

DEPARTMENT OF THE INTERIOR
CANADA

Honourable T. A. CRERAR, *Minister*

J. M. WARDLE, *Deputy Minister*

PUBLICATIONS
OF THE
Dominion Observatory
OTTAWA

R. MELDRUM STEWART, *Director*

Vol. XII

Bibliography of Seismology

No. 9

(Items 2942—3041)

JANUARY, FEBRUARY, MARCH, 1936

BY

ERNEST A. HODGSON

OTTAWA
J. O. PATENAUDE, I.S.O.
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1936

Price 25 cents.

This document was produced
by scanning the original publication.

Ce document est le produit d'une
numérisation par balayage
de la publication originale.

DEPARTMENT OF THE INTERIOR

Geological Survey of Canada

PUBLICATIONS

OF THE

Dominion Observatory

OTTAWA

By permission of the Minister of the Interior

Vol. XII

Bibliography of Seismology

No. 9

(Items 2912-2917)

JANUARY, FEBRUARY, MARCH, 1936

BY

THOMAS J. HARRIS

1936

Price 25c

DEPARTMENT OF THE INTERIOR

Geological Survey of Canada

PUBLICATIONS

OF THE

Dominion Observatory

OTTAWA

10th Street, Ottawa, Ontario

Vol. XII

Bibliography of Seismology

No. 9

(Items 2012-2017)

JANUARY, FEBRUARY, MARCH, 1936

BY

James J. Thomson

1936

Price 25c

Bibliography of Seismology

January, February, March, 1936

2942. AGAMENNONE, G., "Come e quando rovinò il tempio di Venere Genitrice," *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, 109-117, 2 fig., bib., Rome, 1935.

— ALFANO, G., "Gli epicentri sismici dell'Italia con particolare riguardo a quelle rovinosi, disastrosi, e disastrossimi." See No. 2990 (7) of this list.

2943. ANDREOTTI, G., "La zona epicentrale e la profondità del fuoco del terremoto dell'Alto Adriatico, 30 nov. 1934," *La Ricerca Scientifica*, Anno VI, Vol. 1, Rome, Jan., 1935.

A short review, signed G. A., appears on p. 124 of *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4 Rome, 1935.

— ARCHER, J. A., and BAXTER, E. F., "Note on the Generation of Forced Oscillations on the Sea-bed." See No. 2944 of this list.

2944. BAXTER, E. F., and ARCHER, J. A., "Note on the Generation of Forced Oscillations on the Sea-bed," *M. N. Geoph. Sup.*, Vol. 3, No. 8, 298-302, bib., London, Dec., 1935. E.Tl.

2945. BERLAGE, H. P., "Correction d'une formule permettant de calculer la profondeur du foyer d'un tremblement de terre éloigné," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 12, 105-108, 1 fig., bib., Strasbourg, 1935.

— BOIS, Charles, "Chronique sismologique: les tremblements de terre destructeurs du 1^{er} janvier au 1^{er} juillet 1935." See No. 2990 (5) of this list.

2946. BOWIE, Wm., "The Origin of Continents and Oceans," *Scien. Month.*, No. 242, Vol. 41, No. 5, 444-449, New York, Nov., 1935.

2947. BUNGERS, Rolf,

(1) "Zum 2-Schichten-Problem der angewandten Seismik," *Zeit. Geoph.*, Jahr. 11, Heft 4-5, 207-211, 3 fig., Braunschweig, 1935.

(2) "Bestimmung von Schichtneigungen aus dem Emergenzstrahl bei Sprengungen," *Ibid.*, Heft 6, 326-328, 2 fig., bib.

2948. BURKY, Ch., "Les glissements de terrain," *Mat. E. Cal.*, No. 34, 143-145, Geneva, 1934.

— BURKY, Ch., "Le séisme du Belouchistan." See No. 2990 (3) of this list.

2949. BUSS, E., "Bulletin de la Station Séismique de Tiflis, 1928," Institut Géophysique de Tiflis, 112 pp., Tiflis, 1935.

Besides the above publication bringing forward the reports from Tiflis to 1928, the same author publishes the first of a series of quarterly reports dealing with the first quarter of 1935. It carries the serial number 1 and the date 1935. It comprises 20 pp.

2950. CANAN, H. V., "American Great Lakes Harbours," *Science*, No. 2149, Vol. 83, p. 14 (Supp.), New York, Mar. 6, 1936.

A popular article by Science Service here reports the original article by Captain Canan in a recent issue of *The Military Engineer*. It deals with the effects on Great Lakes harbours of the tilting of the land about a "hinge line" through the lakes, the United States harbours being deepened and the Canadian harbours made shallow thereby.

2951. CAVASINO, Alfonso, "I terremoti d'Italia nel trentacinquennio 1899-1933," Appendix to Vol. 4, Ser. 3, *Mem. R. Uff. Cent. Met. Geof.*, 266 pp., charts, Rome, 1935. A.C.

