, Beartooth region: Stow, M. H., 2.
 Drusy vugs, monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
 Earthquake record: Nile, S. W., 1.
 Elk Basin oil and gas field: McCabe, W. S., 2.
 Faulting, Late Cenozoic: Pardee, J. T., 1.
 Judith Basin, Ellis, Amsden, Big Snowy group: Walton, P. T., 1.
 Kevin-Sunburst oil, Cut Bank gas fields: U.S.G.S., 8.
 Magnetite deposits, Running Wolf dist.: Goodspeed, G. E., 2.
 Overthrusting and oil accumulation: Blackstone, D. L., Jr., 3.
 Petroleum geology: Emrick, E. R., 1.
 Plains, structure contour map: Dobbin, C. E., 3.
 Pryor Mts. structure: Blackstone, D. L., Jr., 2.
 Southern Cross iron deposits, Deer Lodge Co.: Wimmeler, N. L., 1.
 Thrust faults, Bearpaw Mts. origin: Reeves, F., 2.

Physiographic geology.

- Beartooth Mts., 3 stages of Pleist. glaciation: Bevan, A. C., 4.
 Big Belt Range: Lyons, J. B., 1.
 Bighorn Basin area: Mackin, J. H., 1.
 Caliche in glacial chronology: Howard, A. D., 1.
 Clark Fork-Kootenai River devel. plan: Erdmann, C. E., 1.
 Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.
 Glacial drifts: Howard, A. D., 3.
 Marias River buried Pleist. gorge: Fox, P. P., 1.
 Plains, structure contour map: Dobbin, C. E., 3.
 Queen Mary copper deposit, Missoula Co.: Brinton, W. H., 1.

Underground water.

- Clark Fork-Kootenai River devel. plan: Erdmann, C. E., 1.
 Montbrayite, Quebec, new gold telluride: Peacock, M. A., 3.
 Montmorillonite.
 Colorado, Golden area clays: Schlocker, J., 1.
 Iowa, clay minerals in soils: Peterson, J. B., 1.

Montmorillonite—Continued.

- Kaolin, related minerals, structure: Perkins, A. T., 1.
 Missouri, fire clays, differential thermal analysis: Keller, W. D., 12.
 Montmorillonite minerals: Ross, C. S., 1.
 Soils, clays, relation to group: Ross, C. S., 1.
 United States, SE. Coastal Plain soils, clays: Coleman, R., 1.
 Monzonite.
 California, Vulcan iron deposits, San Bernardino Co.: Lamey, C. A., 1.
 Colorado, Kokomo mining dist.: Koschmann, A. H., 1.
 Montana, Bearpaw Mts. dike with drusy vugs: Pecora, W. T., 1.
 Bull Run prospects: Roby, R. N., 2.
 Moffet-Johnston copper area: Roby, R. N., 1.
 Utah, Iron Co. iron deposits: Young, W. E., 1.
 Moon, cf., earth, craters: Kelly, A. O., 1.
 Imbrian Plain, and geology: Spurr, J. E., 1.
 Origin and topog.: Daly, R. A., 1.
 Surface features, origin: Dietz, R. S., 2.
 Moonstone, Black Range pegmatite, N. Mex.: Kelley, V. C., 5.
 Moraines. See also Glacial geology.
 Alaska, Pavlof Volcano area, Aleutian Is.: Kennedy, G. C., 5.
 California, Sierra Nevada mountain valleys: Blackwelder, E. R., 5.
 Colorado, NW. Park Co.: Singewald, Q. D., 4.
 Greenland, S. and SE.: Boegvad, R., 1.
 West: Laursen, D., 1.
 Indiana, sluiceways, lacustrine plains, S.: Thornbury, W. D., 1.
 Iowa, Mankato drift plain: Gwynne, C. S., 1.
 Minnesota, South Dakota: Gwynne, C. S., 2.
 Montana, NE., glacial drifts: Howard, A. D., 3.
 New York, asymmetric distrib. in plateau valleys: Holmes, C. D., 2.
 Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 New York City area: Rosalsky, M. B., 1.
 Terminal: Kindle, C. H., 2.
 North Dakota, Flora quad.: Branch, J. R., 1.
 Northwest, glacial drifts: Howard, A. D., 3.
 Ontario, Orilla area: Deane, R. E., 1.
 Quebec, descriptive geology: Dresser, J. A., 1.
 South Dakota, James Basin: Rothrock, E. P., 2.
 United States, St. Louis area, Pleist. sediments: Robertson, P., 1.
 Utah, Desert Ranges: Ives, R. L., 12.
 Morel pebbles, Wind River Basin, Wyo.: Scott, H. W., 1.

- Moren-Kisinger oil-gas field, Young Co., Tex.: Cheney, M. G., 5.
- Morphologic regions, Mexico: Tamayo, J. L., 2.
- Morphology.
- Cephalopoda: Flower, R. H., 2.
- Nautiloidea: Flower, R. H., 2.
- Mother substance of petroleum: Trask, P. D., 1.
- Mounds, Central Valley, Calif.: Holdredge, C. P., 1.
- Mount Mazama, Oregon: Hansen, H. P., 2.
- Mount Vsevidof, Umnak Is., Alaska: Byers, F. M., Jr., 1.
- Mountain leather, Campbell quarry, Md.: Levey, H., 1.
- Mud-analysis logging: Pixler, B. O., 1.
- Mud cracks.
- Greenland, East, Trias.: Stauber, H., 2.
- New Mexico, Carlsbad area: King, R. H., 1.
- Pennsylvania, Lehigh River flood deposit, Bethlehem, May 1942: Gault, H. R., 1.
- Subaqueous, formed by settling: Flower, R. H., 1.
- Mud volcanoes, West Greenland, Svartenhuk Penin.: Rosenkrantz, A., 2.
- Multiple reflections, symposium: Ellsworth, T. P., 1; Widess, M. B., 2.
- Multivariate analysis: Burma, B. H., 2.
- Muscovite.
- Chrome micas: Whitmore, D. R. E., 1.
- Colorado pegmatites: Hanley, J. B., 2.
- Connecticut, Branchville pegmatite: Shainin, V. E., 1.
- Feldspar, products, lab. alteration: Folk, R. L., 1.
- Idaho, Avon mica dist.: Reed, G. C., 1.
- North Carolina, Franklin-Sylva dist.: Olson, J. C., 2.
- Ontario, Mattawan-Olrig area: Harding, W. D., 1.
- Purdy Mines, Mattawan: Spence, H. S., 1, 2.
- United States, SE., sheet deposits: Jahns, R. H., 6.
- Myth and mammoth in archaeology: Eiseley, L. C., 5.
- Nahcolite.
- Colorado, Garfield Co.: Glass, J. J., 1.
- Sodium bicarbonate from oil shale: Ertl, T., 1.
- Native silver, Mich., mineral collecting locs.: Parsons, W. H., 1.
- Natrolite.
- Pennsylvania, Kibblehouse quarry: Thomas, C. A., 8.
- United States, gemstones: Pearl, R. M., 2.
- Natrophilite, Conn., structure: Byström, A., 1.
- Natural bridges.
- Arches Nat. Monument, Utah: Lowman, H. A., 1.
- Arizona, Tonto Natural Bridge: Miller, J., 1.
- Utah: Breed, J., 1; Dodge, N. N., 1; Lowman, H. A., 1.
- National Parks: Lauritzen, J., 1.
- Zion Nat. Monument: Gregory, H. E., 1.
- Natural gas.
- Airborne magnetometer invs.: Muffly, G., 1.
- Alabama, future fuels: Lloyd, S. J., 1.
- Oil and gas fields: Shreveport G. Soc., 1.
- Prospects: Jones, W. B., 2.
- Western, pre-Selma fms. poss.: Eargle, D. H., 1; U.S.G.S., 1, no. 50.
- Alaska, Iniskin-Chinitna Penin. poss.: Kellum, L. B., 2.
- Alberta, Brûlé area W. of 5th meridian, poss.: Canada G. S., 1.
- Exploration, 1946: Nickle, C. O., 1.
- Foothills oil fields: Link, T. A., 2.
- Mineral resources: Hooke, A. J., 1.
- Moberly Creek area poss.: Lang, A. H., 2.
- North Pinhorn field: Wilson, G. M., 1.
- Possibilities, oil and gas fields: Fowler, N. M., 1.
- Anadarko Basin field, Tex.-Okla.: Gould, C. N., 2.
- Appalachian Basin, Berea sand types, poss.: Rittenhouse, G., 4; U.S.G.S., 1, no. 58.
- Arizona, devel. 1945-46: Bates, R. L., 2.
- Possibilities: Anonymous, 39.
- Arkansas, devel. 1945-46: Mackay, D. K., 1; Williams, J. R., 1.
- Southern, oil and gas fields: Shreveport Geol. Soc., 1.
- Arkansas-Okla.-Kans., Ord.-Camb. poss.: Ireland, H. A., 1; U.S.G.S., 1, no. 52.
- Bighorn Basin, Wyo.-Mont., oil and gas fields: Hares, C. J., 3; U.S.G.S., 1, no. 74; Wyoming Univ., 1.
- California, Carpinteria to Gaviota, road log: Simonson, R. R., 1.
- Coalinga oil field: Kaplow, E. J., 1.
- Del Valle, Ramona oil fields: Matter, J. E., 1.
- Developments, 1945-46: Moody, G. B., 1.
- East side San Joaquin Valley, oil-field fms.: Ferguson, G. C., 1.
- Elwood, Capitan oil fields: Simonson, R. R., 2.
- Explorations, discoveries, 1945: Parker, F. S., 1.
- Great Valley: Laiming, B. G., 1.
- Guide book to field trip Mar. 1947, oil fields: A.A.P.G., 1.
- Maricopa to Cymric oil field: Woodward, W. T., 1.
- Newhall-Potrero oil field, Los Angeles Co.: Lee, A. T., 1.
- Reserves, estimates, 1941-46: Calif. R. R., Comm., 1.
- San Joaquin Valley oil fields, types of accumulation: Bryan, J. J., 1.
- Tehama County: O'Brien, J. C., 1.
- Trico field: Bailey, W. C., 2.
- Ventura Basin oil fields: Lammers, E. C. H., 2.
- West Newport oil and gas field: Dunlap, W. E., 1, 2.
- West side San Joaquin Valley, oil-field fms.: Goudkoff, P. P., 1.

Natural gas—Continued.

- Canada, devel. 1945-46: Fournier, F. L., 1; Hume, G. S., 1.
 Lloydminster-Lone Rock oil and gas field: Edmunds, F. H., 1.
 Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
 Western: Hume, G. S., 3; Nickle, C. O., 3.
 Color-numerical system for well-logs: Maddox, D. C., 1.
 Colorado, dry holes, and oil and gas fields: Demok, F. K., 1; U.S.G.S., 1, no. 73.
 Fuels: Vanderwilt, J. W., 5.
 Las Animas Arch area poss.: Osborne, H. W., 1.
 Model anticline, Las Animas Co.: Bass, N. W., 3; U.S.G.S., 1, no. 68.
 Rangely oil and gas field: Bench, B. M., 1, 2; Newton, S. M., 1, 2, 3, 4.
 Review of oil geology, 1945: Van Tuyl, F. M., 1.
 Selected well logs: Barb, C. F., 1.
 Colorado River Salt Basin, Colo.-Utah: Arnold, H. C., 1.
 Continental shelf explor., U. S. Gulf Coast: Anonymous, 63.
 Core-analysis interpretation, statistical method: Law, J., 1.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.
 Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Cuba: Calvache, A., 1.
 Jarahuco field: Noguera, M. A., 1.
 Oriente Prov., W., poss.: Vletter, D. R., de, 1.
 Cut Bank gas field, Mont.: Erdmann, C. E., 2; U.S.G.S., 8.
 Cut Bank-West Kevin field, Mont.: Erdmann, C. E., 2.
 Electrical logging techniques, new: Stick, J. C., 1.
 Emanometric oil and gas prosp.: Pirson, S. J., 1.
 Energy of reservoirs: Bench, B. M., 3.
 Evaluation, well-samples: Richards, J. T., 1.
 Evolution, geol. thought in prosp. for oil and gas: Price, P. H., 2.
 Flow, homogenous fluids thro porous media: Calhoun, J. C., Jr., 2.
 Forest City Basin, U. S.: Lee, W., 1; U.S.G.S., 1, no. 48.
 Genesee uplift, Kans.-Otero Co., Colo.: Maher, J. C., 1.
 Geochemical prosp., disturbing factors: Pirson, S. J., 2.
 Georgia, oil and gas poss.: Feyton, G., 1.
 Glossary, petroleum industry: Irizarry, O. E., 1.
 Helium as tracer, oil and gas reservoirs: Frost, E. M., Jr., 1.
 Hilliards quad., oil and gas field index maps, Pa.: Sherrill, R. E., 1.
 Homogeneous permeability determination: Yuster, S. T., 1.
 Illinois, devels., 1945-46: Bell, A. H., 2, 3.
 Indiana, devels. 1946: Bell, A. H., 3.

Natural gas—Continued.

- Iowa, min. res.: Hershey, H. G., 1.
 Kansas, Genesee Uplift: Clark, S. K., 1.
 Hugoton field: Morgan, L. C., 1.
 Recent devels.: Jewett, J. M., 1.
 West, explor. 1945-46: Ver Wiebe, W. A., 1.
 Kansas-Colorado, subsurface cross sec. area poss.: Collins, J. B., 2.
 Kentucky, Big Six field, upper Licking River: Jillson, W. R., 2-a.
 Clinton Co. pools: Jillson, W. R., 5.
 Lloydminster-Lone Rock oil and gas field, Canada: Edmunds, F. H., 1.
 Louisiana, Delhi, West Delhi, Big Creek fields: Bloomer, P. A., Jr., 1; Lloyd, A. M., 1; Weber, G., 2.
 Devels., 1945-46: Blackwell, W. G., 1; Shepherd, G. F., 1; Williams, J. R., 1.
 North oil and gas fields: Shreveport Geol. Soc., 1.
 Oil and gas map: La. G. S., 1.
 West Tepetate field: Bates, F. W., 3.
 Michigan, devels., 1945-46: Hardenberg, H. J., 1.
 Southeast, well-cores: Cohee, G. V., 1.
 Michigan Basin, Traverse group poss.: Cohee, G. V., 2; U.S.G.S., 2, no. 28.
 Mineral fuels, part played by: Miser, H. D., 1-a.
 Mississippi: Highsaw, R. B., 1.
 Cranfield field: Zebal, G. P., 1.
 Cretaceous poss.: Alexander, C. W., 2.
 Missouri, poss.: Greene, F. C., 1.
 Montana, Cut Bank, Kevin, West Kevin, Sunburst fields: Erdmann, C. E., 2; U.S.G.S., 8, 12, 13.
 Northwest, Dev. poss.: Sloss, L. L., 1; U.S.G.S., 2, no. 25.
 Petroleum geology: Emrick, E. R., 1.
 Plains, structure contour map: Dobbins, C. E., 3.
 Moren-Kisinger oil-gas field, Tex.: Cheney, M. G., 5.
 Mud-analysis logging: Pixler, B. O., 1.
 Nebraska, Forest City Basin: U.S.G.S., 1, no. 48.
 New Mexico, devels., 1945-46: Bates, R. L., 2; Kelly, J. M., 1.
 Future oil poss.: Bates, R. L., 1.
 Guadalupe Co., poss.: Gorman, J. M., 1; U.S.G.S., 1, no. 44.
 Joyita Hills, Los Pinos Mts. Chupadera Mesa area poss.: Wilpolt, R. H., 1; U.S.G.S., 1, no. 41.
 Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U.S.G.S., 1, no. 54.
 Lucero Uplift poss.: Kelley, V. C., 2; U.S.G.S., 1, no. 47.
 Mineral res.: Benjovsky, T. D., 3.
 Nacimiento, San Pedro Mts., area poss.: Wood, G. H., Jr., 1; U.S.G.S., 1, no. 57.
 Northern, devels. 1946: Bates, R. L., 4.
 Northwest Quay Co. poss.: Dobrovolsky, E., 1; U.S.G.S., 1, no. 62.

Natural gas—Continued.

New Mexico—Continued.

- Rattlesnake field, San Juan Co.: Hinson, H. H., 1.
 San Juan Basin oil and gas fields: Cotton, R. E., 1.
 Southeast devals., 1946: Boss, R. L., 1.
 New York, future poss.: Heck, E. T., 1.
 North Dakota, Keene dome poss.: Nevin, C. M., 2.
 Nesson anticline poss.: Laird, W. M., 1.
 Northeast Territories, explor. 1946: Stewart, J. S., 2.
 Possibilities: Denis, H. B., 1.
 Ohio: Cottingham, K., 1.
 Berea Sands, First, Second: Pepper, J. F., 1.
 Mineral res.: Stout, W. E., 3.
 Oil-fields and oil traps: Illing, V. C., 1.
 Oil-reservoir studies, electric analogy extension: Schaefer, H., 1.
 Oklahoma, devals., 1945-46: Borden, J. L., 1; Cullen, R. J., 1.
 Industrial minerals: Dott, R. H., 5.
 West Edmond oil field: McGee, D. A., 1.
 Western prospects: Gibbon, A., 2.
 Oklahoma-Kansas, Arbuckle group poss.: Ireland, H. A., 1; U. S. G. S., 1, no. 52.
 Ontario: Hutt, G. M., 7.
 Exploration, 1945: Harkness, R. B., 1.
 Windsor-Sarnia area, Paleozoic: Caley, J. F., 1.
 Oregon, poss.: Smith, H., 1.
 Nehalem River Basin poss.: Warren, W. C., 1.
 Pennsylvania, Hilliards quad., index, oil and gas fields, maps: Sherrill, R. E., 1.
 North Strabane area: Fettke, C. R., 1.
 Pittsburgh area: Leighton, H., 3.
 Smicksburg quad.: Shaffner, M. N., 1.
 Petroleum geology in W. Canada to 1945: Sanderson, J. O. G., 1.
 Saskatchewan, Cypress Lake area poss.: Furnival, G. M., 1.
 South Dakota, Black Hills area poss.: Anonymous, 40.
 Western poss.: Baker, C. L., 2.
 South Texas oil, gas field: Deegan, C. J., 2.
 Tennessee, cent.: Bentall, R., 1.
 Stones River rocks, NE. cent.: Collins, J. B., 1.
 Texas, Carthage field: Foster, F. K., 1.
 Del Monte field: Clark, G. H., 1.
 East, devals., 1945-46: Cash, T. C., 1; Shelby, T. H., Jr., 1.
 Keystone field, Winkler Co.: Mygdal, K. A., 1.
 La Gloria oil, gas field: Wooley, W. C., 1.
 Mineral res.: Cunningham, W. A., 1.
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- Petroleum, gas occurrences: Sellards, E. H., 3.
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 Raccoon Bend salt dome field: McLellan, H. J., 1.
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 Berea-Murrysville sands: Demarest, D. F., 1; U.S.G.S., 1, no. 49.
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- Possibilities, Cret., Ala.-Ga.-N. Fla.: Applin, P. L., 1; U.S.G.S., 2, no. 26.
- Pre-Selma Upper Cret., Ala.-Miss. poss.: Conant, L. C., 2; U.S.G.S., 1, no. 64.
- Reserves: DeGolyer, E. L., 2, 3; Miser, H. D., 1.
- Rocky Mtn. area devels.: Dobbin, C. E., 1, 2, 4; Krampert, E. W., 1; Rocky Mtn. Petroleum Y. B., 1.
- Salt dome explor.: Hagen, C., 1.
- Southeast States, devels. 1945-46: Alexander, C. W., 1.
- Well logging on Gulf Coast: Houston Geol. Soc., 1.
- West and Northwest, devels., 1945-46: Bates, R. L., 2.
- Utah, Duchesne River area poss.: Huddle, J. W., 2; U.S.G.S., 1, no. 75.
- Gas and oil poss. and explor.: Arnold, H. C., 1.
- Green River Desert-Cataract Canyon area poss.: Baker, A. A., 1; U.S.G.S., 1, no. 55.
- Henry Mts. poss.: Hunt, C. B., 1.
- Morgan Penn. fm. poss., Split Mtn.: McCann, F. T., 1.
- Virginia, Lee Co. Ord. field: Miller, R. L., 3.
- Rose Hill oil field, Lee Co.: Miller, R. L., 1-a; U.S.G.S., 1, no. 76.
- Washington, explor., poss.: Glover, S. L., 2; Smith, H., 1.
- Washington-Oregon poss.: Beck, R. S., 1.
- Water, connate, oil and gas producing horizons: Bench, B. M., 4.
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- West Virginia, Berea sands, First, Second: Pepper, J. F., 1.
- Developments: Reger, D. B., 1.
- Southern, Berea sand: Merrels, C. W., 2nd, 1; U. S. G. S., 1, no. 59.
- Well-sample records: Martens, J. H. C., 1.
- Wyoming, Bargee area poss., Fremont Co.: Williams, M. D., 1; U.S.G.S., 1, no. 56.
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- Paleozoic fms.: Stipp, T. F., 2.
- Developments, prospects, 1946-47: La Fleche, P., 1.
- Northeast Wind River Basin, Tertiary poss.: Tourtelot, H. A., 1; U.S.G.S., 2, no. 22.
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- Faunas, Penn., Tex.: Plummer, F. B., 3.
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- Morphology: Flower, R. H., 2.
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- Forest City Basin devel.: U.S.G.S., 1, no. 48.
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- Mineralogy.
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- Alligator, Pliocene: Mook, C. C., 1.
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- Box Butte County, ground water: Cady, R. C., 1.
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- Origin: Shand, S. J., 1.
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Nepheline syenite, New Jersey: Hayes, W. H., 1; Wilkerson, A. S., 1.

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Coal fields: Andrews, D. A., 1.

Copper deposit, Elko Co.: Matson, E. J., 2.

Corundum mines, Blue Metal: Binyon, E. O., 1.

Douglas, Ormsby, Washoe Cos. min. res.: Overton, T. D., 1.

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Fluorspar mine, Nye Co.: Geehan, R. W., 1. Kral, V. E., 4.

Iron deposits: Kral, V. E., 1, 2, 3, 5, 6. Magnesite, Gabbs area: Vitaliano, C. J., 2.

Tungsten deposits: Hobbs, S. W., 1; Holmes, G. H., Jr., 1.

Zinc-lead Sultan mine, Clark Co.: Geehan, R. W., 3.

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Blue Metal corundum mine area: Binyon, E. O., 1.

Bristol Range, N.: Wheeler, H. E., 2.

Douglas, Ormsby, Washoe Counties: Overton, T. D., 1.

Eureka mining area: Binyon, E. O., 1; Sharp, W., 1.

Fish distrib. and Pleist. hydrography, correlates: Miller, R. R., 1.

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Tungsten deposits: Hobbs, S. W., 1; Holmes, G. H., Jr., 1.

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Amethysts, Bullfrog mine: Lisle, T. O., 1.

Artinite, Luning: Hurlbut, C. S., Jr., 1.

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Corundum, Blue Metal mines: Binyon, E. O., 1.

Eureka mining dist.: Binyon, E. O., 1; Matson, E. J., 1; Sharp, W., 1.

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Goldfieldite is tellurian tetrahedrite: Thompson, R. M., 1.

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Tungsten mines: Hobbs, S. W., 1; Holmes, G. H., Jr., 1.

Wapplerite, Manhattan: Goudey, H., 1.

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Zinc-lead mine, Clark Co.: Geehan, R. W., 2.

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Fish distrib. and Pleist. hydrography, correlates: Miller, R. R., 1.

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Igneous fusion of tuff, Eureka: Gianella, V. P., 2.

Mount Hope mine, Eureka Co.: Matson, E. J., 1.

Sandstones, bleaching, belts of defm.: Longwell, C. R., 5.

Tungsten mines area: Hobbs, S. W., 1; Holmes, G. H., Jr., 1.

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Blue Metal corundum mines: Binyon, E. O., 1.

Bristol Range, N., faulting: Wheeler, H. E., 2.

Elko Co. copper deposit: Matson, E. J., 2.

Eureka mining dist.: Binyon, E. O., 1; Matson, E. J., 1; Sharp, W., 1.

Igneous fusion of tuff, Eureka: Gianella, V. P., 2.

Rio Grande copper deposit: Matson, E. J., 2.

Sandstones, bleaching, belts of defm.: Longwell, C. R., 5.

Segerstrom-Heizer iron mine: Kral, V. E., 5.

Steamboat Springs area: White, D. E., 5, 6.

Sultan zinc-lead mine, Clark Co.: Geehan, R. W., 3.

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Paragenesis, Chickering pegmatite, near
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Polygon nets, devel.: Conrad, V., 2.

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Stoddard fluorine mine, Cheshire Co.: Bar-
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Erosion, Lost River-Flume gorges, jointing
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New Home salt dome, Miss.: Nettleton, L.
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Iron mines, Sussex Co.: Lynch, V. J., 1.

Magnetite deposits, drill-hole correl.:
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Nepheline syenite, Beemerville: Wilker-
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Iron mines, Sussex Co.: Lynch, V. J., 1.

Limestone quarry, McAfee: Zodac, P., 2.

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Shark, Eocene, Belmar Beach: Reed, M.
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Diabase dikes, Franklin Furnace quad.:
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Appalachian drainage, Newark ser.: Carls-
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Contact manganese mine, Grant Co.: Rus-
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 Iron deposits: Grantham, R. M., 1; Sheridan, M. J., 1.
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 Salt-dolomite intergrowths, Chaves Co.: Schwade, I. T., 1.
 San Juan Basin oil and gas fields: Colton, R. E., 1.
 Santa Rita copper mine, hydrothermal alteration: Kerr, P. F., 5.
 Stauber copper mine: Holmquist, R. J., 2.
 Steeple Rock zinc-lead dist.: Russell, P. L., 6.
 Tin deposits: Volin, M. E., 1.
 White Eagle fluorspar mine: Soulé, J. H., 2.

Historical geology.

- Algae reefs, Ogallala fm.: Price, W. A., 1.
 Atwood copper group, Lordsburg dist.: Huntington, M. G., 1.

New Mexico—Continued.

Historical geology—Continued.

- Black River Valley: Lang, W. T. B., 2.
 Contact manganese mine: Russell, P. L., 1.
 Correlation, Perm. W. Tex.-SE. N. Mex.: Skinner, J. W., 1.
 Cyclothem, Lower Penn., diastrophism: Young, J. A., Jr., 1.
 Fluorspar deposits: Goddard, E. N., 6;
 Rothrock, H. E., 1; Soulé, J. H., 1.
 Gallinas dist. and Mts.: Kelley, V. C., 4, 6.
 Gran Quivira quad.: Bates, R. L., 3.
 Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 Guadalupe Co., geology, asphalt deposits: Gorman, J. M., 1; U.S.G.S., 1, no. 44.
 Headstone mining dist.: Benjovsky, T. D., 2.
 Intertonguing marine, non-marine Upper Cret. deposits: Pike, W. S., Jr., 1.
 Iron Mtn. beryllium, tungsten deposits: Storms, W. R., 2, 3.
 Jones iron deposit, Socorro Co.: Grantham, R. M., 1.
 Jurassic fms., correl., revision: Baker, A. A., 3.
 Lake Valley manganese deposits: Apell, G. A., 2.
 Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U. S. G. S., 1, no. 54.
 Little Hatchet Mts.: Lasky, S. G., 3.
 Los Piños Mts.: Stark, J. T., 1.
 Lucero uplift: Kelley, V. C., 2; U. S. G. S., 1, no. 47.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Mica deposits: Jahns, R. H., 1.
 Nacimiento, San Pedro Mts.: Wood, G. H., Jr., 1; U. S. G. S., 1, no. 57.
 Niggerhead manganese deposits: Russell, P. L., 7.
 Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: Wilpolt, R. H., 1; U. S. G. S., 1, no. 61.
 Pecos Valley redbeds, Trias.: Lang, W. T. B., 3.
 Peerless lead-zinc mine: Soulé, J. H., 4.
 Pennsylvanian: Henbest, L. G., 4; Read, C. B., 2; Young, J. A., Jr., 2.
 Permian Basin, hard-rock drilling for oil: Johnston, D., 1.
 Permian correlations, Tex.-N. Mex.: Skinner, J. W., 1.
 Petroleum poss., future: Bates, R. L., 1.
 Potash reserves, Eddy Co.: Storms, W. R., 1.
 Pre-San Andres fms., SE., oil zones: King, R. E., 1.
 Quay County: Dobrovolsky, E., 1; U. S. G. S., 1, no. 62.
 Rattlesnake oil and gas field: Hinson, H. H., 1.
 Rio Puerco area, lower: Wright, H. E. Jr., 1.

New Mexico—Continued.

Historical geology—Continued.

- Salt-dolomite intergrowths, Chaves Co.: Schwade, I. T., 1.
 San Juan Basin E. side, Tert., Cret. fms.: Dane, C. H., 1; U. S. G. S., 2, no. 24.
 San Juan Basin oil and gas fields: Colton, R. E., 1.
 Tusas-Tres Piedras area, Tert., quat.: Butler, A. P., Jr., 1.

Mineralogy.

- Agate field, Jeffers, Gila Nat. Forest: Neely, L. M., 1.
 Alaskite, Capitan Mtn.: Sidwell, R., 3.
 Atwood copper group: Huntington, M. G., 1.
 Beyerite in pegmatite: Heinrich, E. W., 4.
 Bismuth minerals in pegmatites: Heinrich, E. W., 4.
 Bromine in carnallite, sylvite: Lindberg, M. L. L., 2.
 Capitan quad., dikes: Sidwell, R., 1.
 Carnallite-filled mud cracks in salt clay: King, R. H., 1.
 Copper King mine, Taos Co.: Holmquist, R. J., 4.
 Elk Mtn. mica deposit: Holmquist, R. J., 1.
 Ellis manganese deposit: Russell, P. L., 3.
 Fluorite crystal, Luna Co.: Twenhofel, W. S., 2.
 Fluorspar deposits: Goddard, E. N., 6; Rothrock, H. W., 1; Russell, P. L., 2; Soulé, J. H., 1.
 Gallinas dist.: Kelley, V. C., 4.
 Gamma-ray studies, potassium salts, saline fms.: Spicer, H. C., 1.
 Glass from atomic bombs cf. tektites: Khan, A. R., 1.
 Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 Harding tantalum-lithium deposits: Soulé, J. H., 3.
 Headstone mining dist.: Benjovsky, T. D., 2.
 Huckelberry spar mine: Sur, F. J., 2.
 Iron deposits: Grantham, R. M., 1; Sheridan, M. J., 1.
 Iron Mtn. beryllium, tungsten deposits: Storms, W. R., 2, 3.
 Lake Valley manganese deposits: Apell, G. A., 2.
 Little Hatchet Mts.: Lasky, S. G., 3.
 Manganese deposits: Russell, P. L., 5, 7.
 Mica deposits: Jahns, R. H., 1.
 Mineral contribs. to World War II: Benjovsky, T. D., 3.
 Peerless lead-zinc mine, Grant Co.: Soulé, J. H., 4.
 Potash deposits: Harley, G. T., 1; Storms, W. R., 1.
 Puente-Ladron aerolite: La Paz, L., 2, 4; Nininger, H. H., 5; Smith, C. H., 1.
 Santa Rita copper mine, hydrothermal alteration: Kerr, P. F., 5.
 Stauber copper mine: Holmquist, R. J., 2.

New Mexico—Continued.

Mineralogy—Continued.

- Steeple Rock zinc-lead dist.: Russell, P. L., 6.
 Tin deposits: Volin, M. E., 1.
Paleontology.
 Algal reefs, Ogallala fm.: Price, W. A., 1.
 Black River Valley, Comanche: Lang, W. T. B., 2.
 Brachiopoda, Percha sh.: Stainbrook, M. A., 2.
 Cephalopoda, Mid. Perm.: Clifton, R. L., 1.
 Dinosaurs, Ghost Ranch, Trias.: Colbert, E. H., 7.
 Footprints, Abo Perm. fm.: Branson, E. B., 6.
 Fossil egg capsules, chimaeroid Cret. fish: Brown, R. W., 5.
 Gran Quivira quad.: Bates, R. L., 3.
 Limnoscels, Permo-Carb. reptile: Romer, A. S., 1.
 Little Hatchet Mts.: Lasky, S. G., 3.
 Nacimiento, San Pedro Mts., adjacent plateaus: U. S. G. S. 1, no. 57.
 Ostracoda, Juras. Todilto ls.: Swain, F. M., 4.
 Ovis canadensis, Pleist.: Stovall, J. W., 1.
 San José non-ceramic culture, Grants area: Bryan, K., 2.
 Sand dunes, alluvium, artifacts, Grants area: Bryan, K., 3.
 Sandia Cave, early man: Eiseley, L. C., 3.
 Spirifer rockymontanus, type area: Williams, J. S., 1.

Petrology.

- Alaskite, Capitan Mtn.: Sidwell, R., 3.
 Atwood copper group: Huntington, M. G., 1.
 Building-block material, natural lightweight: Benjovsky, T. D., 1.
 Capitan quad.: Sidwell, R., 1.
 Contact manganese mine: Russell, P. L., 1.
 Feldspar, Red River dist.: Park, C. F., Jr., 3.
 Gallinas dist., Mts.: Kelley, V. C., 4, 6.
 Gran Quivira quad.: Bates, R. L., 3.
 Guadalupe Co., asphalt deposits: Gorman, J. M., 1; U. S. G. S., 1, no. 44.
 Harding tantalum-lithium deposits: Soulé, J. H., 3.
 Headstone mining dist.: Benjovsky, T. D., 2.
 Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U. S. G. S., 1, no. 54.
 Lithium-tantalum pegmatites: Jahns, R. H., 4.
 Little Hatchet Mts.: Lasky, S. G., 3.
 Los Piños Mts.: Stark, J. T., 1.
 Lucero uplift, W.-cent. N. Mex.: Kelley, V. C., 2; U. S. G. S., 1, no. 47.
 McCartys basalt flow, Valencia Co.: Nichols, R. L., 1.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Mica deposits: Jahns, R. H., 1.

New Mexico—Continued.

Petrology—Continued.

- Moonstone pegmatite, Tert., Black Range: Kelley, V. C., 5.
 Niggerhead manganese deposit: Russell, P. L., 7.
 Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: Wilpolt, R. H., 1; U. S. G. S., 1, no. 61.
 Pre-San Andres fms. SE., oil zones: King, R. E., 1.
 Rattlesnake oil and gas field: Hinson, H. H., 1.
 San Juan Basin oil and gas fields: Colton, R. E., 1.
 White Eagle fluorspar mine: Soulé, J. H., 2.

Physical geology.

- Alaskite, Capitan Mtn.: Sidwell, R., 3.
 Apache mica mine: Holmquist, R. J., 3.
 Atomic bomb test reflection and refraction records: Gutenberg, B., 2.
 Atwood copper group: Huntington, M. G., 1.
 Bishop Cap fluorspar prospect: Sur, F. J., 1.
 Capitan quad., dikes: Sidwell, R., 1.
 Carnallite-filled mud cracks in salt clay: King, R. H., 1.
 Clovis site area: Price, W. A., 1-a.
 Contact manganese mine: Russell, P. L., 1.
 Cyclothems, Lower Penn. diastrophism: Young, J. A., Jr., 1.
 Earth motion, atomic bomb tests, July 16, 1945: Leet, L. D., 2.
 Earthquake record: Northrop, S. A., 2.
 Elk Mtn. mica deposit: Holmquist, R. J., 1.
 Eolian dam, Tucumcari area: Dobrovolny, E., 2.
 Feldspar deposits, Red River dist.: Park, C. F., Jr., 3.
 Fluorite crystal, Luna Co.: Twenhofel, W. S., 2.
 Fluorspar deposits: Goddard, E. N., 6; Rothrock, H. E., 1; Soulé, J. H., 1; Sur, F. J., 2.
 Gallinas dist. and Mts.: Kelley, V. C., 4, 6.
 Gran Quivira quad.: Bates, R. L., 3.
 Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 Guadalupe Co., asphalt deposits: Gorman, J. M., 1; U. S. G. S., 1, no. 44.
 Harding tantalum-lithium deposits: Soulé, J. H., 3.
 Iron deposits: Grantham, R. M., 1; Sheridan, M. J., 1.
 Iron Mtn. beryllium, tungsten deposits: Storms, W. R., 2, 3.
 Lake Valley manganese deposits: Apell, G. A., 2.
 Las Vegas Basin, Sangre de Cristo foothills: Northrop, S. A., 1; U. S. G. S., 1, no. 64.
 Lithium-tantalum pegmatites, Mora Co.: Jahns, R. H., 4.

New Mexico—Continued.

Physical geology—Continued.

- Little Hatchet Mts.: Lasky, S. G., 3.
 Los Piños Mts.: Stark, J. T., 1.
 Lucero uplift, W.-cent. N. Mex.: Kelley, V. C., 2; U. S. G. S., 1, no. 47.
 McCartys basalt flow, Valencia Co.: Nichols, R. L., 1.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Moonstone pegmatites, Tert., Black Range: Kelley, V. C., 5.
 Nacimiento, San Pedro Mts., adjacent plateaus: Wood, G. H., Jr., 1; U. S. G. S., 1, no. 57.
 Niggerhead manganese deposit: Russell, P. L., 7.
 Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: Wilpolt, R. H., 1; U. S. G. S., 1, no. 61.
 Peerless lead-zinc mine: Soulé, J. H., 4.
 Rio Puerco area: Wright, H. E., Jr., 1.
 San Juan Basin oil and gas fields: Colton, R. E., 1.
 Santa Rita copper mine, hydrothermal alteration: Kerr, P. F., 5.
 Sedimentation, middle Rio Grande Valley: Happ, S. C., 3.
 Steeple Rock zinc-lead dist.: Russell, P. L., 6.
 Tin deposits: Volin, M. E., 1.
 Tusas-Tres Piedras area: Butler, A. P., Jr., 1.
 White Eagle fluorspar mine: Soulé, J. H., 2.

Physiographic geology.

- Eolian dam, Tucumari area: Dobrovolny, E., 2.
 Gran Quivira quad.: Bates, R. L., 3.
 Little Hatchet Mts.: Lasky, S. G., 3.
 Rio Puerto area: Wright, H. E., Jr., 1.
Underground water.
 Gran Quivira quad.: Bates, R. L., 3.
 Little Hatchet Mts.: Lasky, S. G., 3.

New York.

Economic geology.

- Clinton, W. and cent.: Gillette, T., 1.
 Hematite ores, diagenesis: Alling, H. L., 2.
 Dannemora magnetite dist.: Bardill, J. D., 2.
 Magnetite explor., Adirondack iron deposits: Hawkes, H. E., Jr., 4.
 Magnetite, Star Lake area: Millar, W. T., 1; Reed, D. F., 1.
 Magnetite deposits, drill-hole correlates: Hawkes, H. E., Jr., 3.
 Petroleum and gas poss.: Heck, E. T., 1.
 Porosity, ore deposition, Edwards, Balmat mines: Brown, J. S., 2.
 Redford-Clayburg magnetite dist.: Bardill, J. D., 3.
 Russian Station magnetite dist.: Bardill, J. D., 4.
 Talc deposits, Gouverneur dist.: Engel, A. E. J., 4.

New York—Continued.

Economic geology—Continued.

Titaniferous magnetite: Stephenson, R. C., 1.

Zinc mines, Edwards, Balmat areas: Brown, J. S., 3; Marvin, T., 1.

Historical geology.

Catskill quad., Camb., Ord.: Chadwick, G. H., 2.

Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

Clinton, W. and cent.: Gillette, T., 1.

Hematite ores, diagenesis: Alling, H. L., 2.

Fort Ann area, Camb., Canadian: Flower, R. H., 7.

Genesee Gorge sediments: Alling, H. L., 1.

Lake Sanford area magnetite deposits: Stephenson, R. C., 1.

Long Island: Fox, J. T., 1.

Petroleum and gas, future poss.: Heck, E. T., 1.

Porosity, ore deposition, Edwards, Balmat mines: Brown, J. S., 2.

Stissing Mtn., Lower Paleozoic: Knopf, E. F. B., 3.

Trenton "delta": Chadwick, G. H., 3.

Tunnels, deep, New York City: Berkey, C. P., 2.

Zinc mines, Edwards, Balmat: Brown, J. S., 3.

Mineralogy.

Anhydrite, gypsum, magnetite, Lyon Mtn.: Zimmer, P. W., 1.

Bedford dist. minerals: Mann, A., 1.

Clinton hematite ores: Alling, H. L., 2; Gillette, T., 1.

Dannemora magnetite dist.: Bardill, J. D., 2.

Eastern State Parkway mineral locs.: Zodac, P., 7.

Garnet paragenesis, Barton mine: Shaub, B. M., 3.

Genesee Gorge sediments: Alling, H. L., 1.

Magnetite dists., magnetic surveys: Bardill, J. D., 3, 4.

Mianus Gorge minerals: Brown, S. C., 1. Mt. Adam and Pine Island, Orange Co.: Cosminsky, P. R., 1.

Peridotite dike, Salt Springs Road, Syracuse: Maynard, J. E., 1.

Polycrase, Day area: Smith, E. S. C., 1.

Porosity, ore deposition, Edwards, Balmat areas: Brown, J. S., 2.

Rock crystal loc., Fonda: Zodac, P., 11.

Star Lake magnetite deposits: Reed, D. F., 1.

Talc deposits: Engel, A. E. J., 4.

Ti-Fe relations during magmatic processes, Adirondacks: Evrard, P., 1.

Titaniferous magnetite, Lake Sanford area: Stephenson, R. C., 1.

Titanite, allanite locs., Eastern State Parkway: Zodac, P., 8.

Tourmaline from New York tunnel: Lisle, T. O., 6.

Zinc mines, Balmat area: Marvin, T., 1.

New York—Continued.

Paleontology.

Brachiopoda, spiriferid, Sil. Cobleskill fm.: Howell, B. F., 8.

Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

Cayugoceras, Upper Sil. cephalopod: Flower, R. H., 4.

Clinton ores, dwarf fauna listed: Alling, H. L., 2.

Clinton, W. and cent.: Gillette, T., 1.

Crinoid, Chemung, Alfred Station: Goldring, W., 1.

Fauna, Sil., Vernon shale: Flower, R. H., 8.

Fish, fossil, Cherry Valley: Anonymous, 35.

Hyolithes cooperi, new name: Williams, J. S., 1.

Mastodon "hair" is algae: Eiseley, L. C., 1.

Nautiloids, Ord.: Flower, R. H., 6.

Paleozoic habitat group restoration: Reimann, I. G., 1.

Protolepidodendron, Psilophyton, Mid. Dev.: Banks, H. P., 1.

Scolecodonts, Trenton: Eller, E. R., 1.

Trilobites, Sil.: Howell, B. F., 4, 10.

Upper Cambrian: Lochman, C., 1; Rasetti, F., 4.

Petrology.

Boulders, interglacial conglomerate: Schmidt, V. E., 1.

Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

Clinton, W. and cent.: Gillette, T., 1.

Flysch and molasse: Eardley, A. J., 2.

Genesee sediments: Alling, H. L., 1.

Metamorphic rock structures, fabrics: Engel, A. E. J., 2.

Peridotite dikes, Syracuse: Maynard, J. E., 1.

Postanorthosite gabbro, Avalanche Lake: Jaffe, H. W., 1.

Stissing Mtn.: Knopf, E. F. B., 3.

Storm King granite, Bear Mtn.: Lowe, K. E., 4.

Ti-Fe relations during magmatic processes: Evrard, P., 1.

Titaniferous magnetite, Lake Sanford area: Stephenson, R. C., 1.

Trenton "delta": Chadwick, G. H., 3.

Zinc mines, Balmat area: Marvin, T., 1.

Physical geology.

Aeromagnetic survey over Benson mines: Hawkes, H. E., Jr., 1; U.S.G.S., 4, no. 2.

Catskill, Kaaterskill quads.: Chadwick, G. H., 1.

Clinton hematite ores, diagenesis: Alling, H. L., 2.

Cortlandt complex, gravity, magnetic surveys: Woollard, G. P., 2.

Dannemora magnetite dist. magnetic surveys: Bardill, J. D., 2.

Magnetite, Star Lake area: Millar, W. T., 1.

Magnetic surveys: Bardill, J. D., 3, 4.

New York—Continued.

Physical geology—Continued.—

Metamorphic rock structures, fabrics:
Engel, E. E. J., 2.

Oswegatchie quad., aeromagnetic map:
Balsley, J. R., Jr., 2; U.S.G.S., 4,
no. 1.

Rock floor, W. Long Island: de Laguna,
W., 1.

Peridotite dikes, Syracuse: Maynard, J.
E., 1.

Porosity, ore deposition, Edwards, Balmat
mines: Brown, J. S., 2.

Post-anorthosite gabbro, Avalanche Lake:
Jaffe, H. W., 1.

Shawangunk Mtn. lakes: Myers, R. E., 1.
Storm King granite, Bear Mtn.: Lowe,
K. E., 4.

Talc deposits: Engel, A. E. J., 4.

Ti-Fe relations during magmatic processes:
Evrard, P., 1.

Titaniferous magnetite, Lake Sanford area:
Stephenson, R. C., 1.

Trenton "delta": Chadwick, G. H., 3.

Triassic trough: Harrington, J. W., 2.

Tunnels, deep, New York City: Berkey,
C. P., 2.

Varves, Hornell area: Wood, A. E., 1, 2.

Zinc mines, Edwards, Balmat: Brown,
J. S., 3.

Physiographic geology.

Appalachian drainage, Newark ser.: Caris-
ton, C. W., 1.

Boulders, interglacial conglomerate:
Schmidt, V. E., 1.

Catskill, Kaaterskill quads.: Chadwick,
G. H., 1.

Clinton, W. and cent.: Gillette, T., 1.

Finger Lakes, origin: Apfel, E. T., 1.

Glacial stream diversion, Hornell area:
Wood, A. E., 5.

Ice-contacts, ice-melting below water:
Cook, J. H., 1.

Long Island geology: Fox, J. T., 1.

Moraine, terminal, New York City area:
Kindle, C. H., 2; Rosalsky, M. B., 1.

Moraines, asymmetric distrib. in plateau
valleys: Holmes, C. D., 2.

Pensaiken gravel fossiliferous pebbles:
Howell, D. F., 6.

