DEPARTMENT OF THE INTERIOR
CANADA

HON. THOMAS G. MURPHY, *Minister* H. H. ROWATT, *Deputy Minister*

PUBLICATIONS

OF THE

Dominion Observatory

OTTAWA

R. MELDRUM STEWART, *Director*

Vol. X

Bibliography of Seismology

No. 16

OCTOBER, NOVEMBER, DECEMBER, 1932

BY

ERNEST A. HODGSON

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1933

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During the seven years which have elapsed since the first issue of the first series of this *Bibliography* in 1916, a total of 2,800 items have been reported, including those of this issue. From time to time, we receive requests for information as to the journals and other publications in which these articles have appeared.

In order that such information may be complete and authoritative, questionnaires have recently been sent to the publishers concerned asking for a tabulation of data: the exact title of the publication, the name of the society it represents (if any), the subscription price per year, the cost of single numbers, etc. These data will be placed on file at the Dominion Observatory, Ottawa.

Should the demand be sufficiently pronounced, it may later be found possible to compile the data in mimeographed form, to be distributed on request. In the meantime, the information on file will be made available to those to whom it may be of service.

1501. ADAMS, C. E., "Earthquakes in New Zealand, 1930," Report of the Dominion Astronomer and Seismologist for the Year ended 31st December, 1930. Dominion Observatory Bulletin, No. 82, 4-6, with map, Wellington, 1931.

1502. (1) AGAMENNONE, Giovanni, "Tremblément de terre de la mer Caspienne de la nuit 8-9 juillet 1895," *Bulletin Météorologique et Sélsmique de l'Observatoire Imperial de Constantinople*, 4 pages in reprint, August, 1895.

(2) AGAMENNONE, Giovanni, "L'activité sismique en orient, et en particulier dans l'empire Ottoman, pendant l'année 1895," *Ibid*, Partie sismique pour l'an 1891, 6 pages in reprint, Constantinople, 1896.

(3) AGAMENNONE, Giovanni, "Nuovo tipo d'orologio sismoscopico," *Bollettino della Società Sismologica Italiana*, **5**, 4 pages in reprint, Rome. G. A.

1503. AGAMENNONE, Giovanni, "In difesa del piccolo sismografo di Roma," *Bollettino della Società Sismologica Italiana*, **30**, Fascicoli 3-4, 95-121, 3 figures, Rome, 1932.
G. A.

1504. AGAMENNONE, Giovanni, "La presenza di onde lente nella fase preliminare di taluni sismogrammi," *Rendiconti della Reale Accademia Nazionale dei Lincei, Classe di Scienze fisiche, matematiche e naturali*, **15**, Series 6, Semi-fascicolo 12, 960-965, Rome, June, 1932. G. A.

1505. AGAMENNONE, Giovanni, "La pretesa ripercussione, agli antipodi, dell'eruzione del Cracatoa del 1883," *Rendiconti della Reale Accademia Nazionale dei Lincei, Classe di Scienze fisiche, matematiche e naturali*, **16**, Series 6a, Fascicoli 3-4, 127-133, Rome, August, 1932. G. A.

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1506. ALEXANIAN, C. L., "Traité pratique de prospection géophysique," Librairie Polytechnique, Ch. Béranger, 268 pages, illustrated. Price 62 francs. Paris and Liège, 1932.

A review, signed H. Shaw, appears on page 160 of *The Mining Magazine*, **47**, No. 3, London, September, 1932. W. W. D.

—— AMAGIÀ, Roberto, "Studio delle grandi calamita." See No. 1567 of this list.

1507. AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, "Geophysics, 1931," *Transactions of the Society of Petroleum Geophysicists*, **1**, 1-113, illustrated. Price $2.50. The American Association of Petroleum Geologists, Tulsa, 1932.

The above paper-covered publication is a reprinting of a series of papers from the *Bulletin of the American Association of Petroleum Geologists*, **15**, Nos. 11 and 12, Nov. and Dec., 1931, and forms the first volume of the *Transactions of the* (newly-formed) *Society of Petroleum Geophysicists*. A review by H. Shaw appears on page 160 of *The Mining Magazine*, **47**, No. 3, London, September, 1932. W. W. D.

1508. AMERICAN GEOPHYSICAL UNION, "Transactions of the American Geophysical Union, Thirteenth Annual Meeting, April 28 and 29, 1932, Washington, D.C." Publication of the National Research Council of the National Academy of Sciences, 401 pages, numerous illustrations, Washington, June, 1932.

The report is divided into parts, one each for the respective sections of Geodesy, Seismology, Meteorology, Terrestrial Magnetism and Electricity, Oceanography, Volcanology, and Hydrology, as well as one reporting the proceedings of the general assembly.

Of particular interest to seismologists are the "Symposium on the Application of Geophysics to Ocean Basins and Margins," which formed part of the program of the general assembly, and the "Symposium on the Application of Seismology to the Study of Ocean Basins," which received the attention of the Section of Seismology. Those participating in the first of these were: Messrs. Field, Bucher, Taber, Heck, Hess, Littlehales, DeGolyer, Barton, and Day. Those contributing to the latter were: Messrs. Heck, Newmann, Merritt, Thom, and de Smitt. The papers by these contributors will be found listed in this issue of the *Bibliography*.

Other papers of interest to seismologists are as follows: "Landslide-modifications of Submarine Valleys," by Francis P. Shepard and the report on the survey of the Atlantic coast as included in the paper by Frank S. Borden on "Oceanographic Work of the Coast and Geodetic Survey during the Past Year." These papers will also be found indicated by authors in this issue of the *Bibliography*.

1509. AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, "Geophysical Prospecting, 1932," *Transactions of the American Institute of Mining and Metallurgical Engineers*, 510 pages, illustrated. Price $5. New York, 1932.

A review, signed H. Shaw, appears on page 160 of *The Mining Magazine*, **47**, No. 3, London, September, 1932. W. W. D.

1510. AMERICAN NATIONAL RED CROSS, "Managua Earthquake, Official Report of the Relief Work in Nicaragua after the Earthquake of March 31, 1931." Publication of the American National Red Cross, A. R. C. 903, 43 pages, illustrations, Washington, October, 1931.

A review in French, signed W., appears on pages 279-280 of *Matériaux pour l'Étude des Calamités*, No. 27, Geneva, 1932.

1511. BANERJI, S. K. and JOSHI, S. S., "Disturbance of Pressure at the Bed of a Deep Sea." A reprint of two pages (1 figure), from *Current Science*, Bombay, July, 1932.

