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BY

ERNEST A. HODGSON

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Bibliography of Seismology

January to June, 1941

The present unsettled world conditions have reduced the volume of items to be reported in the *Bibliography*. Fewer papers are being written; the assistance of some collaborators has been lost; and the opportunity in Canada for obtaining access to some periodicals is gone.

For these reasons it has seemed best to change the *Bibliography* temporarily from a quarterly to a semi-annual publication. The series, begun in January, 1929, continues unbroken. When the volume of bibliographical material warrants, a return to the original quarterly form is planned.

Collaboration by workers in seismology and allied fields is always welcomed. At the moment, it is particularly desired in the case of those living in neutral countries and therefore, presumably, having access to periodicals not available in Canada. On request, report forms will be furnished which reduce to a minimum the work of reporting papers and books which should be listed.

5011. ADKINS, John N., "The Alaskan Earthquake of July 22, 1937", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 353-376, 7 fig., 5 tab., bib., Berkeley, Oct., 1940.

5012. AHREN, D. W., "Early Geophysics in the First Person", *Oil Weekly*, Vol. 97, No. 2, p. 78, Houston, April 8, 1941.

5013. ALCEDÁN, Victor C., "El subsuelo de Lima observado a traves del ultimo terremoto", *Boletín de la Sociedad Geográfica de Lima*, Tomo 57, Trimestre No. 3, 123-133, 4 fig., Lima, 1940.

5014. AMERICAN INSTITUTE OF MINING AND METALLURGY, "Program of Committee on Geophysics Courses", *Geophysics*, Vol. 6, No. 1, 83-84, Houston, Jan., 1941.

Papers were delivered on the above subject by the following authors:—Slotnik, Bucher, Krumbein, Straley, Miller, Field, Kelly, Leet, Macelwane, Landsberg, Griggs.

5015. AMERICAN PHYSICAL SOCIETY. In the *Physical Review* for March, 1941 (464-480), appears the report by the Secretary of the American Physical Society of the Minutes of the Philadelphia Meeting, December 26-28, 1940. As usual, abstracts of all the papers are given. Of these several are of particular interest to seismologists. They are indexed in this issue of the *Bibliography* under the authors' names: Inglis, Longwell, Leet.

— ANDERSON, C. A., and MERRIAM, C. W., "Low-angle Thrusting in the Roberts Mountains, Nevada". See No. 5048 of this list.

— ANDERSON, J. F., "Apparatus for Solving Seismographic Problems" (Patent), U.S. No. 2,217,720, issued October 15, 1940. See No. 5094 of this list.

— ATHY, L. F., and MCCOLLUM, E. V., "Method and Apparatus for Seismic Surveying" (Patent), U.S. No. 2,219,508, issued Oct. 29, 1940. See No. 5094 of this list.

- ATHY, L. F., and PRESCOTT, H. R., "Seismic Method of Logging Bore Holes" (Patent) See No. 5093 of this list.
5016. BANCROFT, Dennison, "An Electronic Interval Timer for Laboratory Seismology", *Transactions, American Geophysical Union*, 1940, 695-696, 1 fig., Washington, 1940.
5017. BANCROFT, Dennison, "The Velocity of Longitudinal Waves in Cylindrical Bars", *Physical Review*, Vol. 59, No. 7, 588-593, 2 fig., 2 tab., bib., Lancaster, April, 1941.
- BANCROFT, Dennison, and BIRCH, Francis, "New Measurements of the Rigidity of Rocks at High Pressure". See No. 5020 of this list.
- BARKSDALE, Julian D., COOMBS, Howard A., and BRADFORD, Donald C., "Puget Sound Earthquake of November 12, 1939" (abstract). See p. 2017 of the publication reported as No. 5047 of this list.
- BATES, D. A., TILLOTSON, E., DEAKIN, C. S., and JUNNER, N. R., "The Accra Earthquake of 22nd June, 1939". See No. 5065 of this list.
5018. BEERS, Roland F., "Resolution Control in Seismic Survey", *Geophysics*, Vol. 6, No. 1, 52-63, 5 fig., bib., Houston, Jan., 1941.
5019. BIRCH, Francis, "The Thermoelectric Measurement of High Temperatures in Pressure Apparatus", *Review of Scientific Instruments*, Vol. 10, No. 4, 137-140, 2 fig., bib., Lancaster, April, 1939.
- The above is No. 56 of the list of papers published under the auspices of the Committee on Geophysical Research and the Division of Geological Sciences at Harvard University.
5020. BIRCH, Francis, and BANCROFT, Dennison, "New Measurements of the Rigidity of Rocks at High Pressure", *Journal of Geology*, Vol. 48, No. 7, 752-766, 3 fig., bib., Chicago, Oct.-Nov., 1940.
5021. BLAKE, Archie, "Mathematical Problems in Seismology", *Transactions, American Geophysical Union*, 1940, 1094-1113, 3 fig., bib., Washington, 1940. A.B.
- BLAKE, Archie:—
- (1) "The Local Seismological Activities of the Coast and Geodetic Survey in California";
 - (2) "Criteria for the Reality of Apparent Periodicities and other Regularities".
- See No. 5091 of this list.
- BODLE, R. R., "The Question of Apparent Regional Variation in the Speed of Seismic Waves and Related Problems". See No. 5091 of this list.
5022. BOESEN, Victor Hugo, "America's Greatest Earthquake", *Coronet*, 75-80, Chicago, Jan., 1941.

A brief description of the New Madrid earthquake of 1811.

C.

5023. BORN, W. T., Review of "Geophysical Prospecting for Oil", by L. L. Nettleton (see No. 4979 of these lists), *Geophysics*, Vol. 6, No. 1, 87-88, Houston, Jan., 1941.

See also a summary by E. A. Eckhardt on pp. 88-89 of the same publication, presenting a comparison of several recent books on geophysics.

- BRADFORD, Donald C., BARKSDALE, Julian D., and COOMBS, Howard A., "Puget Sound Earthquake of November 12, 1939" (abstract). See p. 2017 of the publication reported as No. 5047 of this list.

5024. BRIDGMAN, P. W.:—

- (1) "The Measurement of Hydrostatic Pressure to 30,000 Kg/cm.²", *Proceedings, American Academy of Arts and Sciences*, Vol. 74, No. 1, 1-10, 5 fig., 1 tab., bib., Boston, Oct., 1940;
- (2) "The Linear Compression of Iron to 30,000 Kg/cm.²", *Ibid.*, No. 2, 11-20, 5 fig., bib.;
- (3) "The Compression of 46 Substances to 50,000 Kg/cm.²", *Ibid.*, No. 3, 21-51, 4 fig., 20 tab., bib.

5025. BRUCE, J. W., "Simplified Method of Seismic Refraction Computations", Abstracts of Papers, Conference on Seismic Sub-surface Exploration, Office of Chief of Engineers, Washington, Feb., 1940; War Department, Corps of Engineers, U.S. Army, 39-47, April, 1940.

A brief review by D. W. appears on p. 41 of *Mines Magazine*, Vol. 31, No. 1, Golden, Jan., 1941.

5026. BULLARD, E. C., "The Geophysical Study of Submarine Geology", *Proceedings, Royal Institute of Great Britain*, Vol. 31, 139-147, London, 1940.