Post-glacial lakes, Susquehanna Valley:
Young, A. E., 1.

Shawangunk Mtn. lakes: Myers, R. E., 1.
Varves, Hornell area: Wood, A. E., 1, 2.

Underground water.

Broome County ground water: Brown, R.
H., 1.

Cortland quad. ground water: Asseltine,
E. S., 1.

Nassau Co. wells record: Roberts, C. M., 3.
Post-glacial lakes, Susquehanna Valley:

Young, A. E., 1.

Shawangunk Mtn. lakes: Myers, R. E., 1.

Newfoundland.

Areas described.

Baie Verte-Mings Bight area: Watson,
K. D., 1.

Newfoundland—Continued.

Economic geology.

Baie Verte-Mings Bight area: Watson,
K. D., 1.

Bell Island iron deposit: Hayes, John J., 1.

Little Bay area: MacLean, H. J., 1.

Problems of geology: Snelgrove, A. K., 1.

Historical geology.

Baie Verte-Mings Bight area: Watson,
K. D., 1.

Little Bay area: MacLean, H. J., 1.

Problems of geology: Snelgrove, A. K., 1.

Silurian, E. area: Twenhofel, W. H., 3.

Paleontology.

Trilobita, Camb.: Troelsen, J. C., 1.

Physical geology.

Big Oven, sea cave: Kindle, C. H., 1.

Underground water.

Sea cave, Big Oven: Kindle, C. H., 1.

Newhall-Potrero oil field, Calif.: Lee, A. T.,
1, 5.

Nicaragua, fossil plants and human footprints:
Brown, R. W., 7.

Nickel.

Alaska, Funter Bay, Admiralty Is.: Holt,
S. P., 2.

Southeast coast area: Kennedy, G. C., 1.
Spirit Mtn. mine, Copper River: Pierce,
H. C., 1.

Yakobi Island: Kennedy, G. C., 1.

Arsenides: Holmes, R. J., 1.

California, Julian-Cuyamaca area: Creasey,
S. C., 1.

Canada, exploration, prosp.: Hoffman,
R. D., 1.

Montreal to Port Arthur: Hutt, G. M., 1.
Sudbury dist.: Stanley, R. C., 1; Anony-
mous, 2.

Cuba: Calvache, A., 1.

Iron meteorites, composition: Brown, H.
S., 1.

Manitoba, Granville, Lynn Lakes area:
Allan, J. D., 1; Brown, E. L., 1;
de Wet, J. P., 1.

Meteorites: Mehl, R. F., 1.

Tests for: Anonymous, 10, 11.

Missouri, Fredericktown mining dist.: Kid-
well, A. L., 4.

New Jersey, Franklin, arsenides: Holmes,
R. J., 4.

Northwest Territories: Denis, H. R., 1;
Murphy, R., 1.

Ontario, Falconbridge mine area: David-
son, S. C., 1.

Parry Sound area: Satterly, J., 1.

Robb-Jamieson area: Berry, L. G., 1.

Sudbury area: Bullen, C. S., 1; Cooke,
H. C., 2.

Timagami Lake area: Moorhouse, W.
W., 1.

Timiskaming silver-cobalt area: Reid,
J. A., 1.

Quebec, diamond drilling: Jones, G., 1.

Saskatchewan, Rottenstone Lake area:
Mawdsley, J. B., 1.

Single crystals of some magnetic metals:
Bozorth, R. M., 1.

Nickel—Continued.

United States, min. res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.

Missouri Valley area: U.S.G.S., 3, no. 1.

Niggli-Becke process for rock analysis: Bacon, C. S., Jr., 1.

Nodules. See also Concretions.

California, collecting: Hagar, D., 1; Henry, D. J., 4; Schweitzer, C. G., 1.

Illinois, Mazon Creek fern fossils: Anonymous, 22.

Oklahoma, Perm. prospecting: Kennedy, M., 2.

Oregon, ferruginous bauxite deposits: Libbey, F. W., 1.

Pennsylvania, Clinton Co. diaspore clays: Foose, R. M., 3.

Nomenclature.

Alabama, W., pre-Selma Upper Cret. fms.: Monroe, W. H., 2.

Alaskite and alaskaite: Anonymous, 53.

Alaskoceras vs. Plectoceras: Flower, R. H., 3.

Algae as ecologic indicators: Glock, W. S., 1.

Fossil, symbiotic, N. Am.: Elias, M. K., 1.

Late Paleozoic, N. Am.: Johnson, H. H., 2.

Ammobaculites paleocenicus for A. midwayensis: Cushman, J. A., 1.

Arizona, Crater Mound vs. Meteor Crater: Darton, N. H., 2.

Bancroftina, new brachiopod name: Sinclair, G. W., 5.

Berea cf. Cussewago sand.: Demarest, D. F., 1; U.S.G.S., 1, no. 49.

Bighorn Basin, Mont.-Wyo., fm. names: Wyoming Univ., 1.

Blancan, N. Am., Pliocene or Pleistocene: Stirton, R. A., 1.

Boice Missn. shale, Nebr.: Reed, E. C., 1.

Boksepitite = bismutite and massicot: Heinrich, E. W., 3.

Bolivina dissentiata for B. imporcata: Cushman, J. A., 1.

Buntonio for Pyricythereis, Miss.: Howe, H. V., 3.

Bryophytes, Cenozoic, Mesozoic, N. Am.: Steere, W. C., 1.

Burchards ls. for Crown Point fm., Vt.: Kay, G. M., 2.

California, Monterey fm.: Bramlette, M. N., 1.

Cambrian system base: Wheeler, H. E., 1.

Canada, Rocky Mts.: Williams, M. Y., 2.

Chapmanina, Eocene genus: Frizzell, D. L., 1.

Charny fm. for Sillery, Quebec: Rasetti, F., 3.

Cladochonus striatissimus for C. striatus, preoccupied: Easton, W. H., 1.

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 Fontana Dam area: Moneymaker, B. C., 2.
 Marls, E.: Berry, E. W., 3.
 Spruce Pine pegmatite dist.: Olson, J. C., 1.

Physical geology.

- Buck Creek corundum, Clay Co.: Ballard, T. J., 3.
 Chatuga Reservoir, basic intrusives: Kellberg, J. M., 1.

North Carolina—Continued.

Physical geology—Continued.

- Fontana Dam area: Moneymaker, B. C., 2.
 Franklin-Sylva mica dist.: Olson, J. C., 2.
 Halifax Co. molybdenum deposits: Robertson, A. F., 2.
 Hot Springs area: Stose, G. W., 2.
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 Vermiculite origin: Murdock, T. G., 4.
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 Carolina Bays not of meteoritic origin: Barringer, B., 1.
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 Jerome Bog, a peat-filled Carolina Bay: Buell, M. F., 1.
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Underground water.

- Brackish water, Coastal Plain: Mundorff, M. J., 5.
 Elizabeth City ground-water res.: Mundorff, M. J., 4.
 Ground water: Mundorff, M. J., 1.
 Neuse River Basin: Mundorff, M. J., 3.
 Guilford County: Murdock, T. G., 3.
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 U. S. G. S., 3, no. 20.
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Historical geology.

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 Eocene Golden Valley fm.: Benson, W. E. B., 1.
 Flora quad.: Branch, J. R., 1.
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 Lake Dakota ground-water deposits: Rasmussen, W. C., 1.
 Nesson anticline subsurface stratigraphy: Laird, W. M., 1.

Petrology.

- Caliche in glacial chronology: Howard, A. D., 1.

North Dakota—Continued.

Petrology—Continued.

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Nesson anticline subsurface stratigraphy: Laird, W. M., 1.

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Northwest Territories—Continued.

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Indin Lake gold area: Lilge, E. O., 1.
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Mineralogy.

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- Barasois-Indian Brook area: Douglas, G. V., 4.
Basal conglomerate, Guysborough Co.: MacNeil, D. J., 2.

Nova Scotia—Continued.

Petrology—Continued.

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Ohio—Continued.

Mineralogy—Continued.

New Westville meteorite: Henderson, E. P., 1.

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Ammonoidea, Allegheny Penn. fm.: Miller, A. K., 3.

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Fauna, Silica shale, Dev.: Zuidema, H. P., 1.

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Geologic map: Bownocker, J. A., 1.

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Resources, Butler, Hamilton Cos.: Bernhagen, R. J., 3.

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Summary: Van Tuyl, D. W., 1.

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Oil sands. See also Petroleum.

- California, Maricopa to Cymric oil field:
Woodward, W. T., 1.
Clay content: Bates, T. F., 3.
Sand: Smith, E. R., 2.

Oil shale. See also Bitumens; Petroleum.

- Colorado, Anvil Points, Rifle, studies on:
Gardner, E. D., 1.
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North America, survey: Swinnerton, A. A., 1.
Ohio, min. res.: Stout, W. E., 3.
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Oklahoma—Continued.

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- Shoreline trend oil poss.: Gibbon, A., 3.
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Clay resources: Winburn, H. L., 1.
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California, dunite, Dunsmuir area: Hawkes, H. E., Jr., 2.

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Areas described.

- Parry Sound area: Satterly, J., 1.
 Robb-Jamieson area: Berry, L. G., 1.
 Timagami Lake area, NE.: Moorhouse, W. W., 1.

Economic geology.

- Beryl deposit, Lyndoch: McLaren, D. C., 3.
 Brazeau vanadium-bearing magnetites: Harding, W. D., 2.
 Calumet mines, Calumet Island: McLaren, D. C., 1.
 Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Copper deposits, Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
 Dome gold mine: Holmes, T. C., 1.
 Gem Lake-Bee Lake area: Minton, M. O., 1.
 General: Hutt, G. M., 7.
 Gypsum, Caledonia mine: McLaren, D. C., 6.
 Hasaga gold mines: McLaren, D. C., 7.
 Iron deposits: Bartley, M. W., 1, 2;
 Tanton, T. L., 2.
 Little Longlac-Sturgeon River area: Horwood, H. C., 1.
 Lode gold areas: Cooke, H. C., 1.
 McKenzie Is.-East Bay, Red Lake mining dist.: Bergman, H. J., 1.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Mamen group, Bee Lake area: Thomson, R., 1.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Mica, Purdy mines: Spence, H. S., 1, 2.
 Natural gas, 1945: Harkness, R. B., 1.
 Northern Empire gold mine: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Parry Sound area minerals: Satterly, J., 1.

Ontario—Continued.

Economic geology—Continued.

- Petroleum, 1945: Harkness, R. B., 2.
 Red Lake gold area: Thomson, R., 2;
 Wet, J. P., de, 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rush Lake gold mines: Hogg, N., 1.
 Seismic prosp., SW.: Hodgson, J. H., 2.
 Structure, ore deposits, Kirkland Lake-
 Noranda-Val d'Or area: Thomson, J.
 E., 2.
 Sudbury nickel-copper area: Bullen, C. S.,
 1; Cooke, H. C., 2.
 Timagami Lake area: Moorhouse, W.
 W., 1.
 Timiskaming silver-cobalt area: Reid, J.
 A., 1.
 Township 47, Missinaibi area: Bruce, E.
 L., 3.
 Windsor-Sarnia area: Caley, J. F., 1.
 Zinc-lead mines, prospects: Bonham, W.
 M., 1.

Historical geology.

- Brazeau vanadium-bearing magnetites:
 Harding, W. D., 2.
 Brucite, Rutherglen dist.: Keith, M. L., 1.
 Calumet mines, Calumet Island: McLaren,
 D. C., 1.
 Chelmsford area, Sudbury dist.: Canada
 G. S., 1.
 Cochenour Willans gold mine area: Now-
 lan, J. P., 1.
 Copper deposits, Robb, Jamieson, Godfrey
 Tps.: Ferguson, S. A., 1.
 Detroit River Island: Caley, J. F., 2.
 Dome gold mine deposits: Holmes, T.
 C., 1.
 Eagle Lake area: Moorhouse W. W., 2.
 Falconbridge area, Sudbury dist.: Canada
 G. S., 1; Davidson, S. C., 1.
 Gem Lake-Bee Lake area: Minton, M.
 O., 1.
 General: Hutt, G. M., 7.
 Geological map: Ontario Dept. Mines, 3.
 Hasaga gold mines: McLaren, D. C., 7.
 Helen iron mine: Kidder, S. J., 1.
 Keewatin-Timiskaming unconformity, Kirk-
 land Lake dist.: Thomson, J. E., 1.
 Kenogami Lake area: Ontario Dept.
 Mines, 2.
 Little Longlac-Sturgeon River area: Hor-
 wood, H. C., 1.
 MacKenzie Island, East Bay, Red Lake
 dist.: Bergman, H. J., 1.
 Madsen Red Lake gold mines: McLaren,
 D. C., 8.
 Matachewan Consolidated gold mines: Mc-
 Laren, D. C., 2.
 Mattawan-Olrig area: Harding, W. D., 1.
 Northern Empire gold mine, Beardmore
 area: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Onakawana lignite, Moose Basin: Mc-
 Laren, D. C., 5.
 Ottawa-Cornwall area: Canada G. S., 1.
 Paragneisses, Bancroft area: Gummer, W.
 K., 1.

Ontario—Continued.

Historical geology—Continued.

- Parry Sound area: Satterly, J., 1.
 Pleistocene, beach deposits, Barrie areas:
 Deane, R. E., 2.
 Orillia area: Deane, R. E., 1.
 Sarnia area: Satterly, J., 1.
 Red Lake area: Thomson, R., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rush Lake gold mines: Hogg, N., 1.
 Seismic prosp., SW.: Hodgson, J. H., 2.
 Structure, ore deposits, Kirkland Lake-
 Noranda-Val d'Or area: Thomson, J.
 E., 2.
 Sudbury geologic problems: Cooke, H.
 C., 2.
 Teck Tp. geol. map: Ont. Dept. Mines, 1.
 Timagami Lake area, NE.: Moorhouse, W.
 W., 1.
 Township 47, Missinaibi area: Bruce, E.
 L., 3.
 Windsor-Sarnia area: Caley, J. F., 1.

Mineralogy.

- Beryl deposit, Lyndoch: McLaren, D. C., 3.
 Brazeau magnetites: Harding, W. D., 2.
 Brucite mines area: Keith, M. L., 1; Man-
 darino, J. A., 1.
 Calumet mines, Calumet Is.: McLaren, D.
 C., 1.
 Chloritoid, Porcupine dist.: Gustafson, J.
 K., 1.
 Cochenour Willans gold mine area: Now-
 lan, J. P., 1.
 Conchilites, Steep Rock area: Goodwin,
 W. M., 1.
 Copper deposits, Robb, Jamieson, Godfrey
 Tps.: Ferguson, S. A., 1.
 Dome gold mine deposits: Holmes, T.
 C., 1.
 Falconbridge nickel mine area: Davidson,
 S. C., 1.
 General: Hutt, G. M., 7.
 Hasaga gold mines: McLaren, D. C., 7.
 Heavy minerals, Craigmont corundum:
 Eardley-Wilmot, V. L., 1.
 Helen iron mine: Kidder, S. J., 1.
 Hematite boulders, Iron Is., Lake Nipis-
 sing: Knight, C. W., 1.
 Iron deposits: Bartley, M. W., 1, 2;
 Tanton, T. L., 2.
 Jasper conglomerate: Bay, J. W., 1.
 Little Longlac-Sturgeon River area pros-
 pects: Horwood, H. C., 1.
 MacKenzie Is.-East Bay Red Lake mining
 dist.: Bergman, H. J., 1.
 Madsen Red Lake gold mines: McLaren,
 D. C., 8.
 Mamen group, Bee Lake area: Thomson,
 R., 1.
 Matachewan Consolidated gold mines: Mc-
 Laren, D. C., 2.
 Mica, Purdy mines: Spence, H. S., 1, 2.
 Nepheline, corundum-bearing rocks, NE.:
 Moyd, L. S., 2.
 Omega gold mines: McLaren, D. C., 4.
 Parry Sound area: Satterly, J., 1.

Ontario—Continued.

Mineralogy—Continued.

- Renfrew Co. mineral locs.: Eisenberg, J. M., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rush Lake gold mines: Hogg, N., 1.
 Structure, ore deposits, Kirkland-Noranda-Val d'Or area: Thomson, J. E., 2.
 Sudbury nickel-copper area: Bullen, C. S., 1.
 Timagami Lake area, NE.: Moorhouse, W. W., 1.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Wernerite, chatoyant, Bancroft area: Thomas, W. B. S., 1.

Paleontology.

- Artifacts, raised Lake Huron beach: Greenman, E. F., 1.
 Brachiopoda, lingulid, Ord.: Sinclair, G. W., 2.
 Illaenus, muscle scars: Sinclair, G. W., 10.
 Isotelus, meraspid period: Fritz, M. A., 4.
 Mastodon, SW.: Russell, L. S., 5.
 Platystrophia, Trenton: Sinclair, G. W., 4.
 Rhopalonaria, Dundas fm., Toronto: Fritz, M. A., 3.
 Scolecodonts: Eller, E. R., 1, 2.
 Strophomena, Trigrammaria, Microtrypa, Ottawa ls.: Wilson, A. E., 1.
 Windsor-Sarnia area, Paleozoic: Caley, J. F., 1.

Petrology.

- Beatty Tp. intrus.: Armstrong, H. S., 1.
 Brucite, Rutherglen dist.: Keith, M. L., 1.
 Bryce area, intrusives and granite: Moorhouse, W. W., 3.
 Calumet mines, Calumet Is.: McLaren, D. C., 1.
 Chloritoid, Porcupine dist.: Gustafson, J. K., 1.
 Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Copper deposits, Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
 Gem Lake-Bee Lake area: Minton, M. O., 1.
 General: Hutt, G. M., 7.
 Hardrock "porphyry" of Little Long Lac: Bruce, E. L., 2.
 Hasaga gold mines: McLaren, D. C., 7.
 Jasper conglomerate: Bay, J. W., 1.
 Kenogami Lake area: Ont. Dept. Mines, 2.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Mamen group, Bee Lake area: Thomson, R., 1.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Mica, Purdy Mines: Spence, H. S., 1, 2.
 Nepheline, corundum-bearing rocks: Moyd, L. S., 2.
 Origin: Shand, S. J., 1.
 Norites, Eagle Lake area: Moorhouse, W. W., 2.
 Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.

Ontario—Continued.

Petrology—Continued.

- Omega gold mine: McLaren, D. C., 4.
 Paragneisses, Bancroft area: Gummer, W. K., 1.
 Parry Sound area: Satterly, J., 1.
 Red Lake area: Thomson, R., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rock bursts, Lake Shore mines: Robson, W. T., 1.
 Rush Lake gold mines: Hogg, N., 1.
 Steep Rock Lake, Quat.: Antevs, E., 2.
 Sudbury geol. problems: Cooke, H. C., 2.
 Timagami Lake area: Moorhouse, W. W., 1.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Township 47, Missinabi area: Bruce, E. L., 3.
 Windsor-Sarnia area, Paleozoic: Caley, J. F., 1.
Physical geology.
 Beatty Tp. intrus.: Armstrong, H. S., 1.
 Beryl deposit, Lyndoch: McLaren, D. C., 3.
 Brucite, Rutherglen dist.: Keith, M. L., 1.
 Bryce area, intrusives and granite: Moorhouse, W. W., 3.
 Calumet mines, Calumet Is.: McLaren, D. C., 1.
 Chelmsford area, Sudbury dist.: Canada G. S., 1.
 Chloritoid, Porcupine dist.: Gustafson, J. K., 1.
 Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Copper deposits, Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
 Dome gold mine ore deposits: Holmes, T. C., 1.
 Falconbridge area, Sudbury dist.: Canada G. S., 1; Davidson, S. C., 1.
 Hasaga gold mines: McLaren, D. C., 7.
 Helen iron mine: Kidder, S. J., 1.
 Keewatin-Timiskaming unconformity, Kirkland Lake dist.: Thomson, J. E., 1.
 Kenogami Lake area: Ont. Dept. Mines, 2.
 Little Longlac-Sturgeon River area: Horwood, H. C., 1.
 McKenzie Is.-East Bay, Red Lake dist.: Bergman, H. J., 1.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Mamen group, Bee Lake area: Thomson, R., 1.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Mattawan-Olrig area: Harding, W. D., 1.
 Mica deposits, Purdy mines: Spence, H. S., 2.
 Nepheline rocks, origin: Shand, S. J., 1.
 Northern Empire gold mine, Beardmore area: Benedict, P. C., 1.
 Omega gold mine: McLaren, D. C., 4.
 Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Paragneisses, Bancroft area: Gummer, W. K., 1.
 Parry Sound area: Satterly, J., 1.

Ontario—Continued.

Physical geology—Continued.

- Red Lake area: Thomson, R., 2.
 Robb-Jamieson area: Berry, L. G., 1.
 Rock bursts, Lake Shore mines: Robson, W. T., 1.
 Rush Lake gold mines: Hogg, N., 1.
 Sudbury dist. geol. problems: Cooke, H. C., 2.
 Timagami Lake area, NE.: Moorhouse, W. W., 1.
 Timiskaming silver-cobalt area min. res.: Reid, J. A., 1.
 Township 47, Missinaibi area: Bruce, E. L., 3.
 Travel times from rockbursts, Kirkland Lake: Hodgson, J. H., 1.
 Windsor-Sarnia area, Paleozoic: Caley, J. F., 1.

Physiographic geology.

- Aerial surveys: Bishop, J. M., 1.
 Falconbridge, Sudbury dist.: Canada G. S., 1.
 General: Hutt, G. M., 7.
 Jasper conglomerate: Bay, J. W., 1.
 Kenogami Lake area: Ont. Dept. Mines, 2.
 Land forms, clay belt: Hills, A., 1.
 Mattawan-Olrig area: Harding, W. D., 1.
 Onakawana lignite, Moose Basin: McLaren, D. C., 5.
 Pleistocene beach deposits, Barrie, Orilla, Sutton areas: Deane, R. E., 1, 2; Greenman, E. F., 1.
 Robb-Jamieson area: Berry, L. G., 1.
 Steep Rock Lake area Quat., glacial geol.: Antevs, E., 2; Bartley, M. W., 3.
 Sudbury geologic problems: Cooke, H. C., 2.
 Township 47, Missinaibi area: Bruce, E. L., 3.
 Windsor-Sarnia, Paleozoic: Caley, J. F., 1.

Underground water.

- Pleistocene deposits, beaches, Orilla area: Deane, R. E., 1.

Onyx.

- Arizona, N., marble: McKee, E. D., 2.
 California, Death Valley: Lisle, T. O., 1.
 Fairfield: Lisle, T. O., 4.
 Volcan Springs deposits: Walker, L. W., 1.

Oölite and oöolith: DeFord, R. K., 1.

Oörites.

- Haiti, cascade travertine deposit: Schrock, R. R., 2.
 Maryland, South Mtn. fold, defm.: Cloos, E., 3.
 Pennsylvania, Hollidaysburg - Huntington quads.: Butts, C., 1.

Opal. See also Gems: Precious stones.

- Arizona, Malpai Mesa area: Schell, B. E., 1.
 California, Eagle Crags collecting area: Henry, D. J., 2.
 "The Geysers" minerals: Vonsen, M., 1.
 Kern County collecting: Henry, D. J., 3.
 San Diego Co., caliche: Emery, K. O., 1.
 Formation: Copisarow, A. C., 1.

Opal—Continued.

- Idaho, gem minerals: Fernquist, C. O., 1.
 Mexico, discovery, 1835: Anonymous, 24.
 Queretaro fields: Major, D. M., 1.
 Moisture content, crystal structure: Miller, S., 1.
 Nebraska, W., moss variety: Mitchell, R., 2.
 Nevada, Steamboat Springs minerals: Giannela, V. P., 3.
 New York, Eastern State Parkway min. locs.: Zodac, P., 7.

- Ophiuroidea, West Greenland: Laursen, D., 1.
 Optical activity in crystals: West, C. D., 1.
 Optical figures with reflecting microscope: Neuerburg, G. J., 2.
 Optical mineralogy: Jahns, R. H., 3; Tunell, G., 1.

- Orbitoididae, synopsis: Rutten, M. G., 2.
 Orcutt oil field, Calif.: Hughes, A. W., 1.
 Ordovician. See also Paleontology, Ordovician.
 Adirondack border: Wheeler, R. R., 4.
 Adirondackia, vanishing: Chadwick, G. H., 5.

- Alabama, NE.: Burchard, E. F., 1.
 Alaska, Lost River tin deposit, Seward Penin.: Heide, H. E., 1.

- Alberta, plains structure at depth: Ruth-erford, R. L., 1.

- Arizona, Grand Canyon area: Corle, E., 1; Stone, J. F., 1.

- Arkansas, Magnet Cove, Hot Spring Co.: McElwaine, R. B., 1.

- Arkansas-Oklahoma-Kansas, geol. map: Ireland, H. A., 1; U.S.G.S., 1, no. 52.

- Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.

- Bighorn Basin, Wyo.-Mont.: Wyoming Univ., 1.

- British Columbia, N.: Armstrong, J. E., 2.
 Burchards ls. vs. Crown Point fm., Vt.: Kay, G. M., 2.

- California, Section Sierra Nevada-Death Valley: Hopper, R. H., 1.

- Canada, Montreal to Port Arthur: Hutt, G. M., 1.

- Ottawa-Cornwall area: Canada G. S., 1.
 Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.

- Western, limestones: Goudge, M. F., 1.

- Canadian Arctic, Victor Is. area: Washburn, A. L., 1.

- Colorado, Alma, Horeshoe dists. lode deposits: Singewald, Q. D., 1.

- Baca Co., Freezeout Creek fault area: Buehler, K. M., 1.

- Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.

- Cañon City area: Blum, V. J., 1.
 Colorado Springs quad.: McLaughlin, K. P., 1.

- General: Vanderwilt, J. W., 5.
 Gilman dist., Eagle Co.: Tweto, O. L., 3.

- Jewell Tunnel mine, Chaffee Co.: Ames, E. W., 1.

- Kokomo mining dist.: Koschmann, A. H., 1.

Ordovician—Continued.

Colorado—Continued.

Leadville mining dist., Lake Co.: Loughlin, G. F., 1.

Southeast, subsurface Paleozoic: Maher, J. C., 2.

Snowmass Mtn. area: Vanderwilt, J. W., 6.

Upper Blue River area: Singewald, Q. D., 3.

Cross sections, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.

Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.

Trego Co., Kans.-Cheyenne Co., Colo.: Collins, J. B., 2.

Forest City Basin, U. S.: U.S.G.S., 1, no. 48.

Geological aspects of prosp., zinc-lead dist., Ill.: Willman, H. B., 1.

Greenland, Scoresby Sound area: Rothé, J. P., 1.

Idaho, Borah Peak quad.: Ross, C. P., 2.

Geological map: Ross, C. P., 1.

Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.

Illinois, geol. map: Weller, J. M., 1.

Joe Daviess Co. lead deposits: Zinner, P., 1.

King oil field, Jefferson Co.: Folk, S. H., 1.

Marine oil pool, Madison Co.: Lowenstam, H. A., 1.

Indiana, E., deep oil wells: Bieberman, D. F., 1.

Indiana State Parks: Freeman, O. W., 1.

Kansas, Barton Co. buried hills: Walters, R. F., 1.

Central, limestones: Taylor, M. H., 2.

Crude oils and stratigraphy: Tulsa Geol. Soc., 1.

Geneseo uplift: Clark, S. K., 1.

Geologic cross-sec., Ford Co. to Dallam Co., Tex.: Edson, F. C., 1.

Kinderhook dolomite, Sedgwick Co.: Carmody, R. A., 1.

Kraft-Prusa oil field: Walters, R. F., 3.

Viola fm. zones: Ver Wiebe, W. A., 4.

Kentucky, Clinton Co. pools: Jillson, W. R., 5.

Trenton Perryville fm.: McFarlan, A. C., 1.

Labrador Penin., E. area: Tanner, V., 2.

Maine, manganese deposits, Aroostook Co.: Miller, R. L., 2.

Manitoba, geol. map: Canada G. S., 1.

Prospecting areas: de Wet, J. P., 1.

Tramping Lake, N. part: Stanton, M. S., 1.

Maquam group, Carman, Youngman fms., Vt.: Kay, G. M., 2.

Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 2.

South Mtn. fold, defm.: Cloos, E., 3.

Ordovician—Continued.

Mexico, geol. map, N. part: King, P. B., 4.

Yaqui Valley, Sonora: Toron Villegas, L., 2.

Michigan, Mackinac Island: Stanley, G. M., 1.

Mineral res.: Zuidema, H. P., 2.

Southeast: Cohee, G. V., 1.

Minnesota, NE.: Thiel, G. A., 2.

Southeast: Thiel, G. A., 1.

Missouri: Hinchey, N. S., 1.

Alice zinc mine: Kidwell, A. L., 3; Needham, A. B., 1.

Barite deposits: Mather, W. B., 2.

Gulf Coastal Plain in SE.: Grohskopf, J. G., 2.

Morgan Co.: Mather, W. B., 1.

Plattin fm.: Peery, T. E., 1.

Ste. Genevieve, St. Francis Cos., SE.: Kidwell, A. L., 6.

Montana, Cat Creek oil field: Perry, E. S., 2.

Great Plains sed. rocks: Perry, E. S., 1.

Northwest: Sloss, L. L., 1; U.S.G.S., 2, no. 25.

Plains structure map: Dobbin, C. E., 3.

Montreal, Canada: Clark, T. H., 1.

Nevada, Bristol Range: Wheeler, H. E., 2.

Eureka min. dist.: Sharp, W., 1.

Mount Hope lead-zinc mine, Eureka Co.: Matson, E. J., 1.

New Brunswick, Honeydale area: Alcock, F. J., 3.

St. Stephen area: Alcock, F. J., 2.

Sussex, Kings and Queens Cos.: Canada G. S., 1.

New England, Keene-Brattleboro area: Moore, G. E., 1.

New Hampshire, Monadnock area: Billings, K. S. F. L., 1.

Mt. Washington quad.: Billings, M. P., 2.

New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1, 2.

New Mexico, fluorspar area: Rothrock, H. E., 1.

Future oil poss.: Bates, R. L., 1.

Southeast, pre-San Andres fms. oil zones: King, R. E., 1.

New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1, 2.

Fort Ann area: Flower, R. H., 7.

Genesee Gorge sediments: Alling, H. L., 1.

Long Island: Fox, J. T., 1.

Stissing Mtn.: Knopf, E. F. B., 3.

Trenton delta: Chadwick, G. H., 3.

Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.

Little Bay area: MacLean, H. J., 1.

North America, Gulf of St. Lawrence area: Twenhofel, W. H., 4.

North Dakota, Nesson anticline: Laird, W. M., 1.

Northwest Territories, Great Slave Lake area: Bateman, J. D., 2.

Ordovician—Continued.

- Ohio, Chillicothe test-core studies: Carman, J. E., 2.
 Cincinnati area, fossils, strata: Bucher, W. H., 1.
 Geologic map: Bownocker, J. A., 1.
 Scenic geology: Carman, J. E., 1.
 Tuscarawas County: Cummins, J. W., 1.
 Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
 Antioch pool, Garvin Co.: Turk, L. B., 1.
 Arbuckle Mts. glass sands: Ham, W. E., 6.
 Crude oils and stratigraphy: Tulsa G. Soc., 1.
 Cumberland oil field: Cram, I. H., 1.
 Northeast: Moore, C. A., 3.
 Ouachita Mtn. area: U.S.G.S., 1, no. 66.
 Southern oil fields: Gouin, F., 1.
 Southwest Antioch oil field: Swesnik, R. M., 1.
 West, Ouachita Mts.: Hendricks, T. A., 1; Tulsa G. Soc., 1.
 Ontario, Bancroft area paragneisses: Gummer, W. K., 1.
 Calumet Island mines: McLaren, D. C., 1.
 General: Hutt, G. M., 7.
 Geologic map: Ont. Dept. Mines, 3.
 Orilla area: Deane, R. E., 1.
 Parry Sound area: Satterly, J., 1.
 Southwest, value of seismic prosp.: Hodgson, J. H., 2.
 Windsor-Sarnia area: Caley, J. F., 1.
 Pennsylvania, clastic sed. rocks: Willard, B., 6.
 High-calcium limestones: Swain, F. M., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Taconic sequence: Stose, G. W., 2.
 Permian Basin, U. S.: Johnston, D., 1.
 Quebec: Hutt, G. M., 5.
 Descriptive geology: Dresser, J. A., 1.
 Eastern Tps. serpentine belt: Faessler, C., 3.
 Megantic to Montreal: Hutt, G. M., 2.
 Quebec Central Ry. area: Dawson, A. S., 1.
 St. Lawrence Valley: Rasetti, F., 3.
 Shawinigan area: Laverdière, J. W., 1.
 Simard area, Chicoutimi Co.: Denis, B. T., 1.
 South Dakota, Missouri Valley: Petsch, B. C., 1.
 Western, deep well borings: Baker, C. L., 2.
 Tennessee, central: Bentall, R., 1; Jewell, W. B., 1.
 Eve Mills area, Monroe Co.: Dunlap, J. C., 1.
 Jefferson City area: Brokaw, A. L., 1.
 Knox Co., Longview mbr. of Kingsport fm.: Allen, A. T., Jr., 1.
 Mascot-Jefferson City area ore bodies: Brokaw, A. L., 1.

Ordovician—Continued.

- Tennessee—Continued.
 Richmond channels, channel fillings: Wilson, C. W., Jr., 1.
 Stones River rocks: Collins, J. B., 1.
 Tennessee—Virginia, dolomites: Prouty, C. E., 2.
 Texas, Apco oil field, Pecos Co.: Ellison, S. P., Jr., 2.
 Central area: Barnes, V. E., 2, 5, 7, 8.
 Ellenburger group: Barnes, V. E., 1; Cloud, P. E., Jr., 1; Crowley, A. J., 1; Goldich, S. S., 2.
 Geologic cross-sections, Dallam Co. to Ford Co., Kans.: Edson, F. C., 1.
 Glass Mts.-Marathon Basin trip: West Tex. G. Soc., 2.
 Keystone field, Winkler Co.: Mygdal, K. A., 1.
 Llano Uplift sec.: Bullard, F. M., 1.
 TXL field, Ector Co.: Cantrell, C. D., Jr., 1.
 West, pre-Permian fms.: Barton, J. M., 1.
 Petroleum devel.: Deegan, C. J., 1.
 United States, Appalachian structure: Hietanen, A., 1.
 Appalachians, central: Carlston, C. W., 1.
 Black Warrior Basin, Miss.-Ala.: Mellen, F. F., 1.
 Continental shelf exploration: Lee, F. W., 1.
 Northeast, Basin areas: Lockett, J. R., 1.
 Quimbys Mill mbr., Platteville fm.: Agnew, A. F., 1.
 Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 2.
 Virginia-Tennessee area: Prouty, C. E., 1.
 Utah, Mineral Range tungsten deposits: Crawford, A. L., 3.
 West-central, Confusion Range: Bacon, C. S., Jr., 2.
 Vermont, Burchards ls. vs. Crown Point fm.: Kay, G. M., 2.
 Maquam group: Kay, G. M., 2.
 Orange Co. copper mines: Jacobs, E. C., 2.
 Virginia, Appalachian Valley lss., facies: Cooper, B. N., 3.
 Bolarian series: Kay, G. M., 5.
 Giles County: Krinitzsky, E. I., 1.
 Rose Hill oil field, Lee Co.: Jillson, W. R., 15; Miller, R. L., 1-a, 3; U. S. G. S., 1, no. 76.
 Shenandoah Valley: Cooper, B. N., 1.
 Western, limestones: Kay, G. M., 4.
 Washington, Stevens Co.: Campbell, C. D., 1; Reed, G. C., 4.
 West Virginia, limestones: Kay, G. M., 4.
 Natural gas horizons: Reger, D. B., 1.
 Wisconsin, Coughlin, Galena Level zinc mines: Berliner, M. H., 1.
 Grant Co., Last Chance zinc mine: Lincoln, F. C., 1.

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- Wyoming, Bighorn Basin Paleozoic fms.:
 Stipp, T. F., 2.
 Jackson Hole area Ranges: Wanless,
 H. R., 4.
 Northwest Wind River Mts.: Baker,
 C. L., 1.
 Oregon Basin oil field: Walton, P. T., 3.
 Paleozoic fms., Cody area: Stipp, T.
 F., 1.
 Sage Creek dome area: U. S. G. S., 1,
 no. 53.
 Yukon: Decker, C. E., 3.
 Ore deposits and geologic age: Milholić, S., 1.
 Ore deposits, origin. See also Mineral de-
 posits, origin. For ore deposits in
 general, see Economic geology (gen-
 eral).
- Alaska, chromite deposits, Red Mtn.,
 Kenai Penin.: Rutledge, F. A., 1.
 Copper-sulfur deposits, Prince of Wales
 Is.: Fosse, E. L., 1.
 Kasaan Penin.: Warner, L. A., 1.
 Mount Eielson zinc-lead deposits: Muir,
 N. M., 3.
 Mountain View tungsten deposit, Hy-
 der: Erickson, A. W., 1.
 Rua Cove, Knight Island copper claims:
 Stefansson, K., 1.
 Southeast, molybdenite deposits: Twen-
 hofel, W. S., 1.
- Arizona, Amargosa deposit, Pima Co.:
 Tainter, S. L., 3.
 Castle Dome copper deposit: Peterson,
 N. P., 1.
 Copper Butte mine, Mineral Creek dist.:
 Phelps, H. D., 1.
 Iron King mine, Prescott: Mills, H.
 F., 1.
 Magma copper mine, Superior: Michell,
 W. D., 1.
 Manganese-silver ores: Romslo, T. M., 1.
 New Planet mine, Yuma Co.: Cum-
 mings, J. B., 2.
 San Manuel copper deposit: Chapman,
 T. L., 1; Steele, H. J., 1.
 Basic research, indust. minerals and rocks:
 Gillson, J. L., 1.
- British Columbia, Britannia mines No.
 8 ore bodies: Irvine, W. T., 1.
 Electrum-ruby silver deposit, East Gold
 mine: Fawley, A. P., 1.
 Highland-Bell mine ores: Staples, A.
 B., 2.
 Northern: Armstrong, J. E., 2.
 Porcher Island deposits: Smith, A., 2.
 Red Rose tungsten mine: Stevenson,
 J. S., 1.
 Whitewater, Lucky Jim mine areas:
 Hedley, M. S., 1.
- California, Akos mine, Mariposa Co.: Wie-
 belt, F. J., 2.
 Bessemer iron deposits: Wiebelt, F. J., 1.
 Blue Ledge mine, Siskiyou Co.: Hund-
 hausen, R. J., 2.
 Chromite deposits, N. Coast Ranges: Dow,
 D. H., 2.

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- California—Continued.
 Del Norte Co. chromite deposits: Wells,
 F. G., 1.
 East Mayacmas dist., quicksilver depos-
 its: Yates, R. G., 1.
 Gorman tin dist.: Wiess, J. H., 1.
 Iron deposits: Lamey, C. A., 1.
 New Idria dist. quicksilver deposits:
 Eckel, E. B., 1.
 North Elder Creek area chromite: Ry-
 nearson, G. A., 1.
 Pine Creek, Adamson mines: Bateman,
 P. C., 1.
 Red Mtn. magnesite vein system: Boden-
 los, A. J., 1.
 Shasta, California deposits: Lamey, C.
 A., 1.
 Sierra Nevada, copper-zinc belt: Heyl,
 G. R., 2.
 Sixteen-To-One gold-quartz vein: Cooke,
 H. R., Jr., 1.
 Sulphur Bank quicksilver mine: Ever-
 hart, D. L., 1.
 Walibu quicksilver mine: Bailey, E. H.,
 2.
 West Mayacmas dist. quicksilver depos-
 its: Bailey, E. H., 1.
- Canada, lode gold areas: Cooke, H. C., 1.
 Sudbury dist.: Stanley, R. C., 1.
 Zinc-lead mines, Quebec, Ontario: Bon-
 ham, W. M., 1.
- Carbonates, vein, microscopic characters:
 Grout, F. F., 2.
- Chrome micas: Whitmore, D. R. E., 1.
- Colorado, Boulder dist. scheelite: Tweto,
 O. L., 1, 2.
 Climax molybdenum mine, Lake Co.:
 Vanderwilt, J. W., 3; Anonymous, 61.
 Cripple Creek dist.: Koschmann, A.
 H., 4.
 Dunmore mine, Ouray Co.: Kelley, V.
 C., 3.
 Front Range mineral belt: Goddard,
 E. N., 5.
 Gilman dist., Eagle Co.: Tweto, O.
 L., 3.
 Gold Hill dist.: Myers, R. E., 2.
 Kokomo mining dist.: Koschmann, A.
 H., 1, 3.
 Leadville mining dist.: Loughlin, G.
 F., 1.
 Mineral Point, Poughkeepsie, Upper Un-
 compahgre dists.: Kelley, V. C., 1.
 Rico mining dist.: Varnes, D. J., 2.
 Silverton volcanic center dists.: Bur-
 bank, W. S., 9.
 Uncompahgre mining dist.: Burbank,
 W. S.; 8.
 Vanadium deposits, Placerville area:
 Fischer, R. P., 4.
- Cuba, manganese deposits: Straczek, J.
 A., 1.
 Minerals: Calvache, A., 1.
 Moa chromite dist.: Guild, P. W., 1.
 Depth changes in ore deposition: Bruce,
 E. L., 1.

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- Geochemistry, dolomitization: Johnston, W. D., Jr., 2.
- Geological aspect of prospecting, zinc-lead dist., Ill.: Willman, H. B., 1.
- Gold distribution: Bichan, W. J., 1.
- Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
- Haiti, manganese deposits: Goddard, E. N., 2, 3.
- Hydrothermal ores, deposition: Hulin, C. D., 2.
- Idaho, Blackbird dist. cobalt deposits: Anderson, A. L., 3.
- Clark Fork dist., lead-silver: Anderson, A. L., 2, 2-a.
- Coeur d'Alene min. dist.: Sorenson, R. E., 1.
- Gold deposits: Staley, W. W., 3.
- Last Chance-Hornsilver mines: Anderson, A. L., 5.
- Moyie-Yaak dist.: Anderson, A. L., 1.
- Snake-Salmon Rivers area: Wagner, W. R., 1.
- Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
- Idaho batholith, role in Laramide orogeny: Anderson, A. L., 6.
- Igneous rocks, barren and productive: Johnston, W. D., Jr., 2.
- Illinois, NW. zinc-lead dist.: Willman, H. B., 2.
- Pope Co. fluorite, zinc mines: Bishop, O. M., 1.
- Impounding structures control of ore deposits: Mackay, R. A., 1.
- Iron ores and their fm.: Sanger, A., 1.
- Kentucky, Eva Tanguay mines: Starnes, X. B., 3.
- Mineral Ridge-Clay Lick fault system, fluorite beds: Muir, N. M., 1.
- Lake Superior soft iron ore devel.: Tyler, S. A., 1.
- Limestone replacements refute theories of ore origin: Prescott, B., 1.
- Liquid inclusions in geologic thermometry: Ingerson, E., 2.
- Localization in limestone beds, causes: Johnston, W. D., Jr., 2.
- Maine, Katahdin pyrrhotite deposit area: Miller, R. L., 1.
- Manitoba, Barrington Lake area: Minton, M. C., 2.
- McVeigh Lake area: Bateman, J. D., 1.
- Prospecting areas: de Wet, J. P., 1.
- Sherridon area: Canada G. S., 1.
- Mexico, antimony deposits: González Reyna, J., 9; Guiza, R., Jr., 1; White, D. E., 1, 2, 4.
- Batopilas, Chihuahua silver mines: González Reyna, J., 8.
- Chihuahua, min. res.: González Reyna, J., 3-a.
- Cuarento dist., Durango: Gallagher, D., 1.
- El Cuarenta min. zone, Durango: Pérez Siliceo, R., 4.

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- El Moral dist.: González Reyna, J., 10.
- Iron deposits, N. group: Toron Villegas, L., 1.
- Isla Margarita, Baja Calif.: González Reyna, J., 4.
- Maravatio-Zitacuaro dist.: Flores, T., 1.
- Metasomatic processes: Holser, W. T., 1.
- Mineral deposits: González Reyna, J., 11.
- Pachuca-Real del Monte Silver dist.: Turban, F., 1; Wissner, E. H., 1.
- Placers, Guadalupe, Puerto del Aire, Chihuahua: González Reyna, J., 3.
- Plateau area: Nye, S. S., 1.
- Quicksilver deposits, Mazapil: Pérez Siliceo, R., 2.
- Temascaltepec silver deposits: Cardenas, S., 1.
- Tin deposits: Foshag, W. F., 1.
- Typical deposits: González Reyna, J., 12.
- Michigan, copper dist.: Broderick, T. M., 1.
- Crystal Falls-Alpha iron dist.: Pettijohn, F. J., 1.
- Mineral deposits, magmatic origin: Guimarães, D., 1.
- Mining and geology: Joralemon, I. B., 1; Sales, R. H., 1.
- Minnesota, Mesabi range: Jones, R. H. B., 1.
- Missouri, Alice zinc mine: Kidwell, A. L., 3; Needham, A. B., 1.
- Lead-belt: Wagner, R. E., 1.
- Pyrite deposits: Brown, J. S., 1.
- Molybdenum deposits: Vanderwilt, J. W., 7.
- Montana, Bearpaw Mts., alkalic pegmatites: Pecora, W. T., 2.
- Chromite, Red Lodge area: James, H. L., 1.
- Running Wolf dist. magnetite: Goodspeed, G. E., 2.
- Nature of certain ore-forming solutions: Graton, L. C., 1.
- Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
- Eureka mining dist.: Sharp, W., 1.
- Gabbs area, magnetite: Vitaliano, C. J., 2.
- Mount Hope mine, lead-zinc: Matson, E. J., 1.
- New Mexico, Capitan quad.: Sidwell, R., 1.
- Fluorspar deposits, Gallinas dist.: Soulé, J. H., 1.
- Gallinas dist.: Kelley, V. C., 4.
- Headstone mining dist.: Benjovsky, T. D., 2.
- Huckleberry spar mine, Catron Co.: Sur, F. S., 2.
- Iron Mtn. tungsten deposits: Storms, W. R., 3.
- Lake Valley deposits: Apell, G. A., 2.
- Las Vegas Basin, Sangre de Cristo foothills: U. S. G. S., 1, no. 54.