- CHAIX, A., "Record of the Great Indian Earthquake" (a review). See No. 2990 (6) of this list.

2952. CHAMBERLIN, Rollin T., "Glacier Movement as Typical Rock Deformation," *Jour. Geol.*, Vol. 44, No. 1, 93-104, bib., Chicago, Jan.-Feb., 1936.

The authors abstract reads: "There is a close parallelism between the behaviour of ice in a glacier and the behaviour of rocks under stress in the earth. The resulting structures have much in common. Glacier movement is but rock deformation in progress. Solid-rock flow and the displacement of large masses of ice by shearing both take place in the same part of a glacier and are not mutually exclusive. The concept of a zone of fracture and a zone of flow, whether in the earth or in a glacier, is thought to be more harmful than helpful."

2953. COUCHMAN, H. J., "Survey of India: Geodetic Report 1934." Published by order of Brigadier H. J. Couchman, D.S.O., M.C., Surveyor-General, 142+xxx pages, 29 plates and charts. Price 5s. 3d. Dehra Dun, 1935.

A lengthy review, signed G.T.M., appears on pages 163-165 of *Geographical Journal*, Vol. 87, No. 2, London, Feb., 1936.

- CRABY, A. P., THORNE, A. M., and EWING, M., "Outfit for Seismic Reflection Shooting used in Geophysical Prospecting." See No. 2965 of this list.

2954. CRESKOFF, Jacob J.,

- (1) "San Francisco Mint Designed to Resist Earthquakes," *Eng. N.-R.*, Vol. 115, No. 14, 466-469, 1 illus., detail drawings, New York, Oct. 3, 1935.

Investigation of periods of vibration of site preceded design of an integrated foundation and a rigid symmetrical frame with the design analyzed by both dynamical and statical methods.

- (2) "Earthquake Design," *Ibid.*, Vol. 116, No. 9, p. 325, Feb. 27, 1936.

2955. DALY, Reginald A., "Densities of Rocks Calculated from their Chemical Analyses," *Proc. Nat. Acad. Sc.*, Vol. 21, No. 12, 657-663, tab., bib., Washington, Dec., 1935.
R.A.D.
2956. DAVISON, Charles, "Earthquake-proof Buildings," *Nature*, No. 3454, Vol. 137, 55-57, bib., London, Jan. 11, 1936.
2957. DE ANGELIS D'OSSAT, G., "Allarghiamo l'ambito della sismologia," *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, 95-101, bib., Rome, 1935.
2958. DEGOLYER, E.,
 (1) "Geophysical Search for Oil More Active Than Ever," *Min. Met.*, Vol. 16, No. 337, 13-14, New York, Jan., 1935. (ABEG-1226).
 (2) "Notes on the Early History of Applied Geophysics in the Petroleum Industry," *Jour. Soc. Pet. Geoph.*, Vol. 6, No. 1, 1-10, bib., Tulsa, July, 1935.
2959. DE MIRANDA, R., "O problema da sismologia em Portugal, no seu duplo aspeto científico e humano," *A Terra*, No. 16, 5-23, Coimbra, Nov., 1934.
 A review, signed G.A., appears on p. 130, *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, Rome, 1935.
2960. DINCA-SAMURACAS, Alexandre, "Études sur la phase des tremblements de terre dite 'Phase Maxima'," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 12, 5-99, 32 fig., 17 tab., bib., Strasbourg, 1935.
2961. DIX, C. H., "Note on the Theory of Seismic Prospecting," *Jour. Soc. Pet. Geoph.*, Vol. 6, No. 1, 34-43, 5 fig., Tulsa, July, 1935.
2962. DOBBERSTEIN, Heinz, "Eichung von Fernschallempfängern," *Zeit. Geoph.*, Jahr. 11, Heft 7-8, 362-388, 10 fig., bib., Braunschweig, 1935.
 The above paper is No. 22 of the series: *Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen*.
- ENGG, Dr., NISIDA, Masataka, and TUZI, Zirô, "Photo-elastic Study of Stresses due to Impact." See No. 3026 of this list.
2963. ENGINEERING NEWS-RECORD. The following short notes of interest to seismologists have appeared recently in Vol. 135 of the above periodical:
 (1) "Montana Buildings Damaged by Minor Earthquake," No. 16, p. 556, New York, Oct. 17, 1935.
 (2) "Frequent Earthquakes Do Much Damage in Western Part of Montana," No. 17, p. 588, 1 illus., Oct. 24, 1935.
 (3) "Earth Pressure Tilts Pier of Grand Coulee Bridge," No. 19, 646-647, 2 fig., Nov. 7, 1935.
 (4) "Unusual After-shock at Helena Causes More Damage, Wrecking New School," *Ibid.*, p. 653, 3 illus.
 (5) "Montana Earthquakes Centered Ten Miles from Helena," *Ibid.*, p. 655.
 (6) "Structural Dynamics and Earthquakes," No. 20, p. 691, Nov. 14, 1935.
 (7) "Quake-resistant Construction Planned for Houses in Helena," *Ibid.*, p. 694.