- BULLARD, E. C., "Seismic Research in East Anglia". See No. 5091 of this list.

5027. BULLEN, K. E., "The Crustal Structure of the New Zealand Region as Inferred from Studies of Earthquake Waves", *Proceedings, Sixth Pacific Science Congress*, 103-110, 2 fig., bib., Berkeley, 1939. K.E.B.

5028. BULLEN, K. E., "Elastic Constants of the Earth's Mantle", *Transactions, Royal Society of New Zealand*, Vol. 70, Part 2, 137-139, 2 tab., bib., Wellington, Sept., 1940. K.E.B.

5029. BURWELL, E. W., "Application of Seismic Methods to the Foundation Problems of the Ohio River Division", Abstracts of Papers, Conference on Seismic Sub-surface Exploration, Office of the Chief of Engineers, Washington, Feb., 1940; War Department, Corps of Engineers, U.S. Army, 5-11, April, 1940.

A brief summary by D. W. appears on p. 41 of *Mines Magazine*, Vol. 31, No. 1, Golden, Jan., 1941.

- BUWALDA, John P., and RICHTER, Charles F., "Imperial Valley Earthquake of May 18, 1940". See No. 5048 of this list.

- BYERLY, Perry, "Seismologists' Difficulties with some Mathematical Theory or the Lack of It" (abstract). See p. 2039 of the publication reported as No. 5047 of this list.

- BYERLY, Perry, "Time Service at Seismological Stations in Mexico". See No. 5091 of this list.

5030. CANADIAN MINING AND METALLURGICAL BULLETIN, "Geophysics at University of Toronto", *Canadian Mining and Metallurgical Bulletin*, No. 345, p. (9), Montreal, Jan., 1941.

A brief announcement of a grant of \$10,000 for research in geophysics recently awarded to the University of Toronto by the Viking Foundation of Panama.

5031. CARDER, Dean S., "Response of a Torsion Seismometer to Sustained Vibrations", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 343-351, 5 fig., bib., Berkeley, Oct., 1940.

5032. CARNEGIE INSTITUTION OF WASHINGTON, "Cooperative Researches at the Seismological Laboratory", *Carnegie Institution of Washington Year Book*, No. 39, 134-136, bib., Washington, 1940.

5033. CENTENO-GRAU, M., "Estudios Sismologicos", 555 pp., tabs., bib. Litografia del Comercio, Caracas, Venezuela, 1940.

Contains a chapter on the author's electro-tectonic hypothesis of earthquake origin; also a catalogue of earthquakes felt between 1530 and 1939 in Venezuela. The other chapters are devoted to general seismology. H.L.

5034. COMRIE, L. J., "The Correction of Epicentres by Least Squares", *Monthly Notices, Royal Astronomical Society, Geophysical Supplement*, Vol. 5, No. 1, 27-29, 1 tab., bib., London, 1941. E.T.

- COOMBS, Howard A., BRADFORD, Donald C., and BARKSDALE, Julian D., "Puget Sound Earthquake of November 12, 1939" (abstract). See p. 2017 of the publication reported as No. 5047 of this list.

5035. DALY, R. A., "Strength and Structure of the Earth", 434 pp., 83 fig., 69 tab., bib. Price \$3.50. Prentice-Hall, Publisher, New York, 1940.

A review by Chester R. Longwell appears on pp. 210-211 of *Science*, No. 2409, Vol. 93, New York, Feb. 28, 1941, and on pp. 220-221 of *Economic Geology*, Vol. 36, No. 2, Lancaster, March-April, 1941.

A lengthy review by L. L. Nettleton appears on pp. 90-92 of *Geophysics*, Vol. 6, No. 1, Houston, Jan., 1941.

Adolph Knopf reviews the book on pp. 319-320 of *American Journal of Science*, Vol. 239, No. 4, New Haven, April, 1941.

- DEAKIN, C. S., JUNNER, N. R., BATES, D. A., and TILLOTSON, E., "The Accra Earthquake of 22nd June, 1939". See No. 5065 of this list.

5036. DELISLE, J. F., "On the Epicentre of the North Pacific Earthquake of 1938 November 10", *Dominion (NZ) Observatory Bulletins*, No. S-58, reprinted from *New Zealand Journal of Science and Technology*, Vol. 22, No. 1B, pp. 47B-49B, 1 tab., bib., Wellington, 1940.

5037. DISIN. Several papers have appeared in the Japanese language only in the periodical *Disin* (Vol. 8, Tokyo, 1936). They are briefly reported in English on p. (4) of the abstracts section of the *Japanese Journal of Astronomy and Geophysics*, Vol. 18, No. 1, Tokyo, 1940. They are indexed in this *Bibliography* under the names of the respective authors as follows: Yosiyama, Kishinouye, Haeno, Honma.

5038. DU REE, A. C., "Fire-Department Operations during the Long Beach Earthquake of 1933", *Bulletin, Seismological Society of America*, Vol. 31, No. 1, 9-12, Berkeley, Jan., 1941.

5039. ECKHARDT, E. A., "Some Reflections on Seismic Prospecting", *Explosives Engineer*, Vol. 18, No. 4, 102-104, Wilmington, April, 1940.

A brief abstract, signed D.W., appears on p. 185 of *Mines Magazine*, Vol. 31, No. 4, Golden, April, 1941.

— ECKHARDT, E. A. Reviews of books by Jakosky and Heiland (see Nos. 5063 and 5058 of this list), *Geophysics*, Vol. 6, No. 1, 85-86, 88-89, Houston, Jan., 1941.

— ELDER, J. S., and SCHONLAND, B. F. J., "Anticipatory Triggering Devices for Lightning and Static Investigations". See No. 5108 of this list.

5040. ENGINEERING NEWS-RECORD, "Earthquakes Influence Tower Design", *Engineering News-Record*, Vol. 125, No. 25, 812-814, 3 fig., New York, Dec. 19, 1940.

"The 279-ft. tower of the Hoover Library at Stanford University has a steel frame designed to carry wind loads, reinforced concrete outer walls to carry earthquake loads. At second-floor level, shears from the tower are distributed over a base five and a half times the tower area. Earthquake precautions added little to construction costs."

5041. ENGINEERING NEWS-RECORD, "Earthquake Analyzer", *Engineering News-Record*, Vol. 126, No. 7, p. 103, 1 fig., New York, Feb. 13, 1941.

Simply an illustration with foot-note description to the effect that the instrument shown is an earthquake analyzer developed by the Bureau of Reclamation for the study of earthquake forces, regarding which data are required in the building program of that organization.

— ENGLISH, Walter A., "Subsurface Structure of the San Joaquin Valley, California" (abstract). See p. 1957 of the publication reported as No. 5048 of this list.

5042. EWING, Maurice, WOOLLARD, George P., and VINE, A. C., "Geophysical Investigations in the Emerged and Submerged Atlantic Coastal Plain", *Bulletin, Geological Society of America*, Vol. 51, No. 12, Part 1, 1821-1840, 3 fig., 6 pl., bib., New York, Dec. 1, 1940.

— EWING, Maurice, "Application of Artificial Seismic Methods on Land and Sea". See No. 5091 of this list.