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- New Mexico—Continued.
 Lead-zinc deposits, Grant Co.: Soulé, J. H., 4.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Lucero uplift: U. S. G. S., 1, no. 47.
 New York, Adirondacks, Ti-Fe relations during magmatic processes: Evrard, P., 1.
 Clinton hematite ores: Alling, H. L., 2.
 Edwards-Balmat zinc mines: Brown, J. S., 2, 3.
 Lake Sanford area: Stephenson, R. C., 1.
 Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 North America, origin "Lake Superior" type iron ores: Moore, E. S., 3.
 North Carolina, Buck Creek corundum deposits: Ballard, T. J., 3.
 Cherokee iron deposits: Robertson, A. F., 1.
 Vermiculites: Murdock, T. G., 4.
 Northwest Territories, Eldorado mine: Murphy, R. 1.
 Giant gold mine: Anonymous, 56.
 Yellowknife dist.: Campbell, N., 2; Riley, C., 1; Anonymous, 56.
 Nova Scotia, gold dist. ore bodies: Cameron, H. L., 1.
 Ore deposits and geologic age: Miholić, S., 1.
 Ontario, Brazeau vanadium-bearing magnetites: Harding, W. D., 2.
 Calumet Island mines: McLaren, D. C., 1.
 Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Copper deposits: Ferguson, S. A., 1.
 Dome gold mine: Holmes, T. C., 1.
 Falconbridge nickel mine area: Davidson, S. C., 1.
 Hasaga gold mines: McLaren, D. C., 7.
 Helen iron mine: Kidder, S. J., 1.
 Little Longlac-Sturgeon River area: Horwood, H. C., 1.
 Madsen Red Lake gold mines: McLaren, D. C., 8.
 Matachewan Consolidated gold mines: McLaren, D. C., 2.
 Mattawan-Olrig area: Harding, W. D., 1.
 Steeprock Lake iron ores: Tanton, T. L., 2.
 Sudbury area: Cooke, H. C., 2.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Ore genesis, metallurgical interpretation: Brown, J. S., 4.
 Oregon, ferruginous bauxite deposits: Libbey, F. W., 1.
 Mount Reuben min. dist.: Youngberg, E. A., 1.
 Pennsylvania, manganese minerals: Foose, R. M., 2.
 Pequea silver mine: Foose, R. M., 4.
 White Rocks area: Foose, R. M., 1.

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- Quebec, Federal mine, Gaspé: Auger, P. E., 3.
 Major faults, Abitibi region: Norman, G. W. H., 5.
 Siscoe mine area: Auger, P. E., 1.
 Sericite-kaolin alteration: Johnston, W. D., Jr., 2.
 Source of ores: Thompson, G. A., 1.
 Tennessee, Churchwell-Robinette mines: Warner, A. H., 1.
 Jefferson City area deposits: Brokaw, A. L., 1.
 Zinc deposits: Sayrs, R. L., 1.
 Texas, Llano iron deposits: Evans, A. M., 2.
 Terlingua quicksilver deposits: Evans, A. M., 1.
 Thorium-uranium ratios, lead ores genesis: Senftle, F. E., 2.
 Ti and Fe relations during magmatic processes: Evrard, P., 1.
 Tungsten, Ima mine, Lemhi Co.: Anderson, A. L., 7.
 United States, minerals for war: Knopf, A., 1.
 Ore deposits: Helke, A., 1.
 Picher field, Okla.-Kans. mineral solutions movement: Stoiber, R. E., 1.
 Tungsten deposits: Espenshade, G. H., 1; Kerr, P. F., 1.
 Utah, Alta dist. scheelite deposits: Crawford, A. L., 1.
 Alunite deposits, Piute Co.: Hild, J. H., 1.
 Iron Springs dist.: Mackin, J. H., 2.
 Mammoth mine, Tintic dist.: Welch, R. F., 1.
 Mercur mining dist.: Young, E. B., 1.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Mineral res.: Schneider, H., 1.
 Tintic dist.: Kildale, M. B., 1.
 Wah Wah lead-zinc mine: Jones, R. L., 1.
 White Horse alunite deposits: Willard, M. E., 1.
 Wildcat Mts. fluorspar deposits: Buranek, A. M., 4.
 Vein carbonates, microscopic characters: Grout, F. F., 2.
 Vein filling: Douglas, G. V., 1.
 Vermont, Orange Co. copper mines: Jacobs, E. C., 2.
 Virginia, Piney River ilmenite, titanium deposits: Davidson, D. M., 2; Ross, C. S., 4.
 Volatile transfer in effusives, intrusives: Lane, A. C., 5.
 Washington, Buckhorn Mtn. iron deposits: Zoldok, S. W., 1.
 Olympic Penin.: Park, C. F., Jr., 1.
 Republic mining dist.: Wright, L. B., 2.
 Stevens County: Campbell, I., 1.
 Sultan Basin deposits: Carithers, L. W., 1.

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Wisconsin, Defense zinc mines: Berliner, M. H., 1.

Wyoming, Hot Springs Co. sulfur deposits: Majors, F. H., 1.

Ore deposits, research: Johnston, W. D., Jr., 2.

Ore horizons, characteristics: Rove, O. N., 1.

Ore mineral identification by punched cards: Fairbanks, E. E., 3.

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Ore minerals, microscopic examination: Pauly, H., 1.

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Bauxite, ferruginous, deposits: Libbey, F. W., 1.

Building-block materials: Wagner, N. S., 1.

Chromiferous sand, Coos Bay area: Hundhausen, R. J., 1.

Chromite-bearing sands, S. coast: Griggs, A. B., 1.

Coal fields: Andrews, D. A., 1.

Foundry sand near Eugene: Lowry, W. D., 1.

Glass Buttes quicksilver deposit: Reed, G. C., 2.

High alumina-iron laterite deposits: Kelly, J. V., 2.

Horse Heaven quicksilver deposits: Lewis, F. E., 1.

Limestone deposits, Willamette Valley: Allen, J. E., 1.

Magnetite sands, Columbia River: Kelly, J. V., 1.

Mount Reuben min. dist.: Youngberg, E. A., 1.

Nehalem River, upper: Warren, W. C., 1.

Perlite deposits, Wasco Co.: Allen, J. E., 2.

Petroleum, gas prospects: Smith, H., 1.

Quicksilver deposits map: Frederick, F., 1.

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Historical geology.

Biostratigraphy: Beck, R. S., 1.

Coastal sands, chromite-bearing: Griggs, A. B., 1; Hundhausen, R. J., 1.

Crater Lake Nat. Park: Williams, H., 1.

Foundry sand near Eugene: Lowry, W. D., 1.

High alumina-iron laterite deposits, Columbia Co.: Kelly, J. V., 2.

Horse Heaven quicksilver mine and dist.: Lewis, F. E., 1.

John Day area: Merriam, J. C., 1; Stock, C., 7.

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Historical geology—Continued.

Man, early, age: Allison, I. S., 1; Hansen, H. P., 1.

Mapping, geol., topog., 1946: Allen, J. E., 5.

Mount Reuben mining dist.: Youngberg, E. A., 1.

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Perlite deposits, Wasco Co.: Allen, J. E., 2.

Postglacial forest succession and climate, Cascades: Hansen, H. P., 2.

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Agates, thunder eggs, sagenite: Bateman, E. S., 2; Dake, H. C., 3; Anonymous 23.

Analcime, spheroidal clusters, Benton Co.: Staples, L. W., 1.

Bauxite, ferruginous, NW.: Libbey, F. W., 1.

Black beach, river sands, SW. coast: Twenhofel, W. H., 2.

Chromite-bearing sands, coast: Griggs, A. B., 1; Hundhausen, R. J., 1.

Feldspar, plagioclase, weathered to bauxite: Allen, V. T., 7.

Foundry sand near Eugene: Lowry, W. D., 1.

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Iron-manganese concretions in Dayton soils: Drosdoff, M., 1.

Ilsemanite, Clackamas Co.: Staples, L. W., 2.

Magnetite sands, Columbia River: Kelly, J. V., 1.

Mansfieldite and mansfieldite-scorodite: Allen, V. T., 4.

Meteoritic falls, Portland area: Pruett, J. H., 1.

Mineral collecting: Bateman, E. S., 1.

Mineral deposits map: Oregon Dept. Geol. Min. Indust., 1.

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Quicksilver deposits: Frederick, F., 1; Reed, G. C., 2.

St. Helens quad.: Wilkinson, W. D., 1.

Sands, Coos Bay to Columbia River: Twenhofel, W. H., 1.

Sodium salts, Lake Co.: Allison, I. S., 2.

Paleontology.

Biostratigraphy: Beck, R. S., 1.

Birds, Pleist., Fossil Lake: Howard, H., 4.

Coal fossils, Coos Bay field: Schopf, J. M., 2.

Foraminifera, Tert., Coos Bay: Detling, M. R., 1.

John Day region: Stock, C., 7.

Mammalia, Miocene, Beatty Buttes: Wallace, R. E., 1.

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- Mammoth bones and artifacts, Willamette Valley: Cressman, L. S., 1.
- Man, early: Allison, I. S., 1; Hansen, H. P., 1.
- Mioptena, Miocene gastropod: Simon, L. F., 1.
- Nehalem River, upper basin: Warren, W. C., 1.
- Osmundites: Dake, H. C., 10.
- Postglacial flora, N. Great Basin: Hansen, H. P., 5.
- Postglacial forest succession and climate, Cascades: Hansen, H. P., 2.
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Petrology.

- Agates, thunder eggs: Bateman, E. S., 2; Dake, H. C., 3.
- Ash falls, Fort Rock Lake, Lake Co.: Allison, I. S., 3.
- Black beach and river sands, coast: Twenhofel, W. H., 2.
- Boulders, erratic, Johns Valley shale: Rea, H. C., 1.
- Claypan soil, genesis: Nikiforoff, C. C., 2.
- Displacements, Malheur River siphon foundations, by swelling shales: Mielenz, R. C., 2.
- Gravels, sands, weathered: Allen, V. T., 3.
- High alumina-iron laterite deposits: Kelly, J. V., 2.
- Horse Heaven quicksilver deposits: Lewis, F. E., 1.
- Iron-manganese concretions in Dayton soils: Drosdoff, M., 1.
- Lava with pitch-pine incls.: De Ment, J. A., 2.
- Limestones, Willamette Valley: Allen, J. E., 1.
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- Sands, Coos Bay to Columbia River: Twenhofel, W. H., 1.

Physical geology.

- Ash falls, Fort Rock Lake, Lake Co.: Allison, I. S., 3.
- Bauxite, ferruginous, deposits: Libbey, F. W., 1.
- Coast Ranges, cent., sills, intrus.: Baldwin, E. M., 1.
- Coastal sands, chromite-bearing: Griggs, A. B., 1.
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- Earthquake record: Packard, E. L., 1.
- Feldspar, plagioclase, weathered to bauxite: Allen, V. T., 7.
- Glass Buttes, Horse Heaven quicksilver deposits: Lewis, F. E., 1; Reed, G. C., 2.
- Gravels, sands, weathered: Allen, V. T., 3.
- McKenzie River, preglacial aggradation: Howell, P. W., 1.

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- Mount Mazama, extinct volcano: Williams, H., 1.
- Nehalem River, upper basin: Warren, W. C., 1.
- Postglacial volcanic activity: Hansen, H. P., 6.
- St. Helens quad.: Wilkinson, W. D., 1.
- Willamette River Basin: Smith, W. D., 2.
- Physiographic geology.*
- Coast, S., chromite-sands: Griggs, A. B., 1.
- Eugene area: Smith, W. D., 1.
- Great Basin, N., post-glacial floras: Hansen, H. P., 5.
- McKenzie River preglacial aggradation: Howell, P. W., 1.
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- St. Helens quad.: Wilkinson, W. D., 1.
- Sands, Coos Bay to Columbia River: Twenhofel, W. H., 1.
- Oregon Basin oil and gas field, Wyo.: Walton, P. T., 2, 3.
- Orella gas field, Calif.: Simonson, R. R., 1.
- Organic evolution: Lull, R. S., 1.
- Organic material into petroleum: Cox, B. B., 1.
- Orientation, conodonts, crystal units: Hass, W. H., 1.
- Origin, "Carolina Bays," SE. U. S.: Prouty, W. F., 3.
- Orogeny.*
- Alaska, Alaska Range: Wahrhaftig, C., 1.
- Kasaan Penin.: Warner, L. A., 1.
- Arizona, Dragoon Mts.: Cederstrom, D. J., 2.
- Bighorn Basin, Mont.-Wyo.: Fanshawe, J. R., 1; Mackin, J. H., 1; Thom, W. T., Jr., 2; Wyoming Univ., 1.
- British Columbia: Hutt, G. M., 6.
- Coast Range batholith: Phemister, T. C., 1.
- Kootenay Lake origin: Schofield, S. J., 1.
- California, Calico Mts. area: Henry, D. J., 1.
- East Mayacmas dist. quicksilver deposits: Yates, R. G., 1.
- Inyo Range, Bishop quad.: Maxson, J. H., 2.
- Ivanpah quad.: Hewett, D. F., 1.
- Los Angeles Basin: Driver, H. L., 1.
- New Idria dist. quicksilver deposits: Eckel, E. B., 1.
- Sierra Nevada, S. structure: Mayo, E. B., 1.
- Sierra Nevada-Death Valley: Hopper, R. H., 1.
- Ventura Basin: Bailey, T. L., 2.
- Ventura to Carpinteria: Redwine, L. E., 1.
- Canada, Rocky Mts.: Williams, M. Y., 2.

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- Colorado, Front Range: Birch, A. F., 1; Goddard, E. N., 5; Wahlstrom, E. E., 2.
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 Cuba, Camagüey Prov.: Wessem, A., 1.
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- Microbiology of sediments: ZoBell, C. E., 6.

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- Micropaleontology, principles: Glaessner, M. F., 2.
- Multivariate analysis: Burma, B. H., 2.
- Nature of replacement: Douglas, G. V., 3.
- Organic evolution: Lull, R. S., 1.
- Paleobotany, introduction: Arnold, C. A., 3.
- Paleoecological import of salinity: Sinclair, G. W., 9.
- Paleoecology, marine animals and salinity: Gunter, G., 1.
- Paleontologist or geologist: Knight, J. B., 2.
- Paleontologists, brief sketches: Palmer, K. E. H. V., 3.
- Invertebrate, relations to geology: Wellmer, J. M., 3.
- Photography of fossils, optimum conditions: Beach, F. K., 1; Rasetti, F., 6.
- Phylogentic terms, analysis redefinition: Haas, O., 4.
- Prehistoric animals, reconstruction: Beck, H. T., 1.
- Relation to petroleum: Johnson, J. H., 6.
- Relative growth, phylogenetic, ontogenetic ser.: Gray, S. W., 1.
- Scientific, econ. paleontology methods, progress: Elias, M. K., 5.
- Smithsonian, pioneer in American geology: Bassler, R. S., 2.
- Species concept and quantitative paleontology: Burma, B. H., 1.
- Stratigraphic vs. descriptive paleontology: Wissler, S. G., 1.
- Synonymies, variations: Easton, W. H., 3.
- Training of geologists: Longwell, C. R., 1; Mather, K. F., 1.
- Trends and developments in vertebrate paleontology: Camp, C. L., 2.
- Varieties, function in paleontology: Newell, N. D., 1.
- X-rays applied to paleontology: Schmidt, R. A. M., 1.
- Cambrian.**
- Alberta, Bryozoa: Fritz, M. A., 6.
- Arctic America, Ellesmere Land faunas: Poulsen, C., 2.
- Arizona, Grand Canyon fauna: Resser, C. E., 1.
- Base of system: Wheeler, H. E., 1.
- British Columbia, Aiken Lake area fauna: Okulitch, V. J., 3.
- Mt. Stephen trilobite fauna: Rasetti, F., 11.
- Pleosporgia, Purcell Range: Okulitch, V. J., 4.
- Florida, Lingulepis, Dixie Co.: Howell, B. F., 14.
- Georgia, Protospongia, Conasauga fm.: Munyan, A. C., 2.
- Greenland, Dolichometopinae, Trilobita: Kobayashi, T., 1.
- Labrador, Cambrocyathus amourensis interval structure: Okulitch, V. J., 2.
- New York, Trilobita, Dutchess Co.: Lochman, C., 1.

Paleontology—Continued.

Cambrian—Continued.

Newfoundland, W., Trilobita: Troelsen, J. C., 1.

North America, Dolichometropinae, Trilobita: Kobayashi, T., 1.

Eodiscid Trilobita: Kobayashi, T., 2.

Fossil Algae: Fenton, C. L., 2.

Graptolitoidea: Ruedemann, R., 1.

Trilobita, genera revision: Lochman, C., 2; Rasetti, F., 4.

Oklahoma, Ostracoda, Wichita Mts.: Frederickson, E. A., Jr., 1.

Pleosporgia, exothecal lamellae: Okulitch, V. J., 1.

Quebec, fauna: Rasetti, F., 9.

Gaspé Trilobita: Rasetti, F., 5.

Stratigraphy and paleontology: Rasetti, F., 2.

Tennessee, Graptolitoidea: Decker, C. E., 5. Trilobita, terminology for describing: Howell, B. F., 7.

United States, bellerophon Gastropoda: Knight, J. B., 1.

Carboniferous.

Amphibia, evolution, development: Colbert, E. H., 1.

Kansas: Lane, H. H., 1.

Aulacopleura, Otariionidae trilobites: Pribyl, A., 1.

Brachiopoda, Percha shale, Ariz.: Stainbrook, M. A., 2.

British Columbia, Alcan Highway exposures: Laudon, L. R., 1.

Bryozoa, fenestrate microstructure: Elias, M. K., 7.

Chattanooga shale type area fauna, Tenn.: Hass, W. H., 3.

Conodonts, orientation of crystal units: Hass, W. H., 1.

Paleozoic guide fossils: Ellison, S. P., Jr., 1.

Corals, builders of limestone: Johnson, J. H., 5.

Lophophyllid, Mid., Upper Penn.: Jeffords, R. M., 1.

Correlations, N. Am.-S. Am., Penn. floral zones: Read, C. B., 3.

Greenland, productids, Mallemuk fm. and brachiopod ls.: Frebold, H., 1.

Illinois, coal balls: Andrews, H. N., Jr., 2.

Fern fossils, Mazon Creek: Anonymous, 22.

Microfauna, Kinkaid Missn., Johnson

Co.: Cooper, C. L., 2.

Ostracoda, Penn.: Cooper, C. L., 1.

Plant concretions, Mazon Creek Penn.: Janssen, R. E., 1.

Pterotocrinus: Gutschick, R. C., 2; Weller, J. M., 4.

Stigmarian appendages in coal balls: Stewart, W. N., 1.

Vertebrata, Penn.: Olson, E. C., 1.

Indiana, Archimedes, Glen Dean fm.: Haas, O., 1.

Corythocrinus, Missn.: Kirk, E., 3.

Paleontology—Continued.

Carboniferous—Continued.

Indiana—Continued.

Footprints, Missn.: Colbert, E. H., 7, 8.

Glen Dean fm. fauna: Haas, O., 2.

Mississippian Spergen ls.: Scott, H. W., 2.

Invertebrata in Penn. correls.: Weller, J. M., 2.

Iowa, Cardiocarpon, coal fields: Reed, F. D., 1.

Coal balls: Andrews, H. N., Jr., 1, 2.

Medullosa, Des Moines coal ball: Andrews, H. N., Jr., 1.

Pachyvera from coal ball, Oskaloosa: Hoskins, J. H., 1.

Plant microfossils: Wilson, L. R., 1.

Seeds from coal balls: Kern, E. M., 1.

Kansas, Algae, lime-secreting: Johnson, J. H., 4.

Nubecularia: Johnson, J. H., 7.

Virgil, Crinoidea: Strimple, H. L., 1.

Kentucky, Permian spore floras: Cross, A. T., 1.

Pterotocrinus: Gutschick, R. C., 2; Weller, J. M., 4.

Labyrinthodontia: Romer, A. S., 3.

Mexico, Cephalopoda, Missn., Caballero fm.: Miller, A. K., 8.

Microfossils, role in correls.: Cooper, C. L., 3.

Mississippian sections, American-European: Moore, R. C., 4.

Missouri, Actinocrinus parvus, St. Louis ls.: Kirk, E., 4.

Algal ls., Missn., St. Louis area: Johnson, J. H., 1.

Beyrichoceras, goniatite, Boone fm.: Miller, A. K., 7.

Cephalopoda, Penn., Jackson Co.: Miller, A. K., 13.

Conodonts, Fern Glen fm.: Mehl, M. G., 1.

Montana, Amsden, Heath fm. faunas: Gardner, L. S., 1; Sloss, L. L., 3.

New Mexico, Limnoscelis, reptile: Romer, A. S., 1.

Percha shale Brachiopoda: Stainbrook, M. A., 2.

North America, Algae: Elias, M. K., 1; Johnson, J. H., 2.

Ammonoid zones: Miller, A. K., 19.

Charophyta: Peck, R. E., 1.

Colled fenestellae: Elias, M. K., 6.

Conchostraca: Raymond, P. E., 1.

Flora: Arnold, C. A., 6.

Pennsylvanian floral zones and provinces: Read, C. B., 3.

Problems: Wanless, H. R., 2, 3.

Plant remains, western: Arnold, C. A., 1.

Ohio, Ammonoidea, Penn. Allegheny fm.: Miller, A. K., 3.

Conodont zones: Hass, W. H., 2.

Gorgonichthys anter-supragathal: Dunkle, D. H., 1.

Nautiloidea: Sturgeon, M. T., 1.

Paleontology—Continued.

Carboniferous—Continued.

- Oklahoma, crinoid, Penn., Tulsa area:
 Strimple, H. L., 1.
 Lepidodendron, Fayetteville fm.: Strimple, H. L., 4.
 Pennsylvania, Cephalopoda, Conemaugh ser.: Miller, A. K., 10.
 Endolobus, Greenbrier Missn. ls.: Miller, A. K., 9.
 Florule, Penn., Dutch Mtn. outlier: Read, C. B., 1.
 Pennsylvanian problems: Wanless, H. R., 2, 3.
 Plant microfossils in coal beds: Kosanke, R. M., 1.
 Relation to petroleum: Johnson, J. H., 6.
 Stegocephalia, genera census: Case, E. C., 1.
 Texas, conodont faunas: Hass, W. H., 4.
 Gastropoda, Penn., Franklin Mts.: Nelson, L. A., 1.
 Llano Uplift Penn.: Plummer, F. B., 2; Thompson, M. L., 2.
 Pennsylvanian fms.: Plummer, F. B., 3.
 Trigonocarpus-Pachytesta complex, U. S.: Hoskins, J. H., 1.
 United States, coal balls: Andrews, H. N., Jr., 5.
 Conodonts, Miss. Valley: Branson, E. B., 7.
 Corals, Penn.: Jeffords, R. M., 1, 3.
 Crinoidea, Miss. Valley Missn.: Kirk, E., 6.
 Fossil plants: Andrews, H. N., Jr., 5.
 Insecta: Pierce, W. D., 2.
 Kinderhook microfaunas: Cooper, C. L., 4.
 Transition floras: Hoskins, J. H., 3.
 Utah, Morgan Penn. fm., Split Mtn.: McCann, F. T., 1.
 West Virginia, Penn. spore floras: Cross, A. T., 1.
 Pocahontas Co. notes: Tilton, J. L., 1.
 Wyoming, Gallatin Fossil Forest: Andrews, H. N., Jr., 3.

Cretaceous.

- Alabama, petrified woods: Fairbanks, E. E., 1.
 Stenocyathus, coral: Wells, J. W., 2.
 Alberta, Corythosaurus: Gilmore, C. W., 1.
 Dinosaur, Troödon, lower jaw: Russell, L. S., 3.
 Edmonton fm. Red Deer Valley: Sternberg, C. M., 2.
 Microfossils, Vermillion area: Nauss, A. W., 1.
 Parasaurolophus, crest: Russell, L. S., 1.
 Arkansas, Anomoedus, pycnodont fish: Hussakof, L., 1.
 Foraminifera, Arkadelphia marl: Cushman, J. A., 1.
 Deadrick collection: Henbest, L. G., 1.
 Birds, evolution: Howard, H., 5.
 California, diatoms, Moreno shale: Long, J. A., 1.

Paleontology—Continued.

Cretaceous—Continued.

California—Continued.

- Fish, San Joaquin Valley: David, L. R., 2.
 Silicoflagellates: Deflandre, G., 1.
 Canada, dinosaurs: Sternberg, C. M., 1.
 Fossil horizons, Mackenzie Valley: Warren, P. S., 1.
 Kootenay fm. age: Bell, W. A., 1.
 Ceratopsia, relative growth: Gray, S. W., 1.
 Colorado, Upper Montana group, Golden area: Moody, J. D., 2.
 Corals as builders of limestone: Johnson, J. H., 5.
 Cuba, Camagüey dist. fauna and strat.: Albear y Franquiz, J. F., de., 1.
 Oriente Prov., flora, fauna: Keijzer, F. G., 3.
 Rotalia: Cushman, J. A., 1.
 Dinosaurs, evolution, devel.: Colbert, E. H., 1.
 Florida, Foraminifera: Cushman, J. A., 1.
 Foraminifera, Tex., Miss., Ala., Ga.: Cushman, J. A., 1.
 Glycymeridae: Nicol, D., 2.
 Greenland, East, ammonites: Spath, L. F., 1.
 Haiti, ammonites: Reeside, J. B., Jr., 1.
 Idaho, Tempskya, other flora: Andrews, H. N., Jr., 9.
 Kansas, fossil fish: Anonymous, 43.
 Micropycnodon, Trego Co.: Dunkle, D. H., 2.
 Vertebrata: Lane, H. H., 1.
 Kootenay fm. fauna, Canada: Bell, W. A., 1.
 Manitoba, Foraminifera, Boyne beds: Wickenden, R. T. D., 1.
 Maryland, Fulpia, mollusk: Stephenson, L. W., 1.
 Ostracoda: Schmidt, R. A. M., 2.
 Mexico, Chiapas, Tortuga: Mullerried, 1-a.
 Corals: Wells, J. W., 1.
 Fossils, Peñuela, Orizaba lss.: Mullerried, 5.
 Neoradiolites: Mullerried, 8.
 Miscellaneous, peripheral apertures: Vaughan, T. W., 1.
 Mississippi, microfossils, deep wells: Stephenson, L. W., 5.
 Montana, giant ammonite: Miller, A. K., 4.
 Carnivorous dinosaur, Lance fm.: Gilmore, C. W., 5.
 Paleopsephurus, other polyodontid fish: MacAlpin, A. J., 1.
 New Jersey, fossil fish check list: Rapp, W. F., Jr., 1.
 New Mexico, Black River Valley: Lang, W. T. B., 2.
 North America, Bulimina, related genera: Cushman, J. A., 7.
 Caribbean area Ostracoda: Bold, W. A. van den, 1.

Paleontology—Continued.

Cretaceous—Continued.

North America—Continued.

- Cenozoic, Mesozoic bryophytes: Steere, W. C., 1.
- Ceratobulimina genus and species: Cushman, J. A., 1.
- Charophyta, fossil: Peck, R. E., 1.
- Cypuraeidae check-list: Ingram, W. M., 1.
- Foraminifera, Gulf Coastal area: Cushman, J. A., 2.
- Pinus: Babcock, E. B., 1.
- Siphogenerinoides: Stone, B., 1.
- West, plant remains: Arnold, C. A., 1.
- Oklahoma, Washita Foraminifera: Loeblich, A. R., Jr., 2.
- Prionotropis woolgari vs. Prionocyclus wyomingensis, variation: Haas, O., 3.
- Saskatchewan, Bearpaw fm. Baculites: Robinson, H. R., 1.
- South Dakota, Torosaurus, Harding Co.: Colbert, E. H., 4-a.
- Texas, Astrangia, coral: Wells, J. W., 2.
- Caryophyllia, coral: Wells, J. W., 2.
- Comanche Echinoidea: Cooke, C. W., 1.
- Cycad, Montague Co.: Chelf, C. R., 1.
- Elasmosaurus: Shuler, E. W., 1.
- Foraminifera, arenaceous: Keijzer, F., 2.
- Type Pepper shale: Loeblich, A. R., Jr., 1.
- Fulpia, mollusk: Stephenson, L. W., 1.
- Spore-like fossils in shales: Jones, D. John, 2.
- Venericardia, Uvalde Co.: Stephenson, L. W., 5.
- Washita Foraminifera: Loeblich, A. R., Jr., 2.
- Trinidad, Foraminifera: Cushman, J. A., 1, 6.
- United States, capsules, chimaeroid fish egg: Brown, R. W., 4, 5.
- Cephalopoda, Comanche: Stanton, T. W., 1.
- East Gulf area, micropaleontology status: Howe, H. V., 2.
- Insecta: Pierce, W. D., 2.
- Invertebrata, Atlantic Coastal Plain, deep wells: Richards, H. G., 3.
- Pelecypoda, Comanche: Stanton, T. W., 1.
- Plants, fossil: Andrews, H. N., Jr., 5.
- Utah, reptilian fauna, North Horn fm.: Gilmore, C. W., 3.
- Wyoming, ammonites, Greybull area: Haas, O., 5.
- Cycad, Crook Co.: Arnold, C. A., 4.
- Mollusca, Sage Creek: Yen, T.-C., 4.
- Devonian.**
- Alterations, fossil, living floras, U. S.: Brown, R. W., 6.
- Arizona, bioherms: Huddle, J. W., 4.
- Mollusca, Island Mesa fauna: Stoyanow, A. A., 1.
- Aulacopleura, Otarionidae trilobites: Pribyl, A., 1.
- Bellerophon muscle scars: Knight, J. B., 3.

Paleontology—Continued.

Devonian—Continued.

- Conodonts, Paleozoic guide fossils: Ellison, S. P., Jr., 1.
- Iowa: Youngquist, W. L., 3.
- Sweetland Creek Shale: Miller, A. K., 16; Youngquist, W. L., 5.
- Corals as builders of limestone: Johnson, J. H., 5.
- Iowa, Independence shale: Stainbrook, M. A., 1.
- Labyrinthodontia: Romer, A. S., 3.
- Leptocoelia flabellites, Penters chert, Ark.: Kinney, D. M., 1.
- Michigan, Bellerophon scars: Knight, J. B., 3.
- Dolotocrinus, Traverse shs.: Kirk, E., 2.
- Missouri, Bryozoa: Loeblich, A. R., Jr., 3.
- Montana, brachiopod from Three Forks area: Laird, W. M., 3.
- New Jersey, Pensauken fossiliferous pebbles, Princeton area: Howell, B. F., 6.
- New York, Chemung Crinoid, Alfred Station: Goldring, W., 1.
- Paleozoic habitat groups: Reimann, I. G., 1.
- Protilepidodendron, Psilophyton: Banks, H. P., 1.
- North America, Algae: Fenton, C. L., 2; Johnson, J. H., 2.
- Conchostraca: Raymond, P. E., 1.
- Fenestellids, coiled: Elias, M. K., 6.
- Graptolitoidea: Ruedemann, R., 1.
- Ohio, Bone Beds, Foraminifera: Stewart, G. A., 1.
- Bungartius, arthrodiran fish: Dunkle, D. H., 4.
- Columbus area rocks, paleoecologic analysis: Wells, J. W., 3.
- Conodonts: Bond, R. H., 1; Haas, W. H., 2.
- Gorgonichthys antero - supragrathal: Dunkle, D. H., 1.
- Sylvania, Silica shale faunas: Zuidema, H. P., 1.
- Oklahoma, Bryozoa: Loeblich, A. R., Jr., 3.
- Pennsylvania, Microspongia, Perry Co.: Howell, B. F., 3.
- Quebec, Cheirolepis, Scaumenac Bay: Lehman, J. P., 1.
- Stegocephalia, genera census: Case, E. C., 1.
- Texas, central area:** Barnes, V. E., 5.
- Conodont faunas: Haas, W. H., 4.
- United States, conodonts, Mississippi Valley: Branson, E. B., 7.
- Transition floras: Hoskins, J. H., 3.
- West Virginia, Pocahontas Co. notes: Tilton, J. L., 1.
- Jurassic.**
- Alaska, index fossils, Tuxedni ss.: Kellum, L. B., 1.
- Alberta, Fernie fm.: Warren, P. S., 2.
- Highwood-Elbow area faunas: Allan, J. A., 2.
- Arkansas, Ostracoda, Cotton Valley group: Swartz, F. M., 1.

Paleontology—Continued.

Jurassic—Continued.

- Canada, dinosaurs: Sternberg, C. M., 1.
- Corals as builders of limestone: Johnson, J. H., 5.
- Cuba, Camagüey dist. fauna and stratigraphy: Albear y Franquiz, J. F., de, 1.
- Dinosaurs, evolution, development: Colbert, E. H., 1.
- Greenland, East, floras: Harris, T. M., 1.
- Louisiana, Ostracoda, Cotton Valley group: Swartz, F. M., 1.
- Hutsonia Ostracoda: Swain, F. M., 2.
- Mexico, N., corals: Wells, J. W., 1.
- New Mexico, Ostracoda, Todilto ls.: Swain, F. M., 4.
- North America, Bryophyta: Cenozoic, Mesozoic: Steere, W. C., 1.
- Charophyta: Peck, R. E., 1.
- Wyoming, Mollusca, fresh-water, Sublette Co.: Yen, T.-C., 3.
- Stomechinus, Bighorn Basin: Cooke, C. W., 3.

Ordovician.

- Arctic America, Ellesmere Land faunas: Poulsen, C., 2.
- Arctic Archipelago fauna: Miller, A. K., 6.
- Canada, Brachiopoda, Ottawa-St. Lawrence Lowland: Wilson, A. E., 3.
- Cephalopoda, SE. Baffin Island: Miller, A. K., 18.
- Echinodermata, Ottawa-St. Lawrence Lowland: Wilson, A. E., 2.
- Eoconularia: Sinclair, G. W., 1.
- Ottawa-St. Lawrence Lowland faunas: Wilson, A. E., 2, 3, 4.
- Trilobita, Lake St. John area: Sinclair, G. W., 11.
- Conodonts, orientation of crystal units: Hass, W. H., 1.
- Paleozoic guide fossils: Ellison, S. P., Jr., 1.
- Corals as builders of limestone: Johnson, J. H., 5.
- Favosites, alpenensis lineage, Traverse group: Swann, D. H., 1.
- Florida, Lingulepis, Dixie Co.: Howell, B. F., 14.
- Holocoanites are endoceroids: Flower, R. H., 5.
- Illaenus, muscle scars: Sinclair, G. W., 10.
- Kentucky, Diestoceras, N.-cent.: Jillson, W. R., 14.
- Manitoba, Cephalopoda, Hudson Bay, W. shore: Miller, A. K., 14.
- Mexico, Bolson de Mapimi area: Estlack, J. C., 1.
- Missouri, Cephalopoda with subterminal apertures: Miller, A. K., 2.
- Conodont fauna, Dutchtown fm.: Youngquist, W. L., 2.
- Fish: Miller, A. K., 5.
- New Brunswick, Halysites, St. John area: Sinclair, G. W., 12.
- New York, nautiloids: Flower, R. H., 6.

Paleontology—Continued.

Ordovician—Continued.

- North America, Algae: Fenton, C. L., 2.
 - Graptolitoidea: Ruedemann, R., 1.
 - Scolecodonts: Eller, E. R., 1.
 - Trilobita, Cybele: Howell, B. F., 9.
 - Dimeropygae: Sinclair, G. W., 7.
 - Injured: Sinclair, G. W., 8.
 - Kirkella, new genus: Kobayashi, T., 3.
 - Ohio, Cincinnati area, fossils, stratigraphy: Bucher, W. H., 1.
 - Oklahoma, Graptolitoidea, Hydrozoa, Big Canyon: Decker, C. E., 4.
 - Ontario, Brachiopoda: Sinclair, G. W., 2.
 - Isotelus, meraspid period: Fritz, M. A., 4.
 - Rhopalonaria, Dundas fm., Toronto: Fritz, M. A., 3.
 - Scolecodonts, Manitoulin Island: Eller, E. R., 2.
 - Strophomena, Trigrammaria, Microtrypa, Ottawa ls.: Wilson, A. E., 1.
 - Trenton Platystrophia: Sinclair, G. W., 4.
 - Pennsylvania, Onchometopus, asaphid trilobite: Howell, B. F., 2.
 - Quebec, Brachiopoda, lingulid: Sinclair, G. W., 2.
 - Conularids: Sinclair, G. W., 6.
 - Platystrophia, Trenton: Sinclair, G. W., 4.
 - Simard area faunas: McGerrigle, H. W., 1.
 - Trilobita: Rasetti, F., 8.
 - Remopleurides sinclairi for R. striatus: Cooper, G. A., 3.
 - Tennessee, conodonts, Lowville: Branson, E. B., 8.
 - Cryptozoon, SE.: Brill, K. G., Jr., 1.
 - Great Smoky Mts. Nat. Park fauna: Neuman, R. B., 2.
 - Texas, Gastropoda, Trilobita: Bridge, J., 3.
 - United States, Cephalopoda, Cincinnati area: Flower, R. H., 2.
 - Conodonts, Miss. Valley: Branson, E. B., 7.
 - Virginia-Tennessee: Prouty, C. E., 1.
 - Virginia, Shenandoah Valley: Cooper, B. N., 1.
 - Trilobita: Evitt, W. R., II, 1; Fischer, A. G., 1; Whittington, H. B., 1.
 - Yukon, faunas, Ord.-Sil. rocks: Decker, C. E., 3.
- Paleozoic undifferentiated.*
- Algae, early records: Fenton, C. L., 2.
 - Arachnida, Ill.: Petrunkevitch, A., 1.
 - Conodonts, guide fossils: Ellison, S. P., Jr., 1.
 - Seeds, fossil, classn.: Hoskins, J. H., 2.
- Permian.*
- Alaska, Parafusulina: Dunbar, C. O., 2.
 - Amphibia, evolution, development: Colbert, E. H., 1.
 - Kansas: Lane, H. H., 1.
 - Arizona, invertebrate tracks, Coconino ss.: Brady, L. F., 2.

Paleontology—Continued.

Permian—Continued.

Aulacopleura, Otarionidae, Trilobita: Pfi-
buhl, A., 1.

Bryozoa, fenestrate microstructure: Elias,
M. K., 7.

California, fusulinids: Thompson, M. L., 1.
Dinosaurs, evolution, development: Colbert,
E. H., 1.

Greenland, East, Cyclolobus: Miller, A.
K., 1.

Wollaston Forland-Franz Josephs Fjord
faunas: Maync, W., 2.

Jacob Boll's collecting, Tex. Perm.: Geiser,
S. W., 1.

Kansas, Algae, lime-secreting: Johnson,
J. H., 4.

Nubecularia: Johnson, J. H., 7.

Labyrinthodontia: Romer, A. S., 3.

Mexico, Ammonoidea: Guiza, R., Jr., 2.

New Mexico, Cephalopoda, Mid. Perm.:
Clifton, R. L., 1.

Footprints, Abo fm.: Branson, E. B., 6.

Limnoscelis, reptile: Romer, A. S., 1.

New Mexico-Texas correl.: Skinner, J.
W., 1.

North America, Algae: Johnson, J. H., 2.

Conchostraca: Raymond, P. E., 1.

Diadectidae, reptile class.: Olson, E.
C., 2.

Fenestellids, coiled: Elias, M. K., 6.

Nautiloidea: Miller, A. K., 17.

Oklahoma, Insecta: Carpenter, F. M., 1.

Permian studies, Smithsonian Inst.: Coop-
er, G. A., 2.

Protosaurus, reptile, relationships: Romer,
A. S., 2.

Stegocephalia, genera census: Case, E.
C., 1.

Texas, algae: Johnson, J. H., 8.

Cephalopoda: Clifton, R. L., 1; Miller,
A. K., 12.

Jacob Boll's collecting: Geiser, S. W., 2.

Koninckioceras: Miller, A. K., 11.

Permopora, alga: Elias, M. K., 3.

Plant remains: Jones, D. John, 1.

Progyrolepis: Dunkle, D. H., 3.

West-SE. N. Mex., correl.: Skinner, J.
W., 1.

United States, conodonts, Miss. Valley:
Branson, E. B., 7.

Corals: Moore, R. C., 2.

Insecta: Pierce, W. D., 2.

Pelecypoda: Newell, N. D., 3.

Pre-Cambrian.

Algae, early records: Fenton, C. L., 2.

Base of Cambrian: Wheeler, H. E., 1.

Quaternary.

Alaska, Foraminifera, Amchitka Is.: Cush-
man, J. A., 1.

Man, early, artifacts: Hibben, F. C., 1.

Arizona, Ventana Cave site: Haury, E.
W., 1.

California, antelope, Pleist., Rancho La
Brea: Furlong, E. L., 1.

Paleontology—Continued.

Quaternary—Continued.

California—Continued.

Aves, Pleist., Rancho La Brea: Howard,
H., 1, 2, 3, 5.

Flightless, Pleist.: Howard, H., 6.

Canis (Aenocyon), Pleist., La Brea:
Stock, C., 8.

Chendytes, Pleist., wing elements: How-
ard, H., 7.

Dire wolf group, Pleist., La Brea: Nigra,
J. O., 1.

Eagle, golden, Rancho La Brea, Pleist.:
Howard, H., 8.

Elephants, Channel Islands Pleist.:
Stock, C., 2.

Fauna, Pleist., Rancho La Brea tar
pits: Pierce, W. D., 1; Stock, C.,
1, 9.

Fish distrib. and Pleist. hydrography:
Miller, R. R., 1.

Los Angeles Basin: Wissler, S. G., 2.

Mollusca, Pleist.: Berry, S. S., 1; Bruff,
S. C., 1.

Pandanaris, Pleist., Rancho La Brea:
Miller, A. H., 1.

Termites, Pleist.: Lance, J. F., 1.

Tranquillity site, man, extinct animals:
Hewes, G. W., 1.

Vultures, Pleist., La Brea: Fisher, H.
I., 1.

Central America, early man: Sellards,
E. H., 6.

Colloidal gel, bottom deposits, Douglas,
Mich.: Phinney, H. K., 1.

Colorado, Folsom artifacts with Bison
bones: Hurst, C. T., 1.

Coral reef hypothesis: Stearns, H. T., 2.

Corals as builders of limestone: Johnson,
J. H., 5.

Cuba, Oriente Prov., fauna, flora: Keijzer,
F. G., 3.

Equus, origin, devel. of horse: Stock,
C., 3.

Florida, fossil man remains, Melbourne,
Vero: Stewart, T. D., 1.

Greenland, West, faunas, Foraminifera:
Joergensen, K. D., 1; Laursen, D., 1.

Ice Age and postglacial fauna: Jensen,
Ad. S., 1.

Illinois, Equus, Pleist.: Galbreath, E.
C., 1.

Flora, Pleist., Ashmore area: Galbreath,
E. C., 3.

Indiana, fish distrib. by postglacial drain-
age: Gerking, S. D., 1.

Kansas, cameloid Eschatius, Pleist.: Riggs,
E. S., 1.

Pupillidae (Gastropoda), Pleist., Plio-
cene; Franzen, D. S., 1, 2, 4; Leonard,
A. B., 2.

Kentucky, Mammalia, Mastodon, Blue
Lick Springs: Jillson, W. R., 3, 4.

Mammoth, Franklin Co., Pleist.: Jill-
son, W. R., 11.

Maryland, pearl, Pleist., Ft. Lookout:
Brown, R. W., 1.

Paleontology—Continued.

Quaternary—Continued.

- Mastodon "hair" is algae: Eiseley, L. C., 1.
 Mexico, ancient man in Valley of Mexico: Arellano, A. R. V., 1.
 Tepeexpan, Pleist. man: Terra, H., de., 1, 2; Weinreich, F., 1.
 Michigan, algal origin, Douglas Lake sediment; Phinney, H. K., 1.
 Mollusca, biometrical analysis of assemblages: Schenck, H. G., 1.
 Nevada, fish distrib. and Pleist. hydrography: Miller, R. R., 1.
 New Jersey, Pleist. fossils in Eocene rock: Richards, H. G., 2.
 New Mexico, Pleist. *Ovis canadensis*: Stovall, J. W., 1.
 North America, Aves, history: Mayr, E., 1.
 Bison, Pleist.: Schultz, C. B., 1; Skinner, M. F., 1.
 Charophyta: Peck, R. E., 1.
 Cypraeidae, western: Ingram, W. M., 1.
 Early, Folsom man: Martin, P. S., 1; Sellards, E. H., 6.
 Indians before Columbus: Martin, P. S., 1.
 Smilodon, disease incidence: Stock, C., 12.
 Tapirs, Pleist. and recent: Simpson, G. G., 1.
 North Carolina, Jerome Bog, age: Buell, M. F., 2.
 Oklahoma, *Megalonyx*, Pleist.: Savage, D. E., 1.
 Ontario, artifacts on raised Lake Huron beach: Greenman, E. F., 1.
 Oregon, Aves, Fossil Lake Pleist.: Howard, H., 4.
 Flora, postglacial, N. Great Basin: Hansen, H. P., 5.
 Mammoth bones and artifacts, Willamette Valley: Cressman, L. S., 1.
 Pennsylvania, glacial peat deposit, Pittsburgh area: Schopf, J. M., 1.
 Texas, Abilene region, middens: Ray, C. N., 1.
 Artifacts Big Bend area: Kelley, J. C., 1.
 Bison bones with artifacts, Plainview quarry: Sellards, E. H., 1, 5.
 Folsom blades, central west: Ray, C. N., 3.
 Mammalia, Pleist., recent, Brazos Co.: Peterson, R. L., 1.
 Patschke Bog profile: Potzger, J. E., 1.
 Stone images, Henderson Co.: Sellards, E. H., 1-a.
 United States, Insecta, fossil: Pierce, W. D., 2.
 Invertebrata, Atlantic Coastal Plain deep wells: Richards, H. G., 3.
 Mollusca, Great Plains, Mo. Valley, Pleist.: Leonard, A. B., 3.
 Utah, early man, Great Salt Lake area: Smith, E. R., 1.
 Whirlwind Valley: Ives, R. L., 5.