2964. EVANS, R. H., and WOOD, R.H., "Modulus of Elasticity of Materials for Small Stresses," *Phil. Mag.*, Vol. 21, No. 138, 65-80, 10 fig., bib., London, Jan., 1936.
2965. EWING, M., CRARY, A. P., and THORNE, A. M., "Outfit for Seismic Reflection Shooting used in Geophysical Prospecting," *Oil and Gas Jour.*, Vol. 33, No. 7, p. 44, Tulsa, Sept. 14, 1934.
2966. FALCAO MACHADO, F., "O mais remoto terremoto," *A Terra*, No. 16, 24-26, Coimbra, Nov., 1934.
A brief review, signed G.A., appears on p. 130, *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, Rome, 1935.
2967. FENNEMAN, Nevin M., "Cyclic and Non-cyclic Aspects of Erosion," *Science*, No. 2144, Vol. 83, 87-94, bib., New York, Jan. 31, 1936.
The above is the address by the retiring president of the Geological Society of America at its New York meeting, Dec. 26, 1935.
2968. FOCKEN, C. M., "Geophysical Prospecting in New Zealand," *Min. Mag.*, Vol. 25, No. 2, 7-9, 23, London, Feb., 1935. (ABEG-1238.)
2969. FONTSERÈ, Eduard, "Nota sobre la profunditat dels seismes Catalans," *Mem. Acad. Cien. Arts, Barcelona*, Vol. 25, No. 7, 14 pp., 1 fig., 3 tab., Barcelona, July, 1935. E.F.
2970. GEMANT, A., "Compressional Waves in Media with Complex Viscosity," *Physics*, Vol. 6, No. 11, 363-365, bib., Lancaster, Nov., 1935.
- GEORGE, P., "A propos des tremblements de terre du Triscastin." See No. 2990 (8) of this list.
2971. GORANSON, Roy W., "A Note on the Elastic Properties of Rocks," *Jour. Wash. Acad. Sc.*, Vol. 24, No. 10, 419-428, Washington, Oct. 14, 1934. (ABEG-1337.)
2972. GOTTSCHALK, Otto, "Nuevo y sencillo análisis elástico de estructuras derivado de métodos mecánicos," *Anal. Soc. Cien. Argentina*, T. 120, No. 1, 3-14, 7 fig., Buenos Aires, July, 1935.
2973. GRACE, S. F., "Tides in a Channel," *M. N. Geoph. Sup.*, Vol. 3, No. 8, 302-310, 5 fig., bib., London, Dec., 1935.
2974. GUNN, ROSS, "The Forces Responsible for Continental Motions and Pacific Type Mountain Building," *Phys. Rev.*, Vol. 49, No. 2, p. 192, Lancaster, Jan. 15, 1936.
- GUTENBERG, B., "Velocities of Elastic Waves in Rocks of Various Ages and at Various Depths" (abstract). See No. 3032 of this list.
2975. HADDOCK, M. H., "The Wandering of the Continents," *Discovery*, No. 195, Vol. 17, 67-70, 2 fig., bib., London, March, 1936.

2976. HAYES, R. C.,

- (1) "Seismic Waves and Crustal Structure in the New Zealand Region," *Dom. Obs (N.Z.) Bul.*, No. 101, 10 pp., 3 fig., bib., Wellington, 1936.
- (2) "A New Phase in Deep-focus Earthquakes," *Ibid.*, No. 107, 553-562, 9 fig., 2 tab., bib., 1936. R.C.H.

2977. HAYNES, J. R., "Heated Stylus for Use with Waxed Recording Paper," *R.S.I.*, Vol. 7, No. 2, p. 108, 1 illus., Lancaster, Feb., 1936.

A brief description of a device for minimizing friction at the writing point of a recording stylus.

— JARDINE, James M., "After the Indian Earthquake" and "Record of the Great Indian Earthquake." See No. 2990, items (4) and (6), of this list.

2978. JEFFREYS, Harold, "Some Deep-focus Earthquakes," *M.N. Geoph. Sup.*, Vol. 3, No. 8, 310-343, tab., London, Dec., 1935. E.T.I.

2979. JOURNAL OF THE SOCIETY OF PETROLEUM GEOPHYSICISTS.

The above publication is the organ of the Society of Petroleum Geophysicists. In the present issue of the *Bibliography* are indexed articles by DeGolyer, Dix, Loving and Smith, Rosaire, and Westby, Each of these appears in the above journal, Vol. 6, No. 1. The abbreviation used is: *Jour. Soc. Pet. Geoph.*

In the same issue of the *Journal*, pp. 73-79, will be found the Constitution and By-laws of the Society, as amended in 1935. On pp. 68-72 appears a list of the Members and on pp. 80-81 is given the list of papers presented at the Wichita meeting of the Society, on March 21, 1935.