5043. FABIAN, H. J., "Bilder vom Erdbeben in Rumänien am 10. November, 1940", *Natur und Volk*, Vol. 71, No. 1, 35-38, 5 fig., Frankfurt, a.M., Jan., 1941.

A short paper showing damages done by the Rumanian earthquake of November 10, 1940, with a brief description of the epicentral region. H.L.

5044. FESSENDEN, H. M., "Fessenden, Builder of Tomorrows", Coward McCann Inc., 362 pp., illus., tab. Price \$3.00. New York, 1940.

The life of Reginald A. Fessenden, written by his wife. Some of the earliest patents in seismic prospecting were taken out by Fessenden.

— FLOYD, Francis M., "Seismic Surveying" (Patent). See No. 5093 of this list.

5045. GAERTNER SCIENTIFIC CORPORATION, "Bore Inspection Telescopes", *Review of Scientific Instruments*, Vol. 12, No. 2, p. 106, New York, Feb., 1941.

5046. GEOLOGICAL MAGAZINE. On pp. 153–160 of *Geological Magazine*, Vol. 78, No. 2, Hertford, March-April, 1941, is printed a lengthy review, signed O.T.J., of the book by Douglas Johnson on "The Origin of Submarine Canyons", which was reported in these lists as No. 4808.

5047. GEOLOGICAL SOCIETY OF AMERICA. The issue of the *Bulletin of the Geological Society of America* devoted to abstracts (Vol. 51, No. 12, Part 2, 1919–2042, New York, Dec. 1, 1940) contains a number of notices of particular interest to seismologists. They are indexed in this issue of the *Bibliography* under the names of the authors, as follows:—Griggs; Heck and Neumann; Murray; Russell; Slichter; English; Gutenberg and Richter; Leet; Longwell; Barksdale, Coombs and Bradford; Treasher; Byerly.

The meetings reported are as follows:—

- (1) Geological Society of America:
December Meeting at Austin (1919–1954),
Cordilleran Section Meeting at Los Angeles in April (1955–1966);
- (2) Paleontological Society:
December Meeting at Austin (1967–1980),
Pacific Coast Branch Meeting at Los Angeles in April (1981–1988);
- (3) Section E, American Institute for the Advancement of Science:
December Meeting at Philadelphia (1989–2014),
June Meeting at Seattle (2015–2038),
Columbus (1939) meeting (papers not previously published) (2039–2042).

5048. GEOLOGICAL SOCIETY OF AMERICA. The Cordilleran Section of the Geological Society of America held their fortieth annual meeting at Stanford University on April 18–19, 1941. The usual official program was issued, containing a list of the papers to be presented and short abstracts of each. The session on Saturday afternoon, April 19, was held jointly with the Seismological Society of America.

The abstracts of particular interest to seismologists are listed in this issue of the *Bibliography* under the names of the authors, as follows: Merriam and Anderson, Gilluly, Buwalda and Richter, Gutenberg.

— GILLULY, James, "Thrust Faulting in the Dragoon Mountains, Arizona". See No. 5048 of this list.

5049. GORANSON, Roy W.:—

- (1) "Fracture and Flow in Stressed Solids", *Transactions, American Geophysical Union*, 698–700, Washington, 1940;
- (2) "Physical Effects of Extreme Pressure", *Scientific Monthly*, Vol. 51, 524–535, New York, 1940.

Brief summaries of the above papers are given in *Carnegie Institution of Washington Year Book*, No. 39 (pp. 51, 52), Washington, 1940.

5050. GORANSON, Roy W., "Experimental Flow of Rocks under Conditions Favoring Recrystallization", *Bulletin, Geological Society of America*, Vol. 51, 1001-1034, 10 fig., 2 pl., bib., New York, 1940.

The above is No. 66 in the list of papers published under the auspices of the Committee on Geophysics of the Department of Geology of Harvard University.

- GREEN, W. G., "Method for Seismic Surveying" (Patent). See No. 5093 of this list.

5051. GRIGGS, David, "Creep of Rocks", *Journal of Geology*, Vol. 47, No. 3, 225-251, 12 fig., bib., Chicago, April-May, 1939.

The above is No. 54 in the list of papers published under the auspices of the Committee on Geophysics of the Department of Geology of Harvard University.

5052. GRIGGS, David, "Earth Heat and Geological Processes", *Journal of Applied Physics*, Vol. 12, No. 4, p. 302, Lancaster, April, 1941.

The above is an abstract only of a paper presented at the Conference of Applied Nuclear Physics, held at Cambridge, Mass., October 28-November 2, 1940.

- GRIGGS, David, "Experiments in Dynamic Metamorphism" (abstract). See p. 1928 of the publication reported as No. 5047 of this list.

5053. GUTENBERG, Beno, "Changes in Sea Level, Postglacial Uplift, and Mobility of the Earth's Interior", *Bulletin, Geological Society of America*, Vol. 52, No. 5, 721-772, 5 fig., 9 tab., bib., Washington, May, 1941.

- GUTENBERG, Beno, "Mechanism of Faulting in Southern California Indicated by Seismograms". See No. 5048 of this list.

- GUTENBERG, Beno, "Urgent Need for Additional First Class Stations in the Southern Hemisphere and Elsewhere". See No. 5091 of this list.

- GUTENBERG, Beno, and RICHTER, Charles F., "Seismicity of the Earth" (abstract). See p. 1958 of the publication reported as No. 5047 of this list.

- HAENO, Seizo, and KISHINOUE, Fuhuhiko, "A Small Portable Apparatus for Marking Wireless Time Signals upon Seismograms" (in Japanese language only). See No. 5037 of this list.

5054. HAFNER, W., "The Seismic Velocity Distribution in the Tertiary Basins of California", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 309-326, 4 fig., 1 tab., Berkeley, Oct., 1940.

5055. HASKELL, Norman A., "The Viscosity of the Asthenosphere", *American Journal of Science*, Vol. 33, 22-28, bib., New Haven, 1937.

5056. HAYES, R. C., "The Deep-focus Earthquakes of the Southeast Pacific", *Proceedings, Sixth Pacific Science Congress*, 131-134, 1 fig., bib., 1939. R.C.H.

5057. HECK, N. H., "Earthquakes and the Foreign Service", *American Foreign Service Journal*, Vol. 18, No. 2, 75-77, 105-107, 4 fig., Washington, Feb., 1941. N.H.H.

- HECK, N. H., Presidential Address, Association of Seismology of the International Union of Geodesy and Geophysics. See No. 5091 of this list.

- HECK, N. H., and NEUMANN, Frank, "Earth Motions in the Vicinity of a Fault Slip" (abstract). See p. 1929 of the publication reported as No. 5047 of this list.

5058. HEILAND, Carl A., "Geophysical Exploration", Prentice-Hall, Inc., 1013 pp., 536 illus. Price \$10.00. New York, 1940.

"This book encompasses a thorough discussion of geophysical procedures and apparatus, calculations and interpretations of methods and applications. The results obtained by geophysics under a variety of geological conditions are presented with pertinent illustrations selected from various parts of the world". Geoph.