Paleontology—Continued.

Quaternary—Continued.

- Wyoming, Finley site with Yuma points, Eden area: Howard, E. B., 1.

Silurian.

- Aulacopleura, Otariionidae Trilobita: Pfi-byl, A., 1.
 California, Klamath Mtn. Prov. fauna: Westman, B. J., 1.
 Conodonts, Paleozoic guide fossils: Ellison, S. P., Jr., 1.
 Egan collection, Invertebrata: Ball, J. R., 1.
 Greenland, North, Offley Island fauna: Poulsen, C., 1.
 Illinois, Invertebrata, Thomas A. Greene Mem. Mus. collection: Greacen, K. F., 1.
 Kentucky, conodonts, Brassfield fm.: Branson, E. B., 1.
 Maine, Ripogenus Dam fauna: Willard, B., 8.
 Mexico, Bolson de Mapimi area: Estlack, J. C., 1.
 Missouri, Bryozoa: Loeblich, A. R., Jr., 3.
 New Jersey, Pensauken fossiliferous pebbles: Howell, B. F., 6.
 New York, Brachiopoda, Cobleskill fm.: Howell, B. F., 8.
 Cayugoceras, cephalopod: Flower, R. H., 5.
 Clinton, W. cent.: Gillette, T., 1.
 Paleozoic habitat groups: Reimann, I. G., 1.
 Trilobita: Howell, B. F., 4, 10.
 Vernon shale fauna: Flower, R. H., 8.
 North America, Algae: Fenton, C. L., 2.
 Fenestellids, coiled: Elias, M. K., 6.
 Graptolitoidea: Ruedeman, R., 1.
 Oklahoma, Bryozoa: Loeblich, A. R., Jr., 3.
 Pennsylvania, Monacraterion clintonense burrows: Howell, B. F., 5.
 Quebec, Simard map area faunas: McGerrigle, H. W., 1.
 United States, conodonts, Miss. Valley: Branson, E. B., 7.
 Central, Stiptocrinus: Kirk, E., 1.
 West Virginia, Pocahontas Co. notes: Tilton, J. L., 1.
 Yukon, faunas, Ord.-Sil. rocks: Decker, C. E., 3.
- Tertiary*.
- Alabama, Foraminifera, Cocoa sand: Cushman, J. A., 4.
 Alaska, Amchitka Island Foraminifera: Cushman, J. A., 1.
 Alterations, fossil, living floras, U. S.: Brown, R. W., 6.
 Amphibia, Kans.: Lane, H. H., 1.
 Arkansas, Foraminifera, Paleocene: Cushman, J. A., 1.
 Aves, evolution: Howard, H., 5.
 California, Calistoga petrified trees: Lisle, T. O., 3.
 Carnivores, Black Hawk Ranch: MacDonald, J. R., 2.

Paleontology—Continued.

Tertiary—Continued.

California—Continued.

Eocene Foraminifera, Contra Costa Co.:
Nicholson, P. R., 1.

Eocene fish scales: David, L. R., 1.

Glycymeris: Nicol, D., 1.

Los Angeles Basin: Wissler, S. G., 2.

Mancalla, Pliocene Lucas hawk: Miller,
L. H., 1.

Miocene Sequoia wood cf. modern:
Cundy, P. F., 1.

Mollusca, Pliocene, Los Angeles City:
Willett, G., 1.

Pliocene Calipyrghula: Leonard, A. B., 1.
San Diego Pliocene Lucas auk: Miller,
L. H., 1.

Timms Point Pliocene Foraminifera:
Cushman, J. A., 1.

Central America, Nautiloidea: Miller, A.
K., 15.

Coral reef hypotheses: Stearns, H. T., 2.
Corals as builders of limestone: Johnson,
J. H., 5.

Cuba, Camagüey-Oriente dist. fauna de-
scribed: Albear y Franquiz, J. F., de,
1; Hermes, J. J., 1.

Discocyclinidae, Eocene: Cole, W. S., 1.
Foraminifera: Bellen, R. C., van, 1;
Cole, W. S., 1; Keijzer, F., 1.

Mollusca: Aguayo, C. G., 1, 2.

Rotalia: Cushman, J. A., 1.

Curaçao, West Indies, Mollusca: Regteren
Altena, C. O., van, 1.

Delaware, Ostracoda: Schmidt, R. A.
M., 2.

Dominican Republic, small Foraminifera:
Bermúdez y Hernández, P. J., 1.

Equus, origin, devel.: Stock, C., 3.

Florida, Algae, Eocene: Johnson, J. H., 9.
Gastropoda, Alum Bluff: Gardner, J.
A., 1.

Hauerina: Cushman, J. A., 1.

Marginella, Pliocene: Smith, M., 1.

Miocene fauna, N.: White, T. E., 1.

Miocene Phyllangia: Wells, J. W., 2.

Miocene rodents: Wood, A. E., 3.

Ostracoda: Swain, F. M., 3.

Scaphoda, Alum Bluff group: Gardner,
J. A., 1.

Velates, Eocene: Richards, H. G., 1.

Foraminiferal genus Chapmanina, Eocene:
Frizzell, D. L., 1.

Georgia, Alum Bluff group, Gastropoda,
Scaphopoda: Gardner, J. A., 1.

Oysters, Eocene, Coastal Plain: Tom-
kins, R. R., 1.

Glyptobairdia, new Ostracoda genus: Ste-
phenson, M. B., 2.

Greenland, Eotrias, Labyrinthodontia:
Säve-Söderbergh, G., 1.

Gulf Coast, U. S., Textulariidae: Stuckey,
C. W., Jr., 1.

Haiti, Ceratobulimina genus and species:
Cushman, J. A., 1.

Idaho, fossil polyspores: Andrews, H. N.,
Jr., 7.

Paleontology—Continued.

Tertiary—Continued.

Idaho—Continued.

Fresh-water Mollusca: Yen, T.-C., 5.

Tempyska, Wayan: Andrews, H. N., 9.

Vertebrata, Lemhi Valley Miocene: Wil-
son, J. A., 1.

Illinois, Porters Creek Foraminifera, cor-
rections: Stephenson, M. B., 3.

Jamaica, Pleurodonte, Miocene: Kimball,
D., 1.

Kansas, Geomys, Rexroad Pliocene fauna:
Franzen, D. S., 3.

Pupillidae (Gastropoda), Pleist., Plio-
cene: Franzen, D. S., 2.

Vertebrata: Lane, H. H., 1.

Land bridges: Simpson, G. G., 6.

Llano Estacado, Tex.-N. Mex., Ogallala
fm. algae reefs: Price, W. A., 1.

Maryland, Ostracoda: Schmidt, R. A.
M., 2.

Mexico, Ceratobulimina genus and species:
Cushman, J. A., 1.

Miopleiona, Miocene gastropod, Lincoln
Co.: Simon, L. F., 1.

Miscellaneous, peripheral apertures: Vaugh-
an, T. W., 1.

Mississippi, Buntonia for Pyricythereis,
Ostracoda: Howe, H. V., 3.

Foraminifera, Byram marl type loc.:
Cushman, J. A., 1.

Vicksburg area: Todd, M. R., 1.

Hauerina, Oligocene: Cushman, J. A., 1.

Mollusca, biometrical analysis of assem-
blages: Schenck, H. G., 1.

Montana, Red Lodge, Ft. Union coal
microfossils: Wilson, L. R., 5.

Nebraska, Alligator, Pliocene: Mook, C.
C., 1.

Limnocoecus, Miocene shrew: Macdon-
ald, J. R., 1.

Marsupial "tiger", Pliocene: Zuidema,
H. P., 4.

New Jersey, Alcyonaria, Eocene: How-
ell, B. F., 13.

Fish check list: Rapp, W. F., Jr., 1.

Pleistocene fossils in Eocene rocks:
Richards, H. G., 2.

Shark, Eocene, Belmar Beach: Reed,
M. D., 1.

North America, Acrididae, incerta sedis:
Zeuner, F. E., 1.

Aves, history: Mayr, E., 1.

Bryophyta, Cenozoic, Mesozoic: Steere,
W. C., 1.

Bulimina, related genera: Cushman, J.
A., 1.

Caribbean region Ostracoda: Bold, W.
A., van den, 1.

Ceratobulimina, genus and species: Cush-
man, J. A., 1.

Charophyta: Peck, R. E., 1.

Cypridacanthus, new genus: Andrews, H. N.,
Jr., 1.

Floras: Chaney, R. W., 4.

Mollusca, Jackson Eocene, Miss. Embay-
ment: Harris, G. D., 1.

Paleontology—Continued.

Tertiary—Continued.

North America—Continued.

- Nautiloidea: Miller, A. K., 15.
 Palaeogale, early mustelids: Simpson, G. G., 4.
 Pinus: Babcock, E. B., 1.
 Sigmollina, genus, species: Cushman, J. A., 1.
 Taxonomy, flowers, herbaceous seeds: Elias, M. K., 2.
 Western, plant remains: Arnold, C. A., 1.
 North Carolina, microfossils, Oligocene, Miocene: McLean, J. D., Jr., 1.
 North Dakota, fern, Golden Valley Eocene fm.: Benson, W. E. B., 1.
 Oklahoma, Pliocene Calipyrigula: Leonard, A. B., 1.
 Oregon, Beatty Buttes Miocene Mammalia: Wallace, R. E., 1.
 Coos Bay Foraminifera: Detling, M. R., 1.
 John Day region fossils: Stock, C., 7.
 St. Helens quad. faunas: Wilkinson, W. D., 1.
 Palaeogale, Plesiogale, Plesictis, redefinition: Simpson, G. G., 4.
 Panama, Gatun fm. fauna, Canal Zone: Keen, A. M., 1.
 Paramyidae, Tert. rodents: Wood, A. E., 4.
 Puerto Rico, Oligocene Hauerina: Cushman, J. A., 1.
 Tarsus, artiodactyl, origin, function: Schaeffer, B., 1.
 Tertiary time chart, continental: Simpson, G. G., 10.
 Texas, Ostracoda, Weches Eocene fm.: Stephenson, M. B., 1.
 Trinidad, Ceratobulimina genus and species: Cushman, J. A., 1.
 Lizard Springs fm. Foraminifera: Cushman, J. A., 6.
 Mollusca, Miocene Springvale: Rutsch, R. F., 1.
 Oligocene Foraminifera, St. Croix fm.: Cushman, J. A., 8.
 United States, Atlantic Coastal Plain fish fauna: Leriche, M., 1.
 Coastal Plain Invertebrata, deep-well: Richards, H. G., 3.
 Eocene Spirulaea (Tubulostium): Howell, B. F., 11.
 Great Basin Pliocene environments: Axelrod, D. I., 1.
 Gulf area micropaleontology, status: Howe, H. V., 2.
 Insecta: Pierce, W. D., 2.
 Mollusca, univalve, Jackson Eocene, Miss. Embayment: Palmer, K. E. H. V., 2.
 Paleocene Foraminifera: Cushman, J. A., 1.
 Plants, fossil: Andrews, H. N., Jr., 5.

Paleontology—Continued.

Tertiary—Continued.

United States—Continued.

- Western, Duchesnean fauna and Eocene-Oligocene boundary: Simpson, G. G., 3.
 Miocene Merychyninae, oreodonts: Schultz, C. B., 2.
 Utah, Crocodilian, Eocene, Uinta Co.: Gilmore, C. W., 4.
 Mollusca, Pliocene Salt Lake fm.: Yen, T.-C., 8.
 Ostracoda, Salt Lake fm.: Swain, F. M., 6.
 Virgin Islands, Foraminifera, St. Croix: Cushman, J. A., 3.
 Virginia, Ostracoda: Schmidt, R. A. M., 2.
 Washington, Saddle Mts. petrified trees: Bateman, E. S., 3.
 West Indies, Curaçao, Mollusca: Regteren Altena, C. O. van, 1.
 Cypraeidae: Ingram, W. M., 1.
 Foraminifera, Oligocene, Trinidad, St. Croix: Cushman, J. A., 8.
 Nautiloidea: Miller, A. K., 15.
 Sigmollina, genus, species: Cushman, J. A., 1.
 Wyoming, Bighorn Basin, Eohippus: Stock, C., 11.
 Coprolites, Bridger fm. near Lonetree: Bradley, W. H., 2.
 Crocodilus, Bridger Basin: Gilmore, C. W., 1.
 Fish, Green River shales: Zuidema, H. P., 3.
 Gastropoda, nonmarine Eocene, Hot Springs Co.: Yen, T.-C., 6.
 Machaeroides, Bridger Eocene saber-tooth creodont: Gazen, C. L., 1.
 Mollusca, Paleocene, Sheridan Co.: Yen, T.-C., 1.
 Ostracoda, Eocene, in petrified wood: Anonymous, 44.
 Testudo, Oligocene: Gilmore, C. W., 2.
 Vertebrata, Wind River Basin: Lewis, G. E., 2.

Triassic.

- Amphibia, Kans.: Lane, H. H., 1.
 Arizona, Chirotherium: Peabody, F. E., 2.
 Continental fauna, N.: Camp, C. L., 3.
 Labyrinthodont, Moenkopi fm.: Peabody, F. E., 4.
 Machaeropsopus, Chinle phytosaur: Colbert, E. H., 5.
 Moenkopi fm., current crescents: Peabody, F. E., 1.
 Vertebrata and trackways: Peabody, F. E., 3; Welles, S. P., 1.
 Bellerophon muscle scars: Knight, J. B., 3.
 British Columbia, faunas, NE.: McLearn, F. H., 2.
 Liard River area: Kindle, E. D., 1.
 Parapopanoceras fauna: McLearn, F. H., 1.
 Pardonet Hill area: McLearn, F. H., 3.
 Canada, dinosaurs: Sternberg, C. M., 1.
 Colorado, Neocalamites: Holt, E. L., 1.

Paleontology—Continued.

Triassic—Continued.

- Corals as builders of limestone: Johnson, J. H., 5.
 Greenland, East, fish: Nielsen, E., 2.
 Flora: Harris, T. M., 1.
 Kansas, Amphibia and Vertebrata: Lane, H. H., 1.
 Labyrinthodontia: Romer, A. S., 3.
 New Jersey, fossil fish check list: Rapp, W. F., Jr., 1.
 Hypognathus, reptile: Colbert, E. H., 3.
 New Mexico, dinosaurs, Ghost Ranch: Colbert, E. H., 7.
 North America, Bryophyta, Cenozoic, Mesozoic: Steere, W. C., 1.
 Conchostraca: Raymond, P. E., 1.
 North Carolina, Rutiodon, phytosaur: Colbert, E. H., 5.
 Paratrachyceras, Protrachyceras, ammonoid genera: McLearn, F. H., 4, 5.
 Pennsylvania, Crustacea, Lockatong fm., Gwynedd area: Bock, W., 1.
 Stegocephalia, genera census: Case, E. C., 1.
 Texas, Typothorax, reptile: Sawin, H. J., 1.
 United States, Insecta: Pierce, W. D., 2.
 Utah, Gastropoda, freshwater: Yen, T. C., 2.
 Wyoming, footprints, Chugwater, Red Peak fms.: Branson, E. B., 2, 5.

Paleopathology, research, Pacific Coast, 1917-1944: Stock, C., 4.

Paleopedology, application of soil science to geology: Ireland, H. A., 4.

Paleozoic, undifferentiated.

- Alaska, Funter Bay, Admiralty Is. deposits: Holt, S. P., 2.
 Alberta, foothills, Athabaska-Ram Rivers: MacKay, B. R., 2.
 Highwood-Elbow area: Allan, J. A., 2.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 British Columbia, Aiken Lake area: Armstrong, J. L., 1.
 Alcan Highway exposures: Laudon, L. R., 1.
 Salmon Arm area: Rice, H. M. A., 1.
 California, Iron Hat deposits: Lamey, C. A., 1.
 Ivanpah quad.: Hewett, D. F., 1.
 Georgia, oil and gas poss.: Peyton, G., 1.
 Illinois, Arachnida: Petrunkevitch, A., 1.
 Mexico, Yaqui Valley, Sonora: Toron Villegas, L., 2.
 New Mexico, Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
 North America, Cordilleran geosyncline, orogeny: Eardley, A. J., 1.
 United States, Appalachian structures, N.: Hietanen, A., 2.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Northeast, basin structure devel.: Lockett, J. R., 1.
 Utah, Kelly's Hole, Dugway Range: Ives, R. L., 16.

Paleozoic undifferentiated—Continued.

Utah—Continued.

- Stansbury Island, Great Salt Lake: Ives, R. L., 7.
 Washington, Anderson zinc-lead prospect, Stevens Co.: Lorain, S. H., 2.
 Wyoming, Gros Ventre Mts., Mt. Leidy Highlands: Foster, H. L., 1.
 Wind River Mts. N. flank: Weart, R. C., 1.
 Palladium: De Ment, J. A., 1.
 Panama Canal Zone, Canal bed: Bowman, W. G., 1.
 Gatun fm.: Keen, A. M., 1.
 Geological investigations: Vaughan, T. W., 2.

Paragenesis.

- Alaska, copper-sulfur deposits, Prince of Wales Is.: Fosse, E. L., 1.
 Molybdenite deposits, SE.: Twenhofel, W. S., 1.
 Biotite micas of ig. rocks, chem. composition: Nockolds, S. R., 1.
 British Columbia, electrum-ruby silver deposits, East Gold mine: Fawley, A. P., 1.
 Gold deposits, new type: Warren, H. V., 5.
 California, Pine Creek, Adamson mines, Inyo Co.: Bateman, P. C., 1.
 Sixteen-To-One gold-quartz vein, Al-leghany: Cooke, H. R., Jr., 1.
 Colorado, Boulder dist. scheelite: Tweto, O. L., 1.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Kokomo mining dist.: Koschmann, A. H., 1.
 Lake City area, Hinsdale Co.: Burbank, W. S., 13.
 Mineral Point, Poughkeepsie, Upper Un-compahgre dists.: Kelley, V. C., 1.
 Connecticut, Branchville pegmatite: Shain-in, V. E., 1.
 Depth changes in ore deposition: Bruce, E. L., 1.
 Geological mineralogy: Landes, K. K., 2.
 Gold distribution: Bichan, W. J., 1.
 Greenland, East, basaltic rocks: Krok-ström, T., 1.
 Hydrothermal ores, deposition: Hulin, C. D., 2.
 Idaho, Blackbird dist. cobalt deposits: Anderson, A. L., 3.
 Clark Fork dist., lead, silver, zinc deposits: Anderson, A. L., 2; Lorain, S. H., 1.
 Last Chance Hornsilver mines: Anderson, A. L., 5.
 Moyie-Yaak dist.: Anderson, A. L., 1.
 Snake-Salmon Rivers area: Wagner, W. R., 1.
 Impounding structures control of ore deposits: Mackay, R. A., 1.
 Limestone replacements refute theories of ore origin: Prescott, B., 1.

Paragenesis—Continued.

- Liquid inclusions in geologic thermometry:
Ingerson, E., 2.
- Maine, Topsham area pegmatites: Shainin, V. E., 2.
- Mexico, Batopilas, Chihuahua silver mines:
González Reyna, J., 8.
El Moral dist.: González Reyna, J., 10.
Maravatio-Zitacuaro dists.: Flores, T., 1.
- Missouri, barite deposits: Mather, W. B., 2.
Morgan Co.: Mather, W. B., 1.
Pyrite deposits: Brown, J. S., 1.
- Montana, Dillon area: Lindberg, M. L., 3.
Monzonite dike, Bearpaw Mts.: Pecora, W. T., 1.
- New Hampshire, Chickering pegmatite, Walpole area: Shaub, B. M., 2.
- New Mexico, Little Hatchet Mts. area: Lasky, S. G., 3.
Mica deposits: Jahns, R. H., 1.
- New York, Adirondack Mts., Ti-Fe relations during magmatic processes: Evrard, P., 1.
Barton garnet mine: Shaub, B. M., 3.
Clinton hematite ores, diagenesis: Alling, H. L., 2.
Lyon Mtn. mine: Zimmer, P. W., 1.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
Little Bay area: MacLean, H. J., 1.
- Northwest Territories, Eldorado mine: Murphy, R., 1.
- Ontario, Bancroft area: Gummer, W. K., 1.
Copper deposits, Robb, Jamieson, Godfrey Tps.: Ferguson, S. A., 1.
Gold mines, Madsen Red Lake: McLaren, D. C., 8.
Nepheline rocks, origin: Shand, S. J., 1.
Norites, Eagle Lake: Moorhouse, W. W., 2.
- Ore genesis, metallurgical interpretation: Brown, J. S., 4.
- Oxidation, reduction, in geochemistry: Mason, B., 3.
- Quebec, chromite, Orford area: Fortier, Y. O., 2.
Descriptive geology: Dresser, J. A., 1.
- South Dakota, pegmatites: Fisher, D. J., 1; Norton, J. J., 1.
- United States ore deposits: Helka, A., 1.
- Utah, San Rafael Swell area: Crawford, A. L., 2.
Wildcat Mts. fluorspar deposits: Burnek, A. M., 4.
- Washington, Sultan Basin deposits: Carithers, L. W., 1.
- Zoning, ore dists.: Johnston, W. D., Jr., 2.
- Paramorph, quartz after tridymite, Home quad., Colo.: Ray, L. L., 1.
- Paravauxite, gordonite, relations: Nuffield, E. W., 3.
- Pearcite, N. Am.: Peacock, M. A., 7.
- Pearl, Pleist., Md.: Brown, R. W., 1.
- Peat. See also Bogs; Paleobotany; Pollen analysis.
El Salvador: Basauri, D., 1.
Florida: Davis, J. H., Jr., 1.
General: Thiessen, R., 1.
Indiana, Cabin Creek raised bog: Friesner, R. C., 1.
Lake Nipigon area, N. Am., bogs and pollen analysis: Wilson, L. R., 1.
Maine, fuel poss.: Trefethen, J. M., 1-a.
Mexico, Estado Michoacán: Blásquez López, L., 4.
Miquelon: Aubert de la Rüe, E., 1.
New Jersey: Waksman, S. A., 1.
North Carolina, Jerome Bog: Buell, M. F., 1.
Nova Scotia, Digby Neck area: Bancroft, M. F., 1.
Pennsylvania, Pittsburgh area glacial bog: Schopf, J. M., 1.
Quebec: Girard, H., 1; Radforth, N. W., 2.
St. Pierre: Aubert de la Rüe, E., 1.
Texas, coal production: Stenzel, H. B., 3.
Patschke Bog profile: Potsger, J. E., 1.
United States, Pacific Northwest, post-glacial forest succession: Hansen, H. F., 3.
- Pebbles.
Arizona, W., Paleozoic seaways: McKee, E. D., 3.
Colorado, Dunmore mine, Ouray Co.: Kelley, V. C., 3.
Morel pebbles, Wind River Basin, Wyo.: Scott, H. W., 1.
New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
Texas, W. Gulf Coastal Plain, grinding: Parkinson, G. A., 1.
Wyoming, Wind River Basin, limestones: Scott, H. W., 1.
- Pectolite,
California, "The Geysers" minerals: Vonsen, M., 1.
New Jersey, Paterson quarry: Hayes, W. H., 3.
- Pediments.
Arizona, Ajo mining dist.: Gilluly, J., 1.
Santa Cruz Basin: Turner, S. F., 1.
- Pedometer value, explor. rough terrain: Mullerried, 4.
- Pegmatites.
British Columbia, beryllium, Golden area: Watson, K. D., 2.
California, crystalline rocks, S.: Miller, W. J., 1.
Pala dikes, San Diego Co.: Jahns, R. H., 5.
Colorado: Hanley, J. B., 3.
Beryllium, tantalum: Hanley, J. B., 1.
Bismuth minerals: Heinrich, E. W., 4.
Brown Derby lithia mine: Hanley, J. B., 2.
Construction, nonmetallic minerals: U. S. G. S., 3, no. 10.

Pegmatites—Continued.

Colorado—Continued.

- Denver Mtn. Parks area: Boos, M. F., 1.
 Eight Mile Park area: Heinrich, E. W., 7.
 Longs Peak-St. Vrain batholith: Boos, M. F., 2.
 Connecticut, Branchville pegmatite: Shainin, V. E., 1.
 Beryl resources: Cameron, E. N., 2.
 Cuba, Moa chromite dist., Oriente Prov.: Guild, P. W., 1.
 Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
 Idaho, Avon mica dist.: Reed, G. C., 1.
 Maine, Freeport-Friendship coast: Trefethen, J. M., 8.
 Topsham area: Shainin, V. E., 2.
 Manitoba, Barrington Lake area: Minton, M. C., 2.
 Sherridon area: Canada G. S., 1.
 Mianus Gorge, Conn.-N. Y.: Brown, S. C., 1.
 Montana, Bearpaw Mts. area: Pecora, W. T., 2.
 New Mexico, Apache mica mine: Holmquist, R. J., 3.
 Bismuth minerals: Heinrich, E. W., 4.
 Black Range, Tert.: Kelley, V. C., 5.
 Dikes, Mora Co.: Jahns, R. H., 4.
 Manganese mines, Grant Co.: Russell, P. L., 1.
 Mica deposits: Holmquist, R. J., 1; Jahns, R. H., 1.
 New York, Eastern State Parkway min. locs.: Zodac, P., 7.
 North Carolina, Franklin-Sylva dist.: Heinrich, E. W., 6; Olson, J. C., 2.
 Industrial minerals: Stuckey, J. L., 1.
 Spruce Pine dist.: Olson, J. C., 1.
 Northwest Territories, Ross Lake area poss.: Fortier, Y. O., 3.
 Quebec, Lacorne area: Tremblay, L. P., 1, 2.
 Wettnagami River area: Fairbairn, H. W., 1; Graham, R. B., 1.
 Saskatchewan, Rottenstone Lake area: Mawdsley, J. B., 1.
 South Dakota, Custer area, bastinite: Fisher, D. J., 2.
 Structure, mineralogy: Page, L. R., 2.
 United States, feldspar from zoned beds: Cameron, E. N., 3.
 Granitic, internal structure: Cameron, E. N., 1.
 Mica-bearing, SE.: Griffiths, W. R., 1.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Utah, Granite Peak area: Ives, R. L., 8.
 Mineral Range tungsten deposits: Crawford, A. L., 3.
 Vermont, Strafford quad.: Doll, C. G., 1.
 Washington, Colville batholith, E. border structures: Campbell, C. D., 2.

Pelecypoda. See also Mollusca.

- Alberta, Highwood-Elbow area faunas: Allan, J. A., 2.

Pelecypoda—Continued.

- British Columbia, Carbon Creek-Mount Bickford area: Mathews, W. H., 2.
 Faunas, Upper Trias., NE.: McLearn, F. H., 2.
 California, Palos Verdes Hills fauna: Woodring, W. P., 1.
 Reef Ridge fauna: Steward, R. B., 1.
 Canada, Mackenzie River Valley Cret. fauna: Warren, P. S., 1.
 Cuba, Camagüey dist. fauna and stratigraphy: Albear y Franquiz, J. F., de, 1.
 Camagüey-Oriente dist. fauna: Hermes, J. J., 1.
 Egan collection, Sil. Invertebrata, N. Am.: Ball, J. R., 1.
 Faunas, Gatun fm., Panama Canal Zone: Keen, A. M., 1.
 Glen Dean Carb. fm., Ind.: Haas, O., 2.
 Little Hatchet Mts., N. Mex.: Lasky, S. G., 3.
 Pennsylvanian, Tex.: Plummer, F. B., 3.
 Pittsburgh area, Pa.: Leighton, H., 3.
 Vernon shale, Sil., N. Y.: Flower, R. H., 8.
 Georgia, E.-cent. Coastal Plain: La Moreaux, P. E., 1.
 Glycymeridae, origin: Nicol, D., 2.
 Glycymeris, Tert., Calif.: Nicol, D., 1.
 Greenland, East, faunas: Vischer, G. A., 2.
 Kap Hope area: Rosenkrantz, A., 1.
 Wollaston Forland-Franz Josephs Fjord Perm.: Mayne, W., 2.
 West, faunas: Laursen, D., 1.
 Ice Age and postglacial fauna: Jensen, Ad. S., 1.
 Illinois, Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Invertebrata, Atlantic Coastal Plain, U. S., deep wells: Richards, H. G., 3.
 Mexico, Sierra de la Peña area fauna: Alvarez, M., Jr., 1.
 Mississippi, Lee Co. faunas: Vestal, F. E., 1.
 Macrofossils. Cret. from deep wells: Stephenson, L. W., 5.
 Mollusca, Pleist., Calif.: Berry, S. S., 1.
 Neoradiolites, Cret., Mex.: Mullerried, 8.
 New Jersey, Pleist. fossils in Eocene rocks: Richards, H. G., 2.
 New York, Catskill, Kaaterskill quads. faunas: Chadwick, G. H., 1.
 Ohio, Cincinnati area, fauna, strata: Bucher, W. H., 1.
 Oklahoma, Bartlesville field trip fossils: Strimple, H. L., 2.
 Oregon, St. Helens quad. faunas: Wilkin-son, W. D., 1.
 Ostraea, Eocene, Ga.: Tomkins, I. R., 1.
 Ostreidae, major groups: Stenzel, H. B., 5.
 Nomenclatural synopsis: Stenzel, H. B., 5.

Pelecypoda—Continued.

- Quebec, faunas: Dresser, J. A., 1.
 Landslides, two recent: Clark, T. H., 2.
 Simard map area faunas: McGerrigle, H. W., 1.
 Saltermya for Anthracomya: Palmer, K. E. H. V., 1.
 Trinidad, Miocene Mollusca, Springvale beds: Rutsch, R. F., 1.
 United States, Comanche faunas: Stanton, T. W., 1.
 Permian, SW.: Newell, N. D., 3.
 Venericardia, Cret., Tex.: Stephenson, L. W., 5.
 West Indies, Curaçao Tert. Mollusca: Regteren Altena, C. O., van, 1.

Peneplains. See also Erosion.

- Bighorn Basin area, Mont.-Wyo.: Mackin, J. H., 1.
 Colorado Front Range: Wahlstrom, E. E., 2.
 Greenland, Scoresby Sound area: Rothé, J. P., 1.
 Illinois, preglacial erosion surfaces: Horberg, C. L., 1.
 Kansas, Barton Co. buried hills: Walters, R. F., 1.
 Labrador Peninsula, E. area: Tanner, V., 2.
 Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1.
 New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
 Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
 North America, S. Appalachians: Shaffer, P. R., 1.
 North Carolina, Coastal Plain: Berry, E. W., 1.
 Two peneplains under Coastal Plain: Prouty, W. F., 2.
 Pennsylvania, Pittsburgh area: Leighton, H., 3.
 Wyoming, Wind River Mts.: Baker, C. L., 1.

Pennsylvania.

Areas described.

- Smicksburg quad.: Shaffner, M. N., 1.

Economic geology.

- Anthracyte reserves: Ashley, G. H., 1.
 Berea sand types, distrib., Appalachian Basin: Rittenhouse, G., 4; U.S.G.S., 1, no. 58.
 Brownstone, Hummelstown: Bolton, F. J., 1.
 Diaspore clay, Clinton Co.: Foose, R. M., 3.
 Graphite mine, Chester Co.: Thomas, C. A., 6.
 Hollidaysburg-Huntington quads: Butts, C., 1.
 Iron-manganese deposit, White Rocks: Foose, R. M., 1.
 Limestones, high-calcium: Swain, F. M., 1.
 Magnetite deposits, Dillsburg, York Co.: Neumann, G. L., 1.
 Manganese minerals: Foose, R. M., 2.

Pennsylvania—Continued.

Economic geology—Continued.

- Mineral industries future: Steidle, E., 1.
 Oil and gas field property-line maps, Hilliards, Titusville quads.: Dickey, P. A., 1; Sherrill, R. E., 1.
 Petroleum and gas, North Strabane area: Fetteke, C. R., 1.
 Pittsburgh area: Leighton, H., 3.
 Slate, properties, uses: Bates, T. F., 2.
 Smicksburg quad.: Shaffner, M. N., 1.
 Wax saturation in oil sands: Calhoun, J. C., 1.
 Well-sample records described: Martens, J. H. C., 1.

Historical geology.

- Devonian sequence, near Huntington: Willard, B., 5.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Iron-manganese deposit, White Rocks: Foose, R. M., 1.
 Lackawanna Basin, origin: Willard, B., 1.
 Mississippian, continental-marine relations: Willard, B., 2.
 Ordovician clastic sed. rocks: Willard, B., 6.
 Pequea silver mine: Foose, R. M., 4.
 Petroleum and gas, North Strabane area: Fetteke, C. R., 1.
 Pittsburgh area: Leighton, H., 3.
 Smicksburg quad.: Shaffner, M. N., 1.
 Taconic sequence: Stose, G. W., 2.
 Triassic, Delaware Valley: Willard, B., 10.

Mineralogy.

- Bradford Woods meteorite, Allegheny Co.: Leighton, H., 1; Stone, R. W., 1.
 Comparative weathering, common heavy minerals: Dryden, A. L., Jr., 1.
 Diaspore clay, Clinton Co.: Foose, R. M., 3.
 Flood deposit, Lehigh River, Bethlehem, May 1942: Gault, H. R., 1.
 Fluorescence, iron-stone shales, Pottstown: Thomas, C. A., 3.
 Fluorescent minerals, Kibblehouse quarry: Thomas, C. A., 1, 8.
 Friedensville zinc-mine minerals: Thomas, C. A., 5.
 Graphite mine, Chester Co.: Thomas, C. A., 6.
 Iron minerals in fire clays: Leatham, E., 1.
 Iron-manganese deposit, White Rocks: Foose, R. M., 1.
 Limonite pseudomorphs: Anonymous, 26.
 Manganese minerals: Foose, R. M., 3.
 Micaceous minerals in slate: Bates, T. F., 4.
 Mineral collecting: Myers, R. E., 3.
 Mineral industries, future: Steidle, E., 1.
 Mineral isograds, SE.: McKinstry, H. E., 2.
 Petroleum and gas, North Strabane area: Fetteke, C. R., 1.
 Pittsburgh area: Leighton, H., 3.

Pennsylvania—Continued.

Mineralogy—Continued.

- Red crystals on Wheatley sphalerite: Thomas, C. A., 4.
 Sauconite, zinc-clay mineral: Ross, C. S., 2.
 Scapolite metagabbro, Bucks Co.: Weiss, J., 2.
 Smicksburg quad.: Shaffner, M. N., 1.
 Uranotile (uranophane), Easton area: Bertrand, J. H., Jr., 1.
 Vandergrift mineral locs.: Hamilton, H. V., 1.
 Wheatley mines collecting area: Thomas, C. A., 7.
 Zeolites, Dyer quarry: Thomas, C. A., 2.
 Zinc in plants, slime ponds, Friedensville: Robinson, W. O., 3.

Paleontology.

- Cephalopoda, Conemaugh ser.: Miller, A. K., 10.
 Crustacea, Lockatong fm., Gwynedd area: Bock, W., 1.
 Endolobus, Greenbrier Missn. ls.: Miller, A. K., 9.
 Florule, Penn., Dutch Mtn. outlier: Read, C. B., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Microspongia, Dev., Perry Co.: Howell, B. F., 3.
 Mississippian, continental-marine relations: Willard, B., 2.
 Monocraterion clintonense, Sil. burrows showing aperture: Howell, B. F., 5.
 Onchometopus, asaphid trilobite, Ord.: Howell, B. F., 2.
 Peat deposit, glacial, Pittsburgh area: Schopf, J. M., 1.

Petrology.

- Flood deposit, Lehigh River, Bethlehem, May 1942: Gault, H. R., 1.
 Flysch and molasse: Eardley, A. J., 2.
 Iron minerals in fire clays: Leatham, E., 1.
 Limestones, high-calcium: Swain, F. M., 1.
 Metagabbro, scapolite, Bucks Co.: Weiss, J., 2.
 Ordovician clastic sed. rocks: Willard, B., 6.
 Slates, with micaceous minerals: Bates, T. F., 4.
 Taconic sequence: Stose, G. W., 2.

Physical geology.

- Bucks Co. scapolite metagabbro: Weiss, J., 2.
 Comparative weathering, common heavy minerals: Dryden, A. L., Jr., 1.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Iron-manganese deposit, White Rocks: Foose, R. M., 1.
 Lackawanna Basin, origin: Willard, B., 1.
 Pittsburgh area: Leighton, H., 3.
 Smicksburg quad.: Shaffner, M. N., 1.
 Taconic sequence: Stose, G. W., 2.

Pennsylvania—Continued.

Physiographic geology.

- Appalachian drainage, Newark ser.: Carls- ton, C. W., 1.
 Conodoguinet Creek meanders, Martins- burg shale: Strahler, A. N., 1.
 Lackawanna Basin, origin: Willard, B., 11.
 Mountain gaps, cultural influence: Willard, B., 4.
 Pittsburgh area: Leighton, H., 3.
 Post-glacial lakes, Susquehanna Valley: Young, A. E., 1.
Underground water.
 Ground water: Graham, J. B., 1; Anony- mous, 38.
 Hollidaysburg-Huntington quads.: Butts, C., 1.
 Post-glacial lakes, Susquehanna Valley: Young, A. E., 1.
 Smicksburg quad.: Shaffner, M. N., 1.

Pennsylvanian. See Carboniferous.

- Pennsylvanian problems: Wanless, H. R., 2, 3.
 Pentlandite, Grenland ore mineral: Pauly, H., 1.

Peridotite.

- California, Del Norte Co. chromite de- posits: Wells, F. G., 1.
 North Elder Creek area chromite: Ry- nearson, G. A., 1.
 Chromite, correl. with containing rocks: Thayer, T. P., 1.
 Cuba, Moa chromite dist.: Guild, P. W., 1.
 New York, Syracuse, altered dike: May- nard, J. E., 1.
 North Carolina, Buck Creek corundum deposits: Ballard, T. J., 3.
 Industrial minerals: Stuckey, J. L., 1.

Perlite.

- Oregon, agates: Anonymous, 59.
 Map of mineral deposits: Oreg. Dept. Geol. Min. Indust., 1.
 Wasco Co. deposits: Allen, J. E., 2.
 Source of synthetic pumice: Ralston, O. C., 1.

Permafrost.

- Alaskan areas: Cabot, E. C., 2; Jaillite, W. M., 1; Péwé, T. L., 3; Wallace, R. E., 3.
 Arctic America, Alaska: Barnes, L. C., 1.
 Climatic variations, affecting geotherm initial: Lane, A. C., 3.
 North America, permanently frozen ground areas: Muller, S. W., 1.
 Sub-Arctic area, dredging: Nordale, A. M., 1.

Permeability measurements, small cores: Morse, R. A., 1.

Permian. See also Carboniferous; Paleontology, *Permian*.

- Alaska, Nizina dist.: Miller, D. J., 1.
 Southeast: Williams, J. S., 2.
 Yukon area: Williams, J. S., 2.
 Alberta, Banff area, Rocky Mts.: Warren, P. S., 3.
 Arizona, Dragoon Mts.: Cederstrom, D. J., 2.

Permian—Continued.

Arizona—Continued.

- Grand Canyon and area: Corle, E., 1;
Stone, J. F., 1; Van Gundy, C. E., 1.
Holbrook area, water fms.: Babcock, H.
M., 2.
Mohawk zinc prospect, Pima Co.: Haury,
P. S., 1.
Paleozoic seaways: McKee, E. D., 3.
Petroleum poss.: Anonymous, 39.
Wilcox Basin: Jones, R. S., 1.
Bighorn Basin, Mont.-Wyo.: Wyoming
Univ., 1.
British Columbia, Ashcroft area: Duffell,
S., 1, 2.
Coast Range batholith: Phemister, T.
C., 1.
Manson Creek, Cassiar dist.: Canada
G. S., 1.
Nanaimo coal field: Buckham, A. F., 1.
Nicola, Kamloops, Yale dists.: Canada
G. S., 1.
South half Aiken Lake area: Armstrong,
J. E., 1.
California, Hirz Mtn. iron deposit: Lamey,
C. A., 1.
Shasta, California deposits: Lamey, C.
A., 1.
Central America, geol. map: Mullerried, 1.
Colorado, Baca Co., Freezeout Creek fault
area: Buehler, K. M., 1.
Bonanza (Kerber Creek) mining dist.:
Burbank, W. S., 14.
Colorado Springs quad.: McLaughlin,
K. P., 1.
General: Vanderwilt, J. W., 5.
Gilman dist., Eagle Co.: Tweto, O. L., 3.
Golden-Morrison area: LeRoy, L. W., 1.
Kokomo mining dist.: Koschmann, A.
H., 1, 3.
La Plata dist.: Eckel, E. B., 2.
Mineral Point, Poughkeepsie, Upper Un-
compahgre dists.: Kelley, V. C., 1.
Rangely oil and gas field: Bass, N. W.,
1; Bench, B. M., 1; Newton, S. M.,
4; U. S. G. S., 1, no. 67.
Rico mining dist.: Varnes, D. J., 2.
San Juan region: Burbank, W. S., 6.
Silverton volcanic center dists.: Bur-
bank, W. S., 9.
Snowmass Mtn. area: Vanderwilt, J.
W., 6.
Subsurface Paleozoic: Maher, J. C., 2.
Uncompahgre mining dist.: Burbank,
W. S., 8.
Upper Blue River area, Summit Co.:
Singewald, Q. D., 3.
Upper White River area Paleozoics:
Thompson, W. O., 1.
Vanadium deposits, Placerville area:
Fischer, R. P., 4.
Correlations, Tex.-N. Mex.: Skinner, J.
W., 1.
Cross-section, subsurface, Ness Co., Kans.-
Lincoln Co., Colo.: Maher, J. C., 1.
Scott Co., Kans.-Otero Co., Colo.: Ma-
her, J. C., 3.

Permian—Continued.

Cross-section—Continued.

- Trego Co., Kans.-Cheyenne Co., Colo.:
Collins, J. B., 2.
Forest City Basin, U. S.: U. S. G. S., 1,
no. 48.
Greenland, East: Kleiber, K., 1; Maync,
W., 1, 2; Stauber, H., 2; Vischer G.
A., 2.
Jamesonland lowlands: Stauber, H., 1.
Northeast: Ahlmann, H. W., 1; Bierther,
C. P., 1; Huebscher, H., 1.
Idaho, geol. map: Ross, C. P., 1.
Georgetown area phosphates: Deiss, C.
F., 2.
Snake-Salmon Rivers area: Wagner,
W. R., 1.
Kansas, Arkansas River Valley: Williams,
C. C., 2.
Barton Co. buried hills: Walters, R.
F., 1.
Central area: Taylor, M. H., 1.
Coal reserves: Abernathy, G. E., 2.
Genesee uplift: Clark, S. K., 1.
Grant, Haskell, Stevens Cos.: McLaugh-
lin, T. G., 2.
Kanopolis Dam site: Happ, S. C., 5.
Pottawatomie Co. unconformity: Har-
ned, C. H., 1.
Scott Co.: Waite, H. A., 1.
Mexico, Altar dist. Sonora: Arellano,
A. R. V., 2.
Caborca area, Sonora: Cooper, G. A., 1.
Conchos Valley, Chihuahua: King, R.
E., 2.
Northern, geol. map: King, P. B., 4.
Yaqui Valley, Sonora: Toron Villegas,
L., 2.
Montana, Great Plains sed. rocks: Perry,
E. S., 1.
Plains structure contour map: Dobbin,
C. E., 3.
South-central, Paleozoic-Mesozoic rocks:
Gardner, L. S., 1.
Montreal, Canada: Clark, T. H., 1.
New Hampshire, Mt. Washington quad.:
Billings, M. P., 1.
Plymouth quad.: Moke, C. B., 1.
New Mexico, Eddy Co. potash reserves:
Storms, W. R., 1.
Exploration, devel., 1945: Kelly, J.
M., 1.
Fluorspar area: Rothrock, H. E., 1;
Soule, J. H., 1.
Future oil poss.: Bates, R. L., 1.
Gallinas dist. and Mts.: Kelley, V. C.,
4, 6.
Gran Quivira quad.: Bates, R. L., 3.
Guadalupe Co.: U. S. G. S., 1, no. 44.
Las Vegas Basin, Sangre de Cristo foot-
hills: U. S. G. S., 1, no. 54.
Los Piños Mts.: Stark, J. T., 1.
Lower Rio Puerco area: Wright, H. E.,
Jr., 1.
Lucero uplift: U. S. G. S., 1, no. 47.
Nacimiento, San Pedro Mts., adjacent
plateaus: U. S. G. S., 1, no. 57.

Permian—Continued.

New Mexico.—Continued.

- Paleozoic, Joyita Hills, Los Piños Mts., Chupadera Mesa: U. S. G. S., 1, no. 61; Wilpolt, R. H., 1.
- Peerless lead-zinc mine, Grant Co.: Soulé J. H., 4.
- Pre-San Andres fms. oil zones: King, R. E., 1.
- Quay Co., NW.: Dobrovolsky, E., 1: U. S. G. S., 1, no. 62.
- Rattlesnake field, San Juan Co.: Hinson, H. H., 1.
- Socorro Co. iron deposit: Grantham, R. M., 1.
- Southeast-west Texas correl.: Skinner, J. W., 1.
- Yeso fm., salt-dolomite intergrowths: Schwade, I. T., 1.
- Ohio, Dunkard-Permian boundary: White, G. W., 1.
- Geologic map: Bownocker, J. A., 1.
- Ground-water fms.: Bernhagen, R. J., 2.
- Iron-ore fms.: Stout, W. E., 1.
- Scenic geology: Carman, J. E., 1.
- Oklahoma, Anadarko Basin oil poss.: Wheeler, R. R., 3.
- Correlations, N.-cent.: Lukert, L. H., 1.
- North-central: Okla. City Geol. Soc., 1.
- Southern oil fields: Gouin, F., 1.
- West Edmond field: McKee, D. A., 1.
- Pennsylvania, high-calcium ls. deposits: Swain, F. M., 1.
- Lackawanna Basin origin: Willard, B., 1.
- Pittsburgh area: Leighton, H., 3.
- Permian Basin, U. S.: Johnston, D., 1.
- Quebec, Shawinigan area: Laverdière, J. W., 1.
- South Dakota, Missouri Valley: Petsch, B. C., 1.
- Texas, Apco oil field: Ellison, S. P., Jr., 2.
- Boulders, polished: Ray, C. N., 2.
- Celestite deposits: Evans, G. L., 3.
- Correlations, W. Tex.-SE. N.Mex.: Skinner, J. W., 1.
- Geologic cross-sec., Dallam Co. to Ford Co., Kans.: Edson, F. C., 1.
- Glass Mts.: Cooper, G. A., 2.
- Glass Mts.-Marathon Basin trip: West Tex. Geol. Soc., 2.
- Hueco, Franklin Mts.: West Tex. Geol. Soc., 1.
- Keystone field: Mygdal, K. A., 1.
- Petroleum and gas occurrence: Sellards, E. H., 3.
- Pioneer geology: Gould, C. N., 5.
- Rustler Springs sulfur deposits: Evans, G. L., 1.
- TXL oil field, Ector Co.: Weber, G., 1.
- Wolfcamp-Leonard strata: Moore, R. C., 3.
- United States, Bighorn Basin oil and gas fields: Pierce, W. G., 1: U.S.G.S., 1, no. 74.
- Castile Sea sediments: King, R. H., 2.
- Correlations: King, P. B., 1.

