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- (2) Dr. Perry Byerly, professor of seismology, the University of California, \$900 for an investigation to determine whether various portions of the earth's crust have free vibration periods during earthquakes.
- (3) Dr. David Griggs, research physicist, Harvard University, \$675 for constructing instruments to test the deformation of rocks under high confining pressures in the laboratory.
- (4) Arthur Keith, U.S. Geological Survey, Washington, D.C., \$665 to continue and complete the studies of Appalachian structure and stratigraphy in the Province of Quebec and adjacent areas.

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4078. KOPERBERG, M., "Aanteekeningen over het Sopoetan-gebergte in de Minahassa (Notes on the Sopoetan mountain ridge in the Minahassa, Isle of Celebes)," *Verlag van de geware vergadering der wis- en natuur-kundige afdeeling van de koninklijke Akademie van Wetenschappen*, Vol. 18, 110-126, 273-294, Amsterdam, June, September, 1911.

The author found a recognizable relation between the seismic perturbations and the Pentoe-solfatara of 1901. The combination of the beginning and the greatest violence of the seismic disturbance in the origin of the Pentoe-solfatara appeared to be of significance. The pleistoseismic region appeared to coincide with the next environs of that solfatara. The fissures south of the Sempoe had a direction of about N 40° E and are, according to the author, of seismic origin. In the second article the author compiled a table of the earthquakes of the Minahassa during the first six months of 1901, 1906, and 1907; and a table of the frequency of the earthquakes in the Minahassa, and the volcanic phenomena there and in the neighbourhood during the period 1887-1908.

J.F.S.

— KOTANI, Masao, and IMAMURA, Gakuro, "Crustal Blocks." See No. 4068 of this list.

4079. KRUMBACH, G., "Seismische Registrierungen in Jena, 1. Januar bis 31. Dezember 1936," *Veröff., Jena*, No. 31, 29 pp., Jena, 1937.

4080. KUENEN, Ph. H., "Density Currents in Connection with the Problem of Submarine Canyons," *Geol. Mag.*, Vol. 75, No. 6, 241-249, London, June, 1938.

A valuable bibliography dealing with submarine canyons and their interpretation is appended.

4081. LANDSBERG, Helmut,

- (1) "An Outline of the Methods of Geophysical Prospecting, Text Material for Correspondence Course Offered by Division of Mineral Industries Extension, Pennsylvania State College" (Mimeographed), Pennsylvania State College, 61 pp., 41 fig., Price \$1. State College, Pa., 1937. H.L.
- (2) "Earthquakes and Seismology in Pennsylvania," *Commonwealth of Pennsylvania, Dept. Inter. Aff.*, Vol. 5, No. 2, 3-9, 6 fig., 2 tab., Harrisburg, Jan., 1938. H.L.

4082. LEET, L. Don, "Travel Times for New England," *Bul. S.S.A.*, Vol. 28, No. 1, 45-48, 1 fig., 1 tab., bib., Berkeley, Jan., 1938.

4083. LEYPOLDT, Harry, "Periodicity of Earth Movements in Los Angeles Harbor," *Bul. S.S.A.*, Vol. 28, No. 1, 23-32, 6 fig., Berkeley, Jan., 1938.

4084. LÚNKENHEIMER, Federico, and GERSHÁNIK, Simón,

- (1) "Resultados Sismométricos del Año 1932," *Publications, Observatorio Astronómico de la Universidad Nacional de La Plata, Serie Geofísica*, Tomo 5, No. 4, 151-204, La Plata, 1937.
- (2) "Resultados Sismométricos del Año 1933," *Ibid.*, Tomo 6, No. 1, 3-50, 1937.
- (3) "Resultados Sismométricos del Año 1934," *Ibid.*, No. 2, 53-111, 1937.

The first two of the above publications are by Lúnkenheimer; the last is by Gershánik.

4085. LYNCH, Joseph, S.J.,

- (1) "The New Fordham University Seismic Vault," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, Fasc. 7, 46-50, 3 fig., Strasbourg, 1937.
- (2) "A New Theory of the Earth's Core," *J.R.A.S.C.*, Vol. 32, No. 5, 262-263, Toronto, May-June, 1937.