An extended review by the author appears on p. 616 of *Mines Magazine*, Vol. 30, No. 11, Golden, Nov., 1940. A short review is given on p. 103 of *Economic Geology*, Vol. 36, No. 1, Lancaster, Jan.-Feb., 1941. A lengthy review by E. A. Eckhardt appears on p. 86 of *Geophysics*, Vol. 6, No. 1, Houston, Jan., 1941, and a further discussion, comparing several recent books on geophysics, appears on pp. 88-89 of the same publication.

5059. HODGSON, Ernest A., "The Structure of the Earth as Revealed by Seismology", *Smithsonian Institution Report for 1939*, 281-302, 3 pl., 11 fig., Washington, 1940.

The above is a reprinting of the text which was reported as No. 4178 of these lists.

- HONMA, Syosaku, "Velocity Distribution of P-waves within the Earth" and "Effect of Velocity-Discontinuity upon the Results of Wiechert-Herglotz's Method of Determining Wave Velocity within the Earth" (in Japanese language only). See No. 5037 of this list.

5060. HONNELL, P. M., "Record Counter Aids in Seismograph Computations", *Oil and Gas Journal*, Vol. 38, No. 36, p. 44, Tulsa, 1940.

The article describes a mechanism for placing timing lines on seismograms as used in oil survey work.

5061. ICHINOSE, Masami, "Precise Investigation of Hooke's Law in Primary Elastic Deformation", *Proceedings, Physico-Mathematical Society of Japan*, Third Series, Vol. 23, No. 2, 119-131, 4 fig., 7 tab., bib., Tokyo, Feb., 1941.

- INGLIS, D. R., "Motion of the Earth's Fluid Core". See p. 469 of the report listed as No. 5015 of this issue.

- IRELAND, Andrew T., THOENEN, J. R., and WINDES, S. L., "Progress Report: House Movements Induced by Mechanical Agitation and Quarry Blasting". See No. 5120 of this list.

5062. JACKSON, Charles F., "Annual Report of Mining Division, U.S. Bureau of Mines, for Fiscal Year 1940", *Bureau of Mines Publications*, No. RI-3536, 25 pp., 1 fig., Washington, 1940.

"Contains chapters on . . . seismic effects of blasting, measurements of pressure on mine pillars, . . ." A lengthy review appears on pp. 58-59 of *The Mining Magazine*, Vol. 64, No. 2, London, Feb., 1941.

5063. JAKOSKY, J. J., "Exploration Geophysics", Times-Mirror Press, 800 pp., 430 illus. Price \$8.00. Los Angeles, 1940.

A review in *Geophysics* reads: "This volume describes the fundamental theories, equipment and field technique of the recognized exploratory geophysical methods, and illustrates their application to problems of economic geology".

The earlier chapters of the book are printed in the *Canadian Mining Journal* (Montreal) as follows: Vol. 61, No. 12, 787-795, 4 fig., 1 tab., bib., Dec., 1940; and Vol. 62; No. 1, 24-28, 2 fig., bib., Jan., 1941; No. 3, 161-166, 2 tab., bib., March, 1941; and No. 4, 239-242, 2 tab., April, 1941. The series of excerpts is "to be continued".

A brief review appears on p. 104 of *Economic Geology*, Vol. 36, No. 1, Lancaster, Jan.-Feb., 1941.

A lengthy review by E. A. Eckhardt is given on page 85 of *Geophysics*, Vol. 6, No. 1, Houston, Jan., 1941, and a further discussion, comparing several recent books on geophysics, appears on pp. 88-89 of the same publication.

5064. JEFFREYS, Harold:—

- (1) "The Determination of the Earth's Gravitational Field", *Monthly Notices, Royal Astronomical Society, Geophysical Supplement*, Vol. 5, No. 1, 1-22, tab., bib., London, 1941;
- (2) "The Figures of the Earth and Moon", *Monthly Notices, Royal Astronomical Society*, Vol. 101, No. 1, 34-36, London, Feb., 1941. E.T.

— JEFFREYS, Harold, "The Genesis of Deep Focus Earthquakes". See No. 5091 of this list.

5065. JUNNER, N. R., BATES, D. A., TILLOTSON, E., and DEAKIN, C. S., "The Accra Earthquake of 22nd June, 1939", *Gold Coast Geological Survey, Bulletins*, No. 13, 72 pp. Price 3s. London, 1941.

Dr. Junner and Mr. Bates deal with the geology and macroseismic evidence. Mr. Tillotson presents the instrumental reports and Mr Deakin treats the subject from the standpoint of engineering. E.T.

5066. KAMEN-Kaye, M., "Seismic Refraction Studies in the Orinoco Basin of Deposition, Venezuela", *Geophysics*, Vol. 5, No. 4, 385-392, 4 fig., Menasha, Oct., 1940.

— KANAI, K., and SEZAWA, K.:—

- (1) "Dynamical Absorption of the Energy of Rayleigh Waves and Love Waves by Weak Surface Layers";
- (2) "Thermodynamical Origin of the Earth's Core. I";
- (3) "Effect of Distribution of Masses in a Rahmen Floor on Seismic Structural Vibration, and Model Experimental Confirmations of that Effect with a New Vibration Table".

See No. 5115 of this list.

— KANAI, K., and SEZAWA, K., "The Action of a Soft Surface Layer as a Dynamic Damper to Seismic Surface Waves" (title only). See No. 5085 of this list.

5067. KATO, Y., "Changes in the Earth's Magnetic Field Accompanying Earthquakes or Volcanic Eruptions", *Tohoku University Science Reports*, No. 29, 315-342, Sendai, Nov., 1938.

The above comprises sections two and three of the report. Section I was listed as No. 4313 in this *Bibliography*.

5068. KELLY, S. F., "Photographing Rock Walls and Casings of Bore Holes," *Transactions, American Geophysical Union*, 1939, Part 3, 269-271, Washington, Aug., 1939.

— KEMP, Garrett, "Lecture Notes on Practical Petroleum Geophysics". See No. 5102 of this list.

5069. KENNEDY, W. Jay, "The Interferometer Method of Determining the Amplitudes of Small Mechanical Vibrations", *Journal, Optical Society of America*, Vol. 31, No. 2, 99-101, 3 fig., bib., New York, Feb., 1941.

— KIRK, David K., "Apparatus for Transmitting and Recording Shot Moments" (Patent). See No. 5093 of this list.

5070. KISHINOUE, Fuyuhiko, "The Unusually Large Microseisms of October 21, 1938, at Hongo, Tokyo", *Bulletin, Earthquake Research Institute*, Vol. 18, Part 3, 401-418, 14 fig., 7 tab., bib., Tokyo, Sept., 1940.

— KISHINOUE, Fuyuhiko, "On the Earthquakes occurred at Oosima, Izu, in 1905", and "Shocks associated with the Idu Earthquake of November 26, 1930" (in Japanese language only). See No. 5037 of this list.

— KISHINOUE, Fuyuhiko, and HAENO, Seizo, "A Small Portable Apparatus for Marking Wireless Time Signals upon Seismograms" (in Japanese language only). See No. 5037 of this list.

5071. KRUGER, F. C., and LINEHAN, D., S.J., "Seismic Studies of Floored Intrusives in Western New Hampshire", *Bulletin, Geological Society of America*, Vol. 52, No. 5, 633-648, 5 fig., 1 tab., bib., Washington, May, 1941.

— LANDSBERG, H., and NEUBERGER, H., "On Differences of Pn Velocities". See No. 5091 of this list.