2980. KELLY, S. F.,

- (1) "Widening Use of Geophysics in Geology Observed," *Min. Met.*, Vol. 16, No. 337, 20-21, New York, Jan., 1935. (ABEG-1222.)
- (2) "Geophysics—the Geologist's New Tool," *Min. Jour.*, Vol. 18, No. 19, p. 4, Phoenix, Feb. 28, 1935. (ABEG-1223.)

2981. KOHLSCHÜTTER, E., "Veröffentlichung des Preussischen Geodätischen Institutes: Jahresbericht des Direktors des Geodätischen Institutes für die Zeit vom April 1934 bis März 1935," 22 pp., Potsdam, 1935.

2982. KORIDALIN, E., and MASARSKIJ, S., "Seismic Prospecting with Reflected Waves" (in German), *C.R. Acad. Sc. USSR.*, Vol. 3, No. 3, 121-124, Leningrad, 1935.2983. KROMER, C. H., "Earthquake-resistant Construction Applied to California Schools," *Eng. N.-R.*, Vol. 115, No. 25, 856-860, New York, Dec. 19, 1935.

Seismic requirements of the new law are effective on 1,001 new school buildings valued at \$35,000,000. The article outlines the fundamental principles in designing to resist horizontal forces and reviews the salutary effect on construction from two and one-half years of law enforcement by the State Division of Agriculture.

2984. LEHMANN, I., "Seismic Time-curves for Epicentral Distances around 80°: The Aleutian Earthquake of 1929, July 7th," *U.G.G.I., Ass. Séis., Trav. Sc., Ser. A, Fasc. 12*, 109-133, 3 fig., 3 pl., bib., Strasbourg, 1935.

2985. LINDGREN, Waldemar, *et al.*, "Annotated Bibliography of Economic Geology," Vol. 8, No. 1, 242 pp., Washington, 1936.

The above bibliography is published by the Economic Geology Publishing Company, Urbana, Ill. It is prepared under the auspices of the National Research Council, U.S.A. The publication appears as one volume (two numbers) per year. The price is \$5 per year or \$3 per number. Items 1216-1241 deal with geophysical prospecting in general; and items 1327-1383 with seismic methods.

Items throughout this issue of the *Bibliography of Seismology* which are reported in the above issue of the *Annotated Bibliography of Economic Geology* are followed by the bracketed notation (ABEG-....) the number being that of the item in the Washington publication.

2986. LOVING, G. H., and SMITH, G. H., "Explosives and Electric Blasting Caps for Geophysical Prospecting," *Jour. Soc. Pet. Geoph.*, Vol. 6, No. 1, 27-33, Tulsa, July, 1935.

2987. MACELWANE, James B., S.J., "Problems and Progress on the Geologico-Seismological Frontier," *Science*, No. 2148, Vol. 83, 193-198, bib., New York, Feb. 28, 1936.

The above is the address of the retiring vice-president and chairman of the Section of Geology and Geography of the American Association for the Advancement of Science, delivered at a joint session of the Section and the Seismological Society of America, Saint Louis, Dec. 30, 1935. J.B.M.+R.R.B.

2988. MARTIN, H., "Einschwingvorgänge und ihre Bedeutung bei der Aufzeichnung von stossähnlichen Erschütterungen," *Veröff. Jena*, Heft 26, 39 pp., 48 fig., bib., Jena, 1935. H.M.

— MASARSKIJ, S., and KORIDALIN, E., "Seismic Prospecting with Reflected Waves" (in German). See No. 2982 of this list.

— MASUDA, K., and WADATI, K., "On Pulsatoric Oscillations of the Ground." See No. 3031 of this list.

2989. MATÉRIAUX POUR L'ÉTUDE DES CALAMITÉS, "Radó de Kövesligethy," *Mat. E. Cal.*, No. 34, 114-115, Geneva, 1934.

2990. MATÉRIAUX POUR L'ÉTUDE DES CALAMITÉS. The following articles of interest to seismologists appear in No. 35 (Geneva, 1935) of the above periodical:

- (1) "L'edilizia antisismica in Italia," 43-46.
- (2) "L'attività sismica dell'Italia," 46-51.
- (3) "Le séisme du Beloutchistan" (Review of an article by Ch. Burky in *Journal de Genève*), 62-65.
- (4) "After the Indian Earthquake," 66-70. (See No. 6 below).
- (5) "Chronique sismologique: les tremblements de terre destructeurs du 1^{er} janvier au 1^{er} juillet 1935," by Charles Bois, 82-86.