A note reporting experiments with a small tank model, in support of the theory that microseisms are caused by pressure changes on the bed of the sea due to the passage of water waves. See also No. 806 of these lists.

—— BARTON, D. C., "Torsion-balance Surveys in Southwest Louisiana and Southeast Texas," pp. 40-42 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

1512. BEUERMANN, W., "Untersuchung der Schallausbreitung bei Unterwasserexplosionen," *Zeitschrift für Geophysik*, 8, No. 1-2, 1-16, Braunschweig, 1932.

A summary by W. Ayvazoglou appears on page 473, of *Geophysical Abstracts*, No. 38. See No. 1453 of these lists. F. W. L.

—— BLAKE, A., "The Recording of Strong Seismic Motion" (abstract only). See No. 1514 of this list.

—— BLAKE, A. and MCCOMB, H. E., "Analysis of Rates of Rotation of Recording Drums" (abstract only). See No. 1514 of this list.

1513. BLUT, Heinrich, "Ein Beitrag zur Theorie der Reflexion und Brechung elastischer Wellen an Unstetigkeitsflächen," *Zeitschrift für Geophysik*, 8, Heft 6-7, 305-322, 16 figures, Braunschweig, 1932.

This paper appeared in two sections, the first having been reported as No. 1407 of these lists. The second section, noted above, is No. 7 of the series *Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen.*

1514. BODLE, Ralph R., "Earthquake Notes." Publication of the Eastern Section of the Seismological Society of America, 4, Nos. 1 and 2, 1-15, Washington, September, 1932.

The above issue reports the Philadelphia Meeting of the Eastern Section, May 2-3, 1932. Abstracts are presented of papers by each of the following authors, to which reference will be found in this issue of the *Bibliography:* Taber, Neumann, Lynch, Eikelberg, Leet and Ewing, Stechschulte, Shepard, O'Connor, Fleming, Hand, Wrocklage, Merritt, Wenner, Robison, McComb and Blake, Weed.

—— BODLE, R. R. and NEUMANN, Frank, "United States Earthquakes, 1930." See No. 1559 of this list.

1515. BOIS, Ch., "Chronique Sismologique," *Matériaux pour l'Étude des Calamités*, No. 27, 260-263, Geneva, 1932.

—— BORDEN, Frank S., "Oceanographic Work of the Coast and Geodetic Survey during the Past Year," pp. 211-224 (9 figures) of the report of the Section of Oceanography of the American Geophysical Union in connection with the program of the annual meeting. See No. 1508 of this list.

—— BUCHER, Walter H., "Problems of Island-arcs and Ocean-deeps," pp. 12-19 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

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In the first paper the author indicates the effect at the surface, and also within the interior of the earth, of a wave of condensation emitted from a deep source, the conditions being isotropic and any function of the time. In the second he deals with the distortional wave. J. C.

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—— CAVASINO, Alfonso, "Studio delle grandi calamita." See No. 1567 of this list.

1518. COULOMB, J., "Sur les ondes transversales superficielles (ondes de Love)," *Annales de l'Institut de Physique du Globe*, **9**, 170-186, Paris, 1931. J. C.

1519. COWPLAND, C. C., "Record-Breaking Dynamite Blast Made by Hercules Powder," *The Hercules Mixer*, pp. 88-89, April, 1932.

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—— DAY, Arthur L., "Experiences of a Seismologist with 'Seismic Methods'," pp. 42-44 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

—— DEGOLYER, E., "The Application of Seismic Methods to Submarine Geology," pp. 37-40 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

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(2) DE MIRANDA, Raul, "Tremores de Terra: Estudo macrosismico," Silva Raposo, 6 rua Candido dos Reis, 175 pages, illustrations, Coimbra, 1931.

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1522. DISCOVERY, "A New British Expedition to Iceland," *Discovery*, No. 152, **13**, pg. 244, London, August, 1932.

A brief announcement of the Cambridge Iceland Expedition. The thickness of the ice-cap is to be measured by seismic means.

1523. DUCKERT, P., "Über die Ausbreitung von Explosionswellen in der Erdatmosphäre," *Gerlands Beiträge zur Geophysik*, Supplementband I, 236-290, 16 figures, bibliography, Leipzig, 1931.

The bibliography is most comprehensive, listing a total of 193 publications on the subject indicated in the title.

1524. EBY, J. Brian, "The Economic Relation of Geophysics to Geology on the Gulf Coast," *Economic Geology*, **27**, No. 3, 231-246, 7 figures, Tulsa, May, 1932.

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—— EIKELBERG, E. W., "The Determination of Accurate Time of Large Explosions" (abstract only). See No. 1514 of this list.

1526. ENGINEERING NEWS-RECORD, "Three Dams on San Andreas Fault Have Resisted Earthquakes," *Engineering News-Record*, **109**, No. 8, 218-219, New York, August 25, 1932.

Construction pictures, together with a report of a recent inspection of these structures by F. R. McMillan and M. B. Lagaard, were published in *Engineering News-Record* for May 8, 1930, at page 766. S. G.

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—— EWING, Maurice and LEET, L. Don, "Velocity of Elastic Waves in Granite." See No. 1550 of this list.

—— EWING, Maurice and LEET, L. Don, "A Study of Phases on Explosion Records" (abstract only). See No. 1514 of this list.

1527. EXNER, F. M., "Zur Dynamic der Bewegungsformer auf der Erdoberfläche," *Gerlands Beiträge zur Geophysik*, Supplementband I, 373-446, 64 figures, bibliography, Leipzig, 1931.

1528. FERNER, R. Y., Co., "Seismometer, Wenner Design," Specification sheet giving details of the Wenner seismograph (horizontal component), 4 pages, 2 illustrations, Investment Building, Washington, 1931. E. J. L.

—— FIELD, Richard M., "Introduction to the Symposium on the Application of Geophysics to Ocean Basins and Margins," pp. 11-12 of the the report on the program of the general assembly at the annual meeting of the American Geophysical Union. See No. 1508 of this list.

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—— FLEMING, J. A., "The Seismological Station at the Huancayo Magnetic Observatory in Peru" (abstract only). See No. 1514 of this list.

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A summary by W. Ayvazoglou appears on page 474 of *Geophysical Abstracts*, No. 38. See No. 1453 of these lists. F. W. L.

—— GREGORY, J. W., "The Unstable Earth." See No. 1588 of this list.

1530. GUTENBERG, B., "Einleitung: Allgemeines über Geophysik," *Handbuch der Geophysik*, **1**, Lieferung 1, 1-7, Berlin, 1932.

On page 6 the author presents a spirited defense of the value of seismology and of volcanology. For reference to the *Handbuch der Geophysik*, see No. 332 of these lists.