5072. LANGFORD, George B., "The Rock Burst Problem", *The Canadian Mining and Metallurgical Bulletin*, No. 348, 169-182, Montreal, April, 1941.

The above is the text of a paper delivered before the Canadian Institute of Mining and Metallurgy at the Montreal Meeting in March, 1941. The paper was also printed in part in the *Northern Miner*, pp. 36 and 44, Toronto, March 6, 1941.

G.H.A.C.

5073. LAWSON, Andrew C., "Another Note on the Isostatic Control of Fluctuations of Sea Level", *Science*, No. 2414, Vol. 93, 326-327, New York, April 4, 1941.

5074. LEET, L. Don, "Adapting the Milne-Shaw Seismograph to Registration of Diurnal Tilts", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 327-329, 4 fig., bib., Berkeley, Oct., 1940.

5075. LEET, L. Don, "New England's Earthquakes", *Harvard Alumni Bulletin*, 4 pp. in reprint, 2 fig., Cambridge, 1941. L.D.L.
- LEET, L. Don, "Physical Frontiers in Seismology" (abstract). See p. 2000 of the publication reported as No. 5047 of this list. The same abstract also appears on p. 14 of the *Bulletin of the American Physical Society* (Vol. 15, No. 7, New York, Dec. 10, 1940), announcing the program of the annual meeting to be held in Philadelphia, Dec. 26-28, 1940. See also p. 479 of the report listed as No. 5015 in this issue.
5076. LEVIN, S. Benedict, "The Salvador Earthquakes of December, 1936", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 377-407, 11 fig., bib., Berkeley, Oct., 1940.
- LINEHAN, D., S.J., "Need for Uniform Practice in the Publication of Distance, Time, and Other Data". See No. 5091 of this list.
- LINEHAN, D., S.J., and KRUGER, F. C., "Seismic Studies of Floored Intrusives in Western New Hampshire". See No. 5071 of this list.
- LONGWELL, Chester R. Review of "Strength and Structure of the Earth" by R. A. Daly. See No. 5035 of this list.
- LONGWELL, Chester R., "Problems of Orogeny" (abstract). See p. 2001 of the publication reported as No. 5047 of this list. See also p. 478 of the report listed as No. 5015 in this issue.
5077. LYNCH, Joseph, S.J., "Our Trembling Earth", Dodd Mead and Co., 202 pp., 59 illus. Price \$3. New York, 1940.
5078. LYNCH, Joseph, S.J., "What is the State of the Earth's Core?", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 337-341, 1 fig., bib., Berkeley, Oct., 1940.
5079. LYNCH, William A., "The Energy of Local Earthquakes Recorded at Fordham", *Bulletin, Seismological Society of America*, Vol. 30, No. 4, 331-335, 3 fig., 1 tab., bib., Berkeley, Oct., 1940.
- MACELWANE, James B., S.J., "The Present Status of the Problem of Microseisms". See No. 5091 of this list.
- MCCOLLUM, E. V., and ATHY, L. F., "Method and Apparatus for Seismic Surveying" (Patent), U.S. No. 2,219,508, issued Oct. 29, 1940. See No. 5094 of this list.
5080. MCCREADY, H. J., "Shot Hole Characteristics in Reflection Seismology", *Geophysics*, Vol. 5, No. 4, 373-381, Menasha, Oct., 1940.
5081. McMURRAY, Howard, "Periodicity of Deep-focus Earthquakes", *Bulletin, Seismological Society of America*, Vol. 31, No. 1, 33-82, 15 fig., 5 graphs, 17 tab., Berkeley, Jan., 1941.
- MERCANTON, P. L., "Seismic Soundings on Glaciers in Switzerland". See No. 5091 of this list.
- MERRIAM, C. W., and ANDERSON, C. A., "Low-angle Thrusting in the Roberts Mountains, Nevada". See No. 5048 of this list.

5082. MILLER, William J., "Recognition of Faults in Southern California", *Journal of Geology*, Vol. 49, No. 1, 87-100, bib., Chicago, Jan.-Feb., 1941.

— MINTON, John P., "Electric Seismograph" (Patent). See No. 5093 of this list.

5083. MONTANDON, Raoul, WERNER, Mlle. D., and TRONDLÉ, Mlle. P., "Chronique des Calamités (1er septembre 1929 à 31 août 1930)", *Revue pour l'Étude des Calamités*, Tome 3, Nos. 10-11, 164-176, 2 tab., Geneva, May-Dec., 1940.

— MÜFFLY, Gary, "Seismograph Prospecting" (Patent), U.S. No. 2,217,806, issued October 15, 1940. See No. 5094 of this list.

5084. MUGGE, R., "Erdbeben-Katastrophen einst und jetzt", *Natur und Volk*, Vol. 70, No. 11, 542-549, Frankfurt a.M., Nov., 1940.

Popular article on causes of earthquakes with illustrations from the Feb. 1939 earthquake at Concepcion, Chile. H.L.

— MURRAY, Harold W., "Submarine Mountains in the Gulf of Alaska" (abstract). See p. 1935 of the publication reported as No. 5047 of this list.

— NAKAMURA, S. T., "On the Period and Damping of Seismometers", and "Further Studies on the Period and Damping of Seismometers" (titles only). See No. 5085 of this list.

5085. NATIONAL RESEARCH COUNCIL OF JAPAN, "Transactions: Minutes of the Meetings (fifty-fourth to fifty-eighth) of the Division of Geophysics", *Japanese Journal of Astronomy and Geophysics*, Vol. 18, No. 1, 3 pp., Tokyo, 1940.

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5086. NATURE. Brief items of interest to seismologists have appeared in recent issues of Vol. 146 of the above periodical (London, 1940) as follows:—

- (1) "Earthquake Work in Toledo, Spain", No. 3697, p. 337, Sept. 7;
- (2) "Seismological Data from India", No. 3704, p. 556, Oct. 26;
- (3) "Physical Controls in Adjustments of the Earth's Crust", *Ibid.*, 563-564;
- (4) "Aleutian Islands Earthquake", No. 3705, p. 592, Nov. 2;
- (5) "Earthquakes in Rumania and Turkey", No. 3706, p. 615, Nov. 9;
- (6) "The Imperial Valley (California) Earthquake", *Ibid.*, p. 622;
- (7) "Earthquake in Rumania", No. 3707, p. 647, Nov. 16;
- (8) "Earthquakes during October", "Earthquakes Registered in Switzerland", and "Seismological Observations at Saint Louis", No. 3709, 719-720, Nov. 30;
- (9) "Bibliography of Seismology", No. 3710, p. 744, Dec. 7;
- (10) "New Seismographs for Boulder Dam", and "Earthquake in Chili", No. 3711, p. 775, Dec. 14;
- (11) "Recent Earthquakes", No. 3712, p. 803, Dec. 21;
- (12) "Canadian Seismological Stations", *Ibid.*, p. 804;
- (13) "Crustal Structure of the United States", *Ibid.*, p. 809;
- (14) "Determination of the Depth of Glacial Deposit", *Ibid.*, p. 810.