Permian—Continued.

United States—Continued.

- Formations below Smackover: Hazzard, R. T., 2.
- Guadalupe Mts., Tex.-N. Mex.: West Tex. Geol. Soc., 3.
- Hugoton gas field devel.: Mercier, V. J., 3.
- Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 2.
- Utah, Cedar City, Parowan Valleys: Thomas, H. E., 2.
- Confusion Range area: Bacon, C. S., Jr., 2.
- Duchesne River area: Huddle, J. W., 1, 2; U. S. G. S., 1, no. 75.
- Green River Desert-Cataract Canyon area: Baker, A. A., 1; U. S. G. S., 1, no. 55.
- Henry Mts. area: Hunt, C. B., 1.
- Little Cottonwood area: Ives, R. L., 3.
- Mineral Range tungsten deposits: Crawford, A. L., 3.
- Pavant Valley area: Dennis, P. E., 1; Maxey, G. B., 1.
- Uinta Mts., Paleozoic, Mesozoic: Thomas, H. D., 1.
- Wasatch Mts., Provo area: Baker, A. A., 4; U. S. G. S., 2, no. 30.
- Whiterocks River-Ashley Creek area, Uinta Co.: Kinney, D. M., 2; U. S. G. S., 1, no. 82.
- Zion Nat. Monument: Gregory, H. E., 1.
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 D., 1; King, H. H., 1.

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- East, Clinton sand deposition: Swain, J. F., 1.
- Elk Basin field, Mont.-Wyo.: McCabe, W. S., 2.
- Exploration for: Jakosky, J. J., 1.
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- Soil color, factors affecting: Plice, M. J., 1.
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 Park Co., NW.: Singewald, Q. D., 4.
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- Canada, Flin Flon-Mandy area: Stockwell, C. H., 1.
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- Colorado, nonmetallics: U.S.G.S., 3, no. 10.
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Central: Huddle, J. W., 3.

Dragoon Mts.: Cederstrom, D. J., 2.

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Arizona—Continued.

- Grand Canyon area: Corle, E., 1; McKee, E. D., 1; Stone, J. F., 1; Van Gundy, C. E., 1.
 Johnny Bull-Silver Knight deposit: Tainter, S. L., 1.
 Paradise Valley, Maricopa Co.: McDonald, H. R., 1.
 Peebles Valley: Babcock, H. M., 1.
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- Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Cañon City area: Blum, V. J., 1.
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 Borah Peak quad.: Ross, C. P., 2.
 Clark Fork lead-zinc dist.: Lorain, S. H., 1.
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- Geologic map: Ross, C. P., 1.
 Little Pittsburg lead-zinc mine: Herdlick, J. A., 1.
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 Missouri, barite deposits: Mather, W. B., 2.
 Ste. Genevieve, St. Francis Cos.: Kidwell, A. L., 6.
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 Dam sites, Flathead River above Columbia Falls: Erdmann, C. E., 3.
 Gallatin Co. corundum: O'Brien, R. D., 2.

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Overthrusting and oil accumulation:
Blackstone, D. L., Jr., 3.

Petroleum geology: Emrick, E. R., 1.
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New Brunswick, Sussex, Kings and
Queens Cos.: Canada G. S., 1.

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Billings, M. P., 1.

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Brown, J. S., 3; Marvin, T., 1.

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Origin "Lake Superior" type iron ores:
Moore, E. S., 3.

North Carolina, E. coastal Plain oil wells:
Swain, F. M., 5.

Fontana Dam area: Moneymaker, B. C., 2.

Halifax area: Mundorff, M. J., 2.

Hot springs, origin: Stose, G. W., 3.

Pre-Cambrian—Continued.

North Carolina—Continued.

Neuse River Basin: Mundorff, M. J., 3.
Raleigh graphite: Harrington, J. W., 1.

Spruce Pine dist.: Olson, J. C., 1.

Northwest Territories, Chalco Lake area:
Stanton, M. S., 2.

Eldorado mine: Murphy, R., 1.

Giant gold mine: Anonymous, 56.

Ross Lake area: Fortier, Y. O., 3.

Yellowknife area: Campbell, N., 1, 2;
Fortier, Y. O., 3; Henderson, J. F., 1; Anonymous, 56.

Nova Scotia, Barasois-Indian Brook area:
Douglas, G. V., 4.

Gold dists.: Cameron, H. L., 1.

Guysborough Co.: McNeil, D. J., 2.

Halifax xenoliths, contacts: Douglas, G. V., 2.

Strait of Canso area: Ferguson, S. A., 2.

Ohio, Vance well drill cuttings: Pye, W. D., 1.

Oklahoma, NE.: Moore, C. A., 3.

Ontario: Hutt, G. M., 7.

Bancroft area paragneisses: Gummer, W. K., 1.

Brazeau vanadium-bearing magnetites:
Harding, W. D., 2.

Calumet Island mines: McLaren, D. C., 1.

Chelmsford area, Sudbury dist.: Canada G. S., 1.

Eagle Lake area: Moorhouse, W. W., 2.

Falconbridge, Sudbury dist.: Canada G. S., 1.

Gem Lake-Bee Lake area: Minton, M. O., 1.

Geologic map: Ont. Dept. Mines, 3.

Hasaga gold mines: McLaren, D. C., 7.

Helen iron mine: Kidder, S. J., 1.

Kenogami Lake area: Ontario Dept. Mines, 2.

Kirkland Lake dist., Noranda-Val d'Or area: Thomson, J. E., 2.

Keewatin-Timiskaming unconformity:
Thomson, J. E., 1.

Little Longlac-Sturgeon River area:
Horwood, H. C., 1.

Lyndoch beryl deposit: McLaren, D. C., 3.

McKenzie Is.-East Bay, Red Lake dist.:
Bergman, H. J., 1.

Madsen Red Lake gold mines: McLaren, D. C., 8.

Mamen Group, Bee Lake area: Thomson, R., 1.

Matachewan Consolidated gold mines:
McLaren, D. C., 2.

Mattawan-Olrig area: Harding, W. D., 1.

Northern Empire gold mine: Benedict, P. C., 1.

Onakawana lignite, Moose Basin: McLaren, D. C., 5.

Orilla area: Deane, R. E., 1.

Parry Sound area: **Satterly, J., 1,**
Red Lake area: Thomson, R., 2.

Pre-Cambrian—Continued.

Ontario—Continued.

- Robb-Jamieson area: Berry, L. G., 1; Ferguson, S. A., 1.
 Rush Lake gold mine: Hogg, N., 1.
 Rutherglen dist.: Keith, M. L., 1.
 Sudbury area: Cooke, H. C., 2.
 Teck Tp.: Ont. Dept. Mines, 1.
 Timagami Lake area: Moorhouse, W. W., 1.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
 Township 47, Missinaibi area: Bruce, E. L., 3.
 Value of seismic prosp.: Hodgson, J. H., 2.
 Windsor-Sarnia area: Caley, J. F., 1.
 Pennsylvania, Bucks Co. quarry: Weiss, J., 2.
 White Rocks area: Foose, R. M., 1.
 Quebec, Abitibi, Temiscamingue Cos. 1944 min. devel.: Ingham, W. N., 1.
 Bachelor Lake area: Longley, W. W., 3.
 Barraute area, Abitibi Co.: Tremblay, L. P., 3.
 Beauchastel Tp. W. half: Ambrose, J. W., 1.
 Bourlamaque area: Canada G. S., 1; Norman, G. W. H., 1, 2, 3.
 Canton Carpentier: Tiphane, M., 1.
 Castagnier area: Longley, W. W., 2.
 Descriptive geology: Dresser, J. A., 1.
 Desvaux Lake area: Auger, P. E., 2.
 Dubuisson area: Norman, G. W. H., 4.
 Haig area geol. map: Canada G. S., 1.
 Lacorne area: Tremblay, L. P., 1, 2.
 Major faults, Abitibi region: Norman, G. W. H., 5.
 North Shore St. Lawrence area: Claveau, J., 1.
 Pershing area: Norman, G. W. H., 6.
 Perthite as age indicator: Faessler, C., 1.
 Quebec Central Ry. area: Dawson, A. S., 1.
 Shawinigan area: Laverdière, J. W., 1.
 Simard map area: Denis, B. T., 1.
 Siscoe mine area: Auger, P. E., 1.
 Tonnancourt-Holmes area: Longley, W. W., 1.
 Vauquelin area: Norman, G. W. H., 6, 8.
 Wetetnagami River and Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.
 Rock "norms" use in geophys. invs.: Daly, R. A., 3.
 Saskatchewan, Athabaska Lake area: Sask. Dept. Nat. Res., 1.
 Rottenstone Lake area: Mawdsley, J. B., 1.
 South Dakota, Galena-Roubax dist.: Berg, J. R., 1.
 Metallic min. deposits: U. S. G. S., 3, no. 13.
 Missouri Valley: Petsch, B. C., 1.

Pre-Cambrian—Continued.

South Dakota—Continued

- Western, deep well borings: Baker, C. L., 2.
 Texas, Apco oil field: Ellison, S. P., Jr., 2.
 Central area, min. res.: Barnes, V. E., 2, 3, 4, 8.
 Keystone field: Mygdal, K. A., 1.
 Llano uplift sec.: Bullard, F. M., 1; Evans, A. M., 2.
 United States, Appalachian structure: Hietanen, A., 1, 2; Stose, G. W., 4.
 Basin area, NE.: Lockett, J. R., 1.
 Blue River-South Platte Transmtn. Diversion line area: Haff, J. C., 1.
 Duchesne River area: U.S.G.S., 1, no. 75.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 2.
 Utah, Hat Island, Great Salt Lake: Blackwelder, E., 3.
 Little Cottonwood area: Ives, R. L., 3.
 Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.
 Virginia, age of Catoclin volcanic rocks: Furcron, A. S., 2.
 Wisconsin, Baraboo quartzite: Riley, N. A., 1.
 Douglas Co. copper: Smith, M. C., 1.
 Utley meta-rhyolite rocks: Gram, O. E., 1.
 Wyoming, Good Fortune iron mine: Frey, E., 4.
 Gros Ventre Mts., Mt. Leidy Highland: Foster, H. L., 1.
 Hartville iron dist.: Frey, E., 3.
 Iron Mtn. deposits: Frey, E., 2.
 Laramie Mts. wind gaps, origin: Blackstone, D. L., Jr., 1.
 Oregon Basin field: Walton, F. T., 2.
 Owl Creek Mts.: Engel, A. E. J., 3.
 Overthrusting and oil accumulation: Blackstone, D. L., Jr., 3.
 Paleozoic fms., Cody area: Stipp, T. F., 1.
 Shanton iron deposit: Frey, E., 1.
 Wind River Mts.: Baker, C. L., 1; U. S. G. S., 1, no. 51, no. 60.
 Pre-Cambrian Shield, geophys. prosp.: Koulomzine, T., 1.
 Precharged luminescences and laws: De Ment, J. A., 3.
 Precious stones. See also Gems, and the individual varieties.
 Gem identification handbook: Liddicoat, R. T., Jr., 2.
 Key: Spencer, L. J., 1.
 Prehistoric animals, reconstruction: Beck, H. T., 1.
 Prehnite.
 Massachusetts, Blueberry Mtn. quarry: Eisenberg, J. M., 1.
 Somerville, Granite St. quarry: Palache, C., 3.
 Vermont, Eden Mills quarry: Frondel, C., 2.

- Premium technological discovery of oil: Rosaire, E. E., 1.
- Primárrumpf and fold mts.: Engeln, O. D., von, 1.
- Primary lineation, fluvial ss. criterion of current direction: Stokes, W. L., 1.
- Prince Edward Island, clays and shales: MacPherson, A. R., 1.
- Problems of geology, Newfoundland: Snelgrove, A. K., 1.
- Profile technique, mapping stope geology: James, A. H., 1.
- Profiling, continuous and refraction shooting: Barthelmes, A. J., 1.
- Projections and zones: Fisher, D. J., 3.
- Prospecting.
- Alaska, industrial minerals: Glover, A. E., 1.
- Steeply-dipping beds under till, etc.: Lee, F. W., 2.
- Protozoa, silicoflagellates, Cret., Calif.: Deffandre, G., 1.
- Proustite crystals, exper. invs.: Peacock, M. A., 6.
- Pseudomorphs.
- California, blue agates, Lead Pipe Springs: Rogers, A. F., 6.
- Greenland, East, basaltic rocks: Krokström, T., 1.
- Martite, Va.: Pegau, A. A., 1.
- Missouri, King's Butte, twinned after pyrite: Ellis, M. W., 1.
- Nature of replacement: Douglas, G. V., 3.
- Pennsylvania, limonite: Anonymous, 26.
- Psilomelane.
- New Mexico, Contact manganese mine: Russell, P. L., 1.
- Niggerhead manganese deposits: Russell, P. L., 7.
- United States, SW., tungsten, vanadium: Fleischer, M., 1.
- Utah, Drum Mtn. manganese projects: King, W. H., 1.
- Pteropoda.
- New York, Catskill, Kaaterskill quads. faunas: Chadwick, G. H., 1.
- Pennsylvania, Hollidaysburg - Huntington quads. faunas: Butts, C., 1.
- Quebec faunas: Dresser, J. A., 1.
- Publication of geophys. case histories: Cortes, H. C., J., 1.
- Puerto Rico. See also West Indies.
- Historical geology.*
- Dos Bocas, Garzas Dams areas: Money-maker, B. C., 3, 4, 5.
- Geology and ground water res.: McGuinness, C. L., 1.
- Paleontology.*
- Halimeda, green alga in beach sands: Overbeek, J. V., 1.
- Hauerina, Oligocene: Cushman, J. A., 1.
- Underground water.*
- Garzas power tunnel: Moneymaker, B. C., 5.
- Ground water: McGuinness, C. L., 1.
- Pulse of the earth: Hendricks, T. A., 3; Umbgrove, J. H. F., 1.
- Pumice.
- British Columbia, Haylmore placer mine: Stevenson, J. S., 1.
- Mexico, "Cerrito", Tepetzotlán area: Mullerried, 1-B.
- Tlaxcala: Blásquez López, L., 1.
- New Mexico: Benjovsky, T. D., 1; Clipping, D. M., 1, 2.
- Oregon, Fort Rock Lake, Lake Co. artifacts and ash falls: Allison, I. S., 1, 3.
- Man, early, age: Allison, I. S., 1.
- Map of mineral deposits: Oreg. Dept. Geol. Min. Indust., 1.
- Washington: Carithers, L. W., 2.
- Pumicite.
- New Mexico, natural light-weight bldg.-block materials: Benjovsky, T. D., 1.
- Texas, N., volcanic sediments: Sidwell, R., 2.
- Washington: Carithers, L. W., 2.
- Pumpellyite, Coast Ranges, Calif.: Switzer, G., 5.
- Punched card identification, ore minerals: Fairbanks, E. E., 3.
- Purite, McAfee quarry, N. J.: Zodac, P., 2.
- Pycnogonida, evolutionary significance: Hedgpeth, J. W., 1.
- Pyrargyrite.
- British Columbia, Highland Bell mine: Staples, A. B., 1, 2.
- California, Alpine Co. collecting: Nichols, J. B., 1.
- Idaho, Clark Fork dist. lead-silver mineralization: Anderson, A. L., 2.
- Pyrite.
- Alaska, Kasaan Penin.: Warner, L. A., 1.
- California, "The Geysers" minerals: Vonsen, M., 1.
- Colorado, Front Range mineral belt: Goddard, E. N., 5.
- Silverton area collecting: Hudson, K., 1.
- Costa Rica, Monte Aguacate mine: Rex, R., 1.
- Geothermometer: Smith, F. G., 3.
- Guatemala, Huehuetenango Dept.: Manó, J. C., 1.
- Idaho, Clark Fork dist. lead-silver mineralization: Anderson, A. L., 2.
- Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
- Snake-Salmon Rivers area: Wagner, W. B., 1.
- Kansas, crystals, locs.: Graffham, A. A., 2.
- Plattsburg ls.: Graffham, A. A., 1.
- Maryland, Campbell quarry minerals: Levey, H., 1.
- Mexico, Maravatio-Zitacuaro dists.: Flores, T., 1.
- Nuevo León: Mullerried, 6.
- Missouri: Brown, J. S., 1.
- Morgan Co.: Mather, W. B., 1.
- Origin of deposits: Herbert, P., Jr., 1.
- Silver Mine area: Kidwell, A. L., 1.
- Nevada, Steamboat Springs: White, D. E., 5.

Pyrite—Continued.

- New Jersey, Sheldon quarry, Rudeville: Zodac, P., 3.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
- Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.
- Oregon, Mount Reuben min. dist.: Youngberg, E. A., 1.
- Pennsylvania, fire clays: Leatham, E., 1.
- Wheatley mines area: Thomas, C. A., 7.
- Preservation of specimens: Gordon, S. G., 1.
- Quebec, Barraute area: Tremblay, L. P., 3.
- United States, min. res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
- Tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
- Utah, Granite Peak area: Ives, R. L., 8.
- Virginia, Louisa Co.: Hickman, R. C., 4.
- West Virginia, Pittsburgh coal seam concretions: Foster, W. D., 1.
- Pyroaurite, Eden Mills quarry, Vt.: Frondel, C., 2.
- Pyrolusite.**
- Costa Rica, Monte Aguacate mine: Rex, R., 1.
- Kansas, Plattsburg ls.: Graffham, A. A., 1.
- New Mexico, Contact manganese mine: Russell, P. L., 1.
- New York, Bedford dist. minerals: Mann, A., 1.
- Utah, Drum Mtn. manganese: King, W. H., 1.
- Pyromorphite.**
- Illinois, S.: Grogan, R. M., 1.
- Pennsylvania, Wheatley mines area: Thomas, C. A., 7.
- Pyrope garnet and red spinel distinction: Anderson, B. W., 1.
- Pyrophyllite.**
- Feldspar, products, lab. alteration: Folk, R. L., 1.
- North Carolina, min. res.: Greaves-Walker, A. F., 1; Murdock, T. G., 1; Stuckey, J. L., 1.
- Pyroxene.**
- California, Los Banos dist.: Daviess, S. N., 1.
- Cell and symmetry: Buerger, M. J., 2.
- Greenland, coast sands, Unartok to Tokulinek: Vroman, J., 1.
- Kaolin, related minerals, structure: Perkins, A. T., 1.
- New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.
- Sheldon quarry, Rudeville minerals: Zodac, P., 3.
- Pyroxenite, Alaska, SE.: Kennedy, G. C., 2.
- Pyrrhotite.**
- Canada, Flin Flon-Mandy area: Stockwell, C. H., 1.
- Greenland ore minerals: Pauly, H., 1.
- Maine, Katahdin area: Miller, R. L., 1.

Pyrrhotite—Continued.

- Manitoba, Tramping Lake area: Stanton, M. S., 1.
- Maryland, Campbell quarry: Levey, H., 1.
- New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.
- Rudeville, Windsor quarry: Zodac, P., 5.
- Sheldon quarry, Rudeville: Zodac, P., 3.
- Newfoundland, Baie Verte-Mings Bight area: Watson, K. D., 1.
- Q-meter for low-frequency reactor measurements: Mitchell, W. R., 1.
- Quantitative interpretation, gravimetric data: Schiffett, H. L., 1.
- Quartz.**
- Alaska, SE.: Shaw, V., 1.
- Alaskite, Capitan Mtn., N. Mex.: Sidwell, R., 3.
- Arkansas, W., crystal deposits: Engel, A. E. J., 1.
- California, Eagle Crags collecting area: Henry, D. J., 2.
- Julian-Cuyamaca area: Creasey, S. C., 1.
- Pine Creek, Adamson mines: Bateman, P. C., 1.
- Sixteen-To-One gold quartz vein: Cooke, H. R., Jr., 1.
- Canada, W., antimony and tellurium minerals: Warren, H. V., 6.
- Colorado, Gold Hill dist.: Myers, R. E., 2.
- Home quad., paramorphs after tridymite: Ray, L. L., 1.
- Connecticut, Branchville pegmatite: Shainin, V. E., 1.
- Costa Rica, Monte Aguacate mine: Rex, R., 1.
- Crystal growth, high temperature-pressure: Friedman, I. I., 1.
- Orientation: Palache, C., 4.
- El Salvador: Basauri, D., 1.
- Grain-shape fabrics, clastic quartz: Rowland, R. A., 1.
- Greenland sands, S. coast, Unartok-Tokulinek: Vroman, J., 1.
- Idaho, Blackbird dist. cobalt deposits: Anderson, A. L., 3.
- Clark Fork dist.: Anderson, A. L., 2.
- Gem minerals: Fernquist, C. O., 1.
- Snake-Salmon Rivers area: Wagner, W. R., 1.
- Iowa, clay minerals in soils: Peterson, J. B., 1.
- Isostructural relationships, $AlPO_4$ and $SiSiO_4$: Gruner, J. W., 4.
- Liquid inclusions, measurement: Ingerson, E., 2.
- Maryland, Campbell quarry: Levey, H., 1.
- Massachusetts, Blueberry Mtn. quarry: Eisenberg, J. M., 1.
- Holland Street quarry, Somerville: Palache, C., 3.
- Mystic quarries, Somerville: Palache, C., 3.
- Mexico, Maravatio-Zitacuaro dists.: Flores, T., 1.
- Neuvo León: Mullerried, 6.

Quartz—Continued.

- Mianus Gorge, Conn.-N. Y.: Brown, S. C., 1.
 Microanalysis, X-ray diffraction: Donnay, J. D. H., 3.
 Missouri, Boulder City area: Patterson, T. A., 1.
 Mineral res.: Keller, W. D., 2.
 Silver Mine area: Kidwell, A. L., 1.
 Montana, Bull Run prospects, Silver Bow Co.: Roby, R. N., 2.
 Moffet-Johnston copper area: Roby, R. N., 1.
 Nebraska, Bayard area: Mitchell, R., 1.
 Nevada, Steamboat Springs minerals: Giannela, V. P., 3.
 New Hampshire, schists, vein inclusions: Chapman, C. A., 3.
 New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.
 Franklin Furnace quad., dikes: Milton, C., 3.
 Hunterdon Plateau Trias.: McLaughlin, D. B., 1.
 Rudeville, Windsor quarry: Zodac, P., 5.
 New York, Bedford dist.: Mann, A., 1.
 Genesee Gorge sediments: Alling, H. L., 1.
 North Carolina, ceramic mineral deposits: Greaves-Walker, A. F., 1.
 Crystals with clay, fluid inclus.: Taber, S., 2.
 Franklin-Sylva dist.: Olson, J. C., 2.
 Raleigh graphite, Wake Co.: Harrington, J. W., 1.
 Northwest Territories, Yellowknife area: Riley, C., 1.
 Ontario, Cochenour Willans gold mine area: Nowlan, J. P., 1.
 Oregon, Eugene area foundry sand: Lowry, W. D., 1.
 Mount Reuben min. dist.: Youngberg, E. A., 1.
 Southwest coast black beach, river sands: Twenhofel, W. H., 2.
 Pennsylvania, Vandergrift min. locs.: Hamilton, H. V., 1.
 Wheatley mines area: Thomas, C. A., 7.
 Silica, solubility: Johnston, W. D., Jr., 2.
 Soda-silica-water system in quartz syntheses: Tuttle, O. F., 2.
 Twinning, Dauphiné, in quartz from sawing: Frondel, C., 1.
 Frequency in crystals: Gault, H. R., 2.
 Secondary Dauphiné, and irradiation coloring: Armstrong, E. J., 1.
 United States, mineral res. map, Nebraska-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Southeast Coastal Plain, Fla.: Coleman, R., 1.
 Tungsten deposits, Va.-N. C.: Espen-shade, G. H., 1.
 Utah, Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Wildcat Mts. fluor spar deposits: Buranek, A. M., 4.

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- Vermont, Derby area plutonites: Maynard, J. E., 2.
 Strafford quad.: Doll, C. G., 1.
 Washington, inclusions with reaction rims: Goodspeed, C. E., 1.
 Olympic Mts. collecting: Danner, T., 1.
 Wyoming, Encampment area collecting: Platt, R. E., 1.
 Quartz diorite, Pine Creek area, Calif.: Bateman, P. C., 1.
 Quartz dolerite, Nûgssuak Penin., Greenland: Münck, S., 2.
 Quartz oscillator plates, anomalous thermal effect: Bottom, V. E., 1.
 Quartzite.
 California, Gorman tin dist.: Wiese, J. H., 1.
 Iron Hat deposits: Lamey, C. A., 1.
 Ramona quad.: Merriam, R. H., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 Colorado: U. S. G. S., 3, no. 10.
 Greenland, Clavering Is., Payer Land: Mittelholzer, A. E., 1.
 Idaho, Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Kansas, Kraft-Prusa oil field: Walters, R. E., 3.
 Michigan, Pine Creek area: Higgins, J. W., 1.
 Montana, Bear Trap corundum deposit: Hopkins, J. B., 1.
 North Carolina, Fontana Dam area: Money-maker, B. C., 2.
 North Dakota, riprap: Truesdell, P. E., 1; U. S. G. S., 3, no. 20.
 Nova Scotia, Yarmouth area: Stuewe, W. L., 1.
 South Dakota, riprap: Truesdell, P. E., 1; U. S. G. S., 3, no. 20.
 United States, Missouri Valley area: U. S. G. S., 3, no. 1.
 Virginia, Lick Mts.: Stose, G. W., 1.
 Washington, Colville batholith: Campbell, C. D., 2.
 Wisconsin, Columbia, Sauk Cos.: Riley, N. A., 1.
 Wyoming, construction materials: U. S. G. S., 3, no. 9.
 Quaternary. See also Glacial geology: Paleontology, Quaternary.
 Alabama, Citronelle fm., SW.: Carlston, C. W., 2.
 Western: U. S. G. S., 1, no. 50.
 Alaska, Adak Island, Aleutians: Coats, R. R., 1.
 Alaska Range: Wahrhaftig, C., 1.
 Aleutian Islands, W.: Coats, R. R., 3.
 Great Sitkin Volcano, Aleutians: Simons, F. S., 1.
 Kanaga Island, Aleutians: Coats, R. R., 2.
 Matanuska Valley coal field: Barnes, F. F., 1.
 Molybdenite deposits: Twenhofel, W. S., 1.

Quaternary—Continued.

Alaska—Continued.

- Pavlov Volcano area, Aleutians: Kennedy, G. C., 5.
 Alberta, Brûlé area: Lang, A. H., 1.
 Canadian Pacific Ry. area: Hutt, G. M., 3.
 Highwood-Elbow dist.: Allan, J. A., 2.
 Wapiti-Cutbank area: Allan, J. A., 1.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 Aravaipa deposit, Graham Co.: Denton, T. C., 3.
 Holbrook area, water fms.: Babcock, H. M., 2.
 Johnny Bull-Silver Knight deposit: Tainter, S. L., 1.
 Paradise Valley: McDonald, H. R., 1.
 Peeples Valley: Babcock, H. M., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Salt River Valley: McDonald, H. R., 2.
 San Manuel copper deposits, Pinal Co.: Chapman, T. L., 1.
 Superstition Mtn. area: Shaw, V., 4.
 Wellton-Mohawk area: Babcock, H. M., 3.
 Wilcox Basin area: Jones, R. S., 1.
 Arkansas, Magnet Cove area: Spencer, R. V., 1.
 Bighorn Basin area: Mackin, J. H., 1; Stow, M. H., 2.
 Blancan, N. Am., Pliocene or Pleistocene?: Stirton, R. A., 1.
 British Columbia, Carbon Creek-Mount Bickford area: Mathews, W. H., 2.
 Kootenay Lake area: Schofield, S. J., 1.
 Northern: Armstrong, J. E., 2.
 Texada Island: Mathews, W. H., 1.
 California, Bakersfield Clock Tower, El Tejon Hotel to Lebec: Hackel, O., 1.
 Caliente Range: Hill, M. L., 2.
 Carpinteria to Gaviota, road log: Simonson, R. R., 1.
 Channel Islands region: Clements, T. D., 2.
 Cymric oil field, Kern Co.: McMasters, J. H., 1.
 Fish distrib. and Pleist. hydrography: Miller, R. R., 1.
 Gaviota to Santa Maria: Hughes, A. W., 1.
 Guide Book Field Trip Mar. 1947, oil fields: A. A. P. G., 1.
 Hirz Mtn. iron deposit: Lamey, C. A., 1.
 Iron Hat deposits: Lamey, C. A., 1.
 Julian-Cuyamaca area: Creasey, S. C., 1.
 Kern River Basin: Webb, R. W., 1.
 Kramer borate dist.: Gale, H. S., 1.
 Lake Cahuilla age: Cockerell, T. D. A., 2.
 Los Angeles Basin: Wissler, S. G., 2.
 Maricopa to Cymric oil field: Woodward, W. T., 1.
 Mayacmas dist. quicksilver deposits: Bailey, C. H., 1; Yates, R. G., 1.
 New Idria quicksilver dist.: Eckel, E. B., 1.
 Oak Ridge oil fields: Baddley, E. R., 1.

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California—Continued.

- Palos Verdes Hills: Woodring, W. P., 1.
 Reef Ridge, Coalinga dist.: Stewart, R. B., 1.
 Ridge Route area: Loel, W., 1.
 San Andreas Rift area: Wallace, R. E., 2.
 San Gabriel Basin, NE. margin: Shelton, J. S., 1; U. S. G. S., 1, no. 68.
 San Miguelito, Padre Canyon, Rincon oil fields: Redwine, L. E., 2.
 Santiago oil pool, Kern Co.: Ledingham, G. W., 1.
 Sierra Nevada-Death Valley section: Hopper, R. H., 1.
 South Sierra Nevada structure: Mayo, E. B., 1.
 Sulphur Bank quicksilver mine: Everhart, D. L., 1.
 Ventura area, Santa Paula, Silver Thread oil fields: Hazzard, J. C., 2.
 Ventura Basin: Bailey, T. L., 2.
 Ventura to Carpinteria: Redwine, L. E., 1.
 Vulcan iron deposit: Lamey, C. A., 1.
 West Cuyama Valley to Maricopa, road log: Hill, M. L., 1.
 West Newport oil field: Corwin, C. H., 1.
 West side San Joaquin Valley, oil-field fms.: Goudkoff, P. P., 1.
 Canada, Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
 Central America, geol. map: Mullerried, 1.
 Petroleum poss.: Woodring, W. P., 2.
 Colorado, Big Sandy Creek: area: McLaughlin, T. G., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Front Range: Wahlstrom, E. E., 2.
 General geology: Vanderwilt, J. W., 5.
 Gramp's oil field: Waldschmidt, W. A., 1.
 Kokomo mining dist.: Koschmann, A. H., 1.
 Coral-reef hypotheses: Stearns, H. T., 2.
 Cuba: Brodermann y Vignier, J., 1.
 Geologic map: Brodermann y Vignier, J., 2.
 Oriente Prov.: Keijzer, F. G., 3; Vletter, D. R., de 1.
 Soils: González, A. de J., 1.
 Florida: Pressler, E. D., 1.
 Western: SE. Geol. Soc., 1.
 Georgia, Coastal Plain, E.-cent.: La Moreaux, P. E., 1.
 Geologic map: MacNeil, F. S., 3.
 Petroleum-gas poss.: Peyton, G., 1.
 Georgia Strait area, British Columbia-Wash.: Mathews, W. H., 4.
 Greenland, East: Rosenkrantz, A., 1; Vischer, G. A., 2.
 Kronprins Christians Land: Nielsen, E., 1.
 Northeast, sands: Ahlmann, H. W., 1; Huebcher, H., 1.

Quaternary—Continued.

Greenland—Continued.

West: Laursen, D., 1; Rosenkrantz, A., 2.

Guatemala, Petén area: Wadell, H. A., 1.

Hawaiian Islands: Stearns, H. T., 1.

Kahuku Point lithified clay: Chapman, R. W., 1.

Molokai Island: Macdonald, G. A., 5; Stearns, H. T., 4, 5.

Idaho, Borah Peak quad.: Ross, C. P., 2.

Geologic map: Ross, C. P., 1.

Last Chance-Hornsilver mines: Anderson, A. L., 5.

Rocky Mts., N., drainage changes: Anderson, A. L., 4.

Snake-Salmon Rivers area: Wagner, W. R., 1.

Sulfur deposits area: Staley, W. W., 2.

Teton Co. coal deposits: Staley, W. W., 1.

Illinois, geol. map: Weller, J. M., 1.

Marine pool, Madison Co.: Lowenstam, H. A., 1.

Iowa, clay minerals in soils: Peterson, J. B., 1.

Kansas, Arkansas River Valley: Williams, C. C., 2.

Central area: Frye, J. C., 6; Taylor, M. H., 1.

Genesee Uplift: Clark, S. K., 1.

Grant Co.: McLaughlin, T. G., 2.

Haskell Co.: McLaughlin, T. G., 2.

High Plains surface: Frye, J. C., 3.

Ogallala fm. silicified rock: Frye, J. C., 4.

Pleistocene deposits: Frye, J. C., 2.

Scott Co.: Waite, H. A., 1.

Stevens Co.: McLaughlin, T. G., 2.

Trego Co.: Byrne, F. E., 1.

Kentucky, Clinton Co. pools: Jillson, W. R., 5.

Gulf Embayment area: Roberts, J. K., 2.

Labrador Peninsula, E.: Tanner, V., 2.

Louisiana, Delhi oil field: Bloomer, P. A., Jr., 1.

Geologic map: Wallace, W. E., Jr., 1.

Monroe area: Jones, P. H., 1.

Maine, clays: Treverton, J. M., 3.

Columbia Falls quad.: Terzaghi, R. D., 1.

Manitoba, McVeigh Lake area: Bateman, J. D., 1.

Maryland, Carroll, Frederick Cos.: Stose,

Mexico, "Cerro", Tepetzotlán area: Mullerried, 1-B.

Conchos Valley, Chihuahua: King, R. E., 2.

El Moral dist: González Reyna, J., 10.

Northern, geol. map: King, P. B., 4.

Nuevo León: Mullerried, 6.

Oaxaca guide book: Barrera, T., 1.

Yaqui Valley, Sonora: Toron Villagas,

L., 2.

Zacatecas: González Reyna, J., 2.

Michigan, high level clays, Port Huron moraines: Bergquist, S. G., 1.

Quaternary—Continued.

Minnesota, NE.: Thiel, G. A., 2; Ver Steeg, K., 3.

Mississippi, Gulf Coast Cenozoic: Murray, G. E., Jr., 1.

Itawamba Co.: Vestal, F. E., 2.

Jackson area: Monroe, W. H., 3; U. S. G. S., 1, no. 65.

Lee Co.: Vestal, F. E., 1.

Tinsley oil field: Schroeder, F. R., 1.

Missouri, Morgan Co.: Mather, W. B., 1.

Montana, Cut Bank-West Kevin oil fields: Erdmann, C. E., 2.

Dam sites, Flathead River: Erdmann, C. E., 3.

Montreal, Canada: Clark, T. H., 1.

Nebraska, Scotts Bluff Co.: Wenzel, L. P., 1.

Nevada, Bristol Range: Wheeler, H. E., 2.

Fish distrib. and Pleist. hydrography: Miller, R. R., 1.

New England, Connecticut Valley floods: Jahns, R. H., 2.

New Hampshire, Plymouth quad.: Moke, C. B., 1.

Mt. Washington quad.: Billings, M. P., 1.

New Jersey, Pensauken fossiliferous pebbles, Princeton area: Howell, B. F., 6.

New Mexico, fluorspar area: Rothrock, H. E., 1.

Future oil poss.: Bates, R. L., 1.

Gallinas dist.: Kelley, V. C., 4.

Gran Quivira quad.: Bates, R. L., 3.

Guadalupe Co.: U. S. G. S., 1, no. 44.

Headstone mining dist.: Benjovsky, T. D., 2.

Joyita Hills, Los Piños Mts., Chupadera Mesa area: U. S. G. S., 1, no. 61.

Las Vegas Basin, Sangre de Cristo foothills: U. S. G. S., 1, no. 54.

Little Hatchet Mts. area: Lasky, S. G., 3.

Lower Rio Puerco area: Wright, C. E., Jr., 1.

Lucero Uplift: U. S. G. S., 1, no. 47.

Mica deposits: Jahns, R. H., 1.

Nacimiento, San Pedro Mts., adjacent plateaus: U. S. G. S., 1, no. 57;

Wood, G. H., Jr., 1.

Quay Co.: Dobrovolny, E., 1; U. S. G. S., 1, no. 62.

Tusas-Tres Piedras area: Butler, A. P., Jr., 1.

New York, Syracuse, Salt Springs Rd.: Maynard, J. E., 1.

North America, Pleistocene: Flint, R. F., 3.

North Carolina, Coastal Plain oil wells: Swain, F. M., 5.

Eastern, marls: Berry, E. W., 3.

Halifax area: Mundorff, M. J., 2.

Jerome Bay, near Bush, M. F., 2.

Neuse River Basin: Mundorff, M. J., 3.

North Dakota, Flora quad.: Branch, J. R., 1.

Quaternary—Continued.

North Dakota—Continued.

Keene Dome, McKenzie Co.: Nevin, C. M., 2.

Nova Scotia, Barasois-Indian Brook area: Douglas, G. V., 4.

Ohio, Butler, Hamilton Cos.: Bernhagen, R. J., 3.

Ground-water fms.: Bernhagen, R. J., 2.

Tuscarawas Co.: Cummins, J. W., 1.

Ontario: Hutt, G. M., 7.

Bancroft area paragneisses: Gummer, W. K., 1.

Jasper conglomerate: Bay, J. W., 1.

Kenogami Lake area: Ontario Dept. Mines, 2.

Mattawan-Olrig area: Harding, W. D., 1.

Orilla area: Deane, R. E., 1.

Parry Sound area: Satterly, J., 1.

Robb-Jamieson area: Berry, L. G., 1.

Rutherglen dist.: Keith, M. L., 1.

Sarnia dist. Pleist.: Legget, R. F., 2.

Sudbury area: Cooke, H. C., 2.

Teck Tp.: Ontario Dept. Mines, 1.

Timagami Lake area: Moorhouse, W. W., 1.

Township 47, Missinaibi area: Bruce, E. L., 3.

Oregon, chromite-bearing sands, S. coast: Griggs, A. B., 1.

Early man, age: Hansen, H. P., 1.

St. Helens quad.: Wilkinson, W. D., 1.

Puerto Rico: McGuinness, C. L., 1.

Quebec, descriptive geology: Dresser, J. A., 1.

Desvaux Lake area: Auger, P. E., 2.

Megantic to Montreal: Hutt, G. M., 2.

Shawinigan area: Laverdière, J. W., 1.

Shipshaw area, Pleist.: Legget, R. F., 1.

Simard map area: Denis, B. T., 1.

Siscoe mine area: Auger, P. E., 1.

Wettnagami River and Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.

Saskatchewan, Cypress Lake area: Furnival, G. M., 1.

Selenium, Pleist., S. Dak.: Searight, W. V., 1.

South Dakota, Missouri Valley: Petsch, B. C., 1.

Texas, Abilene region, stream-bank silts, age: Ray, C. N., 1.

Central: Barnes, V. E., 5, 7.

Comal Co.: George, W. O., 4.

Ellenburger group: Cloud, P. E., Jr., 1.

Glass Mts.-Marathon Basin trip: West Tex. Geol. Soc., 2.

Hockley gypsum mine, Harris Co.: Stenzel, H. B., 2.

Houston Co.: Stenzel, H. B., 1.

Katy gas and oil field: Allison, A. P., 1.

Lovell Lake oil field: Wendler, A. P., 1.

North, volcanic sediments: Sidwell, R. 2.

Reeves Co.: Knowles, D. B., 1.

Rustler Springs sulfur deposits: Evans, G. L., 1.

Quaternary—Continued.

Texas—Continued.

Waller, Harris Cos.: Beckelhymer, R. L., 1.

United States, Atlantic Coastal Plain oil poss.: Richards, H. G., 5.

Colorado drainage basin: Gregory, H. E., 2.

Continental shelf explor. for oil: Lee, F. W., 1.

Gulf Coastal Plain: Murray, G. E., Jr., 1; Price, W. A., 4.

High Plains drainage: Smith, H. T. U., 5.

Mississippi River Valley, lower: Fish, H. N., 1.

Periglacial rock streams, Blue Ridge area: Smith, H. T. U., 2.

Rocky Mtn. area, oil geology: Dobbin, C. E., 2.

Utah, Cedar City, Parowan Valleys: Thomas, H. E., 2.

Duchesne River area: U.S.G.S., 1, no. 75.

Fumarole Buttes, Sevier Desert: Ives, R. L., 20.

Green River Desert-Cataract Canyon area: Baker, A. A., 1; U. S. G. S., 1, no. 55.

Henry Mts. area: Hunt, C. B., 1.

Pavant Range and Valley: Dennis, P. E., 1; Maxey, G. B., 1.

Stansbury Island, Great Salt Lake: Ives, R. L., 7.

White Horse alunite deposits, Marysville: Willard, M. E., 1.

Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.

Zion Nat. Monument: Gregory, H. E., 1.

Washington, Sultan Basin deposits: Carithers, L. W., 1.

Washington, D. C. and vicinity, sed. rocks: Darton, N. H., 1.

Washington-Oregon biostratigraphy: Beck, R. S., 1.

Wyoming, Bargee area, Fremont Co.: U. S. G. S., 1, no. 56.

Hartville iron dist.: Frey, E., 3.

Lander area phosphate deposits: King, R. H., 3.

Wind River Mts.: Baker, C. L., 1.

Quebec.

Descriptive geology: Dresser, J. A., 1.

Economic geology.

Asbestos-fiber explor. by core drilling: Foster, G. K., 1.

Bachelor Lake area: Longley, W. W., 3.

Barraute area: Tremblay, L. P., 3.

Beauchastel Tp., west half: Ambrose, J. W., 1.

Bourlamaque, SW.: Norman, G. W. H., 2.

Desvaux Lake area: Auger, P. E., 2.

Federal lead and zinc mine: Auger, P. E., 3.

Folded fault ore dep., Eastern Tps.: Hawley, J. E., 3.

General: Hutt, G. M., 5.

Geophysics, diamond drilling: Jones, G., 1.

Quebec—Continued.

Economic geology—Continued.

- Lacorne area: Tremblay, L. P., 1, 2.
 Lode gold areas: Cooke, H. C., 1.
 Mining devel., 1944: Ingham, W. N., 1.
 Northeast Bourlamaque area geol. map: Canada G. S., 1.
 Peat deposits: Girard, H., 1.
 Pershing area, Abitibi: Norman, G. W. H., 7.
 Quebec Central Ry. area: Dawson, A. S., 1.
 St. Lawrence, N. shore: Claveau, J., 1.
 Siscoe mine area, Abitibi-East: Auger, P. E., 1.
 Thetford mines, asbestos: Collins, F. W., 1.
 Vauquelin area, Pershing, Haig Tps., Abitibi: Norman, G. W. H., 6, 8.
 Zinc-lead mines, Grenville fm.: Bonham, W. M., 1.

Historical geology.

- Bachelor Lake area: Longley, W. W., 3.
 Barraute area: Tremblay, L. P., 3.
 Beauchastel Tp.: Ambrose, J. W., 1.
 Bourlamaque area, Abitibi Co.: Norman, G. W. H., 1, 2, 3.
 Geologic map: Canada G. S., 1.
 Cambrian stratigraphy: Rasetti, F., 2.
 Castagnier area: Longley, W. W., 2.
 Descriptive geology: Dresser, J. A., 1.
 Desvaux Lake area: Auger, P. E., 2.
 Dubuisson, NE., geol. map: Norman, G. W. H., 4.
 Epigenesis, serpentine belt, E. Tps.: Faessler, C., 3.
 Faults, major, Abitibi region: Norman, G. W. H., 5.
 Federal lead-zinc mine, Gaspé: Auger, P. E., 3.
 Gaspé area: Alcock, F. J., 1.
 General: Hutt, G. M., 5.
 Haig, Abitibi Co. geol. map: Canada G. S., 1.
 Lacorne area: Tremblay, L. P., 1, 2.
 Megantic to Montreal: Hutt, G. M., 2.
 Ottawa-Cornwall area, geol. map: Canada G. S., 1.
 Pershing area, Abitibi: Norman, G. W. H., 7.
 Perthite as age indicator: Faessler, C., 1.
 Quebec Central Ry. area: Dawson, A. S., 1.
 Rouyn-Beauchastel area geol. maps: Wilson, M. E., 1.
 St. Lawrence, N. shore: Claveau, J., 1.
 St. Lawrence Valley, Camb., Ord.: Rasetti, F., 3.
 Shawinigan area: Laverdière, J. W., 1.
 Shipshaw area, Pleist.: Legget, R. F., 1.
 Simard map area, Chicoutimi Co.: Denis, B. T., 1.
 Siscoe mine area: Auger, P. E., 1.
 Tonnancourt-Holmes area: Longley, W. W., 1.
 Vauquelin area: Norman, G. W. H., 6, 8.
 Wetetnagami River and Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.

Quebec—Continued.

Mineralogy.