1531. HADDOCK, M. H., "Deep Borehole Surveys and Problems," McGraw-Hill, 296 pages, 186 illustrations. Price $4. New York.

Chapter 10 deals with "Geophysical Methods of Investigating Boreholes."

McG.-H.

—— HAND, Eoline R., "The San Juan, Porto Rico, Seismological Station of the U. S. Coast and Geodetic Survey" (abstract only). See No. 1514 of this list.

1532. HART, G. E. F., "Interesting Oceanographic Phenomena," *The Australian Surveyor*, **3**, No. 4, 192-198, Sydney, December, 1931.

Deals with seismic sea waves and their registration on the tide gauge as a result of their reflection from the shores of America. R. R. B.

—— HECK, N. H., "Seismic Zones as Related to Relief of Ocean-bottom," pp. 21-26 (6 figures) of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

—— HECK, N. H., "Seismology and the Ocean Basins," pp. 91-94 of the report of the Section of Seismology of the American Geophysical Union in connection with the program of the annual meeting, being part of the Symposium on the Application of Seismology to the Study of Ocean Basins. See No. 1508 of this list.

1533. HENCKY, H., "On the Propagation of Elastic Waves in Materials under High Hydrostatic Pressure," *Philosophical Magazine*, No. 90, **14**, 254-258, London, August, 1932.

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—— HESS, Harry Hammond, "Interpretation of Gravity Anomalies and Sounding Profiles Obtained in the West Indies by the International Expedition to the West Indies in 1932," pp. 26-33 (5 figures) of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

1534. HIGUCHI, Seiichi, "On the Motion of the Lever of the Recording Pin of Omori's Horizontal Pendulum Seismograph at the Time of an Earthquake," *Science Reports, Tohoku Imperial University*, **20**, No. 5, 764-781, Sendai, 1931.

A review in German, signed K. Jung, appears on page 85 in the section devoted to *Geophysikalische Berichte*, of *Zeitschrift für Geophysik*, **8**, Heft 3-4, Braunschweig, 1931.

1535. HILL, Mason L., "Mechanics of Faulting near Santa Barbara, California," *Journal of Geology*, **40**, No. 6, 535-556, 9 figures, Chicago, August-September, 1932.

In his abstract the author states that his paper "places limitations on . . . . the reference of seismic epicenters to particular faults."

1536. HOPFNER, F., "Figur der Erde, Dichte und Druck im Erdinnern," *Handbuch der Geophysik*, **1**, Lieferung 1, Abschnitt 3, Chapters 12-17, 139-308, 7 tables, 27 figures, Berlin, 1932.

For reference to the *Handbuch der Geophysik*, see No. 332 of these lists.

1537. IMAMURA, Akitune, "On Slow Changes of Land-Level, both Related and Unrelated to Earthquakes," *Proceedings of the Imperial Academy*, **8**, No. 6, 247-250, 2 figures, 1 table, Tokyo, June, 1932.

1538. IMAMURA, Akitune, "On Crustal Deformations Since 1928 in the Kyoto-Osaka District," *Proceedings of the Imperial Academy*, **8**, No. 6, 251-254, 3 figures, Tokyo, June, 1932.

1539. IMPERIAL EARTHQUAKE INVESTIGATION COUNCIL, "The Contents of the Publications of the Imperial Earthquake Investigation Committee." Special publication of the Imperial Earthquake Investigation Council, 80 pages, Tokyo, 1932.

A note from Prof. A. Imamura, Secretary of the Council, reads, in part, as follows: "The Imperial Earthquake Investigation Committee was abolished in 1925. Since then, the Council have been engaged in settling up the various outstanding matters concerned with the above-mentioned Committee, and have also published a few Reports. Our labours in these respects having ended, and as nothing more will be published unless special reasons warrant it, we have compiled an Index to the whole of the Committee's publications."

The table of contents is as follows:

Publications of the Imperial Earthquake Investigation Committee in Foreign Languages, Nos. 1-26.

Bulletin of the Imperial Earthquake Investigation Committee, Vols. I-XI.

Seismological Notes, Nos. 1-6.

Sinsai Yobô Tyôsakwai Hôkoku (*Reports of the Imperial Earthquake Investigation Committee in Japanese Language*), Nos. 1-101. (Translation.) A. I.

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A short review appears in *Nature*, No. 3275, **130**, pg. 209, London, August 6, 1932.

1541. JONES, J. H., "The Diffraction of Elastic Waves at the Boundaries of a Solid Layer," *Proceedings of the Royal Society, Mathematical and Physical Sciences*, Series A, **137**, No. A 832, 325-343, 10 figures, London, August 2, 1932.

An account is given of an experimental investigation into the diffraction of elastic waves at the boundaries of a limestone layer, embedded in a medium possessing lower elastic wave velocities. The author advances explanations for the several different types of presumably diffraction pulses which have been observed at the surface.

—— JOSHI, S. S. and BANERJI, S. K., "Disturbance of Pressure at the Bed of a Deep Sea." See No. 1511 of this list.

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1543. JUNG, Karl, "Schwere und Geoid bei Isostasie," *Zeitschrift für Geophysik*, **8**, Heft 1-2, 40-52, 4 figures, Braunschweig, 1932.

1544. KATO, Yoshio and NAKAMURA, Saemontaro, "Magnetic Disturbances in the Volcanic and Seismic Regions," *Saito Ho-on Kai (Saito Gratitude Foundation), Annual Report of the Work*, No. 7, 270-271, Sendai, December, 1931.

A paper by the same authors with the title, "Magnetic Disturbance in the Seismic Area of the Earthquake of November 26th, 1930," appears in the *Reports of Tohoku University*, **21**, No. 1, 96-113, Sendai, 1932.

1545. KAWASAKI, Shun'ichi, "Note on Personality in the Estimation of Tenths," *Japanese Journal of Astronomy and Geophysics*, **9**, No. 3, 127-140, 9 tables, Tokyo, 1932.

—— KÖHLER, R., GERECKE, F., MÜLLER, H. K., and RAMSPECK, A., "Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen." See No. 1529 of this list.

1546. KOLDERUP, Carl Fred, "Jordskjelv i Norge 1930 og 1931," *Bergens Museums Årbok 1931, Naturvidenskapelig rekke*, No. 9, 20 pages, 1 figure, 2 maps, with German summary, 1932.

During the year 1930, twelve earthquakes were observed in Norway, and in the year 1931 only seven. The details of the relative sizes of the epicentral areas are given and the positions of the epicentres indicated. R. Z.