5087. NATURE. Brief items of interest to seismologists have appeared in recent issues of Vol. 147 of the above periodical (London, 1941) as follows:—

- (1) "Recent Earthquakes", No. 3714, p. 24, Jan. 4;
- (2) "Recent Earthquakes", No. 3717, p. 114, Jan. 25;
- (3) "Earthquake in Cyprus", No. 3718, p. 145, Feb. 1;
- (4) "Submarine Canyons", *Ibid.*, p. 151;
- (5) "Earthquake in Cyprus", and "Other Recent Earthquakes", No. 3719, p. 174, Feb. 8;
- (6) "The Deepest Boring", *Ibid.*, p. 180.

5088. NELSON, James H., "*Earthquake Notes*", Vol. 12, No. 3, 10 pp., Washington, Dec., 1940.

Earthquake Notes is the organ of the Eastern Section of the Seismological Society of America. It is edited by Mr. Nelson (U.S. Coast and Geodetic Survey, Washington, D.C., U.S.A.) to whom items of seismological interest should be reported.

The present issue deals with the following subject headings in the order given: Spring Meeting 1941; New committees of the Eastern Section; Earthquake in Rumania; More earthquakes in Turkey; Imperial Valley earthquake; Need for strong motion seismographs; Science Service; The earthquake analyzer, a preliminary report (Arthur C. Ruge); Two experimental seismographic stations in Saint Louis (Florence Robertson); Seismographs for Grand Coulee and Shasta Dams; Vertical component vibration meter used as seismometer; Schedule of Naval Radio Time Signals; Royal Observatory, Hong Kong; Prof. Mishio Ishimoto; The interior of the earth; Our Trembling Earth (see No. 5077 of this list); The Little Seismograph (a poem in French with translation by N. H. Heck).

5089. NELSON, James H., "*Earthquake Notes*", Vol. 12, No. 4, 11 pp., 1 fig., 1 tab., Washington, April, 1941.

The present issue contains the following titled sections:—1941 Meeting at Washington, D.C.; New committees of the Eastern Section; Advisory Committee on Seismology (of the Seismological Society of America); Report of Committee on Methods and Operations; Recent inspection trip of N. H. Heck; Larger earthquakes of 1940; Structural design; Extended New England Curves; Dr. Eric Therkelsen, Prof. A. C. Carson, Dr. G. Van Dijk (three obituaries); New recorder and clock for Sitka; Arlington time signals being discontinued; Seismograms from Greenland; Progress in British seismology; Does performance of pendulum indicate change of gravity?; Earthquake in Great Britain; New Britain; Earliest estimation of focal depth; In retrospect; Unusual series of seismographic oscillations; Epicentres; Officers of the Eastern Section.

— NETTLETON, L. L. Review of "Strength and Structure of the Earth" by R. A. Daly. See No. 5035 of this list.

— NEUBERGER, H., and LANDSBERG, H., "On Differences of Pn Velocities". See No. 5091 of this list.

5090. NEUMANN, Frank, "United States Earthquakes 1938", *Publications, U.S. Coast and Geodetic Survey*, Serial No. 629, 59 pp., num. tab. and fig., Washington, 1940.

The above valuable compilation of seismological data continues the series on the same subject by the same author. It is available through the Supt. of Documents at the nominal price of fifteen cents.

- NEUMANN, Frank, "The Accuracy of Seismological Analysis Revealed by Shaking Table Tests". See No. 5091 of this list.
- NEUMANN, Frank, and HECK, N. H., "Earth Motions in the Vicinity of a Fault Slip" (abstract). See p. 1929 of the publication reported as No. 5047 of this list.

5091. NEUMANN, Frank, and ROTHÉ, E., "Comptes Rendus des Séances de la Septième Conférence, réunie à Washington, D.C., du 4 au 15 septembre, 1939", 359 pages, Toulouse, 1940.

The minutes of the various sessions are given in full, in English and in French. Considerable time was given to a discussion of the future of the International Seismological Summary. At the sessions for the presentation of papers contributions were made to the program by the following, the titles of the papers being indexed in this *Bibliography* under the names of the respective authors:—Jeffreys, Gutenberg, Byerly, Linehan, Stagg, Macelwane, Richter, Rothé, Ewing, Mercanton, Landsberg and Neuberger, Bullard, Neumann, Bodle, Blake, Heck. A valuable section of the report is a model questionnaire prepared by Prof. Rothé for distribution to various seismological stations for the purpose of preparing data for a new list of seismological stations of the world. It should stimulate a more complete determination and registration of station and instrumental constants by the seismological stations, providing suggestions as to the data required and insuring uniformity in compilation. The report also contains the usual reports of the permanent officers of the Association of Seismology.

- NISHIMURA, E., "Unusual Movements of the Earth Crust near an Active Fault as Revealed by Titlmeter Observations" (title only). See No. 5085 of this list.
- OLESEN, Raymond, and WASHBURN, Harold, "Transient Testing of Seismic Recording Apparatus". See No. 5126 of this list.

5092. O.M.Q., "El Terremoto de Lima", *Boletín de la Sociedad Geográfica de Lima*, Tomo 57, Trimestre No. 3, 105-122, 8 fig., Lima, 1940.

- OWEN, J. E., "Seismic Surveying" (Patent), U.S. No. 2,215,297, issued Sept. 17, 1940, and also U.S. No. 2,216,452, issued Oct. 1, 1940. See No. 5094 of this list.

5093. PATENTS. The following patent notices of interest to seismologists appear in a list of such notices published in *Geophysics* (Vol. 5, No. 4, Menasha, Oct., 1940):—

- (1) GREEN, W. G., "Method for Seismic Prospecting", U.S. No. 2,203,140, June 4, 1940;
- (2) FLOYD, Francis M., "Seismic Surveying", U.S. No. 2,207,398, July 9, 1940;
- (3) MINTON, John P., "Electric Siesmograph", U.S. No. 2,209,100, July 23, 1940;
- (4) KIRK, David K., "Apparatus for Transmitting and Recording Shot Moments", U.S. No. 2,212,988, Aug. 27, 1940;
- (5) ATHY, L. F., and PRESCOTT, H. R., "Seismic Method of Logging Bore Holes", U.S. No. 2,207,281, July 9, 1940.