- (6) "Record of the Great Indian Earthquake," by James M. Jardine, *The Statesman*, 44 pp., many illus. Price 6 annas. Calcutta, 1934. (A review signed A. Chaix).
- (7) "Gli epicentri sismici dell'Italia con particolare riguardo a quelle rovinosi, disastrosi e disastrossimi," by G. Alfano, *Boll. Soc. Natur, Napoli*, T. 46, 51-120, Naples, 1935. (A review signed M.M.S. Navarro Neumann, S.J..)
- (8) "A propos des tremblements de terre du Triscastin," by P. George, *Les Études Rhodaniennes*, T. 11, 221-222, Lyons, 1935. (A review signed R(aoul) M(ontandon).)
2991. MCKINSTRY, H. E., "Earth-fractures and the Search for Ore." Paper published in the report of the Melbourne (1935) meeting of the Australian and New Zealand Association for the Advancement of Science. A lengthy review appears in *Mining Magazine*, Vol. 53, No. 6, 375-378, 5 fig., London, Dec., 1935.
2992. MEISSER, O., "Beitrag zur Theorie und Konstruktion von statischen Schweremessern," *Zeit. Geoph.*, Jahr. 11, Heft 4-5, 221-234, 11 fig., 3 tab., bib., Braunschweig, 1935.
2993. MILDNER, P., "Das Geophysikalische Observatorium der Universität Leipzig," *Zeit. Geoph.*, Jahr. 11, Heft 7-8, 329-339, 6 fig., bib., Braunschweig, 1935.
2994. MONDELLO, Ugo, "La propagazione nell'Alto Tirreno del terremoto bresciano del 1802," *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, 105-108, bib., Rome, 1935.
- MONTANDON, Raoul, "A propos des tremblements de terre du Triscastin" (a review). See No. 2990 (8) of this list.
- MOSHER, A. T., and VAUGH, Mason, "Record of Reinforced Brickwork in Indian Earthquake." See No. 3029 of this list.
2995. MUNRO, George W., "Power to Move Continents," *Science*, No. 2134, Vol. 82, 488-490, bib., New York, Nov. 22, 1935.
- NAKAGAWA, J., and NAKANO, Masito, "On the Path of Propagation of Sea-waves (Tunami) Originated by Earthquakes." See No. 2997 of this list.
2996. NAKANO, Masito, "An Investigation on the Effect of Prevailing Winds upon the Depth of Bays" (Fourth paper), *Geoph. Mag.*, Vol. 9, No. 2, 223-235, 6 fig., bib., Tokyo, Sept., 1935.
2997. NAKANO, Masito, and NAKAGAWA, J., "On the Path of Propagation of Sea-waves (Tunami) Originated by Earthquakes," *Geoph. Mag.*, Vol. 9, No. 2, 215-221, 5 fig., 3 tab., Tokyo, Sept., 1935.
2998. NATURE. The following short notes of interest to seismologists appear in Vol. 137 (1936) of the above periodical (London):
- (1) "The Formosa Earthquake, April 21, 1925," No. 3453, p. 35, Jan. 4.
 - (2) "Radó de Kövesligethy," No. 3454, p. 58 Jan. 11.
 - (3) "Tectonic Lines in the Philippines," *Ibid.*, p. 75.
 - (4) "Seismographic Study of a Great Explosion," *Ibid.*, p. 75.

- (5) "Deep Oil-well Drilling: Methods at 10,000 ft.," *Ibid.*, p. 75.
- (6) "Recent Earthquakes in California," No. 3457, p. 194, Feb. 1.
- (7) "Siduoka Earthquake of July 11, 1935," No. 3458, p. 240, Feb. 8.
- (8) "Subsidence of East Tokyo," No. 3459, p. 281, Feb. 15.
- (9) "The Quetta Earthquake of May 31, 1935," *Ibid.*, 285-286.
- (10) "Oil-finding Methods and Oil-made Chemicals," No. 3460, p. 310, Feb. 22.
- (11) "Seismograms of Californian Earthquakes," *Ibid.*, p. 326.
- (12) "Mr. F. A. Bellamy," No. 3462, 388-389, Mar. 7.
- (13) "Rock Compressibilities," *Ibid.*, p. 409.
- (14) "Bathymetry of the Oceans," and "Bathymetric Charts of the Oceans," No. 3464, 488-489, Mar. 21, 1936.
2999. NAVARRO NEUMANN, M. Ma. S., S.J., "Courbes isodiastématiques," *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, 102-104, 1 fig., bib., Rome, 1935.
- NAVARRO NEUMANN, M. Ma. S., S.J., "Gli epicentri sismici dell'Italia, etc." (a review). See No. 2990 (7) of this list.
- NISIDA, Masataka, TUZI, Zirô, and ENGG, Dr., "Photo-elastic Study of Stresses due to Impact." See No. 3026 of this list.
3000. OBSERVATORY, "Geophysical Discussion," *Observatory*, No. 739, Vol. 58, 360-366, London, Dec., 1935.
- The report of a geophysical discussion on gravity in India at a meeting in the rooms of the Royal Astronomical Society on Friday, Oct. 25, 1935.
3001. ODDONE, Emilio, "Saggio preparatorio per la prospezione sismica del sottosuolo nazionale," *Mem. R. Uff. Cent. Met. Geof.*, Ser. 3, Vol. 5, Sec. 4, 22 pp., 4 tab., 2 fig., bib., Rome, 1935.
3002. OIL WEEKLY, "Geophysical Work on Gulf Coast Increases," *Oil Weekly*, Vol. 74, No. 1, 57-58, Houston, June 18, 1934. (ABEG-1227.)
3003. OTTO, H., "A New High-precision Clock," *Horological Jour.*, No. 927, Vol. 78, 3-4, 3 fig., bib., London, Dec., 1935.
- This is the last instalment of a series which has been running for some time in the above journal. It was previously reported as No. 2808 of these lists. Further reference is made here because this is the concluding section and because there is here given a discussion of the effect of earthquakes on the new clock.
3004. PAUL, M., "Über Messungen der Erdbodentemperatur an Salzdomen," *Zeit. Geoph.*, Jahr. 11, Heft 7-8, 388-392, 1 fig., bib., Braunschweig, 1935.
3005. PEKERIS, Chaim L., "Thermal Convection in the Interior of the Earth," *M.N. Geoph. Sup.*, Vol. 3, No. 8, 343-367, 4 fig., tab., bib., London, Dec. 1935.