1547. KUPRADZE, V. and SOBOLEV, S., "On the Propagation of Elastic Waves along the Surface of Separation of Two Media having Different Elastic Properties" (in Russian), *Académie des Sciences de l'Union des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 10, 1-23, Leningrad, June, 1930.

The résumé in French announces an application of the method of Lamb (reported as No. 1250 of these lists); the void being replaced by a compressible fluid "the presence of the second medium changes essentially the character of the propagation."

J. C.

A review by W. Ayvazoglou appears on pages 425-426 of *Geographical Abstracts*, No. 36. See No. 1453 of these lists. F. W. L.

1548. LAWSON, Andrew C., "Insular Arcs, Foredeeps, and Geosynclinal Seas of the Asiatic Coast," *Bulletin of the Geological Society of America*, **43**, No. 2, 353-381, 4 figures, Washington, June 30, 1932.

This paper is essentially a study of the constitution of the earth's crust.

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1550. LEET, L. Don and EWING, Maurice, "Velocity of Elastic Waves in Granite," *Physics*, **2**, No. 3, 160-173, 6 figures, bibliography, Menasha, March, 1932.

—— LEET, L. Don and EWING, Maurice, "A Study of Phases on Explosion Records" (abstract only). See No. 1514 of this list.

—— LITTLEHALES, G. W., "Sounding the Depths of the Ocean for Mapping the Conformation and Topography of the Bottom," pp. 33-37 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

—— LYNCH, Joseph, S. J., "Earthquakes of the Past Year," (abstract only). See No. 1514 of this list.

1551. MCCOLLUM, Burton and SNELL, F. A., "Asymmetry of Sound Velocity in Stratified Formations," *Physics*, **2**, No. 3, 174-185, 6 figures, 5 tables, Menasha, March, 1932.

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—— MCCOMB, H. E., "Development of Strong-motion Seismographs" (abstract only). See No. 1514 of this list.

—— MCCOMB, H. E. and BLAKE, A., "Analysis of Rates of Rotation of Recording Drums" (abstract only). See No. 1514 of this list.

1552. MEINESZ, F. A. Vening, "Relevé gravimétrique maritime de l'archipel Indien—relation entre l'intensité de la pesanteur et l'activité tectonique de l'encorce terrestre." Publication de la Commission Géodésique Neerlandaise, 6 pages, Delft, 1931. R. R. B.

—— MERRITT, George E., "Experiments with Two New Types of Tiltmeters" (abstract only). See No. 1514 of this list.

—— MERRITT, George E., "Applications of Interferometric Tiltmeters in the Problems of Geophysics," pp. 98-101 (5 figures) of the report of the Section of Seismology of the American Geophysical Union in connection with the program of the annual meeting, being part of the Symposium on the Application of Seismology to the Study of Ocean Basins. See No. 1508 of this list.

1553. MILLER, William J., "The Landslide at Point Firmin, California," *Scientific Monthly*, **32**, No. 5, 464-469, 5 figures, New York, May, 1932.

The introduction reads: "There are two features of particular interest in regard to the landslide at Point Firmin, California; first, that a considerable body of bed rock on the coast is slowly moving into the sea, and second, that detailed observations have been, and are being made on the rate of the movement. This movement is taking place with sufficient rapidity to afford an exceptional opportunity of actually observing the various stages of a notable alteration of part of a coastline by shifting of bed rock . . . . "

1554. MINISTÈRE DE L'INSTRUCTION PUBLIQUE ET DES BEAUX-ARTS, "Enquêtes et documents relatifs à l'enseignement supérieur: CXXVI. Rapports sur les observatoires astronomiques de province et les observatoires en instituts de physique du globe." Reports for the year 1930. Imprimerie Nationale, 145 pages, Paris, 1932.

The second section of the publication deals with reports from the geophysical institutes at Paris, Strasbourg, Puy-de-Dôme, and Pic du Midi.

1555. MÖLLER, F., "Nomogram zur Bestimmung der Vergrösserung von Galitzin-pendeln," Supplement to *Seismische Berichte des Taunus-Observatoriums*, 2 mimeographed pages, and diagram, Frankfurt a.M., 1932.

A graphical method of determining the magnification of Galitzin seismographs.

H. L.

1556. MÜLLER, Ferdinand, "Zur experimentellen Seismik und deren Anwendung," *Gerlands Beiträge zur Geophysik, Ergänzungshefte für angewandte Geophysik*, **3**, Heft 1, 125-136, 6 figures, Leipzig, 1932.

A paper on the study of information yielded by seismic records without the use of time-distance graphs, the relative amplitudes being alone considered.

—— MÜLLER, H. K., RAMSPECK, A., KÖHLER, R., and GERECKE, F., "Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen." See No. 1529 of this list.

1557. MÜNTZ, Ch. H., "Sur la résolution du problème dynamique de l'élasticité," *Comptes rendus*, **194**, No. 17, 1457-1459, Paris, April, 1932.

The author examines the solution of the problem of the elastic vibrations of a homogeneous, isotropic body (with displacements or tensions at the boundary being given) by means of the integro-differential equations of Volterra. J. C.

1558. NAGAOKA, H., "Variations of Latitude and Great Earthquakes," *Nature*, No. 3284, **130**, 541, 1 chart, London, October 8, 1932.

The author, in the above short note, indicates the evidence which he has found to support his contention that great earthquakes have a measurable effect on the variation of latitude.

—— NAKAMURA, Saemontaro and KATO, Yoshio, "Magnetic Disturbances in the Volcanic and Seismic Regions." See No. 1544 of this list.

—— NEUMANN, Frank, "Accuracy of Epicenter Determinations," pp. 94-98 of the report of the Section of Seismology of the American Geophysical Union in connection with the program of the annual meeting, being part of the Symposium on the Application of Seismology to the Study of Ocean Basins. See No. 1508 of this list.

—— NEUMANN, Frank, "Travel Time Curves of the Santiago Earthquake" (abstract only). See No. 1514 of this list.

—— NEUMANN, Frank, "An Experimental Accelerometer" (abstract only). See No. 1514 of this list.

1559. NEUMANN, Frank and BODLE, R. R., "United States Earthquakes 1930," U. S. Department of Commerce, Coast and Geodetic Survey, Serial No. 539, 25 pages, Washington, 1932.

This special publication is sold at the nominal price of ten cents, through the Superintendent of Documents, Washington, D.C., U.S.A. It is illustrated by means of four maps. The listing is first of earthquakes as felt by persons near the epicentre, second as recorded at the seismological stations in the United States and Canada, and at some few stations in dependencies of the United States.