5094. PATENTS. In *Geophysics* (Vol. 6, No. 1, Houston, Jan., 1941) appears a list of patents, six of which are of particular interest to seismologists. These are indexed in this issue of the *Bibliography* under the names of the respective patentees:—Owen, Anderson, Muffly, Wyckoff, Athy and McCollum.
5095. PERRY, Elwyn L., *et al.* Report of the Committee on Methods and Operations, Eastern Section of the Seismological Society of America, mimeographed edition, 13 pp., Williamstown, Mass., 1941.
- The subdivisions of the report are: Operation of seismometers and recorders; Electrical circuits; Timing; Records; Public relations. Much practical information for station operators is given in this report.
5096. PETERSON, Raymond A., "A Transformed Wave Front Chart", *Geophysics*, Vol. 6, No. 1, 74–80, 4 fig., bib., Houston, Jan., 1941.
5097. PHILBRICK, F. B., "The Effect of Earthquakes on Fire-alarm Systems", *Bulletin, Seismological Society of America*, Vol. 31, No. 1, 1–8, 1 fig., bib., Berkeley, Jan., 1941.
- POPOFF, V., and WEISS-XENOFONTOVA, Z., "Sur les tremblements de terre à la centrale région de l'Oural". See No. 5129 of this list.
- PRESCOTT, H. R., and ATHY, L. F., "Seismic Method of Logging Bore Holes" (Patent). See No. 5093 of this list.
5098. REPETTI, William C., S.J., "The Alabat Earthquake of August 20th, 1937", *Manila Seismological Bulletin for 1937; July-December*, 49–53, Manila, 1940.
5099. RICH, John L. Review of "The Origin of Submarine Canyons", by Douglas Johnson (No. 4808 of these lists), *Journal of Geology*, Vol. 49, No. 1, 107–109, Chicago, Jan.-Feb., 1941.
- RICHTER, Charles F., "Magnitude and Intensity Scales: Preliminary Bulletins". See No. 5091 of this list.
- RICHTER, Charles F., and BUWALDA, John P., "Imperial Valley Earthquake of May 18, 1940". See No. 5048 of this list.
- RICHTER, Charles F., and GUTENBERG, Beno, "The Seismicity of the Earth" (abstract). See p. 1958 of the publication reported as No. 5047 of this list.
5100. RICKER, Norman, "The Form and Nature of Seismic Waves and the Structure of Seismograms", *Geophysics*, Vol. 5, No. 4, 348–366, 12 fig., bib., Menasha, Oct., 1940.
- ROBERTSON, Florence, "Two Experimental Seismographic Stations in Saint Louis" (abstract). See No. 5088 of this list.
- ROTHÉ, E., "A Study of Deep Focus Earthquakes". See No. 5091 of this list.
5101. ROZOVA, E. A., "On Causes of Discrepancies between Epicentres Determined by Regional and Teleseismic Stations", *Publications de l'Institut Séismologique, Académie des Sciences de l'URSS*, No. 96, 23–26, 1 tab., bib., Moscow-Leningrad, 1940.

The paper is in Russian with a brief abstract in English.

- RUGE, Arthur C., "The Earthquake Analyzer; a Preliminary Report" (abstract). See No. 5088 of this list.

- RUSSELL, R. Dana, "Cores from Gulf of Mexico and Mississippi Delta" (abstract). See p. 1943 of the publication reported as No. 5047 of this list.

5102. RUST, W. M., Jr. Review of "Lecture Notes on Practical Petroleum Geophysics", by Garrett Kemp, *Geophysics*, Vol. 6, No. 1, 89-90, Houston, Jan., 1941.

The review is given in *Geophysics* as stated above. The bibliographical data for the original publication are not at present available.

5103. SAITA, Tokitaro, "The Great Chilean Earthquake of January 24, 1939", *Bulletin, Earthquake Research Institute*, Vol. 18, Part 3, 446-459, 22 fig., Tokyo, Sept., 1940.

The paper is in Japanese with a short abstract in English.

5104. SALOMON-CALVI, Wilhelm, "Les tremblements de terre d'Erzincan du 21 novembre et du 27 décembre 1939", *Revue pour l'Étude des Calamités*, Tome 3, Nos. 10-11, 178-180, Geneva, May-Dec., 1940.

See also further reference to this same earthquake on page 230 of the same publication.

5105. SANTILLAN, Manuel, "Catalogo de los temblores registradós en la red sismologica Mexicana durante los años de 1933 y 1934". Published by the Institute of Geology of the National University of Mexico, 227 pp., Mexico, 1937.

The above important compilation of seismological data bears the publication date shown but was received at Ottawa on May 1, 1941. E.A.H.

- SASSA, Kenzo, "On Vertical Movements of the Ground Caused by Meteorological Agencies" (title only). See No. 5037 of this list.

5106. SAVARENSKY, E., "On Deep-focus Earthquakes", *Publications de l'Institut Séismologique, Académie des Sciences de l'URSS*, No. 96, 1-22, 22 fig., tab., bib., Moscow-Leningrad, 1940.

The paper is in Russian with a brief abstract in English.

5107. SCHNIRMANN, G. L., "Electric Methods of Integration and Differentiation", *Publications de l'Institut Séismologique, Académie des Sciences de l'URSS*, No. 105, 68 pp., 66 fig., bib., Moscow-Leningrad, 1940.

The paper is in Russian with a one-page summary in English.

5108. SCHONLAND, B. F. J., and ELDER, J. S., "Anticipatory Triggering Devices for Lightning and Static Investigations", *Journal, Franklin Institute*, Vol. 231, No. 1, 39-47, 5 fig., bib., Philadelphia, Jan., 1941.

5109. SCIENCE. Brief items of interest to seismologists have appeared in recent issues of Vol. 92 of the above periodical (New York, 1940) as follows:—

- (1) "Earthquakes of 1940", No. 2394, p. 447, Nov. 15;
- (2) "Super-speed Earthquake Waves", No. 2395, p. 8 Suppl., Nov. 22;
- (3) "Epicentre of Rumanian Earthquake", *Ibid.*, p. 11 Suppl.;

- (4) "Lecture by Kirtley F. Mather", No. 2396, p. 505, Nov. 29;
- (5) "Focal Depth of Rumanian Earthquake", *Ibid.*, p. 12, Suppl.;
- (6) "The Mexican Earthquake", No. 2417, p. 10 Suppl., April 25.

5110. SCIENCE. Brief items of interest to seismologists have appeared in recent issues of Vol. 93 of the above periodical (New York, 1941), as follows:—

- (1) "Nature of the Motion of the Earth's Core", No. 2406, p. 44 (Suppl.), Feb. 7.

5111. SCIENCE NEWS-LETTER. Brief items of interest to seismologists have appeared in recent issues of Vol. 38 of the above periodical (Washington, 1940) as follows:—

- (1) "Rumania Not Known as Seismically Active Region", No. 21, p. 324, Nov. 23;
- (2) "Super-speed Seismic Waves Cause Revision of Theories", *Ibid.*, p. 325;
- (3) "Machines Develop Pressures", No. 24, p. 374, Dec. 14;
- (4) "Many Earthquakes Occurred; Rumanian Shock was Worst", No. 25, p. 398, Dec. 21;
- (5) "Earth's Core May be Solid, with Hydrogen Dissolved", No. 26, p. 404, Dec. 28.

5112. SCIENCE NEWS-LETTER. Brief items of interest to seismologists have appeared in recent issues of Vol. 39 of the above periodical (Washington, 1941) as follows:—

- (1) "New England Earthquake Centered near North Conway", and "New England Quakes Forecast New Year Week", No. 1, p. 11, Jan. 4;
- (2) "New Earthquake Wave", *Ibid.*, p. 12;
- (3) "Earth Trembles" (Jan. 5, and Jan. 13), No. 4, p. 61, Jan. 25;
- (4) "Earth Trembles" (Feb. 7, Feb. 9, and Feb. 11), No. 8, p. 126, Feb. 22;
- (5) "Earthquake-resistant Brick Used in Los Angeles", No. 11, p. 172, March 15;
- (6) "Tiny Grinding Noises Made in Earth May Warn of Quake", No. 13, p. 195, March 29;
- (7) "Earth Trembles" (March 21), No. 14, p. 222, April 5;
- (8) "Earth Trembles" (April 1, and April 7), No. 16, p. 242, April 19;
- (9) "Earthquake Served First Notice by Disturbing Galvanometers", No. 17, p. 269, 1 fig., April 26.