- Asbestos mine, Thetford: Collins, F. W., 1.
 Chromite, Orford area: Fortier, Y. O., 2.
 Epigenesis, serpentine belt: Faessler, C., 3.
 Federal lead-zinc mine, Gaspé: Auger, P. E., 3.
 Frohbergite: Thompson, R. M., 2.
 Melonite, Montbray mines: Peacock, M. A., 1.
 Mining devels., Abitibi, Temiscamingue Cos. 1944: Ingham, W. N., 1.
 Montbrayite, new gold telluride: Peacock, M. A., 3.
 Oil residuals, Gaspé volcanic rocks: Alcock, F. J., 1.

Paleontology.

- Brachiopoda, Ord. lingulid: Sinclair, G. W., 2.
 Cambrian: Rasetti, F., 2.
 Cheirolepis, Dev. fish: Lehman, J. P., 1.
 Conularids, Ord.: Sinclair, G. W., 6.
 Fauna, Middle Camb.: Rasetti, F., 9.
 Shown by recent landslides: Clark, T. H., 2.
 Peat bed, spores, pollen, Shipshaw area: Radforth, N. W., 2.
 Platystrophia, Trenton: Sinclair, G. W., 4.
 Remopleurides sinclari for R. striatus: Cooper, G. A., 3.
 St. Lawrence Valley, Camb., Ord.: Rasetti, F., 3.
 Scolecodonts, Trenton: Eller, E. R., 1.
 Shipshaw area, Pleist.: Legget, R. F., 1.
 Simard area faunas of lss., shales: McGerrigle, H. W., 1.
 Trilobita, Ord.: Rasetti, F., 8.
 Upper Cambrian, revision: Rasetti, F., 4, 5.

Petrology.

- Camptonite dikes, Sherbrooke dist.: Poitevin, E., 1.
 Canton Carpentier, Abitibi: Tiphane, M., 1.
 Chromite, Orford area: Fortier, Y. O., 2.
 Descriptive petrology: Dresser, J. A., 1.
 Mining development, 1944: Ingham, W. N., 1.
 Perthite as age indicator: Faessler, C., 1.

Physical geology.

- Bachelor Lake area: Longley, W. W., 3.
 Barraute area: Tremblay, L. P., 3.
 Beauchastel Tp.: Ambrose, J. W., 1.
 Bourlamaque area: Norman, G. W. H., 2, 3.
 Camptonite dikes, Sherbrooke dist.: Poitevin, E., 1.
 Castagnier area: Longley, W. W., 2.
 Epigenesis, serpentine belt, E. Tps.: Faessler, C., 3.
 Faults, major, Abitibi region: Norman, G. W. H., 5.
 Folded fault ore dep., E. Tps.: Hawley, J. E., 3.
 Lacorne area, Abitibi: Tremblay, L. P., 1, 2.

Quebec—Continued.

Physical geology—Continued.

Landslides, clays, Saint Louis area: Morin, L. G., 1.

Recent, exposing fossils: Clark, T. H., 2.

Yamaska River area: Laverdière, J. W., 2.

Megantic to Montreal: Hutt, G. M., 2.

Pershing area: Norman, G. W. H., 7.

Shawinigan area: Laverdière, J. W., 1.

Vauquelin area, Abitibi: Norman, G. W. H., 6, 8.

Wettnagami River area: Fairbairn, H. W., 1; Graham, R. B., 1.

Physiographic geology.

Bachelor Lake area: Longley, W. W., 3.

Bourlamaque area: Norman, G. W. H., 3.

Castagnier area: Longley, W. W., 2.

General: Hutt, G. M., 5.

Lacorne area, Abitibi: Tremblay, L. P., 1.

Megantic to Montreal: Hutt, G. M., 2.

Quebec Central Ry. area: Dawson, A. S., 1.

St. Lawrence, N. shore: Claveau, J., 1.

Shawinigan area: Laverdière, J. W., 1.

Shipshaw area Pleist.: Legget, R. F., 1.

Simard area, Chicoutimi Co.: Denis, B. T., 1.

Wettnagami Lake area: Fairbairn, H. W., 1; Graham, R. B., 1.

Queenstone, Idaho: Wetmer, E., 1.

Quicksand.

General: Smith, E. R., 2.

Lifting effect of grain coarseness: Smith, E. R., 1, 3.

Supposed suction effect: Smith, E. R., 4.

Quicksilver.

Alaska, SW. deposits: Webber, B. S., 2.

U. S. Geol. Survey min. invs., 1943-44: Reed, J. C., 1.

British Columbia, Nicola, Kamloops, Yale dists.: Canada G. S., 4.

Northern: Armstrong, J. E., 2.

California, Almaden cinnabar placer: Bailey, E. H., 3.

Maynemas dist.: Bailey, E. H., 1; Yates, R. G., 1.

New Idria dist.: Eckel, E. B., 1.

Sulphur Bank mine, Lake Co.: Everhart, D. L., 1.

Walibu mine, Kern Co.: Bailey, E. H., 2.

Canada, Pinchi Lake belt: Armstrong, J. E., 4.

Western ore prosp.: Irwin, A. B., 1.

Impounding structures control of ore deposits: Mackay, R. A., 1.

Mexico, Chihuahua min. res.: González Reyna, J., 3-a.

Cuarento dist., Durango: Gallagher, D., 1.

Durango, El Cuarenta min. zone: Pérez Siliceo, R., 1, 4.

El Moral dist.: González Reyna, J., 10.

Huitzuco, Guerrero: Hernández Ortiz, D., 1.

Mazapfl deposits: Pérez Siliceo, R., 2.

Quicksilver—Continued.

Mexico—Continued.

Zacatecas, min. res.: González Reyna, J., 2.

Nevada, Steamboat Springs area: Gianella, V. P., 3; White, D. E., 5.

Oregon, Glass Buttes deposit: Reed, G. C., 2.

Horse Heaven mine: Lewis, F. E., 1.

Map of min. deposits: Frederick, F., 1; Oreg. Dept. Geol. Min. Indust., 1.

Pacific Northwest, U. S., min. res.: Appleton, J. B., 1.

Texas, min. res.: Sellards, E. H., 4.

Terlingua deposits: Evans, A. M., 1; Johnson, J. H., 3.

Ultraviolet light prosp.: De Ment, J. A., 9, 10.

United States, min. res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.

Quotation mark, use in science: Eaton, J. E., 1.

Radar in marine oil surveying: Wilson, W. H., 1.

Radioactivity.

California, S., batholith rocks: Larsen, E. S., 2.

Crust of the earth: Alexander, J., 1.

Dolomites, logging by: Mercier, V. J., 1.

Earth's crust: Alexander, J., 1.

Field operation of alternating current equipment: Ives, R. L., 1.

Geiger-Mueller counter tube: Anonymous, 49.

Geiger-Mueller counters applied to mining: Knoerr, A. W., 2.

Gem stones, irradiation by X-ray: Pough, F. H., 1.

Geoexploration: Lundberg, H. T. F., 6.

Great Bear Lake region, radium content of lake water: Senville, F. E., 1.

Lead in tourmaline radioactive?: López de Azcona, J. M., 1.

New Hampshire, Paleozoic magma ser.: Billings, M. P., 3.

North America, Arctic, NW. coasts, radium in ocean-bottom sediments: Sanderman, L. A., 1.

Organic material into oil: Cox, B. B., 1.

Petroleum formation: Anonymous, 21.

Petroleum hydrocarbons, transfm. from organic materials: Mead, W. J., 1.

Radioactivity-prospecting apparatus: Test, M. J., 1.

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Tables of minerals: Hershey, R. L., 1.

Terrestrial dynamics: Willis, B., 2.

United States, well logging on Gulf Coast: Houston G. Soc., 1.

Uranium, Brooklyn Children's Mus. exhibit: Zodac, P., 4.

Hunting with Geiger counter: De Ment, J. A., 12.

Washington, Hood Canal bottom-samples radium content: Wilson, R. E., 1.

Radioactivity—Continued.

- Washington—Continued.
 Skagit Bay submarine cores: Burcham, D. P., 1.
 Well logging by: Jackson, W. J., 1; Mercier, V. J., 2.
 Well-logs interpretation: Kilkenny, J. E., 1.
 Radioactivity and fm. of petroleum: Anonymous, 21.
 Radiocolloid aggregates, uranium minerals: Yagoda, H., 2.
 Radiolaria.
 Cuba, Camagüey dist. fauna: Albear y Franquiz, J. F., de, 1.
 Oriente Prov. faunal, floral lists: Vletter, D. R., de, 1.
 Microfossils, Cret., Vermilion area, Alberta; Nauss, A. W., 1.
 Radium.
 Colorado, metals: Vanderwilt, J. W., 5.
 Northwest Territories; Eldorado mine: Murphy, R., 1.
 Ultramafic rocks: Davis, G. L., 1.
 Rainbow Bridge, Utah: Coon, J. H., 1.
 Raisin City oil field, Calif.: Sloat, J., 2.
 Raleigh waves in a superficial layer: Fu, C. Y., 1.
 Rammelsbergite, crystal structure: Kaiman, S., 1.
 Ramona oil field, Calif.: Matter, J. E., 1; Nelson, L. E., 1.
 Ramsayite, Greenland, analysis: Sahama, T. G., 1.
 Rangely oil field, Colo.: Bass, N. W., 1; Bench, B. M., 1, 2; Bosco, F. N., 1; Newton, S. M., 1, 2; Pickering, W. Y., 1; Thomas, C. R., 1.
 Rare earth elements and compounds: Yost, D. M., 1.
 British Columbia, Red Rose tungsten mine: Stevenson, J. S., 1.
 Rare earth pegmatites, Colo.: Hanley, J. B., 3.
 Rare earths.
 California, neuvite: Murdoch, J., 1.
 United States, occurrence in plants and soils: Robinson, W. O., 1.
 Rare metals: De Ment, J. A., 1.
 Rattlesnake oil and gas field, N. Mex.: Hinson, H. H., 1.
 Reaction, clay minerals, organic cations: Gribb, R. E., 2.
 Realgar, Mercur mining dist., Utah: Young, E. B., 1.
 Recent trends: Rankama, K. K., 4.
 Recheschnoi Volcano, Aleutians, Alaska: Byers, F. M., 1.
 Reconnaissance mapping with trimetrogon: U. S. Army Air Forces, 1.
 Red beds.
 California, Ridge Route area: Loel, W., 1.
 New Mexico, Pecos Valley: Lang, W. T. B., 3.
 New York, Catskill, Kaaterskill quads: Chadwick, G. H., 1.
 United States, S., fms. below Smackover ls.: Hazzard, R. T., 2.

- Red phosphorus, new crystallographic form: Klein, G. E., 1.
 Redox potentials of marine sediments: ZoBell, C. E., 5.
 Reefs or bioherms.
 Arizona, Upper Dev. bioherms: Huddle, J. W., 4.
 California, Gaviota to Santa Maria: Hughes, A. W., 1.
 Colorado, Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Front Range min. belt: Goddard, E. N., 5.
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 Corals as builders of limestone: Johnson, J. H., 5.
 Illinois, Marine pool, Madison Co.: Lowenstam, H. A., 1.
 Mexico, Bolson de Mapimi area: Estlack, J. C., 1.
 New Mexico, future oils poss.: Bates, R. L., 1.
 Northwest Territories, Great Slave Lake area: Bateman, J. D., 2.
 Texas, Upper Camb., Llano Uplift area: Bridge, J., 2.
 Texas-N. Mex., Ogallala fm.: Price, W. A., 1.
 United States, Guadalupe Mts.: West Tex. Geol. Soc., 3.
 Utah, Henry Mts. region: Hunt, C. B., 1.
 Reflection, refraction, plane waves: Fu, C. Y., 1.
 Reflection seismography explor., coastal waters: Christie, N. J., 1.
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Scaphopoda. See also Mollusca.

California, Palos Verdes Hills fauna:

Woodring, W. F., 1.

Scaphopoda—Continued.

- Ctenobranchia, Aspidobranchia, and Scaphopoda, Fla.-Ga.: Gardner, J. A., 1.
 Greenland, East, Kap Hope area faunas: Rosenkrantz, A., 1.
 Invertebrata, Atlantic Coastal Plain, U. S.: Richards, H. G., 3.
 Mississippi, Lee Co. faunas: Vestal, F. E., 1.
 Oklahoma, Bartlesville field trip: Strimple, H. L., 2.
 Oregon, St. Helens quad. faunas: Wilkinson, W. D., 1.
 Trinidad, Miocene Mollusca: Rutsch, R. F., 1.

Scapolite.

- New Jersey, Sheldon quarry, Rudeville: Zodac, P., 3.
 New York, Mt. Adam and Pine Island, Orange Co.: Cosminsky, P. R., 1.
 Ontario, Sudbury area: Bullen, C. S., 1.
 Pennsylvania, Bucks Co. quarry: Weiss, J., 2.

Scarps, geology applied to Imbrian Plain of the moon: Spurr, J. E., 1.

Scenes of geologic interest, Wyo.: Keller, W. D., 4.

Scheelite.

- British Columbia, Red Rose tungsten mine: Stevenson, J. S., 1.
 California, Pine Creek, Adamson mines: Bateman, P. C., 1.
 Colorado, Boulder dist.: Tweto, O. L., 1.
 Fluorescence as applied to minerals: Vanderwilt, J. W., 1.
 Nevada, Osgood Range tungsten deposits: Hobbs, S. W., 1.
 Riley tungsten mine: Holmes, G. H., Jr., 1.
 New Mexico, Iron Mtn. deposits: Storms, W. R., 3.
 Northwest Territories, Ross Lake, poss.: Fortier, Y. O., 3.
 Texas, cent. region collecting: Moore, J. R., III, 1.
 Tungsten: Li, K. C., 1.
 United States, tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.
 Utah, Alta dist.: Crawford, A. L., 1.
 Washington, tungsten res.: Culver, H. E., 1.

Schists.

- Alaska, Prince of Wales Is.: Fosse, E. L., 1; Wright, W. S., 1.
 Southeast, ultrabasic rocks: Kennedy, G. C., 2.
 Spirit Mtn., Copper River area: Pierce, H. C., 1.
 British Columbia, Britannia mines: Irvine, W. T., 1.
 Edey Pass mines, Surf Point: Smith, A., 1.
 California, basement oil production poss.: Cabeen, W. R., 1.

- Blue Ledge mine: Hundhausen, R. J., 2.
 Coast Ranges: Switzer, G., 5.
 Edison oil field: Beach, J. H., 2.
 Gorman tin dist.: Wiese, J. H., 1.

Schists—Continued.

California—Continued.

- Julian-Cuyamaca area: Creasey, S. C., 1.
 Los Angeles Basin oil fields: White, J. L., 1.
 Ramona quad.: Merriam, R. H., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 Georgia, sillimanite deposits: Hudson, W. C., 3.
 Glauconophane facies: Turner, F. J., 2.
 Maine, Columbia Falls quad.: Terzaghi, R. D., 1.
 Swift River Valley: Pratt, E., 1.
 Montana, Bear Trap corundum deposit: Hopkins, J. B., 1.
 New Hampshire, staurolite zones along quartz veins: Chapman, C. A., 3.
 Stoddard fluorine deposit: Bardill, J. D., 1.

North Carolina, Halifax Co.: Robertson, A. F., 2.

Raleigh graphite: Harrington, J. W., 1.
 Spruce Pine dist.: Olson, J. C., 1.

South Carolina, sillimanite deposits: Hudson, W. C., 3.

United States, tungsten deposits, Va.-N. C.: Espenshade, G. H., 1.

Utah, Granite Peak area: Ives, R. L., 8.
 Vermont, Strafford quad., and Tp.: Doll, C. G., 1; Jacobs, E. C., 3.

Washington, Foster Creek Dam site: Schmidt, A. W., 1.

Schreibersite, meteoritic mineral: Neuerburg, G. J., 1.

Science and natural resources: Wrather, W. E., 5.

Science legislation and geology: Croneis, C. G., 1.

Scientific methods, econ. paleontology, progress: Elias, M. K., 5.

Scientists, living, Indiana: Zabel, H. E., 1.

Selection and training: Brandwein, P. F., 1.

Scolecodonts.

- North America, Trenton: Eller, E. R., 1.
 Ontario, Kagawong (Ord.), Manitoulin Island: Eller, E. R., 2.

Search for concealed deposits: Lasky, S. G., 2.
 Searlsite, Green River fm., Wyo.: Fahey, J. J., 2.

Sedimentary petrography and oil invs.: Griffiths, J. C., 1.

Sedimentary petrology literature, origin: Emery, K. O., 4.

Sedimentary rocks. See also Petrology; Sedimentation.

Adirondackia, vanishing: Chadwick, G. H., 5.

Agattu, Aleutian Islands, Alaska: Sharp, R. P., 1.

Alabama, Citronelle fm.: Carlston, C. W., 2.

Lookout Mtn., coal partings in stylolite seams: Schaub, B. M., 4.

Pre-Selma fms.: Eargle, D. H., 1; Monroe, W. H., 2; U. S. G. S., 1, no. 50.

Sedimentary Rocks—Continued.

Alabama—Continued.

Tuscaloosa area, highway profiles:
Eagle, D. H., 3; U.S.G.S., 2, no. 3L

Alaska: Bruet, E., 1.

Adak Island, Aleutians: Coats, R. R., 1.
Argentiferous lead-copper deposits, Slana
dist.: Thorne, R. L., 1.

Chromite, Red Mtn., Kanai Penin.: Rut-
ledge, F. A., 1.

Copper deposits, Kotsina-Kuskulana dist.:
Van Alstine, R. E., 1.

Funter Bay, Admiralty Is. deposits:
Holt, S. P., 2.

Great Sitkin Volcano, Aleutians: Simons,
F. S., 1.

Iniskin-Chinitna Penin.: Kellum, L.
B., 2.

Kanaga Is., Aleutians: Coats, R. R., 2.
Kasaan Penin. ore deposits: Warner,
L. A., 1.

Lost River tin deposit, Seward Penin.:
Heide, H. E., 1.

Matanuska Valley coal field: Barnes, F.
F., 1.

Mount Eielson zinc-lead deposits: Muir,
N. M., 3.

Nenana coal field, Healy Creek: Mar-
strander, H. J. K., 1.

Nizina dist. deposits: Miller, D. J., 1.
Prince of Wales Island: Wright, W.
S., 1.

Southeast, molybdenite deposits: Twen-
hofel, W. S., 1.

Southwest quicksilver deposits: Webber,
B. S., 2.

Spirit Mtn. Copper River area: Pierce,
H. C., 1.

Ultrabasic rocks, SE.: Kennedy, G. C., 2.
Umnak Island, Aleutians: Byers, F.
M., Jr., 1.

Alberta, Brûlé area: Lang, A. H., 1.

Callum Creek area: Douglas, R. J. W., 1.

Cripple Creek area: Erdman, O. A., 1.
Edmonton fm. Red Deer Valley: Stern-
berg, C. M., 2.

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

Foothills, Athabaska-Ram Rivers: Mc-
Kay, B. R., 2.

Gregg Lake area: Irish, E. J. W., 1.

Highwood-Elbow area: Allan, J. A., 2.

Rocky Mtn. fm., Banff area: Warren,
P. S., 3.

Wapiti-Cutbank area: Allan, J. A., 1.

Allogenic grade size and frequency in sedi-
ments: Allen, P., 1.

Aluminum in rock-forming silicates:
Thompson, J. B., Jr., 1.

Arizona, Ajo mining dist.: Gilluly, J., 1.

Aravaipa deposit, Graham Co.: Denton,
T. C., 3.

Bagdad area: Anderson, C. A., 1.

Cactus Flat-Artesia area: Halpenny, L.
C., 2.

Castle Dome copper deposit: Peterson,
N. P., 1.

Sedimentary Rocks—Continued.

Arizona—Continued.

Central, Dev., Missn.: Huddle, J. W., 3.

Copper Butte Mine, Mineral Creek dist.:
Phelps, H. D., 1.

Dragoon Mts.: Cederstrom, D. J., 2.

Grand Canyon, Cambrian: McKee, E.
D., 1.

Mohawk zinc prosp.: Haury, P. S., 1.

New Planet mine, Yuma Co.: Cummings,
J. B., 2.

Paradise Valley: McDonald, H. R., 1.

Peoples Valley: Babcock, H. M., 1.

Pinal Creek-Globe area: Hazen, G. E., 1.

Safford Basin: Turner, S. F., 2.

Salt River Valley: McDonald, H. R., 2.

Santa Cruz Basin: Turner, S. F., 1.

Sullivan mine, Cochise Co.: Kumke, C.
A., 1.

Wellton-Mohawk area: Babcock, H. M.,
3.

West Kaibab Plateau: Strahler, A. N., 3.

Western, Paleozoic seaways: McKee, E.
D., 3.

Wilcox Basin: Jones, R. S., 1.

Arkansas, Hot Spring Co., Magnet Cove:
McElwaine, R. B., 1; Spencer, R. V., 1.

Montgomery Co. barite deposits: Mc-
Elwaine, R. B., 2.

Bighorn Basin, Mont.-Wyo.: Stow, M.
H., 2.

British Columbia: Hutt, G. M., 6.

Alcan Highway Paleozoics: Laudon, L.
R., 2.

Ashcroft area: Duffell, S., 1, 2.

Britannia mines No. 8 ore bodies: Irvine,
W. T., 1.

Cariboo dist.: Holland, S. S., 1.

Coast Range batholith: Phemister, T.
C., 1.

Lucky Jim mine area: Hedley, M. S., 2.

McConnell Creek area: Lord, C. S., 1.

Manson Creek, Cassiar dist.: Canada
G. S., 1.

Nanaimo coal field: Buckham, A. F., 1.

Nicola, Kamloops and Yale dist.: Can-
ada G. S., 1.

Northern: Armstrong, J. E., 2.

Princeton area, Yale, Kamloops, Similk-
ameen, Osoyoos dist.: Canada G. S., 1.

Salmon Arm area: Rice, H. M. A., 1.

South half, Aiken Lake area: Armstrong,
J. E., 1.

Surf Point, Edye Pass mines: Smith,
A., 1.

Texada Island: Mathews, W. H., 1.

Whitewater, Lucky Jim mine areas:
Hedley, M. S., 1.

California, Bessemer iron deposits: Wie-
belt, F. J., 1.

Caliente Range: Hill, M. L., 2.

Carpinteria to Gaviota, road log: Simon-
son, R. R., 1.

Coles Levee deep well: Taliaferro, N.
L., 1.

Del Valle, Ramona oil fields: Matter,
J. E., 1.

Sedimentary Rocks—Continued.

California—Continued.

- Edison oil field: Beach, J. H., 2.
 Gaviota to Santa Maria: Hughes, A. W., 1.
 Gorman tin dist.: Wiese, J. H., 1.
 Great Valley: Ferguson, G. S., 3.
 Guide Book Field trip Mar. 1947, oil fields: A. A. P. G., 1.
 Hirtz Mtn. iron deposit: Lamey, C. A., 1.
 Inyo Range, Bishop quad.: Maxson, J. H., 2.
 Iron Hat deposits: Lamey, C. A., 1.
 Ivanpah quad.: Hewett, D. F., 1.
 Kern River Basin: Webb, R. W., 1.
 Kramer borate dist.: Gale, H. S., 1.
 Los Angeles Basin: Driver, H. L., 1; Wissler, S. G., 2.
 Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Los Banos dist. ss.: Daviess, S. N., 1.
 Maricopa to Cymric oil field: Woodward, W. T., 1.
 Mayacmas quicksilver dist.: Bailey, E. H., 1; Yates, R. G., 1.
 Monterey fm.: Bramlette, M. N., 1.
 New Idria quicksilver dist.: Eckel, E. B., 1.
 Newhall-Potrero oil field: Lee, A. T., 1.
 North Elder Creek chromite area: Ryner, G. A., 1.
 Oxnard oil field: Hazzard, J. C., 3.
 Palos Verdes Hills: Woodring, W. P., 1.
 Petroleum accumulation setting: Hoots, H. W., 2.
 Pico anticline: Arleth, K., 1.
 Reef Ridge, Coalina dist.: Stewart, R. B., 1.
 Repetto fm. pseudo-shoreline: Natland, M. L., 2.
 Ridge Route area: Leal, W., 1.
 San Gabriel Basin: Shelton, J. S., 1.
 San Juan Bautista quad.: Allen, J. E., 3.
 Santa Maria dist.: Hughes, A. W., 3.
 Santa Maria to W. end of Cuyama Valley: Hughes, A. W., 2.
 Santa Rosa Mts. area: Wright, L. B., 1.
 Shasta, California deposits: Lamey, C. A., 1.
 Shasta Dam, Sacramento River: Gardner, W. I., 1.
 Sierra Nevada-Death Valley sec.: Hopper, R. H., 1.
 Sixteen-To-One gold-quartz vein, Allachany: Cooke, H. R., Jr., 1.
 Submarine Geology, S. coast: Emery, K. O., 5.
 Sulphur Bank quicksilver mine, Lake Co.: Everhart, D. L., 1.
 Ventura area, Santa Paula, Silver Thread oil fields: Hazzard, J. C., 2.
 Ventura Basin: Bailey, T. L., 2.
 Ventura to Carpinteria: Redwine, L. E., 1.
 Vulcan iron deposit: Lamey, C. A., 1.

Sedimentary Rocks—Continued.

California—Continued.

- West Cuyama Valley to Maricopa: Hill, M. L., 1.
 West Newport oil and gas field: Dunlap, W. E., 2.
 Canada, Capsisit Lake area: Gilbert, J. E., 1.
 Keith Tp. devels.: Hogg, N., 2.
 Kirkland Lake area: Hopkins, H., 1.
 Lode gold areas: Cooke, H. C., 1.
 Montreal to Port Arthur: Hutt, G. M., 1.
 Ottawa-Cornwall area: Canada G. S., 1.
 Ottawa-St. Lawrence Lowland: Wilson, A. E., 4.
 Rocky Mts.: Williams, M. Y., 2.
 Western, limestones: Goudge, M. F., 1.
 Central America, oil poss.: Woodring, W. P., 2.
 Classification: Shrock, R. R., 7.
 Coal partings in stylolite seams, Lookout Mtn., Ala.: Shaub, B. M., 4.
 Colorado, Alma, Horseshoe dists., lode deposits: Singewald, Q. D., 1.
 Big Four zinc-silver mine, Summit Co.: McCullough, R. B., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Cañon City area: Blum, V. J., 1.
 Climax mine, Lake Co.: Vanderwilt, J. W., 3.
 Coal Creek dist.: Toenges, A. L., 2.
 Cripple Creek dist.: Koschmann, A. H., 4.
 Front Range: Goddard, E. N., 5; Wahlstrom, E. E., 2.
 General geology: Vanderwilt, J. W., 5.
 Golden-Morrison area: LeRoy, L. W., 1.
 Gramp's oil field: Waldschmidt, W. A., 1.
 Iron Springs mining dist.: Koschmann, A. H., 3.
 Jewell Tunnel mine: Ames, E. W., 1.
 Kokomo mining dist.: Koschmann, A. H., 1, 3.
 La Plata dist.: Eckel, E. B., 2.
 Laramie fm., Golden area: Moody, J. D., 1.
 Leadville mining dist.: Loughlin, G. F., 1.
 Mineral Point-Poughkeepsie-Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
 Model anticline, Las Animas Co.: Bass, N. W., 3; U. S. G. S., 1, no. 68.
 Mt. Wilson dist.: Varnes, D. J., 5.
 Rangely oil and gas field: Bench, B. M., 1; U. S. G. S., 1, no. 67.
 San Juan mining dist.: Burbank, W. S., 6, 7.
 Silverton volcanic center dist.: Burbank, W. S., 9.
 Uncompahgre mining dist., Ouray Co.: Burbank, W. S., 8.
 Upper Blue River area: Singewald, Q. D., 3.
 Upper Montana group, Golden area: Moody, J. D., 2.

Sedimentary Rocks—Continued.

Colorado—Continued.

Vanadium deposits: Fischer, R. P., 3, 4; Huleatt, W. P., 1.

Conglomerates, environmental significance: Twenhofel, W. H., 5.

Correlations by fossil spores, pollen: Wilson, L. R., 3.

Cross-section, subsurface, Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.

Cuba: Brodermann y Vignier, J., 1; Thayer, T. P., 2.

Camagüey Prov.: Albear y Franquiz, J. F., de, 1; Hermes, J. J., 1; Wessem, A., 1.

Moa chromite dist.: Guild, P. W., 1.

Oriente Prov.: Guild, P. W., 1; Hermes, J. J., 1; Vletter, D. R., de, 1.

Origin "Colorado" or red beds: González, A. de J., 2.

Soils: González, A. de J., 1.

Diastrophism and evolution: Krynine, P. D., 2.

Florida, geology, oil occurrence: Pressler, E. D., 1.

Western: SE. Geol. Soc., 1.

Georgia, Coastal Plain, E.-cent.: La Moreaux, P. E., 1.

Murray Co.: Fucron, A. S., 1.

Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.

Greenland, East: Büttler, H., 1; Kleiber, K., 1; Rosenkrantz, A., 1; Stauber, H., 2; Vischer, G. A., 2.

Jamesonland lowlands: Stauber, H., 1.

Kronprins Christian Land: Nielsen, E., 1.

Northeast: Ahlmann, H. W., 1; Bierther, W., 1; Hübscher, H., 1; Rothé, J. P., 1.

Scoresbyland, Scoresby Sound area: Bierther, W., 1; Rothé, J. P., 1.

Thule dist.: Munck, S., 1.

West Nûgssuak Penin.: Munck, S., 2.

West Svartenhuk Penin.: Rosenkrantz, A., 2.

Guatemala, Huehuetenango Dept.: Manó, J. C., 1.

Petén area: Wadell, H. A., 1.

Quiché, Alta, Baja Verapaz Depts.: Manó, J. C., 2.

Haiti, manganese deposits: Goddard, E. N., 2, 3, 4.

Materials for Portland cement plant: López, V. M., 1.

Hawaii, Island of Molokai: Macdonald, G. A., 5; Stearns, H. T., 4, 5.

Idaho, Blackbird cobalt deposits: Anderson, A. L., 3; Reed, G. C., 3.

Borah Peak quad.: Ross, C. P., 2.

Clark Fork lead-zinc dist.: Lorain, S. H., 1.

Georgetown area, Perm. Phosphoria fm.: Deiss, C. F., 2.

Gold deposits: Staley, W. W., 3.

Last Chance-Hornsilver mines: Anderson, A. L., 5.

Sedimentary Rocks—Continued.

Idaho—Continued.

Little Pittsburg lead-zinc mine: Herdlick, J. A., 1.

Orofino area: Johnson, C. H., 1.

Palisades Dam site: Harshman, E. N., 1; Mielenz, R. C., 3.

Snake River Valley structure: Perkins, B., 1.

Snake-Salmon Rivers area: Wagner, W. R., 1.

Sulfur deposits area: Staley, W. W., 2.

Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.

Illinois, Cherry Valley area: Smith, V. R., 1.

Coal field diamond-drill explor.: Cady, G. H., 1.

Jo Daviess Co. lead-zinc deposits: Zinner, P., 1.

King oil field: Folk, S. H., 1.

Marine pool: Lowenstam, H. A., 1.

Pope Co. fluorite, zinc mines: Bishop, O. M., 1.

Indiana, Buddha outlier: Malott, C. A., 2.

Deep oil wells, E.: Bieberman, D. F., 1.

Indiana State Parks: Freeman, O. W., 1.

Iron ore devel. from silicated iron fm.: Tyler, S. A., 1.

Kansas, Barton Co. buried hills: Walters, R. F., 1.

Belvidere area, Cret.: Latta, B. F., 1.

Kraft-Prusa oil field: Walters, R. F., 3.

Viola fm. zones: Ver Wiebe, W. A., 4.

Kentucky, Eva Tanguay mines: Starnes, X. B., 3.

Gulf Embayment area: Roberts, J. K., 2.

Hickory Cane, K-K fluorspar prosp.: Hickman, R. C., 1.

J. D. Price fluorite deposits: Starnes, X. B., 4.

Krausse Estate prosp.: Starnes, X. B., 2.

Mineral Ridge-Clay Lick fault fluorite deposits: Muir, N. M., 1.

Moore Hill fluorite: Starnes, X. B., 1.

Labrador Peninsula, E. area: Tanner, V., 2.

Limestone, deposition environments: Sloss, L. L., 5.

Louisiana, Delhi field: Bloomer, P. A., Jr., 1.

Geologic map: Wallace, W. R., Jr., 1.

Maine, Columbia Falls quad.: Terzaghi, R. D., 1.

Katahdin pyrrhotite deposit: Miller, R. L., 1.

Swift River Valley: Pratt, E., 1.

Manitoba, Barrington Lake area: Minton, M. C., 2.

Geologic map: Canada G. S., 1.

Lynn Lake area: Allan, J. D., 1.

McVeigh Lake area: Bateman, J. D., 1.

Morton Lake area: Harrison, J. M., 2.

Prospecting areas: de Wet, J. P., 1.

Sherridon area: Canada G. S., 1.

Snow Lake, Nor-Acme mine areas: Harrison, J. M., 1.

Sedimentary Rocks—Continued.

Manitoba—Continued.

Tramping Lake, N. part: Stanton, M. S., 1.

Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.

Mexico: Waitz, P., 1.

Altar dist., Sonora: Arellano, A. R. V., 2.

Año Nuevo coal mine: Cantero Pérez, E., 1.

Antimony deposits: González Reyna, J., 9; Guiza, R., Jr., 1; White, D. E., 1, 2.

Caborca area, NW. Sonora: Cooper, G. A., 1.

Chert lenses, origin, Soyatal: White, D. E., 3.

Chihuahua min. res.: González Reyna, J., 3-a.

Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.

Cuarento dist., Durango: Gallagher, D., 1.

El Cuarenta min. zone, Durango: Pérez Siliceo, R., 1, 4.

El Moral dist.: González Reyna, J., 10.

Estado Michoacán, N.: Blásquez López, L., 4.

Geologic map, N. part: King, P. B., 4.

Iron deposits, N. group: Toron Villegas, L., 1.

Isla Margarita, Baja Calif.: González Reyna, J., 4.

Lower Conchos Valley, Chihuahua: King, R. E., 2.

Maravatio-Zitacuaro dists.: Flores, T., 1.

Nuevo León: Mullerried, 6.

Oaxaca guide book: Barrera, T., 1.

Origin, lenses in ls., Soyatal: White, D. E., 3.

Parícutin Volcano area: Pérez Peña, A., 1.

Placera, Guadalupe, Puerto del Aire, Chihuahua: González Reyna, J., 3.

Quicksilver deposits: Pérez Siliceo, R., 2.

Sierra de la Peña area: Alvarez, M., Jr., 1.

Tlaxcala: Blásquez López, L., 1.

Unique min. zone, Chihuahua: González Reyna, J., 7.

Yaqui Valley, Sonora: Toron Villegas, L., 2.

Yucatan Penin. area: Shrock, R. R., 4.

Zacatecas, min. res.: González Reyna, J., 2.

Michigan, Crystal Falls-Alpha iron dist.:

Pettijohn, F. J., 1.

Ice Lake-Chicago Creek area: James, H. L., 2.

Mineral res.: Zuidema, H. P., 2.

Pine Creek area: Higgins, J. W., 1.

Southeast, well cores: Cohee, G. V., 1.

Traverse group, Afton-Onaway area: Kelly, W. A., 1.

Michigan Basin, Traverse group: Cohee, G. V., 2; U. S. G. S., 2, no. 28.

Mineral deposits, magmatic origin: Guimarães, D., 1.

Sedimentary Rocks—Continued.

Minnesota, Mesabi range: Jones, R. H. B., 1.

Northeast: Thiel, G. A., 2.

Shore, Lake Superior, NE. of Two Harbors: Grogan, R. M., 2.

Mississippi, Jackson area: Monroe, W. H., 3; U. S. G. S., 1, no. 65.

Missouri, Gulf Coastal Plain in SE.: Grohskopf, J. G., 2.

Morgan Co.: Mather, W. B., 1.

Phelps lease, Jasper Co.: Brichta, L. C., 1.

Post-Cambrian ig. activity: Kidwell, A. L., 7.

Ste. Genevieve, St. Francis Cos.: Kidwell, A. L., 6.

Montana, Bearpaw Mts. area: Reeves, F., 2.

Big Belt Range, N.: Lyons, J. B., 1.

Cat Creek oil field: Perry, E. S., 2.

Central and NW., Devonian: Sloss, L. L., 4.

Choteau titaniferous magnetite deposit: Wimmeler, N. L., 2.

Chromite, Red Lodge area: James, H. L., 1.

Great Plains, distrib.: Perry, E. S., 1.

Kevin-Sunburst, Cut Bank oil fields: U. S. G. S., 8.

Moffet-Johnston copper area: Roby, R. N., 1.

Petroleum geology: Emrick, E. R., 1.

Plains, structure contour map: Dobbin, C. E., 3.

Queen Mary copper project, Missoula Co.: Brinton, W. H., 1.

South-central, Paleozoic, Mesozoic rocks: Gardner, L. S., 1.

Montreal, Canada: Clark, T. H., 1.

Mud cracks, subaqueous, formed by settling: Flower, R. H., 1.

Nebraska, Box Butte Co.: Gady, R. C., 1.

Neocalamites, Colo., Trias.: Holt, E. L., 1.

Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. H., 1.

Osgood Range tungsten deposits: Hobbs, S. W., 1.

Rio Grande deposit: Matson, E. J., 2.

South, Aztec ss. bleaching: Longwell, C. R., 5.

Valery mine: Kral, V. E., 4.

New Brunswick: Hutt, G. M., 4.

Honeydale area: Alcock, F. J., 3.

St. Stephen area, Charlotte Co.: Alcock, F. J., 3.

Sussex, Kings and Queens Cos.: Canada

G. S., 1.

New England, Keene-Brattleboro area: Moore, G. E., 1.

NCW Hampshire, Mt. Washington quad.: Billings, M. P., 1.

Plymouth quad.: Moke, C. B., 1.

New Hampshire-Vermont, Bellows Falls quad.: Kruger, F. C., 1.

New Jersey, Hunterdon Plateau Trias.: McLaughlin, D. B., 1.

Sedimentary Rocks—Continued.

- New Mexico, Capitan Mts., sediments from alaskite: Sidwell, R., 3.
 Capitan quad.: Sidwell, R., 1.
 Fluorspar area: Rothrock, H. E., 1.
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 Arizona, Wilcox Basin: Jones, R. S., 1.
 British Columbia: Hutt, G. M., 6.
 Alcan Highway Paleozoic sed. rocks: Laudon, L. R., 2.
 Nanaimo coal field: Buckham, A. F., 1.
 California, Coast, S., wave erosion: Shepard, F. P., 3.
 Ocean-wave refraction and beach erosion: Munk, W. H., 1.

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- Repetto fm., pseudo-shore line: Natland, M. L., 2.
 Canada, Arctic, Victor Island area: Washburn, A. L., 1.
 Montreal to Port Arthur: Hutt, G. M., 1.
 Coasts, waves, weather: Stewart, J. Q., 1.
 Greenland, sands, S. coast: Vroman, J., 1.
 Southeast and south: Boegvad, R., 1.
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 Lake Bonneville, Utah: Ives, R. L., 17; Relyea, G. M., 1.
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 Michigan, Oakland Co.: Bingham, M. T., 1.
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 East, Clinton sand deposition: Swain, J. F., 1.
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 Utah, Cedar Mts., Moroni's Postpile: Ives, R. L., 14.
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 Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Pavant Range: Maxey, G. B., 1.
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Stansbury Island, Great Salt Lake: Ives, R. L., 7.

Shot-point procedure: Williams, F. J., 1.

Siderite.

Connecticut, differential thermal analysis: Kerr, P. F., 3.

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British Columbia, Highland-Bell mine ores: Staples, A. B., 2.

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Ohio, Sharon conglomerate: Fuller, J. O., 1.

Transportation, deposition: Johnston, W. D., Jr., 2.

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West Nûgssuak Penin.: Munck, S., 2.

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Geologic map: Ross, C. P., 1.

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King oil field: Folk, S. H., 1.

Marine oil pool: Lowenstam, H. A., 1.

Indiana, E., deep oil wells: Bieberman, D. F., 1.

Kansas, central area: Taylor, M. H., 1.

Labrador Penin., E. area: Tanner, V., 2.

Maine, Columbia Falls quad.: Terzaghi, R. D., 1.

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 Manitoba, geol. map: Canada G. S., 1.
 Prospecting areas: de Wet, J. P., 1.
 Michigan, Mackinac Island: Stanley, G. M., 1.
 Mineral res.: Zuidema, H. P., 2.
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 Southeast, well-cores: Cohee, G. V., 1.
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 Montreal, Canada: Clark, T. H., 1.
 New Brunswick: Hutt, G. M., 4.
 Honeydale area: Alcock, F. J., 3.
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 Sussex, Kings and Queens Cos.: Canada G. S., 1.
 New Hampshire, Monadnock area: Billings, K. S. F. L., 1.
 Mt. Washington quad.: Billings, M. P., 1.
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 Tuscarawas Co.: Cummins, J. W., 1.
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 Cumberland oil field: Cram, I. H., 1.
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 Northeast: Moore, C. A., 3.
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 West Edmond oil field: McGee, D. A., 1.
 Ontario, Caledonia gypsum mine: McLaren, D. C., 6.

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- Geologic map: Ontario Dept. Mines, 3.
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 Southwest, value of seismic prosp.: Hodgson, J. H., 2.
 Timiskaming silver-cobalt area: Reid, J. A., 1.
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 Shawinigan area: Laverdière, J. W., 1.
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 Texas, Keystone field, Winkler Co.: Mygdal, K. A., 1.
 Petroleum, gas occurrence: Sellards, E. H., 3.
 Pre-Permian fms., oil devel.: Barton, J. M., 1; Deegan, C. J., 1.
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 Gorman tin dist.: Wiese, J. H., 1.
 Canada, E., Kirkland-Val d'Or area: Norman, G. W. H., 10.
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 Western, tellurides: Warren, H. V., 2.
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 Big Four mine, Summit Co.: McCulloch, R. B., 1.
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 Kokomo mining dist.: Koschmann, A. H., 1.
 Lake City area: Burbank, W. S., 13.
 La Plata dist.: Eckel, E. B., 2.
 Leadville mining dist.: Lake Co.: Loughlin, G. F., 1.
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 Southern, telluride dist.: Varnes, D. J., 3.
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 Michigan, N., mineral collecting: Luoma, W. E., 1.
 Montana, metallic min. deposits: Chace, F. M., 1; U. S. G. S., 3, no. 16.
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 New Mexico, Atwood copper group: Huntington, M. G., 1.
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 Little Hatchet Mts. area: Lasky, S. G., 3.
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 British Columbia, Kamloops area, erosion: Cockfield, W. E., 1.
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 Kansas, Kraft-Prusa oil field: Walters, R. F., 3.
 Mexico, Terán area subsidence, Aug. 1944: Mullerried, 2.
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 Ontario, Lake Shore mines, rock bursts: Robson, W. T., 1.
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- Classification, identification: Casagrande, A., 1.
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- Piedmont manganese belt: Beck, W. A., 1.
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- Geology of the Carolinas: Taber, S., 1.

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- Iodine, sources, distrib. in soil and rocks: Mitchell, J. H., 1.

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- Carolina Bays, origin: Alexander, K. C., 1;
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 Riprap materials: Truesdell, P. E., 1;
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- Selenium, Pleist. deposits: Searight, W. V., 1.

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- Riley tungsten mine, Humboldt Co.: Holmes, G. H., Jr., 1.
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- Washington, Buckhorn Mtn. dist.: Zoldok, S. W., 1.
- Taenite, exclusively meteoric mineral: Neuburg, G. J., 1.

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- Alaska, Nelson Is. collecting: Waskey, F. H., 1.
- El Salvador: Basauri, D., 1.
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- Mexico, Nuevo León: Mullerried, 6.
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- New York, Gouverneur dist.: Engel, A. E. J., 4.
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- Roofing materials: Murdock, T. G., 1.
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- Talus, Dominican Republic, central Cordillera: Weyl, R., 2.

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- Colorado pegmatites: Hanley, J. B., 3.
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- Aerial photos. in struc. mapping, sed. fms.: Nugent, L. E., Jr., 2.

- Aerial photos., study with homemade stereoscopes: Willard, B., 9.

- Aerial photography, war devel. in: Nugent, L. E., Jr., 1.

- Aerial surveying: Wengerd, S. A., 1.

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- Age ratio of sediments, measurement: Beers, R. F., 2.

- Air reconnaissance by magnetometer: Weed, M., 1.

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- Beryllium determination in ores: Stevens, R. E., 1.
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- Calculations from diamond-drill sampling: Greenhalgh, C. W., 1.
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- Carbonaceous sediments, thermal inv.: Tripp, R. M., 2.
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- Clay discs, exper. invs.: Williamson, W. O., 1.
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- Hawaiian soils: Dean, L. A., 1.
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- Flow structure models from field data: Lowe, K. E., 2.
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Vein deposits: Jewell, W. B., 1.

Historical geology.

Cades Cove, Great Smoky Mts. Nat. Park: Neuman, R. B., 1.

Chamberlain-Barnardville iron deposits: McMaster, P. D., 1.

Channels, channel-filling, Richmond age: Wilson, C. W., Jr., 1.

Chattanooga shale type area: Hass, W. H., 3.

Clarksburg kaolin area: Whitlatch, G. I., 1.

Ducktown copper area: Barclay, R. E., 1.

Eve Mills zinc area: Dunlap, J. C., 1.

Longview mbr., Kingsport fm., Knox Co.: Allen, A. T., Jr., 1.

Mascot-Jefferson City zinc dist.: Bridge, J., 1.

Ordovician, Lower-Middle, NE.: Prouty, C. E., 1.

Ordovician and Upper Cambrian, central: Bentall, R., 1.

Ore bodies, Jefferson City area, structural control: Brokaw, A. L., 1.

Stones River rocks: Collins, J. B., 1.

Mineralogy.

Barite: Jewell, W. B., 1.

Copper, Ducktown area: Barclay, R. E., 1.

Fluorite: Jewell, W. B., 1.

Galena: Jewell, W. B., 1.

Iron ores: McMaster, P. D., 1; Warner, A. H., 1.

Kaolin area, Carroll Co.: Whitlatch, G. I., 1.