—— O'CONNOR, J. S., S. J., "Some Aspects of Group Periodicities in the Maxima of Surface Waves" (abstract only). See No. 1514 of this list.

—— ODDONE, E., "Studio delle grandi calamita." See No. 1567 of this list.

1560. OTTENHEIMER, J., "Sur le déplacement de l'eau et sur la nature des ondes enregistrés dans les explosions sous-marines," *Comptes rendus*, **195**, No. 3, 203, Paris, July 18, 1932.

W. W. D.

1561. OXFORD UNIVERSITY, "The International Seismological Summary for 1928, January, February, March," 1-100: ". . . . for 1928, April, May, June," 101-236: ". . . . for 1928, July, August, September," 237-339: Oxford, 1932.

1562. PARRY, William, "The International Metric System of Weights and Measures," *Bureau of Standards Miscellaneous Publication*, No. 135, 13 pages, Washington, May 26, 1932.

The publication presents a brief account of the international metric system of weights and measures. Its purpose is to give such information as will adequately answer some of the more simple questions addressed to the bureau on this subject and to set forth a working knowledge of the system. It will be found a handy compendium of relative values as well as a reference to the legal adoption of the various types of metric units in the United States.

1563. PICHT, Johannes, "Beitrag zur Theorie der Ausbreitung seismischer Wellen," *Gerlands Beiträge zur Geophysik, Ergänzungshefte für angewandte Geophysik*, **3**, Heft 1, 1-8, 2 figures, Leipzig, 1932.

A theoretical discussion of the propagation through a layered medium of the seismic waves generated by an explosion.

1564. PICHT, Johannes, "Über neue Integraphen der Askania-Werke A. G.," *Zeitschrift für Instrumentenkunde*, **52**, Heft 7, 289-299, 17 figures, Berlin, July, 1932.

1565. POLLARD, A. F. C., "The Standardization of Books and Periodicals in Germany," *Journal of Scientific Instruments*, **9**, No. 4, 113-116, London, April, 1932.

The writer discusses the movement in Germany toward a standard format for scientific periodicals. There is also an attempt to standardize the abbreviations to be used in bibliographical references and other related matter.

—— RAMSPECK, A., KÖHLER, R., GERECKE, F., and MÜLLER, H. K., "Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen." See No. 1529 of this list.

1566. RANKINE, A. O., "Some Aspects of Applied Geophysics," *Nature*, No. 3281, **130**, 421-424, London, September 17, 1932.

The paper makes reference to an earlier publication by the same author for which the bibliographical data are as follows: "Physics in Relation to Oil Finding," *Nature*, No. 3106, **123**, 718-720, 6 figures, London, May 11, 1929. This latter paper deals with the seismic method to the exclusion of other types of geophysical prospecting.

1567. Reale Accademia Nazionale dei Lincei, "Studio delle grandi calamita," *Publicazioni della Commissione Italiana per Lo, Part II, Memorie Scientifiche et Tecniche*, Reale Accademia Nazionale dei Lincei, Rome, 1931.

The above publication is in two volumes of which the second comprises xvi + 326 pages, together with maps. A lengthy review, signed Howard of Penrith, is given on pages 457-460 of the *Geographical Journal*, **78**, No. 5, London, November, 1931. In the second volume the first paper is by Professor Roberto Almagià. It deals with the geographical distribution of landslides in Italy. The next paper is by Professor Emilio Oddone and deals with the frequency of earthquakes of disastrous proportions in the Mediterranean Basin, with a chronological catalogue of such calamities in this area since 1501. Explanatory notes are contributed by Dr. Alfonso Cavasino, together with a chart of the regions most affected. The two final papers in this volume are contributed by Dr. Domenico Romano. They deal with earthquakes in Italy, particularly with the means now being adopted in that country to lessen the loss of life and property attendant on such catastrophes.

1568. Reich, H., "Eigenschaften der Gesteine," *Handbuch der Geophysik*, **6**, Lieferung 1, Abschnitt 1, Chapters 1-6, 1-83, 6 figures, 33 tables, Berlin, 1931.

For reference to the *Handbuch der Geophysik*, see No. 332 of these lists.

1569. Rich, John L., "Simple Graphical Method for Determining True Dip from Two Components and for Constructing Contoured Structural Maps from Dip Observations," *Bulletin of the American Association of Petroleum Geologists*, **16**, No. 1, 92-94, 2 figures, Tulsa, January, 1932.

1570. Ries, H. and Watson, T. L., "Elements of Engineering Geology," John Wiley and Sons, Second Edition, 411 pages, 290 figures. Price $3.75. New York, 1931.

A review, signed J. T. McC., appears in the *Journal of Geology*, **40**, No. 3, 287-288 Chicago, April-May, 1932.

—— Robison, E. C., "Magnification of the Wenner Seismometer" (abstract only). See No. 1514 of this list.

1571. Rodés, S. J., "Période diurne et annuelle dans la distribution de 1944 tremblements de terre enregistrés par un même sismographe," *Union Géodésique et Géophysique Internationale, Section de Séismologie, Travaux Scientifiques*, Fascicule 7, 54-56, Strasbourg, 1932.

The above is one of the communications presented at the Stockholm meeting of the International Union.

—— Romano, Domenico, "Studio delle grandi calamita." See No. 1567 of this list.

—— Romberg, Arnold, "The McComb-Romberg Horizontal Seismometer." See No. 1514 of this list.

1572. Rothé, E., "Les ondes séismiques et leur propagation," Fascicule 12 of *Mémorial des Sciences Physiques*, Gauthier-Villars, 60 pages. Price 15 francs. Paris, 1930.

The publication outlines the classic theory of seismology, together with certain personal views, notably with regard to long waves. A bibliography of 34 numbers (41 articles) is appended. J. C.

1573. ROTHÉ, E., "Sur la production des maximums dans les inscriptions séismographiques—cas des épicentres océaniques," *Gerlands Beiträge zur Geophysik*, **34**, Köppen-Band III, 102-122, 11 figures, Leipzig, 1931.

1574. ROTHÉ, E., "Use of a New International Code for the Transmission of Seismic Telegrams," *Union Géodésique et Géophysique Internationale, Section de Séismologie, Travaux Scientifiques*, Fascicule 7, 101-122, Strasbourg, 1932.

The above report, first in English and then in French, outlines the action with regard to the above subject taken at the Stockholm meeting of the International Union.

1575. SCHRADER, J. E., "A Three-Dimensional Vibrograph," *The Physical Review*, **38**, No. 10, pg. 1923, Minneapolis, 1931.

A brief review by W. Ayvazoglou appears on page 543 of *Geophysical Abstracts* No. 40. See No. 1549 of this list. F. W. L.