3006. RAMIREZ, J. Emilio, S.J., "Boletin de sismologia," *Revista Javeriana*, T. 4, No. 20, 343-355, bib., Bogota, Nov., 1935. J.E.R.

A general review of the present status of seismological investigations throughout the world.

3007. RIXMANN, F., "Untersuchungen über die Abhängigkeit der Bodenbewegung bei Sprengungen von der Ladung," *Zeit. Geoph.*, Jahr. 11, Heft 4-5, 197-207, 9 fig., 3 tab., bib., Braunschweig, 1935.

The above paper is No. 18 of the series: *Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen*.

3008. ROSAIRE, E. E., "On the Strategy and Tactics of Exploration for Petroleum," *Jour. Soc. Pet. Geoph.*, Vol. 6, No. 1, 11-26, Tulsa, July, 1935.

3009. RUEDY, R., "Vibrations of Power Lines in a Steady Wind."

(II) "Suppression of Vibrations in a Steady Wind," *Can. Jour. Res.*, Vol. 13, No. 5, 99-110, 2 fig., bib., Ottawa, Nov., 1935.

(III) "The Free Vibrations of a Heavy String," *Ibid.*, Vol. 14, No. 1, 16-24, Jan., 1936.

Power lines running in certain directions have been known to vibrate or sway violently at a time of no wind, while other lines adjacent but running at right angles to them were not affected. Some attempts have been made (though not in the above publications) to explain these observed facts as due to a resonance effect of microseisms. It is for that reason that the above papers have been listed here, the articles containing a good deal of general information about power lines. E.A.H.

3010. SAKURABA, S., "A Contribution to the Theory of the Love Waves Propagating over a Semi-infinite Solid Body of Varying Elasticity," *Geoph. Mag.*, Vol. 9, No. 2, 211-214, bib., Tokyo, Sept., 1935.

3011. SCHMERWITZ, Gerhard, "Die Wirkungsweise eines Klinographen bei der Aufzeichnung von Neigungswellen," *Zeit. Geoph.*, Jahr. 11, Heft 6, 273-288, 5 fig., bib., Braunschweig, 1935.

3012. SCHULZE, Gustaf-Adolf, "Über die Ausbreitung sinusförmiger Bodenbewegung," *Zeit. Geoph.*, Jahr. 11, Heft 6, 307-321, 10 fig., bib., Braunschweig, 1935.

The above paper is No. 19 of the series of *Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen*.

3013. SCIENCE. The following short notes of interest to seismologists have appeared in recent issues of the above periodical:

(1) "Cause of the Helena Earthquakes," No. 2131, Vol. 82, 8-9 (Supp.), New York, Nov. 1, 1935.

(2) "Tide in Rocks at Pittsburg," *Ibid.*, p. 9 (Supp.).

(3) "Experiments on High Pressures at Harvard," No. 2135, Vol. 82, p. 8, (Supp.), Nov. 29, 1935.

(4) "North America Being Pulled into the Pacific Ocean," No. 2144, Vol. 83, p. 6 (Supp.), Jan. 31, 1936.