Sphalerite: Jewell, W. B., 1.

TVA reservoirs, invs.: Moneymaker, B. C., 7.

Zinc deposits: Black, W., 1; Bridge, J., 1; Dunlap, J. C., 1; Sayre, R. L., 1.

Paleontology.

Conodonts: Branson, E. B., 8; Hass, W. H., 3.

Cryptozoon, Ord. bioherms: Brill, K. G., Jr., 1.

Neuman, R. B., 1, 2.

Ordovician, Lower-Middle, NE.: Prouty, C. E., 1.

Graptolites, Camb.: Decker, C. E., 5.

Petrology.

Dolomites, Camb.-Ord. facies: Prouty, C. E., 2.

Hales Bar Dam foundation: Frink, J. W., 1.

Kaolin area, Carroll Co.: Whitlatch, G. I., 1.

Tennessee—Continued.

Petrology—Continued.

Monroe Co. zinc area: Dunlap, J. C., 1. Stones River rocks, NE. cent.: Collins, J. B., 1.

Physical geology.

Blowing caves, E.: Moneymaker, B. C., 1. Cave fms., Sewanee area: Kirby-Smith, H. T., 1; Templeton, H. M., Jr., 1.

Faulting, reverse, near Camden: Ross, R. M., 1.

Hales Bar Dam foundation: Frink, J. W., 1. Iron Mtn. fault, Watauga Dam: Grant, L. F., 2.

Ore bodies, Jefferson City area, structural control: Brokaw, A. L., 1.

Stones River rocks, NE. cent.: Collins, J. B., 1.

Watauga Dam: Grant, L. F., 1.

Physiographic geology.

Channels, channel-fillings, Richmond age: Wilson, C. W., Jr., 1.

Ordovician, Lower-Middle, NE.: Prouty, C. E., 1.

Tenorite, Stauber copper mine, N. Mex.: Holmquist, R. J., 2.

Terms, definitions, for meteorites: Leonard, F. C., 3.

Terraces. See also Beaches; Changes of level: Glacial lakes; Shore lines.

Alaska, Adak Island: Judson, S., 1.

Alaska Range: Wahrhaftig, C., 1.

Bahamas, Eleuthera Island submarine topog.: Schalk, M., 2.

British Columbia: Hutt, G. M., 6.

California, Oxnard oil field: Hazzard, J. C., 3.

Palos Verdes Hills: Woodring, W. P., 1. Submarine geology, S. coast: Emery, K. O., 5.

Ventura area, Santa Paula, Silver Thread oil fields: Hazzard, J. C., 2.

Ventura to Carpinteria: Redwine, L. E., 1.

Connecticut, Stafford Springs area: White, S. E., 1.

Continental shelves, origin: Umbgrove, J. H. F., 3.

Florida, silica-sand belt, Miami-West Palm Beach: Hudson, W. C., 2.

Georgia, Coastal Plain: Tomkins, I. R., 1.

Greenland: Boegvad, R., 1; Laursen, D., 1.

Hawaiian Islands: Stearns, H. T., 1.

Idaho, Borah Peak quad.: Ross, C. P., 2.

Kansas, Arkansas River Valley: Williams, C. C., 2.

Lake Bonneville, Utah: Ives, R. L., 2.

17; Marsell, R. E., 1; Relyea, G. M., 1.

Maine, Moosehead Lake Basin: Lougee, H. J., 1.

Marine deposits, mountainous coasts:

Woodring, W. P., 3.

Maryland, Carroll, Fredericks Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 2.

Mexico, Oaxaca guide book: Barrera, T., 1.

Terraces—Continued.

- Mississippi, Jackson area: Monroe, W. H., 3; U.S.G.S., 1, no. 65.
 Lee Co.: Vestal, F. E., 1.
 Nebraska, Box Butte Co.: Cady, R. C., 1.
 Scotts Bluff Co.: Wenzel, L. K., 1.
 New England, Connecticut Valley floods: Jahns, R. H., 2.
 Marine planation, S.: Olmsted, E. W., 2.
 Upland: Meyerhoff, H. A., 1.
 New York, Catskill, Kaaterskill quads.: Chadwick, G. H., 1.
 Nipissing Great Lakes: Stanley, G. M., 1.
 Oregon, McKenzie River area: Howell, P. W., 1.
 St. Helens quad.: Wilkinson, W. D., 1.
 Sands, Coos Bay to mouth of Columbia: Twenhofel, W. H., 1.
 South coast, sands: Griggs, A. B., 1.
 Pennsylvania, Pittsburgh area: Leighton, H., 3; Schopf, J. M., 1.
 Quebec: Hutt, G. M., 5.
 South Dakota, White River deposits: Cades, E. E., 1.
 Susquehanna Valley, post-glacial lakes, N. Y.-Pa.: Young, A. E., 1.
 Texas, W. Gulf Coastal Plain: Parkinson, G. A., 1.
 United States, Colorado drainage basin: Gregory, H. E., 2.
 East Gulf area, Tert. outcrops: MacNeil, F. S., 4; U.S.G.S., 2, no. 29.
 Pre-Selma Upper Cret., Ala.-Miss.: Conant, L. C., 2; U.S.G.S., 1, no. 64.
 St. Louis area, Pleist.: Robertson, P., 1.
 Utah, Cedar City, Parowan Valley: Thomas, H. E., 2.
 Great Salt Lake: Relyea, G. M., 1.
 Green River Desert-Cataract Canyon area: Baker, A. A., 1.
 Kelly's Hole, Dugway Range: Ives, R. L., 16.
 Pavant Valley: Dennis, P. E., 1.
 Stansbury Island, Great Salt Lake: Ives, R. L., 7.
 Zion Nat. Monument: Gregory, H. E., 1.
 West Virginia, Charleston area: Jeffords, R. M., 2.
 Wyoming, Wind River Mts.: Baker, C. L., 1.

Terrestrial dynamics: Willis, B., 2.

Tertiary. See also Paleontology, *Tertiary*.

- Agattu, Aleutian Islands, Alaska: Sharp, R. P., 1.
 Alabama: MacNeil, F. S., 1, 2; SE. Geol. Soc., 2; U.S.G.S., 1, no. 45.
 Alaska, Adak Is., Aleutians: Coats, R. R., 1.
 Alaska Range: Wahrhaftig, C., 1.
 Aleutian Islands: Coats, R. R., 3.
 Great Sitkin Volcano, Aleutians: Simons, F. S., 1.
 Kanaga Islands; Aleutians: Coats, R. R., 2.
 Matanuska coal field: Barnes, F. F., 1; Payne, T. G., 1.
 Nenana coal field: Marstrander, H. J. K., 1.

Tertiary—Continued.

Alaska—Continued.

- Pavlof Volcano area, Aleutians: Kennedy, G. C., 5.
 Petroleum poss.: Reed, J. C., 2.
 Southeast, ultrabasic rocks: Kennedy, G. C., 2.
 Umnak Island, Aleutians: Byers, F. M., Jr., 1.
 Alberta, Alexo area: Canada G. S., 1.
 Brûlé area: Canada G. S., 1; Lang, A. H., 1.
 Callum Creek area: Douglas, R. J. W., 1.
 Canadian Pacific Ry. area: Hutt, G. M., 3.
 Foothills, Athabaska-Ram Rivers area: MacKay, B. R., 2.
 Foothills boundary: Rutherford, R. L., 2.
 Gregg Lake area: Irish, E. J. W., 1.
 Langford Creek area: Douglas, R. J. W., 2.
 Saunders map area: Canada G. S., 1.
 Alberta-Saskatchewan correl.: Russell, L. S., 4.
 Arizona, Ajo mining dist.: Gilluly, J., 1.
 Copper Butte mine, Mineral Creek dist.: Phelps, H. D., 1.
 Holbrook area, water fms.: Babcock, H. M., 2.
 Johnny Bull-Silver Knight deposits: Tainter, S. L., 1.
 Peeples Valley: Babcock, H. M., 1.
 Pinal Creek-Globe area: Hazen, G. E., 1.
 Salt River Valley: McDonald, H. R., 2.
 San Manuel copper deposit, Pinal Co.: Chapman, T. L., 1.
 Superstition Mtn. area: Shaw, V., 4.
 Wellton-Mohawk area: Babcock, H. M., 3.
 Western, Paleozoic seaways: McKee, E. D., 3.
 Wilcox Basin: Jones, R. S., 1.
 Arkansas, Hot Springs Co.: McElwaine, R. B., 1.
 Bauxite, strat., origin: Harder, E. C., 1.
 Bighorn Basin, Mont.-Wyo.: Fanshawe, J. R., 1; Jepsen, G. L., 1; Mackin, J. H., 1; Stow, M. H., 2; Thom, W. T., Jr., 2; Wyoming Univ., 1.
 Blancan, N. Am., Pliocene or Pleistocene?: Stirton, R. A., 1.
 British Columbia, Ashcroft area: Duffell, S., 1, 2.
 Kootenay Lake origin: Schofield, S. J., 1.
 McConnell Creek area: Lord, C. S., 1.
 Manson Creek, Cassiar dist.: Canada G. S., 1.
 Nicola, Kamloops, Yale dists.: Canada G. S., 1.
 Northern: Armstrong, J. E., 2.
 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Salmon Arm area: Rice, H. M. A., 1.
 California, Aliso Canyon oil field: Leach, C. E., 1.
 Bakersfield Clock Tower, El Tejon Hotel to Lebec: Hackel, O., 1.

Tertiary—Continued.

California—Continued.

- Buena Vista Hills oil pool: Burtner, E., 1.
 Calico Mts. area: Henry, D. J., 1.
 Carpinteria to Gaviota, road log: Simpson, R. R., 1.
 Channel Islands area: Clements, T. D., 2.
 Coalinga oil field: Kaplow, E. J., 1.
 Colorado Desert: Cockerell, T. D. A., 1.
 Cymric oil field: McMasters, J. H., 1.
 Del Valle, Ramona oil fields: Matter, J. E., 1.
 Edison oil field: Beach, J. H., 2.
 Elwood, Capitan oil fields: Simonson, R. R., 2.
 Gaviota to Santa Maria: Hughes, A. W., 1.
 Glendora volcanics: Shelton, J. S., 2.
 Great Valley: Ferguson, G. C., 3.
 Guide Book Field Trip, Mar. 1947, oil fields: A.A.P.G., 1.
 Ivanpah quad.: Hewett, D. F., 1.
 Kern River Basin: Webb, R. W., 1.
 Kramer borate dist.: Gale, H. S., 1.
 Lead Pipe Springs area: Rogers, A. F., 6.
 Los Angeles Basin: Driver, H. L., 1; Wissler, S. G., 2.
 Los Angeles-Santa Paula via oil fields: Hazzard, J. C., 1.
 Los Banos dist.: Daviess, S. N., 1.
 Maricopa to Cymric oil field: Woodward, W. T., 1.
 Mayacmas quicksilver dist.: Bailey, E. H., 1; Yates, R. G., 1.
 Monterey fm.: Bramlette, M. N., 1.
 New Idria quicksilver dist.: Eckel, E. B., 1.
 Newhall-Potrero oil field: Lee, A. T., 1.
 Oak Canyon oil field: Bell, G. R., 1.
 Oak Ridge oil field: Baddley, E. R., 1.
 Oxnard oil field: Hazzard, J. C., 3.
 Palos Verdes Hills: Woodring, W. P., 1.
 Petroleum accumulation setting: Hoots, H. W., 2.
 Pico anticline, Los Angeles Co.: Arleth, K., 1.
 Placer gold mining: Averill, C. V., 1.
 Puente, San Jose Hills Miocene conglomerates: Woodford, A. O., 1.
 Ramona quad.: Merriam, R. H., 1.
 Repetto fm. pseudo-shore lines: Natland, M. L., 2.
 Ridge Route area: Loel, W., 1.
 San Gabriel Basin, NE. margin: Shelton, J. S., 1; U.S.G.S., 1, no. 63.
 San Joaquin Valley: Barbat, W. F., 1; Bryan, J. J., 1; Ferguson, G. C., 1; Goudkoff, P. P., 1.
 San Juan Bautista quad.: Allen, J. E., 3.
 San Miguelito, Padre Canyon, Rincon oil fields: Redwine, L. E., 2.
 Santa Clara-Santa Barbara oil fields, oil zones: Rankin, W. D., 1.
 Santa Maria dist.: Hughes, A. W., 2, 3.
 Santa Paula, Silver Thread oil fields: Hazzard, J. C., 2.
 Santiago oil pool: Ledingham, G. W., 1.

Tertiary—Continued.

California—Continued.

- Sespe red beds, oil origin, migration to: Bailey, T. L., 1.
 Shiells Canyon area: Bailey, W. C., 1.
 Ship Mtn. iron deposit: Lamey, C. A., 1.
 Sierra Nevada-Death Valley sec.: Hopper, R. H., 1.
 Sierra Nevada structure: Mayo, E. B., 1.
 Southern, crystalline rocks: Miller, W. J., 1.
 Strontium deposits: Durrell, C., 1.
 Trico gas field: Bailey, W. C., 2.
 Tuscan fm., Red Bluff area: Treasher, R. C., 1.
 Ventura Basin: Bailey, T. L., 2; Kuffel, G. C., 1.
 Ventura oil field, Ventura Co.: Arthur, J., 1.
 Ventura to Carpinteria: Redwine, L. E., 1.
 West Cuyama Valley to Maricopa, road log: Hill, M. L., 1.
 West Newport oil field: Corwin, C. H., 1; Dunlap, W. E., 1, 2.
 Yosemite Valley Nat. Park: Matthes, F. E., 3.
 Canada, Norman Wells oil field: Stewart, J. S., 1.
 Rocky Mts.: Williams, M. Y., 2.
 Central America, geol. map: Mullerried, 1.
 Petroleum poss.: Woodring, W. P., 2.
 Volcanism: Lester, J. G., 1.
 Colorado, Big Sandy Creek area: McLaughlin, T. G., 1.
 Bonanza (Kerber Creek) mining dist.: Burbank, W. S., 14.
 Boulder Co. tungsten dist.: Tweto, O. L., 2.
 Cañon City area: Blum, V. J., 1.
 Climax mine, Lake Co.: Vanderwilt, J. W., 3; Anonymous, 61.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Eureka-Animas Forks area: Burbank, W. S., 11.
 Fluorspar deposits: Cox, D. C., 1.
 Front Range: Goddard, E. N., 5; Wahlstrom, E. E., 2.
 General geology: Vanderwilt, J. W., 5.
 Golden-Morrison area: LeRoy, L. W., 1.
 Gramp's oil field: Waldschmidt, W. A., 1.
 Jamestown fluorspar dist.: Goddard, E. N., 1.
 Kokomo mining dist.: Koschmann, A. H., 1, 3.
 Lake City area: Burbank, W. S., 13.
 La Plata dist.: Eckel, E. B., 2.
 Mt. Wilson dist.: Varnes, D. J., 5.
 Oil-like hydrocarbons from oil shales: Felts, W. M., 1.
 Rangely oil and gas field: Bench, B. M., 1.
 Rico mining dist.: Varnes, D. J., 2.
 San Juan region: Burbank, W. S., 6, 7.
 Silverton volcanic center dist.: Burbank, W. S., 9.

Tertiary—Continued.

Colorado—Continued.

- Snowmass Mtn. area: Vanderwilt, J. W., 6.
 Uncompahgre mining dist.: Burbank, W. S., 8.
 Vanadium deposits: Fischer, R. P., 3, 4.
 Colorado River age: Longwell, C. R., 2.
 Coral-reef hypotheses: Stearns, H. T., 2.
 Cross-section, subsurface, Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
 Cuba: Brodermann y Vignier, J., 1.
 Camagüey Prov.: Albear y Franquiz, J. F., de, 1; Hermes, J. J., 1; Westsem, A., 1.
 Eastern: Keijzer, F. G., 3; Straczek, J. A., 1; Thayer, T. P., 2.
 Geologic map: Brodermann y Vignier, J., 2.
 Oriente Prov.: Hermes, J. J., 1; Keijzer, F. G., 3; Vletter, D. R., de, 1.
 Soils: González, A. de J., 1.
 El Salvador: Basauri, D., 1.
 Florida: Pressler, E. D., 1.
 Orlando area: Unklesbay, A. G., 2.
 Western: SE. Geol. Soc., 1.
 Georgia, Coastal Plain: La Moreaux, P. E., 1.
 Geologic map: MacNeil, F. S., 3.
 Petroleum and gas poss.: Peyton, G., 1.
 Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.
 Greenland, Clavering Island, Payer Land: Mittelholzer, A. E., 1.
 East: Krokström, T., 1; Maync, W., 1; Vischer, G. A., 1, 2.
 Kronprins Christians Land: Nielsen, E., 1.
 North, plateaus: Noe-Nygaard, A., 2.
 Northeast: Ahlmann, H. W., 1; Backlund, H. G., 1; Blüthen, J., 1.
 Scoresby Sound area: Rothé, J. P., 1.
 Svartenhuk Penin.: Noe-Nygaard, A., 1; Rosenkrantz, A., 2.
 West Nûgssuak Penin.: Munck, S., 2.
 Guatemala, Petén area: Wadell, H. A., 1.
 Haiti, manganese prospects: Goddard, E. N., 2, 3, 4.
 Portland cement materials: López, V. M., 1.
 Surficial breccias from Eocene ls.: Shrock, R. R., 3.
 Hawaiian Islands: Stearns, H. T., 1.
 Island of Molokai: Macdonald, G. A., 5; Stearns, H. T., 4, 5.
 Idaho, Borah Peak quad.: Ross, C. P., 2.
 Geologic map: Ross, C. P., 1.
 Last Chance-Hornsilver mines, Lava Creek dist.: Anderson, A. L., 5.
 Rocky Mts. drainage changes. Anderson, A. L., 4.
 Snake-Salmon Rivers area. Wagner, W. R., 1.
 Teton Co. coal deposits. Staley, W. W., 1.
 Wilbert galena mine, Dome dist.: Anderson, A. L., 5-a.
 Illinois, geol. map: Weller, J. M., 1.

Tertiary—Continued.

- Kansas, Grant, Haskell, Stevens Cos.: McLaughlin, T. G., 2.
 Ogallala fm. silicified rocks: Frye, J. C., 4.
 Trego Co. construction materials: Byrne, F. E., 1.
 Kentucky, Clinton Co. pools: Jillson, W. R., 5.
 Gulf Embayment area: Roberts, J. K., 2.
 Kentucky River, abandoned channels: Jillson, W. R., 2, 7, 9, 10, 13.
 Labrador Peninsula, E. area: Tanner V., 2.
 Llano Estacado Tex.-N. Mex., Ogallala fm. algae reefs: Price, W. A., 1.
 Louisiana, geol. map: Wallace, W. R., Jr., 1.
 West Tepetate oil field: Bates, F. W., 3.
 Manitoba, geol. map: Canada G. S., 1.
 Maryland, Carroll, Frederick Cos.: Stose, A. J., 1.
 Mexico, Batopilas, Chihuahua silver mines: González Reyna, J., 8.
 "Cerrito", Tepetzotlán area: Mullerried, 1-B.
 El Cuarenta min. zone, Durango: Pérez Siliceo, R., 4.
 El Moral dist.: González Reyna, J., 10.
 Lower Conchos Valley, King, R. E., 2.
 Northern, geol. map: King, P. B., 4.
 Nuevo León: Mullerried, 6.
 Oaxaca guide book: Barrera, T., 1.
 Optical calcite crystals occurrence: King, C. R., 1.
 Parícutin Volcano area: Williams, H., 2.
 Plateau area: Nye, S. S., 1.
 Yaqui Valley, Sonora: Toron Villegas, L., 2.
 Yucatan Penin. area: Shrock, R. R., 4.
 Mississippi, Cranfield field: Zebal, G. P., 1.
 Gulf Coast area: Murray, G. E., Jr., 1.
 Itawamba Co.: Vestal, F. E., 2.
 Jackson area: Monroe, W. H., 3; U. S.G.S., 1, no. 65.
 Kilmichael dome: Priddy, R. R., 1.
 Lee Co.: Vestal, F. E., 1.
 Tinsley field: Shroeder, F. R., 1.
 Montana, Bearpaw Mts. area: Reeves, F., 2.
 Big Belt Range, N.: Lyons, J. B., 1.
 Chromite, Red Lodge area: James, H. L., 1.
 Cut Bank-West Kevin oil field: Erdmann, C. E., 2.
 Dam sites, Flathead River: Erdmann, C. E., 3.
 Cverthrusting and oil accumulation: Blackstone, D. L., Jr., 3.
 Petroleum geology: Emrick, E. R., 1.
 Plains structure map: Dobbin, C. E., 3.
 Western, faulting: Pardee, J. T., 1.
 Montreal, Canada: Clark, T. H., 1.
 Nebraska, Box Butte Co.: Cady, R. C., 1.
 Scotts Bluff Co.: Wenzel, L. K., 1.
 Nevada, Bristol Range: Wheeler, H. E., 2.
 Osgood Range: Hobbs, S. W., 1.

Tertiary—Continued.

Nevada—Continued.

- Volcanic rocks, Nye Co.: Callaghan, E., 1.
 New England, Connecticut Valley floods: Jahns, R. H., 2.
 New Hampshire, Mt. Washington quad.: Billings, M. P., 1.
 Plymouth quad.: Moke, C. B., 1.
 New Jersey, Pensauken fm., Princeton area: Howell, B. F., 6.
 Piedmont and Coastal Plain post-Trias. devel.: Thom, W. T., Jr., 4.
 New Mexico, Black Range pegmatites: Kelley, V. C., 5.
 Fluorspar areas: Rothrock, H. E., 1.
 Future oil poss.: Bates, R. L., 1.
 Gallinas dist.: Kelley, V. C., 4, 6.
 Gran Quivira quad.: Gates, R. L., 3.
 Guadalupe Co.: U.S.G.S., 1, no. 44.
 Headstone mining dist.: Benjovsky, T. D., 2.
 Huckleberry spar mine: Sur, F. J., 2.
 Joyita Hills, Los Piños Mts., Chupadera Mesa area: U.S.G.S., 1, no. 61.
 Lake Valley deposits: Apell, G. A., 2.
 Las Vegas Basin, Sangre de Cristo foothills: U.S.G.S., 1, no. 54.
 Little Hatchet Mts. area: Lasky, S. G., 3.
 Lower Rio Puerco uplift: Wright, H. E., Jr., 1.
 Lucero Uplift: U.S.G.S., 1, no. 47.
 Manzanita, North Manzano Mts.: Reiche, P., 1.
 Mica mines, Pecata, Ojo Caliente, Elk Mtn. dists.: Jahns, R. H., 1.
 Nacimiento, San Pedro Mts., adjacent plateaus: U.S.G.S., 1, no. 57; Wood, G. H., Jr., 1.
 Niggerhead manganese deposits: Russell, P. L., 7.
 Quay Co., N.: Dobrovolsky, E., 1; U.S. G.S., 1, no. 62.
 San Juan Basin: Dane, C. H., 1; U. S.G.S., 2, no. 24.
 Steeple Rock dist.: Russell, P. L., 6.
 Tin deposits, Catron, Sierra Cos.: Volin, M. E., 1.
 Tusas-Tres Piedras area: Butler, A. P., Jr., 1.
 North America, ancient Gulf of Mexico, depositions: Rolshausen, R. W., 1.
 Caribbean Sea area: Bucher, W. H., 3.
 Cenozoic holarctic Mammalia: Simpson, G. G., 2.
 Cenozoic Rocky Mtn. trenches: Eardley, A. J., 3.
 Paleogeographic maps: Malaise, R., 1.
 North Carolina, Coastal Plain oil wells: Swain, F. M., 5.
 Eastern, marls: Berry, E. W., 3.
 Halifax area: Mundorff, M. J., 2.
 Neuse River Basin: Mundorff, M. J., 3.
 North Dakota, Dickinson area: McLaughlin, T. G., 3.
 Golden Valley Eocene: Benson, W. E. B., 1.

Tertiary—Continued.

North Dakota—Continued.

- Keene Dome area: Nevin, C. M., 2.
 Nesson anticline: Laird, W. M., 1.
 Oklahoma-Kans., Laverne fm.: Schoff, S. L., 1.
 Ontario, Orilla area: Deane, R. E., 1.
 Rutherglen dist.: Keith, M. L., 1.
 Ore deposits and geologic age: Miholić, S., 1.
 Oregon, chromite-bearing sands, S. coast: Griggs, A. B., 1.
 Columbia Co. mines: Kelly, J. V., 2.
 Eugene area foundry sand: Lowry, W. D., 1.
 Horse Heaven quicksilver mine: Lewis, F. E., 1.
 Northwest ferruginous bauxite deposits: Libbey, F. W., 1.
 Perlite deposits, Wasco Co.: Allen, J. E., 2.
 Nehalem River Basin, upper: Warren, W. C., 1.
 St. Helens quad.: Wilkinson, W. D., 1.
 Oregon-Washington, Columbia River sands: Kelly, J. V., 1.
 Panama Canal Zone, Gatun fm.: Keen, A. M., 1.
 Puerto Rico: McGuinness, C. L., 1.
 Quebec, Shawinigan area: Laverdière, J. W., 1.
 Saskatchewan, Cypress Lake area: Furnival, G. M., 1.
 South Carolina, ground-water invs.: Siple, G. E., 1.
 South Dakota, metallic min. deposits: U. S.G.S., 3, no. 13.
 Missouri Valley: Petsch, B. C., 1.
 Tennessee, Carroll Co.: Whitlatch, G. I., 1.
 Texas, Bexar Co.: Livingston, P. P., 3.
 Buck Hill quad.: Goldich, S. S., 3.
 Carthage gas field: Foster, F. K., 1.
 Coal production: Stenzel, H. B., 3.
 Comal County: George, W. O., 4.
 Del Monte field: Clark, G. H., 1.
 Eocene Rockdale fm. sands: Hoeman, E. C., 1.
 Glass Mts.-Marathon Basin trip: West Tex. Geol. Soc., 2.
 Houston Co.: Stenzel, H. B., 1.
 Katy Gas and oil field: Allison, A. P., 1.
 La Gloria oil and gas field: Woolley, W. C., 1.
 Northern volcanic sediments: Sidwell, R., 2.
 Odem oil field: McCarver, H. C., 1.
 Petroleum and gas occurrences: Sollarda, E. H., 3.
 Raccoon Bend salt dome field: McLellan, H. J., 1.
 Reeves Co.: Knowles, D. B., 1.
 Terlingua quicksilver deposit: Evans, A. M., 1.
 Waller, Harris Cos.: Beckelhymer, R. L., 1.
 West Gulf Coastal Plain pebbles: Parkinson, G. A., 1.

Tertiary—Continued.

Texas—Continued.

- Wood Co., Hawkins field: Wendlandt, E. A., 1.
- Texas and Oklahoma, Trinity River area min. res.: Weissenborn, A. E., 1.
- United States, Appalachian drainage determinants: Meyerhoff, H. A., 4.
- Atlantic Coast, evolution: Thom, W. T., Jr., 3.
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- Bighorn Basin oil and gas fields: Pierce, W. G., 1; U.S.G.S., 1, no. 74.
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- Black Warrior Basin, Ala.-Miss.: Melten, F. F., 1.
- Blue Ridge fault-scarp: White, W. A., 1.
- Colorado drainage basin: Gregory, H. E., 2.
- Colorado River age: Longwell, C. R., 2.
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- Gulf Coast, Cenozoic: Murray, G. E., Jr., 1.
- General: Halbouty, M. T., 2.
- Geosyncline: Howe, H. V., 1; Russell, R. J., 1.
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- Petroleum poss.: Todd, J. D., 3.
- Mississippi Embayment, sed. cycles: Bornhauser, M., 1.
- Mississippi River Valley, lower: Fisk, H. N., 1.
- Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 2, 4.
- Structure relations, Tehachapi, Sierra Nevada, Coast Ranges: Buwalda, J. P., 1.
- Teays River: Ver Steeg, K., 2.
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- Utah, alunite deposits, Piute Co.: Hild, J. H., 1.
- Cedar City, Parowan Valleys: Thomas, H. E., 2.
- Cedar Mts., Moroni's Postpile: Ives, R. L., 14.
- Central: Spieker, E. M., 1.
- Duchesne River area: U.S.G.S., 1, no. 75.
- East Markagunt Plateau: Gregory, H. E., 3.
- Fumarole Butte, Sevier Desert: Ives, R. L., 20.
- Green River Desert-Cataract Canyon area: Baker, A. A., 1.
- Henry Mts. area: Hunt, C. B., 1.
- Iron Co. iron deposits: Young, W. E., 1.
- Mineral Range tungsten deposits: Crawford, A. L., 3.
- Oil-like hydrocarbons from oil shales: Felts, W. M., 1.

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Utah—Continued.

- Pavant Range and Valley: Dennis, P. E., 1; Maxey, G. B., 1.
- Tintic dist.: Kildale, M. B., 1.
- Uinta Basin: Murray, A. N., 1.
- Wasatch Mts., Provo area: Baker, A. A., 4; U. S. G. S., 2, no. 30.
- White Horse alunite deposits: Willard, M. E., 1.
- Whiterocks River-Ashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.
- Virginia, Coastal Plain: Cederstrom, D. J., 1, 3.
- Washington, Grand Coulee: Koester, C. R., 1.
- Mt. Rainier Nat. Park: Danner, T., 2.
- Olympic Penin.: Park, C. F., Jr., 1.
- Republic mining dist.: Wright, L. B., 2.
- Sultan Basin deposits: Carithers, L. W., 1.
- Tungsten res.: Culver, H. E., 1.
- Washington-Oregon biostratigraphy: Beck, R. S., 1.
- Washington, D. C., and vicinity, sed. rocks: Darton, N. H., 1.
- West Indies, Greater Antilles: Meyerhoff, H. A., 3.
- Wyoming, Absaroka volcanic field, Big-horn Basin: Rouse, J. T., 1.
- Good Fortune iron mine: Frey, E., 4.
- Gros Ventre Mts., Mt. Leidy Highlands: Foster, H. L., 1.
- Hartville iron dist.: Frey, E., 3.
- Jackson Hole area: Love, J. D., 1; U. S. G. S., 2, no. 27.
- Laramie Mts. wind gaps origin: Blackstone, D. L., Jr., 1.
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- Oregon Basin oil field: Walton, P. T., 2, 3.
- Overthrusting and oil accumulation: Blackstone, D. L., Jr., 3.
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- Sage Creek dome area: U. S. G. S., 1, no. 53.
- Wind River Basin: Tourtelot, H. A., 1; U. S. G. S., 1, no. 51, 60; 2, no. 22.
- Tertiary centers, and floral migration routes of land plants: Chaney, R. W., 3.
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- Tertiary land bridges: Simpson, G. G., 6.
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- Idaho, Clark Fork dist.: Anderson, A. L., 2; Lorain, S. H., 1.
- Tetrapoda, footprints, Missn., Ind.: Colbert, E. H., 8.
- Texas.
- Boulders, Permian, polished: Ray, C. N., 2.

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- Abrasives, polishing materials: Evans, G. L., 6.
- Alunite at Woodbine-Eagle Ford contact: Stephenson, L. W., 4.
- Anadarko Basin oil and gas field: Gould, C. N., 2.
- Anahuac oil field, geophys. history: Bader, G. E., 1.
- Apco oil field, Pecos Co.: Ellison, S. P., Jr., 2.
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- Building stones, cent. Tex.: Barnes, V. E., 8.
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- Bedded deposits, Spar Valley: Gillerman, E., 1.
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- Llano Uplift area: Evans, A. M., 2.
- Katy gas and oil field: Allison, A. P., 1.
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Economic geology—Continued.

- Lead-zinc deposits, San Antonio Canyon: Dennis, W. E., 4.
- Limestone, Damon Mound: Hurlbut, E. M., Jr., 1.
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- Lovell Lake oil field: Wendler, A. P., 1.
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- Mineral resources: Cunningham, W. A., 1; Sellards, E. H., 2, 4.
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- Algae reefs, Ogallala fm.: Price, W. A., 1.
 Apco oil field, Pecos Co.: Ellison, S. P., Jr., 2.
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 Cambrian, Upper, Llano Uplift: Bridge, J., 2.
 Carthage gas field: Foster, F. K., 1.
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 Correlation, Perm., W. Tex.-SE. N. Mex.: Skinner, J. W., 1.
 Cretaceous, Upper, outcrop correls.: Monroe, W. H., 1; U. S. G. S., 2, no. 23.
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Historical geology—Continued.

- Pennsylvanian: Plummer, F. B., 2, 3.
 Llano area: Plummer, F. B., 2.
 Lower, central Tex.: Spivey, R. C., 1.
 North-central Tex.: Cheney, M. G., 3.
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 Volcanic sediments, N.: Sidwell, R., 2.
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 Agates: Dake, H. C., 2.
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Mineralogy—Continued.

- Mineral resources: Cunningham, W. A., 1; Sellards, E. H., 2, 4; Weissenborn, A. E., 1.
 Rustler Springs sulfur deposits: Evans, G. L., 1.
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- Algae, Permian: Johnson, J. H., 3.
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 Bison quarry, Plainview: Sellards, E. H., 1.
 Cambrian fauna, Llano Uplift: Bridge, J., 2.
 Cephalopoda, Perm.: Clifton, R. L., 1.
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 Corals, Cretaceous: Wells, J. W., 2.
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 Cycad, Cret., Montague Co.: Chelf, C. R., 1.
 Devonian faunas, cent.: Barnes, V. E., 5, 7.
 Echinoidea, Comanche: Cooke, C. W., 1.
 Elasmosaurs, Upper Cret.: Shuler, E. W., 1.
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 Fenestellids, Perm. coiled: Elias, M. K., 6.
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 Foraminifera, Cretaceous: Cushman, J. A., 1; Keijzer, F., 2; Loeblich, A. R., Jr., 1, 2.
 Pepper shale, type, fauna: Loeblich, A. R., Jr., 1.
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 Lower Penn., Llano region: Plummer, F. B., 2.

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- Mammalia, recent, Pleist.: Peterson, R. L., 1.
 Microfossils, role in Penn. correl.: Cooper, C. L., 3.
 Ostracoda, Weches Eocene fm.: Stephenson, M. B., 1.
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 Permopora, Permian alga: Elias, M. K., 3.
 Plants, Permian: Jones, D. John, 1.
 Progyrolepis, Perm. fish: Dunkle, D. H., 3.
 Silicified Perm. fossils: Cooper, G. A., 4.
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 Trilobites, Lower Ord.: Bridge, J., 3.
 Typothorax, Trias. reptile: Sawin, H. J., 1.
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- Buck Hill quad.: Goldich, S. S., 3.
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- Buck Hill quad.: Goldich, S. S., 3.
 Clovis site area: Price, W. A., 1-a.
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California, Agua Caliente, San Diego Co.: South, M., 1.

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Association with uranium minerals:

Spence, H. S., 3.

Geiger counter prosp.: De Ment, J. A., 8.

Genesis of lead ores: Senftle, F. E., 2.

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 Sarnia dist. Pleist.: Legget, R. F., 2.
 Tillite, Hat Is., Great Salt Lake, Utah: Blackwelder, E., 3.
 Tilt corrections, math., for aerial photos.: Van Camp, V. P., 1.
 Time of oil and gas accumulation: Levorsen, A. I., 5.
 Time-stratigraphic concept: Wheeler, H. E., 3.
 Tin.
 Alaska, Cape Mtn., Seward Penin.: Heide, H. E., 1.
 Lost River, Seward Penin.: Heide, H. E., 1.
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 British Columbia: Hutt, G. M., 6.
 California: Bedford, R. H., 1.
 Contact metamorphic cassiterite: Page, L. R., 1.
 Gorman dist.: Wiese, J. H., 1.
 Kramer borate dist.: Gale, H. S., 1.
 Mexico: Foshag, W. F., 1.
 Chihuahua: González Reyna, J., 3-a.
 Tephrit deposits: González Reyna, J., 12.
 Zacatecas: González Reyna, J., 2.
 New Mexico, Catron, Sierra Cos.: Volin, M. E., 1.
 New York, Adirondack Mts., Ti-Fe relations during magmatic processes: Evrard, P., 1.
 Lake Sanford area: Stephenson, R. C., 1.
 South Dakota, metallic min. deposits: Fischer, R. P., 2; U.S.G.S., 3, no. 13.
 Texas, min. res.: Sellards, E. H., 4.
 United States, Missouri Valley area: U. S. G. S., 3, no. 1.
 Tinsley oil field, Miss.: Shroeder, F. R., 1.
 Tinticite, Utah, Tintic dist.: Stringham, B. F., 1.

Titanite.

- Massachusetts, Blueberry Mtn. quarry: Eisenberg, J. M., 1.
 New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.
 Windsor quarry, Rudeville: Zodac, P., 5.
 New York, Eastern State Parkway min. locs.: Zodac, P., 7, 8.
 North America: Jaffe, H. W., 2.
 Ontario, Renfrew Co. locs.: Eisenberg, J. M., 2.

Titanium.

- Rare metals: De Ment, J. A., 1.
 United States, min. res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Missouri Valley: U. S. G. S., 3, no. 1.
 Virginia, Piney River deposit: Davidson, D. M., 2; Ross, C. S., 4.
 Wyoming, Iron Mtn. deposits: Frey, E., 2.
 Titusville quad., Pa., oil and gas field index maps: Dickey, P. A., 1.
 Today's needs for a State Geol. Survey: Leighton, M. M., 3.

Tonalite.

- California, batholith rocks: Larsen, E. S., 2.
 Crystalline rocks: Miller, W. J., 1.
 Ramona quad.: Merriam, R. H., 1.
 Topaz. See also Gems; Precious stones.
 Missouri, min. res.: Keller, W. D., 2.
 Utah, Thomas Range: Ives, R. L., 21; Weight, H. O., 2.
 Torsion balance surveys of inundated areas: Hasselmann, K. F., 1.
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 Greenland, East: Kleiber, K., 1.
 Idaho, Blackbird dist., cobalt deposits: Anderson, A. L., 3.
 Lead in tourmaline radioactive?: López de Azcona, J. M., 1.

- Maryland, Campbell quarry: Levey, H., 1.
 Mianus Gorge, Conn.-N. Y.: Brown, S. C., 1.
 New Jersey, Atlas quarry, Hardystonville: Zodac, P., 6.

- Windsor quarry, Rudeville: Zodac, P., 5.
 New York, Bedford dist.: Mann, A., 1.
 New York City harbor tunnel: Lisle, T. O., 6.
 Vindicator, Swadbury area: Bullen, C. S., 1.

- Synthesis: Frondel, C., 4.
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 Arizona, Coconino sandstone, Invertebrata: Brady, L. F., 2.
 Moskeet fm., Tazewell: Peabody, F. E., 3.
 Chirotherium, Trias., Ariz.: Peabody, F. E., 2.
 Dinosaurs, Canada: Sternberg, C. M., 1.
 Footprints, Abo Perm. fm., N. Mex.: Branson, E. B., 6.
 Indiana, Missn.: Colbert, E. H., 8.

Tracks and Trails—Continued.

Footprints—Continued.

- Wyoming, Chugwater fm.: Branson, E. B., 2.
 Red Peak Trias, fm.: Branson, E. B., 5.
 Sand, fine, cross-bedded, exper. invs.: McKee, E. D., 4.
 Trafficability problems: Ray, L. L., 3.
 Training for mining geology: Longwell, C. R., 1.
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 Training geologists in civil engineering work: Burwell, E. B., Jr., 1.
 Training geologists for geophysical work: Adkins, J. N., 1.
 Training of geologists: Longwell, C. R., 1; Mather, K. F., 1.
 Training of women in geology: Mather, K. F., 1.
 Training, research, geophysical borderlands of geology: Ewing, W. M., 1.
 Transport capacity of wind: Chepil, W. S., 3.
 Travertine.
 California, Calico Mts. area: Henry, D. J., 1.
 Colorado, Cañon City area: Blum, V. J., 1.
 Haiti, calcitic pisolites in cascade deposit, Miragone area: Shrock, R. R., 2.
 Mammoth Cave, Ky.: Lix, H. W., 1.
 United States, caves: Janssen, R. E., 4.
 Yellowstone Nat. Park, geysers: Bauer, C. M., 1.
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 Tremolite.
 California, "The Geysers": Vonsen, M., 1.
 Maryland, Campbell quarry: Levey, H., 1.
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 Petroleum geology: Levorsen, A. I., 4.
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 Alaska, copper deposits, Kotsina-Kuskulana dist.: Van Alstine, R. E., 1.
 Iniskin-Chinitna Penin.: Kellum, L. B., 2.
 Nizina dist. deposits: Miller, D. J., 1.
 Petroleum Naval Reserve No. 4: Foran, W. T., 1.
 Petroleum poss.: Reed, J. C., 2.
 Ultrabasic rocks, SE.: Kennedy, G. C., 2.
 Alberta, Brûlé area: Canada G. S., 1; Lang, A. H., 1.
 Cripple Creek area: Erdman, O. A., 1.
 Highwood-Elbow area: Allan, J. A., 2.
 Moberly Creek area: Lang, A. H., 2.
 Arizona, Grand Canyon, E. part: Van Gundy, C. E., 1.
 Holbrook area, water fms.: Babcock, H. M., 2.
 Bighorn Basin, Mont.-Wyo.: Wyoming, Univ., 1.

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Bighorn Basin—Continued.

- Mesozoic fms.: Downs, G. R., 1.
 Rim features: Thom, W. T., Jr., 2.
 British Columbia: Hutt, G. M., 6.
 Ashcroft area: Duffell, S., 1, 2.
 Carbon Creek—Mount Bickford area: Mathews, W. H., 2.
 Coast Range batholith: Phemister, T. C., 1.
 Kootenay Lake area: Schofield, S. J., 1.
 Liard River area: Kindle, E. D., 1; McLearn, F. H., 1.
 Lucky Jim mine area: Hedley, M. S., 2.
 Manson Creek, Cassiar dist.: Canada G. S., 1.
 Nanaimo coal field: Buckham, A. F., 1, 2.
 Nicola, Kamloops, Yale dists.: Canada G. S., 1.
 Northeast: McLearn, F. H., 1.
 Northern: Armstrong, J. E., 2.
 Pardonet Hill: McLearn, F. H., 3.
 Porcher Island ore deposits: Smith, A., 2.
 Princeton area, Yale, Kamloops, Similkameen, Osoyoos dists.: Canada G. S., 1.
 Salmon Arm area: Rice, H. M. A., 1.
 South half Aiken Lake area: Armstrong, J. E., 1.
 Texada Island: Mathews, W. H., 1.
 Whitewater, Lucky Jim mine areas: Hedley, M. S., 1.
 California, Cuyamaca Peak quad. batholith units: Everhart, D. L., 2.
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 Julian-Cuyamaca area: Creasey, S. C., 1.
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 Minarets deposit, Madera Co.: Severy, C. L., 2.
 Ramona quad.: Merriam, R. H., 1.
 Ridge Route area: Loel, W., 1.
 Shasta, California deposits: Lamey, C. A., 1.
 South, crystalline rocks: Miller, W. J., 1.
 Canada, Rocky Mts.: Williams, M. Y., 2.
 Western, limestones: Goudge, M. F., 1.
 Central America, geol. map: Mullerried, 1.
 Colorado, Baca Co., Freezeout Creek fault area: Buehler, K. M., 1.
 General geology: Vanderwilt, J. W., 5.
 Golden-Morrison area, Jefferson Co.: LeRoy, L. W., 1.
 La Plata dist.: Eckel, E. B., 2.
 Rangely oil and gas field: Bench, B. M., 1, 2; Bosco, F. N., 1; Newton, S. M., 4; U.S.G.S., 1, No. 67.
 San Juan region: Burbank, W. S., 6.
 Silverton volcanic center dists.: Burbank, W. S., 9.
 White River area Paleozoics: Thompson, W. O., 1.
 Cross-section, subsurface, Ness Co., Kans.-Lincoln Co., Colo.: Maher, J. C., 1.

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Cross-section—Continued.

- Scott Co., Kans.-Otero Co., Colo.: Maher, J. C., 3.
- Delaware Valley, Pa.-N. J.: Willard, B., 10.
- Florida, west: SE. Geol. Soc., 1.
- Georgia Strait area, British Columbia, Wash.: Mathews, W. H., 4.
- Greenland, East: Kleiber, K., 1; Maync, W., 1; Rosenkrantz, A., 1; Stauber, H., 2; Vischer, G. A., 2.
- Jamesonland lowlands: Stauber H., 1.
- Northeast: Ahlmann, H. W., 1; Bierther, W., 1.
- Scoresbyland: Bierther, W., 1.
- Scoresby Sound area: Rothé, J. P., 1.
- Idaho, geol. map: Ross, C. P., 1.
- Snake-Salmon Rivers area: Wagner, W. R., 1.
- Sulfur deposits area: Staley, W. W., 2.
- Teton Co. coal deposits: Staley, W. W., 1.
- Maryland, Carroll, Frederick Cos.: Singewald, J. T., Jr., 1; Stose, A. J., 1, 2.
- Mexico, Altar dist., Sonora: Arellano, A. R. V., 2.
- Coal beds, Santa Clara, Sonora: Wilson, I. F., 1.
- Zacatecas: González Reyna, J., 2.
- Montana, Great Plains sed. rocks: Perry, E. S., 1.
- Plains structure contour map: Dobbin, C. E., 3.
- Montreal, Canada: Clark, T. H., 1.
- New Hampshire, Mt. Washington quad.: Billings, M. P., 1.
- Plymouth quad.: Moke, C. B., 1.
- New Jersey, Franklin Furnace quad dikes: Milton, C., 3.
- New Mexico, Capitan quad.: Sidwell, R., 1.
- Future oil poss.: Bates, R. L., 1.
- Gran Quivira quad.: Bates, R. L., 3.
- Guadalupe Co.: U.S.G.S., 1, No. 44.
- Joyita Hills, Los Pinos Mts., Chupadera Mesa area: U.S.G.S., 1, No. 47.
- Lucero Uplift: U.S.G.S., 1, no. 47.
- Nacimiento, San Pedro Mts., adjacent plateaus: U.S.G.S., 1, no. 57.
- Northwest Quay Co.: Dobrovolny, E., 1; U.S.G.S., 1, no. 62.
- Pecos Valley, red beds: Lang, W. T. B., 3.
- Rattlesnake field: Hinson, H. H., 1.
- Rio Puerco area, lower: Wright, H. E., Jr., 1.
- Stauber copper mine, Guadalupe Co.: Holmquist, R. J., 2.
- North Carolina, Neuse River Basin: Mundorff, M. J., 3.
- Orange Co. trough. Harrington, J. W., 2.
- North Dakota, Nesson anticline: Laird, W. M., 1.
- South Dakota, Missouri Valley: Petsch, B. C., 1.