1576. SCHÜNEMANN, H., "Die seismische Bodenunruhe zweiter Art in Hamburg und ihre Ursache," *Zeitschrift für Geophysik*, **8**, Heft 5, 216-226, 6 figures, Braunschweig, 1932.
See also No. 1371 of these lists. E. T.

1577. SCIENCE NEWS LETTER, "Seismographs Set for Spot Records of Coming Quakes," *Science News Letter*, No. 591, **22**, pg. 81, 1 illustration, Washington, August 6, 1932.

This short note announces the setting up of automatic seismographs in various actively seismic sections of the United States. These instruments are set in operation by the first impulse of a local shock and then continue to record the strong motions throughout the duration of the earthquake. They are set up for the purpose of studying the nature of earthquake motion near an epicentre—information vital to the work of engineers endeavouring to construct earthquake-proof buildings.

1578. SCIENCE NEWS LETTER, "Quake in Interior of China May Prove Major Disaster," *Science News Letter*, No. 594, **22**, pg. 132, Washington, August 27, 1932.
The above note directs attention to the earthquake of August 14, 1932.
S. G.

1579. SEE, T. J. J., "The Cause of Earthquakes and Mountain Formation: The Andes, a Great Wall Erected by the Ocean along its own Border," *Scientia*, Series 3, **50**, 281-288, Bologna, November, 1931.

A translation into French, with the title, "La cause des tremblements de terre et de la formation des montagnes: les Andes sont une grande muraille élevée par l'océan le long de son propre bord," is presented on pages 109-116 of the supplement which forms a part of the above-indicated issue of *Scientia*. The translation was made by Marcel Thiers of Paris.

1580. SHAW, H., "Finding Minerals by Physical Methods," *Discovery*, No. 136, **12**, 120-124, 3 illustrations, London, April, 1931.

The above is a presentation in popular form of the geophysical prospecting methods as at present in use. The author has succeeded in making the brief account both interesting and accurately informative.

—— SHAW, H., Book Reviews: A review of each of the books reported as Nos. 1506, 1507, and 1509 of this list is given by the above writer on pages 159-160 of *The Mining Magazine*, **47**, No. 3, London, September, 1932.

1581. SHEPARD, Francis P., "Canyons in Ocean Bottom off New England," *Science*, Supplement to No. 1969, **76**, 8-9, New York, September 23, 1932.

A presentation of the same material with the title " 'Wild West' Gorges Found in Sea Bottom off New England," appears in *Science News Letter*, No. 599, **22**, 208, 1 map, Washington, October 1, 1932.

—— SHEPARD, Francis P., "Landslide Modifications of Submarine Valleys," pp. 226-230 (4 figures) of the report of the Section of Oceanography of the American Geophysical Union in connection with the program of the annual meeting. See No. 1508 of this list.

—— SHEPARD, Francis P., "Depth Changes in Sagami Bay after the Great Japanese Earthquake" (abstract only). See No. 1514 of this list.

1582. SIEBERG, A., "Erdbebengeographie," *Handbuch der Geophysik*, **4**, Lieferung 2, 687-1004, illustrated. Subscription price RM 56; ordinary price RM 84. Paper covers. Berlin, 1932. G. E. S.

See note at end of item No. 843 of these lists and also No. 885.

1583. SMIRNOFF, V. and SOBOLEV, S., "Sur le problème plan des vibrations élastiques," *Comptes rendus*, **194**, No. 17, 1437-1439, Paris, April, 1932.

A second note entitled, "Sur quelques problèmes de vibrations élastiques," appears in the same volume of *Comptes rendus*, No. 21, 1797-1799, Paris, May, 1932. The articles present a new method based on the use of complex variables for the resolution of the problem of elastic vibrations in the case of a plane or a stratum, and some problems for symmetrical axes. J. C.

—— SNELL, F. A. and MCCOLLUM, Burton, "Asymmetry of Sound Velocity in Stratified Formations." See No. 1551 of this list.

1584. SOBOLEV, S., "Sur l'équation d'onde pour le cas d'un milieu hétérogène isotrope" (in French), *Académie des Sciences de l'Union des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 2, 163-167, Leningrad, January, 1930. J. C.

1585. SOBOLEV, S., "Wave Equation for the Case of a Heterogeneous Medium" (in Russian), *Académie des Sciences de l'Union des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 6, pp. 1-57, Leningrad, March, 1930. J. C.

1586. SOBOLEV, S., "On the Diffraction of Spherical Elastic Waves Near the Surface of a Sphere" (in Russian), *Académie des Sciences des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 7, 1-13, Leningrad, 1930. F. W. L.

1587. SOBOLEV, S., "On a Limited Problem of the Theory of the Logarithmic Potential and its Application to the Reflection of Plane Elastic Waves" (in Russian), *Académie des Sciences de Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 11, 1-16, Leningrad, 1930.

A translation of the author's abstract, made by W. Ayvazoglou, appears on page 426 of *Geophysical Abstracts*, No. 36. See No. 1453 of these lists. F. W. L.

—— SOBOLEV, S. and KUPRADZE, V., "On the Propagation of Elastic Waves along the Surface of Separation of Two Media having Different Elastic Properties." See No. 1547 of this list.

—— SOBOLEV, S. and SMIRNOFF, V., "Sur le problème plan des vibrations élastiques." See No. 1583 of this list.

—— STECHSCHULTE, V. C., S. J., "The Deep-Focus Japanese Earthquake of March 29, 1928" (abstract only). See No. 1514 and No. 1484 of these lists.

1588. STEERS, J. A., "The Unstable Earth," Methuen and Co., xiv + 342 pages, diagrams and maps. Price 15s. London, 1932.

A review of the above book, signed A. M. D., appears on page 259 of *The Geographical Journal*, **80**, No. 3, London, September, 1932. The book is one of Methuen's Geological Series, of which the General Editor was the late Prof. J. W. Gregory.

1589. STETSON, Harlan T., "How Stable is the Earth's Crust," *Scientific American*, **145**, 392-394, 7 figures, New York, December, 1931.

1590. STORER, Tracy I., "What is a Publication?" *Science*, No. 1949, **75**, 486-487, New York, May 6, 1932.

1591. SYOYAMA, Mituo, "A Method of Laboratory Device to Record the Period of a Pendulum Motion," *Science Reports, Tokyo University, Physical Institute*, **1**, No. 12, 145-147, Tokyo, 1931.

A review in German, signed Schmehl, appears on page 57 of the section devoted to *Geophysikalische Berichte* in the issue of *Zeitschrift für Geophysik*, **8**, Heft 3-4, Braunschweig, 1931.