3014. SCOTT, Harold W., "The Epicenter of the Helena, Montana, Earthquake," *Science*, No. 2135, Vol. 82, 516-517, New York, Nov. 29, 1935.
3015. SEISMOS COMPANY, "New Prospectus," Hannover, 1935. For reference to earlier prospectus see No. 1359. (ABEG-1331.)
3016. SHEPARD, Francis P., "Geological Mapping of the Ocean Bottom," *Science*, No. 2139, Vol. 82, 614-615, New York, Dec. 27, 1935.
3017. SIEBERG, August, "Die gesetzmässige Verteilung der tektonischen Verformungszonen in einer Geosynklinale," *Zeit. Geoph.*, Jahr. 11, Heft 7-8, 339-344, 3 fig., bib., Braunschweig, 1935.
3018. SIGNORE, Francesco, "La periode séismique Vésuvienne des premiers jours de février 1933," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 12, 101-104, bib., Strasbourg, 1935.
- SMITH, G. H., and LOVING, G. H., "Explosives and Electric Blasting Caps for Geophysical Prospecting." See No. 2986 of this list.
3019. STECHSCHULTE, V. C., S.J., "Deep-focus Earthquakes and Isostasy," *Science*, No. 2148, Vol. 83, p. 206, New York, Feb. 28, 1936. V.C.S.+R.R.B.
3020. STETSON, Harlan T., "The Correlation of Deep-focus Earthquakes with Lunar Hour Angle and Declination," *Science*, No. 2135, Vol. 82, 523-524, 1 fig., 1 tab., bib., New York, Nov. 29, 1935.
3021. SUZUKI, Takeo, "Notes on the Formosa Earthquake of April 21, 1935," *Jap. Jour. Ast. Geoph.*, Vol. 13, No. 1, 55-59, 6 fig., tab., Tokyo, 1935.
- A lengthy review, covering this paper and one by R. Takahasi on the same subject (reported as No. 2835 of these lists), appears on page 93 of the *Geographical Journal*, Vol. 87, No. 1, London, Jan., 1936. It is signed: C.D.
3022. SYÔNO, S., "Free Motion of the Surface of a Semi-infinite Elastic Solid," *Geoph. Mag.*, Vol. 9, No. 3-4, 285-297, 6 fig., Tokyo, Dec., 1935.
3023. THOM, W. T., Jr., "Deep-focus Earthquakes and Isostasy," *Science*, No. 2141, Vol. 83, p. 32, bib., New York, Jan. 10, 1936.
- THORNE, A. M., EWING, M., and CRARY, A. P., "Outfit for Seismic Reflection Shooting used in Geophysical Prospecting." See No. 2965 of this list.
3024. THWAITES, F. T., "Field Photography for Geologists," *Bul. Amer. Ass. Pet. Geol.*, Vol. 20, No. 2, 186-214, 15 fig., Tulsa, Feb., 1936.
3025. TRAPPE, F., "Die Anwendung des seismischen Reflexionsverfahrens in Kohlenbergbau," *Glückauf*, Bd. 71, No. 25, 577-582, Essen, June 22, 1935. (ABEG-1375.)
3026. TUZI, ZIRÔ, ENGG, Dr., and NISIDA, Masataka, "Photo-elastic Study of Stresses due to Impact," *Phil. Mag.*, No. 140, Vol. 21, 448-473, 23 fig., 11 tab., bib., London, Feb. 1936.

3027. ULRICH, Franklin P., "Man-made Earthquakes," *Eng. N.-R.*, Vol. 115, No. 20, 680-682, 4 fig., New York, Nov. 14, 1935.

To advance knowledge of earthquake effects, artificial oscillations are imparted to towers, buildings, bridges, and dams, and the resultant motions are measured.

R.R.B.

3028. UNITED STATES COAST AND GEODETIC SURVEY, "Review of the Year 1935." Reprint from the *Annual Report of the Secretary of Commerce, 1935*, 131-154, Washington, 1936.

3029. VAUGH, MASON, and MOSHER, A. T., "Record of Reinforced Brickwork in Indian Earthquake," *Eng. N.-R.*, Vol. 115, No. 22, 738-739, 5 illus., New York, Nov. 28, 1935.

Floors, ceilings, and lintels were undamaged but in many cases were not tied in to connecting elements. Lack of reinforcement in vertical walls was a major cause of failure.

3030. VERCELLI, F., "La determinazione delle profondità ipocentrali," *Boll. Com. Geod. e Geof., Consiglio Naz. Ricerche*, Ser. 2a, No. 5, 15-20, Milan, 1935.

A review, signed E.P., appears on p. 143 of *Bol. Soc. Sis. Ital.*, Vol. 33, No. 3-4, Rome, 1935.

3031. WADATI, K., and MASUDA, K., "On Pulsatoric Oscillations of the Ground," *Geoph. Mag.*, Vol. 9, No. 3-4, 299-340, 15 fig., num. tab., Tokyo, Dec., 1935.

A paper on the movements usually called microseisms.