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- Texas, pioneer geology: Gould, C. N., 5.
- Reeves Co.: Knowles, D. B., 1.
- United States, Appalachians, drainage: Carlston, C. W., 1; Meyerhoff, H. A., 4.
- Atlantic Coast evolution: Thom, W. T., Jr., 3.
- Atlantic Coastal Plain oil poss.: Richards, H. G., 5.
- Eastern, diabase: Belz, C. A., 1.
- Gulf Coastal Plain, N.: Moody, C. L., 3.
- Rocky Mtn. area oil and gas fields: Dobbin, C. E., 1, 2.
- Utah, Cedar City, Parowan Valleys: Thomas, H. E., 2.
- Duchesne River area: Huddle, J. W., 1; U.S.G.S., 1, no. 75.
- Green River Desert-Cataract Canyon area: Baker, A. A., 1; U.S.G.S., 1, no. 55.
- Henry Mts. region: Hunt, C. B., 1.
- Little Cottonwood area: Ives, R. L., 3.
- Mineral Range tungsten deposits: Crawford, A. L., 3.
- Pavant Range and Valley: Dennis, P. E., 1; Maxey, G. B., 1.
- San Juan oil field: Colton, R. E., 2.
- Uinta Mts. stratigraphy: Thomas, H. D., 1.
- Wasatch Mts., Provo area: Baker, A. A., 4; U.S.G.S., 2, no. 30.
- West-central, Confusion Range: Bacon, C. S., Jr., 2.
- Whiterocks River-Aashley Creek area: Kinney, D. M., 2; U.S.G.S., 1, no. 82.
- Zion Nat. Monument: Gregory, H. E., 1.
- Zion Park hinterland: Ives, R. L., 19.
- Virginia, Charlottesville Mtg. Field Trip, 1947: Pegau, A. A., 2.
- Washington-Oregon biostratigraphy: Beck, R. S., 1.
- Wyoming, Bargee area, Fremont Co.: U.S.G.S., 1, no. 56.
- Central Mesozoic secs.: Love, J. D., 2.
- Hamilton Dome oil field: Krampert, E. W., 2.
- Jackson Hole area: Wanless, H. R., 5.
- Lander phosphate dist.: King, R. H., 3.
- Oregon Basin oil field: Walton, P. T., 3.
- Sage Creek dome area: U.S.G.S., 1, no. 53.
- Wind River Basin: U.S.G.S., 1, no. 51, 60.
- Wind River Mts. NW.: Baker, C. L., 1.
- Trico gas field, Calif.: Bailey, W. C., 2.
- Tridymite, quartz paramorphs after, Home quad., Colo.: Ray, L. L., 1.
- Trilobita. See also Arthropoda; Crustacea.
- Arctic America, Ellesmere Land, Camb.-Ord. fauna: Poulsen, C., 2.
- Arizona, Grand Canyon Camb. fauna: Resser, C. E., 1.
- Aulacopleura, Otariuinidae: Přibyl, A., 1.
- British Columbia, Mt. Stephen Camb. faunas: Rasetti, F., 11.
- Cambrian Lévis conglom. fauna, corrections: Rasetti, F., 1.

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- Cambrian, terminology for describing:
Howell, B. F., 7.
- Cambrian system, correls. by fossils:
Wheeler, H. E., 1.
- Canada, Lake St. John Ord.: Sinclair,
G. W., 11.
- Cybele, Ord., N. Am.: Sinclair, G. W., 7.
- Dimeropygae, Ord., N. Am.: Sinclair, G.
W., 7.
- Dolichometopinae, Camb., N. Am., Green-
land: Kobayashi, T., 3.
- Fauna, Glen Dean Carb. fm., Ind.: Haas,
O., 2.
- Fossil lists, Pittsburgh area, Pa.: Leigh-
ton, H., 3.
- Illaeus, muscle scars: Sinclair, G. W.,
10.
- Illinois, Chester fm. fossils: Michael, G.
V., 1.
- Isotelus, meraspid period, Ord., Ontario:
Fritz, M. A., 4.
- Kirkella, Ord., N. Am.: Kobayashi, T., 3.
- Maine, Ripogenus Dam, Sil. fauna: Wil-
lard, B., 3.
- Mexico, Caborca area, Sonora: Cooper, G.
A., 1.
- New York, Catskill, Kaaterskill quads.
faunas: Chadwick, G. H., 1.
- Clinton fauna, W., cent.: Gillette, T., 1.
- Dutchess Co., Upper Camb.: Lochman,
C., 1.
- Irondequoit Sil. fm.: Howell, B. F., 4.
- Oak Orchard mbr. Lockport fm. Sil.
fauna: Howell, B. F., 10.
- Newfoundland, W., Camb.: Troelsen, J.
C., 1.
- North America, Greenland, Dolichometo-
pinae, Camb.: Kobayashi, T., 1.
- Injured, Ordovician: Sinclair, G. W., 8.
- Late Upper Camb., N. Y.-Vt.-Quebec:
Rasetti, F., 4.
- Lower Camb. genera revision: Lochman,
C., 2.
- Lower Middle Camb. Eodiscids: Koba-
yashi, T., 2.
- Ohio, Cincinnati area fauna: Bucher, W.
H., 1.
- Onchometopus, Ord. asaphid, Pa.: Howell,
B. F., 2.
- Pennsylvania, Hollidaysburg - Huntington
quads., fauna: Butts, C., 1.
- Pittsburgh area, fossil lists: Leighton,
H., 3.
- Quebec, faunas: Dresser, J. A., 1.
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- Ordovician: Rasetti, F., 8.
- Simard map area faunas: McGerrigle,
H. W., 1.
- Western Gaspé, Upper Camb.: Rasetti,
F., 5.
- Remopleurides sinclairi for R. striatus:
Cooper, G. A., 3.
- Telephus, Ord., Va.: Fischer, A. G., 1.
- Texas, Lower Ord.: Bridge, J., 3.
- Utah, Kelly's Hole, Dugway Range: Ives,
R. L., 16.

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- Utah—Continued.
- Stansbury Is., Great Salt Lake: Ives,
R. L., 7.
- Virginia, Ordovician, Strasburg area:
Whittington, H. B., 1.
- Shenandoah Valley, Ord. faunas: Coop-
er, B. N., 1.
- Silicified, Ord.: Cooper, G. A., 4; Evitt,
W. R., II, 1.
- Washington, Stevens Co. Camb.: Camp-
bell, C. D., 1.
- Trimetrogon aerial photography, surveying
tool: Disney, R. W., 1.
- Trinidad. See also West Indies.
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Clay research and oil devel. problems:
Griffiths, J. C., 1.
- Paleontology.*
Ceratobulimina, genus and species: Cush-
man, J. A., 1.
- Foraminifera, Cret.: Cushman, J. A., 1.
- Lizard Springs fm.: Cushman, J. A., 6.
- St. Croix Oligocene fm.: Cushman, J. A.,
8.
- Mollusca, Miocene Springvale beds: Rutsch,
R. F., 1.
- Petrology.*
Soil genesis, sed. clay: Rodrigues, G., 1.
- Trinity River area min. res., Tex.-Okla.:
Weissenborn, A. E., 1.
- Triplite.
Colorado, El Paso Co.: Boucot, A. J., 1;
Wolfe, C. W., 1.
- Fremont Co.: Wolfe, G. D., 1.
- Tripoli.
Mexico, Estado Aguascalientes: Lopez G.,
F., 1.
- United States: Metcalf, R. W., 1.
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- Tschermigite, "The Geysers," Calif.: Vonsen,
M., 1.
- Tsunami, seismic sea waves: Heck, N. H., 1.
- Long-distance, period increase: Munk,
W. H., 2.
- Tsunami and earthquake, Hawaii, 4/1/46:
Macdonald, G. A., 3.
- Tufa, Stansbury Is., Great Salt Lake, Utah:
Ives, R. L., 7.
- Tuff.
Alaska, Knight Island copper claims:
Stefansson, K., 1.
- Arizona, Superstition Mts. area: Shaw,
V., 4.
- California, Glendora volcanics: Shelton,
J. S., 2.
- Monterey fm.: Bramlette, M. N., 1.
- Canada, Flin Flon-Mandy area: Stockwell,
C. H., 1.
- Colorado, Cripple Creek dist.: Koschmann,
A. H., 4.
- Dunmore mine, Ouray Co.: Kelley, V.
C., 3.
- Mineral Point, Poughkeepsie, Upper Un-
compahgre dists.: Kelley, V. C., 1.

Tuff—Continued.

- Cuba, Camagüey Prov.: Wessem, A., 1.
 Nevada, Currant Creek dist.: Vitaliano, C. J., 1.
 Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 Eureka area, igneous fusion: Gianella, V. P., 2.
 Oregon, E., bldg.-block materials: Wagner, N. S., 1.
 Horse Heaven quicksilver mine: Lewis, F. E., 1.
 Puerto Rico, Dos Bocas Dam: Money-maker, B. C., 3.
 Garzas Dam, Vacas River: Money-maker, B. C., 4.
 Quebec, Abitibi, Temiscamingue Cos.: Ignham, W. N., 1.
 Wettnagami Lake and River area: Fairbairn, H. W., 1; Graham, R. B., 1.

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- Alaska, Lost River tin deposit, Seward Penin.: Heide, H. E., 1.
 Mountain View mine, Hyder: Erickson, A. W., 1.
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 Red Rose mine: Stevenson, J. S., 1.
 Brucine determination: Grimaldi, F. S., 1.
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 Pine Creek, Inyo Co.: Bateman, P. C., 1.
 Canada, Flin Flon-Mandy area: Stockwell, C. H., 1.
 Western, ore prosp., explor.: Irwin, A. B., 1.
 Colorado, Boulder dist.: Tweto, O. L., 1, 2.
 Cement-Mineral Creeks area: Varnes, D. J., 7.
 Dunmore mine, Ouray Co.: Kelley, V. C., 3.
 Metallic min. deposits: Fischer, R. P., 1; U.S.G.S., 3, no. 8.
 Metals: Vanderwilt, J. W., 5.
 San Juan region: Burbank, W. S., 6, 7.
 Upper Blue River area: Singewald, Q. D., 3.
 Field test: North, V., 2.
 General: Li, K. C., 1.
 Idaho, Borak Peak quad. poss.: Ross, C. P., 2.
 Nevada, Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
 Osgood Range deposits: Hobbs, S. W., 1.
 Riley Mine, Humboldt Co.: Holmes, G. H., Jr., 1.
 New Mexico, Iron Mtn. deposits: Storms, W. R., 3.
 Mineral res.: Benjovsky, T. D., 3.
 North America: Li, K. C., 1.
 Abundance in ig. rocks: Sandell, E. B., 1.
 Northwest Territories, poss.: Denis, H. B., 1.
 Prospecting: Hedley, M. S., 3.
 Rare metals: De Ment, J. A., 1.

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- South Dakota, metallic min. deposits: Fischer, R. P., 2; U. S. G. S., 3, no. 13.
 Texas, min. res.: Sellards, E. H., 4.
 United States: Kerr P. F., 1.
 Mineral res. map, Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
 Missouri Valley area: U.S.G.S., 3, no. 1.
 Southwest, manganese ores: Fleischer, M., 1.
 Virginia-N. Car. deposits: Espenshade, G. H., 1.
 Utah, Mineral Range: Crawford, A. L., 3.
 Strategic minerals locs.: Buranek, A. M., 1.
 Virginia, Mecklenburg Co.: Argyle, B. E., 1.
 Washington: Culver, H. E., 1.
 Tunnel geology: Terzaghi, K., 1.
 Turquoise. See also Gems; Precious stones.
 Arizona, Castle Dome copper deposit: Peterson, N. P., 2.
 Colorado, King mine nugget: Pearl, R. M., 1.
 Color and fading: Wade, F. B., 1.
 New Mexico, Little Hatchet Mts. area: Lasky, S. G., 3.
 North America: Cross, J. L., 1.
 Texas, min. res.: Sellards, E. H., 4.
 Virginia: Graham, A. R., 1.
 Tuzas, flat-topped volcanoes: Mathews, W. H., 3.
 Twenty million centuries: Beardsley, J. C., 1.
 Twinning, Dauphiné, in quartz from sawing: Frondel, C. 1.
 Secondary: Armstrong, E. J., 1.
 Twinning-frequency, quartz crystals: Gault, H. R., 2.
 Two-dimensional topog. features, gravity effects: Hubbert, M. K., 2.
 TXL oil field, Ector Co., Tex.: Cantrell, C. D., Jr., 1; Weber, G., 1.
 Tyrolite, U. S.: Berry, L. G., 3.
 Ulexite, Kramer borate dist., Calif.: Gale, H. S., 1.
 Ultramafic igneous rocks, radium content: Davis, G. L., 1.
 Ultraviolet light in quicksilver prosp.: De Ment, J. A., 9.
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 Umber, U. S., min. res. map, Nebr., Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.
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 Alabama: SE. Geol. Soc., 2.
 Southeast: MacNeil, F. S., 1.
 Tuscaloosa area, highway profiles: Eargle, D. H., 3; U.S.G.S., 2, no. 31.
 Western, pre-Selma fms.: Monroe, W. H., 2; U.S.G.S., 1, no. 50.
 Alberta, Athabaska sands, drilling: Hume, G. S., 2.
 Highwood--Elbow area: Allan, J. A., 2.
 Plains structure at depth: Rutherford, R. L., 1.
 Wapiti-Cutbank area: Allan, J. A., 1.

Unconformities—Continued.

- Arizona, Ajo mining dist.: Gilluly, J., 1.
 Grand Canyon Cambrian: McKee, E. D., 1.
 Reward (Vekol) zinc deposit, Pinal Co.: Denton, T. C., 1.
 Arkansas-north Louisiana oil fields: Halbouty, M. T., 1.
 Bellows Falls quad., N. H.-Vt.: Kruger, F. C., 2.
 British Columbia, Alcan Highway Paleozoic sed. rocks: Laudon, L. R., 2.
 Ashcroft area: Duffell, S., 2.
 McConnell Creek area: Lord, C. S., 1.
 South half Aiken Lake area: Armstrong, J. E., 1.
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Cameron, E. N., 1.

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- Drainage evolution, High Plains: Smith, H. T. U., 5.
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- History: Heck, N. H., 2.
- 1944-45: Bodle, R. R., 1.
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- Southern Appalachian coal field, Penn.: Wanless, H. R., 1.

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Physical geology—Continued.

- Structure development, relations, NE.: Lockett, J. R., 1.
- Western: Buwalda, J. P., 1.
- Tectonics: King, P. B., 3.
- Map: King, P. B., 5.
- Unconformities in oil fields, Ark.-La.: Halbouty, M. T., 1.
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- Drainage basins, topog. characters: Langbein, W. B., 1.
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Nature, occurrence, distribution: Stewart,
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Stewart, D., Jr., 2.

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A. L., 2.

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King, W. H., 1.

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Exploration, oil and gas: Arnold, H. C., 1.

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Iron deposits, Iron Co.: Young, W. E., 1.

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H., 2.

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F., 1.

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Wideman, F. L., 1.

Resinous coals, Salina, Huntington Can-
yons: Buranek, A. M., 3.

Salts, magnesium, potassium, cored with
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Jones, R. L., 1.

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- Crocodylian, Eocene, Uinta Co.: Gilmore, C. W., 4.

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- Seismological program: Williams, J. S., 2.
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Haas, O., 2.

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J. L., 1.

Texas, cent. region: Moore, J. R., III, 1.

United States: Goldstein, A., Jr., 1.

Wyoming: U. S. G. S., 3, no. 9.

Encampment area: Platt, R. E., 1.

Vermont.

- Ascutney Mtn.: Hooker, M., 1.
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 Jacobs, E. C., 5.

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 E. C., 1.

Economic geology.

- Bellows Falls quad.: Kruger, F. C., 1.
 Copper mines, Orange Co.: Jacobs, E.
 C., 2.
 Mineral industries: Jacobs, E. C., 4.
 Strafford quad. res.: Jacobs, E. C., 1.

Historical geology.

- Bellows Falls quad.: Kruger, F. C., 1, 2.
 Orange Co. copper mines: Jacobs, E. C., 2.
 Ordovician, Chazyan classn.: Kay, G. M., 2.
 Strafford quad.: Doll, C. G., 1; Jacobs,
 E. C., 1.

Mineralogy.

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 Copper mines, Orange Co.: Jacobs, E.
 C., 2.
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 Minerals, Eden Mills asbestos quarry:
 Frondel, C., 2.

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- Trilobita, late Upper Camb., revision:
 Rasetti, F., 4.

Petrology.

- Bellows Falls quad.: Kruger, F. C., 2.
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 White, W. S., 1.
 Plutonites, Derby area: Maynard, J. E., 2.
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 E. C., 1, 3.
 Strafford Township: Jacobs, E. C., 3.

Physical geology.

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 Derby area plutonites: Maynard, J. E., 2.
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 Rock bursts, Barre granite quarries:
 White, W. S., 1.
 Strafford quad.: Doll, C. G., 1; Jacobs,
 E. C., 1.

Vertebrata (general). See also Amphibia,
Aves, etc.

- Arizona, Moenkopi fm. trackways: Pea-
 body, F. E., 3.
 Triassic fauna: Welles, S. P., 1.
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 E. C., 2.
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 C., 2.
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 Camp, C. L., 3.
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 son, J. A., 1.
 Jacob Boll's collecting, Tex. Perm.: Geiser,
 S. W., 1.
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Vertebrata—Continued.

- Phylogenetic terms, analysis redefinition:
 Haas, O., 4.
 Progress, paleont. research, Pacific Coast,
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 Hughes, D. S., 1.
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 Hawley, P. F., 1.
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 Macelwane, J. B., 5.
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 P., 1.
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 J. A., 3.
 Virginia.
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 Bevan, A. C., 3.
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 Aggregates as abrasives: Parrot, W. T., 1.
 Dolomite, high-magnesium, Cootes store
 area: Edmundson, R. S., 1.
 Ilmenite ore body, Piney River: Davidson,
 D. M., 1, 2.
 Limestone, Frederick Co.: Bass, C. E., 1.
 Red Oak granite, Buggs Is. damsite: Mc-
 Gill, W. M., 4.
 Rose Hill oil field, Lee Co.: Jillson, W.
 R., 12, 15; Miller, R. L., 1-a, 3; Pearse,
 B. H., 1; U. S. G. S., 1, no. 76.
 Titanium deposits, Piney River: Ross, C.
 S., 4.
 Tungsten area, Mecklenburg Co.: Argyle,
 B. E., 1.
Historical geology.
 Bolarian ser., Ordovician: Kay, G. M., 5.
 Burkes Garden quad.: Meyerhoff, H. A., 2.
 Cambrian ss? James River, Balcony Falls:
 Casey, J. H., 1.
 Catoctin fm., cent. Va.: Bloomer, R. O., 2.
 Catoctin volcanic rocks, age: Furcron,
 A. S., 2.
 Coastal Plain stratigraphy: Cederstrom,
 D. J., 3.
 Cumberland overthrust block, SW.: Miller,
 R. L., 4.
 Field Trip to quarries, Charlottesville Mtg.,
 1947: Pegau, A. A., 2.
 Genesis of ground water, Coastal Plain:
 Cederstrom, D. J., 1.
 Giles Co., Goodwin Ferry Cave: Krinitzsky,
 E. L., 1.
 Lee County oil occurrence: Miller, R. L., 3.
 Lick Mts. structure: Stose, G. W., 1.
 Limestone facies, Appalachian Valley:
 Cooper, B. N., 3.

Virginia—Continued.

Historical geology—Continued.

- Ordovician, Lower, Middle, SW.: Prouty, C. E., 1.
 Rose Hill oil field, Lee Co.: Jillson, W. R., 12, 15; Miller, R. L., 1-a, 3; U. S. G. S., 1, no. 76.
 Sedimentary fms., Washington and vicinity: Darton, N. H., 1.
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 Shenandoah Valley, Lower Middle Ordovician: Cooper, B. N., 1.

Mineralogy.

- Garnets: Trainer, J. N., 3.
 Hypothetical sedimentary meteorites?: Cross, F. C., 1.
 Ilmenite ore body, Piney River: Davidson, D. M., 1, 2.
 Roanoke Co.: Hickman, R. C., 2.
 Marl, New Kent Co.: Hickman, R. C., 3.
 Martite, pseudomorph or dimorph: Pegau, A. A., 1.
 Pyrites, Louisa Co.: Hickman, R. C., 4.
 Titanium, Piney River: Ross, C. S., 4.
 Tungsten, Mecklenburg Co.: Argyle, B. E., 1.
 Turquoise: Graham, A. R., 1.

Paleontology.

- Ordovician faunas: Cooper, B. N., 1; Prouty, C. E., 1.
 Silicified fossils: Cooper, G. A., 4.
 Ostracoda, Eocene: Schmidt, R. A. M., 2.
 Trilobites, Ord., Catawba: Fischer, A. G., 1.
 Silicified, Ord.: Evitt, W. R., II, 1.
 Strasburg area: Whittington, H. B., 6.

Petrology.

- Aggregates as abrasives: Parrot, W. T., 1.
 Blue Ridge core, cent. Va.: Bloomer, R. O., 3.
 Cambrian ss., Blue Ridge, Montebellow-Glasgow: Chittum, H. T., Jr., 1.
 James River, Balcony Falls: Casey, J. H., 1.
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 Volcanic rocks, age: Furcron, A. S., 2.
 Dolomites, Camb.-Ord. facies: Prouty, C. E., 2.
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 Lick Mts. structure: Stose, G. W., 1.
 Limestone facies, Appalachian Valley: Cooper, B. N., 3.
 Limestones, Middle Ordovician: Kay, G. M., 4.
 Metamorphism along Pulaski fault, Appalachian Valley: Cooper, B. N., 2.
 Red Oak granite, Dug50 Mt., diameters: McGill, W. M., 4.
 Shale, tectonic intrus., Rockbridge Co.: Bloomer, R. O., 1.
 Weathering characteristics of rocks: Melville, P. L., 1.

Physical geology.

- Caves, undeveloped: McGill, W. M., 2.

Virginia—Continued.

Physical geology—Continued.

- Cumberland overthrust block, SW.: Miller, R. L., 4.
 Drainage changes, Clifton Forge area: Hoffman, R. L., 1.
 Gibson's Hole Cave, Augusta Co.: Robertson, J. T., 1.
 Goodwin Ferry Cave, Giles Co.: Krinitzsky, E. L., 1.
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 Limestone, Frederick Co.: Bass, C. E., 1.
 Metamorphism along Pulaski fault, Appalachian Valley: Cooper, B. N., 2.
 Pulaski, Staunton faults: Edmundson, R. S., 2.
 Rose Hill oil field, Lee Co.: Jillson, W. R., 12, 15; Miller, R. L., 1-a, 3; U. S. G. S., 1, no. 76.
 Shale, tectonic intrus., Rockbridge Co.: Bloomer, R. O., 1.
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 Weathering characteristics of rocks: Melville, P. L., 1.

Physiographic geology.

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Underground water.

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 Volatile transfer in effusives and intrusives: Lane, A. C., 5.
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 Alaska, Pavlof Volcano area, Aleutians: Kennedy, G. C., 5.
 California, Monterey fm.: Bramlette, M. N., 1.
 Colorado, nonmetallics: U.S.G.S., 3, no. 10.
 Kansas, Pliocene cf. Pleistocene: Swineford, A., 2.
 Trego Co. construction materials: Byrne, F. E., 1.
 Nebraska, Pleist. deposits: Condra, G. E., 1.
 North Dakota, nonmetallics: Shride, A. F., 1; U. S. G. S., 3, no. 14.
 Oklahoma, composition, industrial uses: Burwell, A. L., 4; Anonymous, 7.
 Paricutin Volcano, Mex.: Worsley, M. B., 2; Shrock, R. R., 5.
 United States, min. res. map, Nebr.-Iowa-Kans. - Mo. - Okla.-Ark.: Midwest Research Inst., 1.
 Western, Green River fms.: Felts, W. M., 1.

Volcanic ash—Continued.

United States—Continued.

Wyoming, nonmetallics: U.S.G.S., 3, no. 9.

Volcanic cinders, Oreg., bldg.-block materials:
Wagner, N. S., 1.

Volcanic emanations, key to ore transport:
Johnston, W. D., Jr., 2.

Volcanic heat: Finch, R. H., 3; Verhoogen,
J., 1.

Volcanic rocks. See Igneous rocks.

Volcanism. See also Volcanic ash: Volcanoes;
Volcanoes, extinct.

Alaska, Aleutian Islands: Coats, R. R., 3.
Pavlov Volcano area, Aleutians: Ken-
nedy, G. C., 5.

Bighorn Basin, Mont.-Wyo.: Stow, M.
H., 2.

British Columbia, Porcher Island: Smith,
A., 2.

California, Calico Mts.: Henry, D. J., 1.
Ivanpah quad.: Hewett, D. F., 1.
Kern River Basin: Webb, R. W., 1.
Sierra Nevada structure: Mayo, E. B., 1.
Southern, crystalline rocks: Miller, W.
J., 1.

Central America volcanic zones, Cret.,
Tert.: Lester, J. G., 1.

Colorado, Front Range: Wahlstrom, E.
E., 2.

Red Mtn. dist.: Burbank, W. S., 10.
Silverton volcanic center dists.: Bur-
bank, W. S., 9.

Cuba, Camagüey Prov.: Wessem, A., 1.
Fort Rock, Summer Lake Basins, Oreg.,
artifacts: Allison, I. S., 1.

General: Adams, L. H., 1.

Geology applied to Imbrian Plain of the
Moon: Spurr, J. E., 1.

Greenland, northeast: Bierther, W., 1;
Blüthen, J., 1.

Plateaus, N.: Noe-Nygaard, A., 2.
Scoresbyland: Bierther, W., 1.

Svartenhuk, basalt prov.: Noe-Nygaard,
A., 1.

Hawaii, Honolulu ground-water supply:
Palmer, H. S., 3.

Honolulu Pleist. ser., Oahu: Winchell,
H., 3.

Koolau basalt ser., Oahu: Wentworth, C.
K., 2.

Idaho, Borah Peak quad.: Ross, C. P., 2.

Indiana, Kentland disturbed area: Dietz,
R. S., 3.

Massachusetts, gneiss dome, Shelburne
Falls: Balk, R., 1.

Mexico, Estado Michoacán, N.: Blásquez
López, L., 4.

Montana, dating by heavy minerals: Stow,
M. H., 1.

New Hampshire, Mt. Washington quad.:
Billings, M. P., 1.

New Mexico, Lucero Uplift: Kelley, V.
C., 2; U. S. G. S., 1, no. 47.

McCartys basalt flow, Valencia Co.:
Nichols, R. L., 1.

Natural light-weight bldg. block ma-
terials: Benjovsky, T. D., 1.

Volcanism—Continued.

North America, Cordilleran geosyncline:
Eardley, A. J., 1.

Oregon, early man, age: Allison, I. S., 1.

Oregon cascades, postglacial forest suc-
cession and climates: Hansen, H. P., 2.

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Hansen, H. P., 6.

Texas, N., volcanic sediments: Sidwell,
R., 2.

Unsolved problems of geophysics: Adams,
L. H., 2.

Utah, Markagunt Plateau: Gregory, H.
E., 3.

Mineral Range, tungsten deposits: Craw-
ford, A. L., 3.

Washington-Oregon, postglacial volcanic
activity: Hansen, H. P., 6.

Wyoming, Absaroka volcanic field, Bighorn
Basin: Rouse, J. T., 1.

Volcanoes. See also Volcanic ash; Volcanism;
Volcanoes, extinct.

Alaska, Aleutian Islands: Byers, F. M.,
Jr., 1; Coats, R. R., 1, 2; Kennedy,
G. C., 5.

Bogoslof Islands: Ransom, J. E., 1.

Great Sitkin Volcano: Simons, F. S., 1.

Investigations, 1946: Robinson, G. D.,
1; U. S. G. S., 11.

Kanaga Island: Coats, R. R., 2.

Pavlov Volcano: Kennedy, G. C., 5.

Umnak Island, volcano invs.: Byers,
F. M., Jr., 1.

British Columbia, origin of flat-topped
volcanoes: Mathews, W. H., 3.

El Salvador: Basauri, D., 1.

Hawaii: Stearns, H. T., 1, 3.

Crater devel.: Jaggat, T. A., Jr., 2.

Honolulu Pleist. ser., Oahu: Winchell,
H., 3.

Kilauea eruptions, 1790, 1822: Finch,
R. H., 4.

Puna rift system: Finch, R. H., 2.

Mauna Loa, summit, rift zone: Mac-
donald, G. A., 1.

Molokai Island: Stearns, H. T., 4, 5.

Tilt patterns, Volcano Observatory:
Powers, H. W., 1, 4.

Volcanic heat, Kilauea, Mauna Loa:
Finch, R. H., 3.

Jorullo Volcano, Mex.: Webber, J. W., 2.

Kanaga Volcano, Alaska: Coats, R. R., 2.

Kilauea, Hawaii: Finch, R. H., 4, 5.

Mount Moffet Volcano, Alaska: Coats, R.
R., 1.

Ocean deeps, mountain chains, and vol-
canic ranges: Gunn, R., 1.

Okmok Volcano, Alaska: Byers, F. M.,
Jr., 1.

Parícutin Volcano, Mexico: Aubert de la
Rüe, E., 2; Belz, C. A., 3; Bullard,
F. M., 2, 3; Coleman, S. N. M., 1;

Foshag, W. F., 3; Kennedy, G. C., 3;
Krauskopf, K. B., 1, 2, 3; Lester,
J. G., 1; Lowdermilk, W. C., 1;

Ordoñez, E., 2, 3; Pérez Peña, A.,
1; Rosalsky, M. B., 2; Segerstrom,

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Parícutin, Mexico—Continued.

K., 1; Shrock, R. R., 5; Webber, J. W., 1; Wilcox, R. E., 1; Williams, H., 2; Zies, E. G., 1.

Pavlof Volcano, Alaska: Kennedy, G. C., 5.
Tlaxcala Volcano, Mexico: Blásquez López, L., 1.

Tulik, Okmok caldera, Umnak Is., Alaska, 1945 eruptions: Robinson, G. D., 2.

United States National Parks: Melbo, I. R., 1.

Volcanic heat: Finch, R. H., 3; Verhoogen, J., 1.

Volcanoes, extinct. See also Volcanic ash; Volcanism; Volcanoes.

Alaska, Adagdak Volcano, Aleutians: Coats, R. R., 1.

Adak Island, Aleutians: Coats, R. R., 1.
Aleutians, western: Coats, R. R., 3.

Kanaga Is., N. Aleutians: Coats, R. R., 2.
Umnak Island invs., Aleutians: Byers, F. M., Jr., 1.

California, Sierra Nevada, S.: Mayo, E. B., 1.

Costa Rica: Stocking, H. E., 1.

Hawaii, Molokai Island: Stearns, H. T., 4, 5.

Idaho, Craters of the Moon: Andrews, H. N., Jr., 4.

Iztaccihuatl Volcano, Mex.: Robles Ramos, R., 1.

Mexico, "Cerrito", Tepetzotlán area: Mullerried, I-B.

Parícutin Volcano area: Pérez Peña, A., 1.

Provinces: Ordoñez, E., 2-a.

Mount Kanaton, Kanaga Island, Alaska: Coats, R. R., 2.

Mount Mazama, Oregon: Hansen, H. P., 2.

Mount Vsevidof, Umnak Is., Alaska: Byers, F. M., Jr., 1.

Oregon, Crater Lake: Williams, H., 1.
Cascades, postglacial forest succession, and climates: Hansen, H. P., 2.

Fort Rock Lake, ash falls: Allison, I. S., 3.

Oregon—Washington postglacial volcanic activity: Hansen, H. P., 2.

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Sunset Crater, Ariz.: Muench, J. R., 1.

United States, N. Gulf Coastal Plain: Moody, C. L., 3.

Utah, Cedar Mts., Moroni's Postpile: Ives, R. L., 14.

Fumarole Butte, Sevier Desert: Ives, R. L., 20.

Washington, pumice deposits: Carithers, L. W., 2.

Washington-Oregon postglacial volcanic activity: Hansen, H. P., 6.

Voltaite, "The Geysers," Calif.: Vonsen, M., 1.
Vredenburgite, Franklin, N. J.: Mason, B., 1.
Vulcanite, East Greenland, eruptives: Rittman, A., 1.

Wad, Grant Co., N. Mex.: Russell, P. L., 1.

Wapplerite, Manhattan, Nev.: Goudey, H., 1.
War-mineral research, Ill. Geol. Survey: Leighton, M. M., 1.

Wasco oil field, Kern Co., Calif.: Erickson, E. L., 1.

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Anderson zinc-lead prospects, Stevens Co.: Lorain, S. H., 2.

Calcareous deposits, Georgia Strait area: Mathews, W. H., 4.

Coal, coal mining: Green, S. H., 1.
Deviation, diamond-drill holes, Metaline dist.: Sampson, E., 1.

Dunite, refractory uses: Jones, R. S., 1.

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Iron deposits, Buckhorn Mtn. dist.: Zoldok, S. W., 1.

Lignite deposit, Lewis Co.: Toenges, A. L., 1.

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Olivine, Twin Sisters Mts.: Roberts, M., 1.

Petroleum, gas prospects: Smith, H., 1.

Exploration: Glover, S. L., 2.

Pumice, pumicite: Carithers, L. W., 2.

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Spillite, manganese problems, Olympic Penin.: Park, C. F., Jr., 1.

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Historical geology.

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Grand Coulee: Koester, C. R., 1.

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Mineralogy.

- Iron deposits, Buckhorn Mtn. dist.: Zoldok, S. W., 1.
- Magnesite belt, Stevens Co.: Campbell, I., 1.
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- Mineral collecting: Bateman, E. S., 1.
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- Mt. Rainier Nat. Park, rocks and minerals: Danner, T., 2.
- Olivine, Twin Sisters Mts.: Roberts, M., 1.
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- Pumice, pumicite: Carithers, L. W., 2.
- Quartz inclusions with reaction rims, diabase dike: Goodspeed, G. E., 1.
- Radium analysis, submarine cores, Skagit Bay area: Burcham, D. P., 1.
- Radium content, Hood Canal bottom-samples: Wilson, R. E., 1.
- Spillite, manganese problems, Olympic Penin.: Park, C. F., Jr., 1.
- Sultan Basin deposits: Carithers, L. W., 1.
- Tungsten resources: Culver, H. E., 1.
- Zinc-lead deposits, Stevens Co.: Lorain, S. H., 2; Reed, G. C., 4.

Paleontology.

- Biostratigraphy: Beck, R. S., 1.
- Cambrian, NE. Stevens Co.: Campbell, C. D., 1.
- Ceratobulimina, genus and species: Cushman, J. A., 1.
- Methow quad.: Barksdale, J. D., 3
- Postglacial forest succession, Puget Lowland: Hansen, H. P., 4.
- Trees, petrified, Saddle Mts.: Bateman, E. S., 3.

Petrology.

- Calcareous deposits, Georgia Strait area: Mathews, W. H., 4.
- Colville batholith, E. border structures: Campbell, C. D., 2.
- Deviation, diamond-drill holes, Metaline dist.: Sampson, E., 1.
- Dolomites, Marble area: Deiss, C., 1.
- Gravels, sands, weathered: Allen, V. T., 3.
- Foster Creek Dam site: Cary, A. S., 1; Schmidt, A. W., 1.
- Methow Valley metamorphic rocks: Barksdale, J. D., 2.
- Mt. Rainier Nat. Park rocks and minerals: Danner, T., 2.
- Olympic Penin.: Park, C. F., Jr., 1.
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Physical geology.

- Colville batholith, E. border structures: Campbell, C. D., 2.
- Foster Creek Dam site: Schmidt, A. W., 1.
- Georgia Strait area: Mathews, W. H., 4.
- Grand Coulee: Koester, C. R., 1.
- Gravels, sands, weathered: Allen, V. T., 3.

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Physical geology—Continued.

- Postglacial volcanic activity: Hansen, H. P., 6.
- Puget Sound earthquake, 2/14/46: Barksdale, J. D., 1.
- Ross Dam area, Cascade Mts.: Coombs, H. A., 1.

Physiographic geology.

- Eugene area: Smith, W. D., 1.
- Foster Creek Dam site: Cary, A. S., 1.
- Grand Coulee: Irwin, W. H., 1; Koester, C. R., 1.
- Mima mounds, origin: Scheffer, V. B., 1.
- South Dam, Columbia Basin projects: Irwin, W. H., 2.
- Sultan Basin: Carithers, L. W., 1.

Underground water.

- Grand Coulee eng. geology: Irwin, W. H. 1.
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Water-coupled microphone system for seismic prosp.: Snively, B. L., 1.

Water, effect on clays in landslides: Auger, P. E., 4.

Water-faceted boulders: Kuenen, P. H., 2.

Water, interstitial, est. by capillary pressure: Thornton, O. F., 1.

Water, moving, competency to transport debris: Nevin, C. M., 3.

Arizona, Castle Dome copper deposit: Peterson, N. P., 2.

Mineral res. map., Nebr.-Iowa-Kans.-Mo.-Okla.-Ark.: Midwest Research Inst., 1.

Wave-front circles, depth velocity increase: Van Melle, F. A., 1.

Wave-types, breaking effect on Calif. beaches: Grant, U. S. IV., 2.

Waves, long-distance, period increase: Munk, W. H., 2.

Wax saturation in oil sands: Calhoun, J. C., 1.

Weathering. See also Erosion.

Acid clay, agent: Keller, W. D., 7.

Arizona, Grand Canyon area: Corle, E., 1; Stone, J. F., 1.

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Arroyo problem: Happ, S. C., 1.

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Dunmore mine, Ouray Co.: Kelley, V. C., 3.

Eureka-Animas Forks area: Burbank, W. S., 11.

Front Range mineral belt: Goddard, E. N., 5.

Gilman dist., Eagle Co.: Tweto, O. L., 3.

Gold Hill dist.: Myers, R. E., 2.

Jewell Tunnel mine, Chouteau Co.: Ames, E. W., 1.

Kokomo mining dist.: Koschmann, A. H., 1, 3.

Leadville mining dist.: Loughlin, G. F., 1.

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Colorado—Continued.

- Metallic min. deposits: Fischer, R. P., 1; U.S.G.S., 3, no. 8.
- Metals: Vanderwilt, J. W., 5.
- Mineral Point, Poughkeepsie, Upper Uncompahgre dists.: Burbank, W. S., 12; Kelley, V. C., 1.
- Rico mining dist.: Varnes, D. J., 2.
- San Juan region: Burbank, W. S., 6, 7.
- Silverton volcanic center dists.: Burbank, W. S., 9.
- Snowmass Mtn. area: Vanderwilt, J. W., 6.
- Upper Blue River area: Singewald, Q. D., 3.
- Geological aspects of prosp., zinc-lead dist., Ill.: Willman, H. B., 1.
- Idaho, Clark Fork lead-zinc dist.: Lorain, S. H., 1.
- Coeur d'Alene mining dist.: Sorenson, R. E., 1.
- Last Chance-Hornsilver mines: Anderson, A. L., 5.
- Little Pittsburg mine: Herdlick, J. A., 1.
- Moyie-Yaak dist.: Anderson, A. L., 1.
- Illinois, Jo Daviess Co.: Zinner, P., 1.
- Northwest zinc-lead dist.: Willman, H. B., 1, 2.
- Pope Co. mines: Bishop, O. M., 1.
- Impounding structures, control of ore deposits: Mackay, R. A., 1.
- Iowa, min. res.: Hershey, H. G., 1.
- Kentucky, Eva Tanguay mines: Starnes, X. B., 3.
- Krausse Estate prosp.: Starnes, X. B., 2.
- Manitoba, prospecting areas: de Wet, J. P., 1.
- Sherridon area: Canada, G. S., 1.
- Maryland, Carroll, Frederick Cos. min. res.: Singewald, J. T., Jr., 2.
- Mexico, Chihuahua min. res.: González Reyna, J., 3-a.
- Maravatio-Zitacuaro dists.: Flores, T., 1.
- Nuevo León: Mullerried, 6.
- Oaxaca guide book: Barrera, T., 1.
- Practical indications. Mullerried, 3.
- State of Zacatecas, min. res.: González Reyna, J., 7.
- Typical deposits: González Reyna, J., 12.
- Urique min. zone, Chihuahua. González Reyna, J., 7.
- Missouri, Alice mine: Kidwell, A. L., 3; Needham, A. B., 1.
- Jasper Co.: Balingier, H. J., 2, Brichta, L. C., 1, 2.
- Morgan Co.: Mather, W. B., 1.
- Winchester deposit, Newton Co.: Balingier, H. J., 1.
- Montana, metallic min. deposits: Chace, F. M., 1; U.S.G.S., 3, no. 16.
- Nevada, Argenta mine, Clark Co.: Geehan, R. W., 2.
- Douglas, Ormsby, Washoe Cos.: Overton, T. D., 1.
- Eureka mines: Binyon, E. O., 1; Sharp, W., 1.

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Nevada—Continued.

- Mount Hope Mine: Matson, E. J., 1.
- Sultan mine: Geehan, R. W., 8.
- New Mexico, Grey Eagle, Grandview, Royal John claims: Hill, R. S., 1.
- Little Hatchet Mts. area: Lasky, S. G., 8.
- Mineral res.: Benjovsky, T. D., 3.
- Peerless mine, Grant Co.: Soulé, J. H., 4.
- Steeple Rock dist.: Russell, P. L., 6.
- New York, Balmat area: Marvin, T., 1.
- Edwards, Balmat mines: Brown, J. S., 2, 3.
- North America, desert minerals: Belz, C. A., 2.
- Northwest Territories poss.: Denis, H. B., 1.
- Oklahoma, industrial minerals: Dott, R. H., 6.
- Ontario, Calumet Island: McLaren, D. C., 1.
- Grenville fm. mines, prospects: Bonham, W. M., 1.
- Parry Sound area minerals: Satterly, J., 1.
- Robb-Jamieson area poss.: Berry, L. G., 1.
- Sudbury area: Cooke, H. C., 2.
- Pacific Northwest, U. S., min. res.: Appleton, J. B., 1.
- Quebec, Bourlamaque, Abitibi Co.: Canada G. S., 1; Norman, G. W. H., 1.
- Federal mine, Gaspé: Auger, P. E., 3.
- Grenville fm., mines, prospects: Bonham, W. M., 1.
- Sauconite: Ross, C. S., 2.
- South Dakota, metallic min. deposits: Fischer, R. P., 2; U.S.G.S., 2, no. 13.
- Tennessee, Eve Mills area: Dunlap, J. C., 1.
- Jefferson City dist.: Bridge, J., 1; Brokaw, A. L., 1.
- Knox Co., Longview mbr. Kingsport fm.: Allen, A. T., Jr., 1.
- Mascot-Jefferson City dist.: Bridge, J., 1.
- Shallow Ore mine, New Market: Black, W., 1.
- Stiner, Bunch Hollow mines: Sayre, R. L., 1.
- Texas, min. res.: Sellards, E. H., 4.
- San Antonio Canyon deposits: Dennis, W. E., 4.
- Silver Eagle mine: Dennis, W. E., 2.
- Texas and Oklahoma, Trinity River area min. res.: Weissenborn, A. E., 1.
- United States, great mines: Ingalls, W. R., 1.
- Mineral res. map, Nebr.-Iowa-Kans. Mo.-Okla.-Ark.: Midwest Research Inst., 1.
- Missouri Valley area: Dow, D. H., 1; U.S.G.S., 3, no. 1.
- Ore deposits. Helke, A., 1.
- Picher zinc-lead zone, Okla.-Kans.: U.S.-G.S., 6.
- Tri-State reserve. Ruhl, O., 1.
- Utah, Kelley's Hole, Dugway Range: Ives, R. L., 16.

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Utah—Continued.

- Mineral res.: Schneider, H., 1.
 Ophir Hill Consolidated mine: Wideman, F. L., 1.
 Tintic dist.: Kildale, M. B., 1.
 Wah Wah mine, Beaver Co.: Jones, R. L., 1.
 Washington, Anderson mine, Stevens Co.: Lorain, S. H., 2.
 Farmer prospect, Stevens Co.: Reed, G. C., 4.
 Metaline dist.: Sampson, E., 1.
 Sultan Basin: Carithers, L. W., 1.
 Wisconsin, Coughlin, Galena Level mines: Berliner, M. H., 1.
 Crow Branch mine: Lincoln, F. C., 1.
 Defense mines, Iowa Co.: Lincoln, F. C., 2.
 Grant Co.: Last Chance mine: Lincoln, F. C., 4.
 Lafayette Co. deposits: Renwick, M. O., 1.
 New Dale Rundell mine: Lincoln, F. C., 1.

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Wisconsin—Continued.

- Tennynson dist., Grant Co.: Apell, G. A., 1.
 Zinc in plants, slime ponds, Friedensville, Pa., and bio-geochemical prosp.: Robinson, W. O., 3.
 Zinckenite, W. Canada: Warren, H. V., 6.
 Zinnwaldite, Silver Mine area, Mo.: Kidwell, A. L., 1.
 Zircon.
 California, Los Banos dist.: Daviess, S. N., 1.
 Fluorescence: Foster, W. R., 3.
 Greenland, East: Kleiber, K., 1.
 Sands, coast between Unartok-Tokulinek: Vroman, J., 1.
 Ontario, Craigmont deposit: Eardley-Wilmot, V. L., 1.
 Renfrew Co. locs.: Eisenberg, J. M., 2.
 Oregon, SW. coast, black beach, river sands: Twenhofel, W. H., 2.
 Zirconium: De Ment, J. A., 1.
 Zoning, ore dists.: Johnston, W. D., Jr., 2.
 Zunyite, Tintic dist., Utah: Kildale, M. B., 1.