—— TABER, Stephen, "The Structure of the Bartlett Trough," pp. 19-21 of the report on the program of the general assembly at the annual meeting of the American Geophysical Union, being part of the Symposium on the Application of Geophysics to Ocean Basins and Margins. See No. 1508 of this list.

—— TABER, Stephen, "The Recent Earthquake near Santiago de Cuba" (abstract only). See No. 1514 of this list.

—— THOM, W. T., "Seismology and Structural Geology," pp. 102-103 of the report of the Section of Seismology of the American Geophysical Union in connection with the program of the annual meeting, being part of the Symposium on the Application of Seismology to the Study of Ocean Basins. See No. 1508 of this list.

1592. TRACY, H. H., "Welded Joints for Seismic Stresses in a Tall Building," *Engineering News-Record*, **109**, No. 11, 312-313, 3 figures, tables, New York, September 15, 1932.

R. R. B.

1593. TSSHOKHER, V., "Investigation of Equilibrium Conditions of Earthen Masses under the Action of Seismic Forces" (in Russian), *Académie des Sciences des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 5, 1-11, Leningrad, 1930.

A short review by W. Ayvazoglou appears on page 424 of *Geophysical Abstracts*, No. 36. See No. 1453 of these lists. F. W. L.

1594. TYLER, E., "The Damping of Pendulums Immersed in a Viscous Fluid," *Philosophical Magazine*, No. 88, **13**, 1099-1128, 21 figures, 7 tables, London, June, 1932. W. W. D.

1595. VESHNIAKOV, N. V., "Seismometric Investigation of Several Bridges in Leningrad" (in Russian), *Académie des Sciences des Républiques Soviétiques Socialistes, Publications de l'Institut Séismologique*, No. 4, 1-20, Leningrad, 1930. F. W. L.

1596. VOLKMANN, W., "Zu Galileis Pendelformel," *Zeitschrift für den physikalischen und chemischen Unterricht*, **45**, Heft 1, 25-28, 6 figures, Berlin, January-February, 1932.

1597. WANNER, E., "Die Lage der Thermal- und Mineralquellen der Schweiz und der Ostalpen bezüglich der Erdbebengebiete," *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich*, **77**, 155-158, 3 illustrations, Zürich, 1932.

—— WATSON, T. L. and Ries, H., "Elements of Engineering Geology." See No. 1570 of this list.

—— WEED, Arthur J., "A Strong-motion Seismograph for Earthquakes with Demonstration Model" (abstract only). See No. 1514 of this list.

—— WENNER, Frank, "Response and Memory Characteristic of Seismometers" (abstract only). See No. 1514 of this list.

—— WENNER, Frank, "Seismometer, Wenner Design." See No. 1514 of this list.

1598. WILSON, H. A., "The Calculation of the Motion of the Ground from Seismograms," *Physics*, **2**, No. 3, 186-199, 22 figures, Menasha, March, 1932.
See also No. 1384 of these lists.

1599. WILSON, John H., "Geophysical Prospecting," reprinted from the *Colorado School of Mines Magazine*, issues of July, August, October, November, and December, 1928, and January, February, April, June, and August, 1929.

The reprints are grouped in two pamphlets of 11 pages each; they are fully illustrated. The subject is dealt with under the headings: Introduction, Pendulum Apparatus, Torsion Balances, Magnetic Methods, Electrical Methods, Seismic Method, Radioactive Methods, Geothermal Methods.

1600. WITTE, H., "Beiträge zur Berechnung der Geschwindigkeit der Raumwellen im Erdinnern," *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-physikalische Klasse*, Weidmannsche Buchhandlung, 43 pages, 10 figures, tables, bibliography. Price RM 3. Berlin, 1932.

The paper is divided into two chapters. The following is a translation of the author's German summary:—

Chapter 1: "The assumption involved in the application of the Herglotz-Wiechert method for directly determining the velocity of body waves in the interior of the earth are here examined in greater detail than formerly. One may consider only a continuous variation of velocity with depth. The velocity may neither vary linearly with decreasing radius nor may the variation exceed a known measure ($dv/dr \leqq v/r$). The time-distance curve issuing from the point of zero distance zero time must always be, not only convex to the Δ-axis and differentiable, but must also have continuous (positive) second derivatives (continuous curvature). If among several time-distance curves of the same type of waves there should be one which begins with $\Delta = 0$, the others may be reduced to an horizon which may be computed by the Herglotz-Wiechert method on

the basis of the first curve. If none begins at $\Delta=0$, then one may only determine approximately the ratio of the vertex-radii, unless it should be possible in some way to complete the missing part of the time-distance curve."

Chapter 2: "The results obtained on calculating the variation of the velocity of body waves with depth by the Herglotz-Wiechert method based on the *P* and *S* time-distance curves as published by Jeffreys in January, 1931 and January, 1932, are here presented. The curves seem to run smoothly and suggest discontinuities only in the depth ranges 900-1000 km. and 2600-2700 km. The values of Poisson's ratio as given by the computed velocities ratio are shown to a depth of 2700 km."

—— WROCKLAGE, H. G., "Installation of McComb-Romberg, Horizontal-component Seismometers at the International Latitude Observatory, Ukiah, California" (abstract only). See No. 1514 of this list.

LIST OF COLLABORATORS

The appended initials are those used to indicate, in each case, the items contributed by the respective collaborator.

Agamennone, G., G.A.
Real Osservatorio Geofisico,
Rocca di Papa, Rome, Italy.

Banerji, S. K., S.K.B.
The Observatory,
Bombay, India.

Bodle, Ralph R., R.R.B.
Editor, "Earthquake Notes,"
United States Coast and Geodetic Survey,
Washington, D.C., U.S.A.

Coulomb, J., J.C.
Institut de Physique du Globe,
Puy de Dôme, Côte de Landais,
à Clermont-Ferrand, France.

Doxsee, W. W., W.W.D.
Dominion Observatory,
Ottawa, Canada.

Gold, S., S.G.
Dominion Observatory,
Ottawa, Canada.

Imamura, Akitune, A.I.
Seismological Institute,
Tokyo Imperial University, Tokyo, Japan.

Landsberg, H., H.L.
Universitätsinstitut für Meteorologie und Geophysik,
Frankfurt a.M., Germany.

Lee, Frederick W., F.W.L.
Editor, "Geophysical Abstracts,"
United States Bureau of Mines,
Washington, D.C., U.S.A.

Low, E. Jas., E.J.L.
Instruments Ltd.,
Ottawa, Canada.