5113. SCIENTIFIC AMERICAN, "Personalities in Science" (Rev. James B. Macelwane, S.J.), *Scientific American*, Vol. 164, No. 1, p. 5, 1 illus., New York, Jan., 1941.

5114. SEISMOLOGICAL SOCIETY OF AMERICA, "Partial Bibliography of Earthquake-resistive Construction", mimeographed edition, 13 pp., 189 items, Berkeley, 1940.

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5115. SEZAWA, K., and KANAI, K.:—

- (1) "Dynamical Absorption of the Energy of Rayleigh Waves and Love Waves by Weak Surface Layers", *Bulletin, Earthquake Research Institute*, Vol. 18, Part 3, 345-358, 16 fig., bib., Tokyo, Sept., 1940;

- (2) "Thermodynamical Origin of the Earth's Core. I", *Ibid.*, 359-369, 6 fig., 1 tab., bib.;
- (3) "Effect of Distribution of Masses in a Rahmen Floor on Seismic Structural Vibration, and Model Experimental Confirmations of that Effect with a New Vibration Table", *Ibid.*, 370-383, 13 fig., 3 tab., bib.
- SEZAWA, K., and KANAI, K., "The Action of a Soft Surface Layer as a Dynamic Damper to Seismic Surface Waves" (title only). See No. 5085 of this list.
5116. SHEPARD, E. R., and WOOD, A. E., "Application of the Seismic Refraction Method of Subsurface Exploration to Flood Control", *American Institute of Mining Engineers, Technical Publications*, No. 1219 (Class L 71), 13 pp., New York, Feb., 1940.
- A review by Dart Wantland appears on p. 663 of *Mines Magazine*, Vol. 30, No. 12, Golden, Dec., 1940.
5117. SLICHTER, Louis B., "Cooling of the Earth", *Bulletin, Geological Society of America*, Vol. 52, No. 4, 561-600, 4 fig., 6 tab., bib., Washington, April, 1941.
- An abstract of the above paper appears on pp. 301-302 of the *Journal of Applied Physics*, Vol. 12, No. 4, Lancaster, April, 1941, as one of the papers presented at the Conference on Applied Nuclear Physics, held at Cambridge, Mass., October 28-November 2, 1940. L.B.S.
- SLICHTER, Louis B., "Internal Heat of the Earth" (abstract). See p. 1946 of the publication reported as No. 5047 of this list.
5118. SLOTNICK, M. M. Review of three recent books on geophysics: Nettleton, L. L., "Geophysical Prospecting for Oil"; Jakosky, J. J., "Exploration Geophysics"; and Heiland, C. A., "Geophysical Exploration". These books are reported in this *Bibliography* as Nos. 4979, 5063, and 5058, respectively. The above review appears in the *Bulletin, Seismological Society of America*, Vol. 31, No. 1, 83-86, Berkeley, Jan., 1941.
- STAGG, J. M., "Seismo Messages at Kew". See No. 5091 of this list.
5119. TAYLOR, Robert B., "Optical Lever Mirror", *Review of Scientific Instruments*, Vol. 12, No. 2, 104-105, New York, Feb., 1941.
- A brief note on the use of a plano-convex lens silvered on the plane face, for use as a galvanometer mirror, etc., obviating the reflections from the glass-air surface.
5120. THOENEN, J. R., WINDES, S. L., and IRELAND, Andrew T., "Progress Report: House Movement Induced by Mechanical Agitation and Quarry Blasting", *U.S. Bureau of Mines Publications*, RI-3542, 36 pp., 15 fig., Washington, 1940.
5121. THORNTON, D. L., "Earthquakes and Structures", *Engineering*, 528-529, London, May 24, 1940.
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5122. TILLOTSON, Ernest, "The Rumanian Earthquake of November 10", *Nature*, No. 3708, Vol. 146, 675-677, 1 map, London, Nov. 23, 1940.
- TILLOTSON, E., DEAKIN, C. S., JUNNER, N. R., and BATES, D. A., "The Accra Earthquake of 22nd June, 1939". See No. 5065 of this list.

5123. TODD, J. D., "Mississippi Looms as Nation's Major 1940 Geophysical Play", *Oil Weekly*, Vol. 96; No. 6, 15-21, Jan. 15; No. 7, 20-34, Jan. 22; Houston, 1940.

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- TREASHER, Ray C., "Distribution of Historic Earthquakes in the Pacific Northwest" (abstract). See p. 2034 of the publication reported as No. 5047 of this list.

- TRONDLE, Mlle P., MONTANDON, Raoul, and WERNER, Mlle. D., "Chronique des Calamités". See No. 5083 of this list.

5124. ULRICH, Franklin P., "The Imperial Valley Earthquakes of 1940", *Bulletin, Seismological Society of America*, Vol. 31, No. 1, 13-31, 20 fig., Berkeley, Jan., 1941.

- VINE, A. C., EWING, Maurice, and WOOLLARD, George P., "Geophysical Investigations in the Emerged and Submerged Atlantic Coastal Plain". See No. 5042 of this list.

5125. WALKER, Eric A., "An Instrument for Measuring Short Intervals of Time", *Journal, Franklin Institute*, Vol. 231, No. 4, 373-379, 3 fig., Philadelphia, April, 1941.

5126. WASHBURN, Harold, and OLESEN, Raymond, "Transient Testing of Seismic Recording Apparatus", *Geophysics*, Vol. 5, No. 4, 337-347, 11 fig., Menasha, Oct., 1940.

5127. WASHINGTON ACADEMY OF SCIENCES. Obituary on William Bowie, *Journal, Washington Academy of Sciences*, Vol. 31, No. 2, p. 83, Washington, Feb. 15, 1941.

5128. WATERS, Kenneth H., "A Numerical Method of Computing Dip Data using Well Velocity Information", *Geophysics*, Vol. 6, No. 1, 64-73, 7 fig., bib., Houston, Jan., 1941.

5129. WEISS-XENOFONTOVA, Z., and POPOFF, V., "Sur les tremblements de terre à la centrale région de l'Oural", *Publications de l'Institut Séismologique, Académie des Sciences de l'URSS*, No. 104, 12 pp., 3 maps, Moscow-Leningrad, 1940.

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- WERNER, Mlle. D., TRONDLE, Mlle. P., and MONTANDON, Raoul, "Chronique des Calamités". See No. 5083 of this list.

5130. WEST, S. S., "The Effect of Density on Seismic Reflections", *Geophysics*, Vol. 6, No. 1, 45-51, 1 fig., 3 tab., Houston, Jan., 1941. S.S.W.

- WINDES, S. L., IRELAND, Andrew T., and THOENEN, J. R., "Progress Report: House Movements Induced by Mechanical Agitation and Quarry Blasting". See No. 5120 of this list.

5131. WINTERBOTHAM, H. St. J. L., "Dr. William Bowie", *Nature*, No. 3707, Vol. 146, p. 645, London, Nov. 16, 1940.

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5132. WOLF, Alfred, "The Time Delay of a Wave Group in the Weathered Layer", *Geophysics*, Vol. 5, No. 4, 367-372, 5 fig., Menasha, Oct., 1940. A.W.

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