3032. WADE, Arthur, "New Theory of Continental Spreading," *Bul. Amer. Ass. Pet. Geol.*, Vol. 19, No. 12, 1806-1818, 2 fig., bib., discussion, Tulsa, Dec., 1935.

The theory, according to the author, may be considered a corollary to Gutenberg's theory of continental spreading.

In the same issue of the periodical, on p. 1842, appears an abstract of a paper by Gutenberg, entitled: "Velocities of Elastic Waves in Rocks of Various Ages and at Various Depths," which was presented at the meeting of the Pacific Section of the Association at Los Angeles, Nov. 7-8, 1935.

3033. WALZ, Audrey Boyers, "They Watch the World," *Columbia*, Vol. 15, No. 8, pp. 9, 24, 3 fig., New Haven, Mar., 1936. F.D.H.

A popular account of the activities in seismology of the Jesuit scientists in the United States.

3034. WANNER, E., "Jahresbericht 1934 des Schweizerischen Erdbebendienstes," *Ann. Schweiz. Met. Zent.*, Jahr. 71, 16 pp. in reprint, 1 pl., Zürich, 1935.

3035. WERNER, Kurt, "Verhalten der Luftdämpfung und Bestimmung des Dämpfungsgrades bei Seismographen und Erchchütterungsmessern," *Zeit. Geoph.*, Jahr. 11, Heft 6, 288-306, 12 fig., bib., 12 fig., bib., Braunschweig, 1935.

3036. WEST, W. D., "The Quetta Earthquake of May 31, 1935," *Rec. Geol. Sur. India*, Vol. 69, 203-240, 1935.

A lengthy review, signed C.D., appears on pp. 285-286 of *Nature*, No. 3459, Vol. 137, London, Feb. 15, 1936.

3037. WESTBY, G. H., "The Discovery by Reflection Seismograph of a Small Producing Structure in Okmulgee County, Oklahoma," *Jour. Soc. Pet. Geoph.*, Vol. 6, No. 1, 44-59, 9 fig., Tulsa, July, 1935.

3038. WHIPPLE, F. J. W., "Notes on the Theory of Microseisms," *M.N. Geoph. Sup.*, Vol. 3, No. 8, 287-297, 1 fig., 1 tab., bib., London, Dec., 1935.

3039. WHIPPLE, F. J. W., "The Data of Seismology," *Nature*, No. 3453, Vol. 137, 4-5, London, Jan. 4, 1936.

A review of (a) *The International Seismological Summary*, (b) *Catalogue of Earthquakes 1925-1930*, and (c) *The Brunner Chart of Depth, Time, and Distance for Deep-focus Earthquakes*.

3040. WILLIS, Bailey, "The Living Globe," *Science*, No. 2132, Vol. 82, 427-433, bib., New York, Nov. 8, 1935.

3041. WILLIS, Bailey, and WILLIS, Robin, "Geologic Structures" (third edition, revised), McGraw-Hill Book Co., 544 pp., 202 fig., 12 pl. Price \$4. New York, 1934.

A review by Ernst Cloos appears on pages 936-939 of *Economic Geology*, Vol. 30, No. 8, Lancaster, Dec., 1935.

— WILLIS, Robin, and WILLIS, Bailey, "Geologic Structures." See No. 3041 of this list.

— WOOD, R. H., and EVANS, R. H., "Modulus of Elasticity of Materials for Small Stresses." See No. 2964 of this list.

LIST OF COLLABORATORS

The initials appended to various items throughout the *Bibliography* indicate, in each case, the contribution by the respective collaborator.

Annotated Bibliography of Economic Geology	(ABEG)
Bodle, Ralph R., Editor, <i>Earthquake Notes</i> , United States Coast and Geodetic Survey, Washington, D.C., U.S.A.	R.R.B.
Cavasino, A., R. Ufficio Centrale de Meteorologia e Geofisica, Rome, Italy.	A.C.
Daly, R. A., Harvard University, Cambridge, Mass., U.S.A.	R.A.D.
Fontserè, Eduard, Director, Real Academia de Ciencias y Artes, Barcelona, Spain.	E.F.
Hayes, R. C., Dominion Observatory, Wellington, New Zealand.	R.C.H.
Henderson, F. D., Dominion Observatory, Ottawa, Canada.	F.D.H.
Hodgson, Ernest A., Dominion Observatory, Ottawa, Canada.	E.A.H.
Macelwane, J. B., S.J., Director, Department of Geophysics, Saint Louis University, Saint Louis, Mo., U.S.A.	J.B.M.
Martin, H., Reichsanstalt für Erdbebenforschung, Jena, Germany.	H.M.
Ramirez, J. E., S.J., Ignatiuskolleg, Valkenburg, Holland.	J.E.R.
Stechschulte, V. C., S.J., Xavier University, Cincinnati, Ohio, U.S.A.	V.C.S.
Tillotson, E., 23 Roseville Road, Leeds 8, England.	E.Tl.