McGraw-Hill Book Co., McG.-H.
New York, U.S.A.

Stechert, G. E., Co., G.E.S.
Publishers, New York, U.S.A.

Tams, E., E.T.
Hauptstation für Erdbebenforschung,
Hamburg 36, Germany.

Zaunick, Rudolph, R.Z.
Editor, "Mitteilungen zur Geschichte der Medizin,
der Naturwissenschaften und der Technik,"
Dresden A-16, Germany.

SUBJECT INDEX FOR THE YEAR 1932

The following subject index for the items listed in the *Bibliography of Seismology* for the year 1932 has been prepared in the same form as that for the items listed in 1931 (see pages 208-210, Vol. X, No. 12 of these *Publications*) and may be considered a continuation of that index.

A1. Aids to Seismological Study: Nos. 1317, 1483, 1545, 1555, 1562, 1569, 1574.

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B2. Bibliographies: Nos. 1253, 1350, 1353, 1430, 1453, 1539, 1549, 1565, 1572, 1590.

C1. Catalogues of Earthquakes, Lists of Aftershocks, etc.: Nos. 1207, 1238, 1250, 1252, 1265, 1355, 1381, 1397, 1409, 1422, 1425(2), 1425(3), 1425(4), 1425(5), 1425(6), 1425(7), 1469(4), 1475, 1515, 1546, 1559, 1571.
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See also G1. (Geodesy) and T2. (Tides).

D3. Descriptions, General, of Earthquakes in Canada or the United States: Nos. 1247, 1307, 1366, 1423, 1428.

D4. Descriptions, General, of Earthquakes other than those in Canada or the United States: Nos. 1237, 1243, 1251, 1255, 1269, 1271, 1295, 1301, 1305, 1309, 1325, 1346, 1367, 1387, 1425(1), 1425(9), 1427, 1484, 1495, 1502(1), 1578.

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E3. Explosions, Studies of Wave Propagation from: Nos. 1214, 1310, 1344, 1372(6), 1512, 1514, 1519, 1560.
See also S3. (Seismic Prospecting).

F1. Foci, Depth of Earthquake: No. 1239, 1389.

G1. Geodesy and Surveying Applied to Seismology: Nos. 1241, 1281, 1314, 1361, 1418, 1432, 1434, 1441, 1461, 1486, 1491, 1492, 1493.

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G3. Geology of Interest to Seismologists: Nos. 1223, 1224, 1230, 1246, 1249, 1273, 1313, 1314, 1324, 1365, 1370, 1372(8), 1375, 1395, 1396, 1423, 1442, 1447, 1452(1), 1470, 1473, 1498, 1520, 1524, 1535, 1548, 1569, 1570, 1579, 1588, 1589, 1597.

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I2. Insurance and Earthquakes: No. 1316.

I3. Isostasy and Gravity; Papers of Interest to Seismologists: Nos. 1328, 1431, 1448, 1450, 1472, 1479(2), 1500(2), 1508, 1543, 1552.

L1. Landslides, Mudflows, etc.: Nos. 1382, 1553.

M2. Materials of the Earth's Crust, Laboratory Tests of: Nos. 1202,1496,1533, 1568.

M3. Mathematical Physics; as Applied to Seismological Problems: Nos. 1234, 1279, 1287, 1288, 1289, 1290, 1303, 1304, 1306, 1312, 1315, 1338, 1363, 1369, 1373, 1374, 1393, 1399, 1400, 1404, 1407, 1437, 1449, 1451, 1465, 1466, 1477, 1480, 1485, 1513, 1516, 1518, 1527, 1541, 1547, 1557, 1563, 1572, 1583, 1584, 1585, 1586, 1587, 1593, 1594, 1600.

M4. Microseisms: Nos. 1237, 1323, 1371, 1414, 1425(5), 1425(8), 1425(10), 1426, 1444, 1446, 1452(1), 1452(2), 1511, 1576.

M5. Meteorology of Interest to Seismologists: Nos. 1266, 1284, 1319, 1425(7), 1523.

O1. Obituaries: Nos. 1276, 1420, 1460, 1468, 1488.

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See also M3. (Mathematical Physics).

P4. Popular Presentations of Various Phases of Seismology: Nos. 1278, 1354, 1372, 1378, 1415, 1416, 1479, 1577, 1578, 1581, 1589.

P5. Prediction of Earthquakes: Nos. 1267, 1377.

See also C4. (Cycles).

R1. Records, Evaluation of Earthquake: Nos. 1266, 1268, 1302, 1384, 1462, 1504, 1534, 1556, 1573, 1598.

See also T4. (Time-Distance Curves) and W1. (Wave Study).

R2. Reports, Seismological; Regular Series: Nos. 1212, 1264, 1270, 1293, 1298, 1307, 1362, 1386, 1390, 1425, 1501, 1561.

See also C1. (Catalogues).

R2.1 Reviews of Various Phases of Seismology: Nos. 1211, 1272, 1320, 1341, 1354, 1364, 1410, 1530.

R3. Rotation Period of the Earth, Variations Therein; Wandering of the Pole; Variation of Latitude: No. 1558.

S1. Scales, Earthquake: Nos. 1372(1), 1394, 1402.

S2. Seismicity of Particular Regions: Nos. 1204, 1256, 1267, 1291, 1292, 1326, 1408, 1411, 1499, 1501, 1502(2), 1521.

See also C1. (Catalogues), D3. and D4. (Descriptions of Particular Earthquakes), O4. (Origins), and R2. (Reports).

S3. Seismic Prospecting: Nos. 1208, 1209, 1228, 1229, 1257, 1258, 1277, 1302, 1307, 1310, 1356, 1359, 1372(2), 1424, 1429, 1458, 1469(1), 1469(2), 1469(3), 1506, 1507, 1508, 1509, 1519, 1522, 1524, 1531, 1541, 1550, 1551, 1556, 1560, 1566, 1580, 1599.
See also E3. (Explosions).

T1. Textbooks; General Treatises on Seismology or Its Applications: Nos. 1221, 1240, 1341, 1376, 1582.

T2. Tidal Loading; Its Effects; Sea-Level, Pressure Changes, etc.: Nos. 1388, 1443.

T4. Time-Distance Curves, Tables, etc.: Nos. 1215, 1220, 1236, 1248, 1261, 1262, 1280, 1295, 1296, 1310, 1312, 1315, 1318, 1327, 1343, 1348, 1351, 1352, 1366, 1367, 1393, 1399, 1400, 1428, 1429, 1436, 1438, 1455, 1456(1), 1484, 1494, 1495, 1550, 1551.

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Reqn. 5893.