4086. MACKINTOSH, F. H., "England is Sinking," *Discovery*, New Series, Vol. 1, No. 1, 13-16, 4 fig., London, April, 1938.

See also a note by Frank Adcock on p. 195 of the same periodical, No. 4, July, 1938.

— MAUGHAN, W. E., and HECK, N. H., "Montana Earthquakes of 1935-1936." See No. 4064 of this list.

4087. McCOMB, H. E., and WENNER, Frank,

- (1) "Recherches à la plate-forme d'essai sur les séismomètres télé-séismiques," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 165-199, 23 fig., bib., Strasbourg, 1937.
- (2) "Le séismomètre Galitzine; sur les divergences entre la théorie de Galitzine et les résultats expérimentaux d'un séismomètre Wilip-Galitzine," *Ibid.*, 200-207, 1 fig.

— McHENRY, Karmon Lorane, "Method of Recording Seismic Waves" (Patent). See No. 4103 of this list.

4088. MIGAUX, M., "Sur les diverses études de géophysique appliquée exécutées au Maroc français de 1930 à 1935," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, Fasc. 7, 51-60, 3 fig., Strasbourg, 1937.

4089. MIHAJLOVIC, J., "Sources d'énergie séismique de la péninsule balkanique," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, Fasc. 7, 61-76, Strasbourg, 1937.
4090. MITERA, Z. A.,
 (1) "Reflection Seismology in Exploring for Potential Fields in Poland," *Oil Weekly*, Vol. 84, No. 11, 164-176, Houston, 1937.
 An abstract by W. Ayvazoglou appears as No. 3587, p. 19, of *Geoph. Abst.* 88, reported as No. 4024 (1) of this list.
 (2) "Exploration in Poland," *Mines Mag.*, Vol. 28, No. 6, 251-252, 275, 4 fig., Golden, June, 1938.
4091. MIYABE, Naomi, "A Summary of Results of Studies Made in Japan, during the Period 1931-1936, on Deformations of the Earth's Crust," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, 24-37, 2 tab., Strasbourg, 1937.
 The second table is a bibliography listing all publications issued in Japan during the period indicated and dealing with the subject under discussion.
4092. MORITA, M., "On the P' Waves in the Neighbourhood of $\Delta = 140^\circ$," *Geoph. Mag.*, Vol. 11, No. 3, 197-220, 7 fig., 4 tab., bib., Tokyo, 1938.
 The above paper is a continuation of the studies reported as No. 3525 of these lists. M.M.
4093. MORSE, Philip M., "This Ball of Clay—How Old? Listening to the Earth's Interior. Is it made of Iron, Green Cheese, or Cold Molasses?" *Technology Review*, Vol. 40, No. 6, 265-267, M.I.T., Cambridge, Mass., April, 1938. R.R.B.
4094. MUSKAT, M., "Reflection of Plane Wave Impulses from Plane Parallel Plates," *Jour. App. Phys.*, Vol. 9, 275-278, 1938.
 An abstract, by the author, appears as No. 2013, p. 467, of *Sc. Abst.*, Sec. A, Physics, No. 485, Vol. 41, London, May 25, 1938.
4095. NATURE. The following brief notes of interest to seismologists have appeared in recent issues of Vol. 141 of the above periodical (London, 1938):
 (1) "Kew Registration of the Japanese Earthquake of May 23, 1938," No. 3578, p. 969, May 28.
 (2) "Earthquake of June 11," No. 3581, p. 1090, June 18.
 (3) "Volcanic History of Montserrat," *Ibid.*, p. 1105.
4096. NEUMANN, Frank, "The Simple Torsion Pendulum as an Accelerogram Analyser," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 208-216, 3 fig., Strasbourg, 1937.
4097. NISIMURA, Eiiti, "Change of Plumb Line Referred to the Axis of the Earth as Found from the Results of the International Latitude Observations" (second paper), *Mem. Col. Sc., Kyoto Imp. Univ.*, Ser. A, Vol. 20, No. 5-6, 191-195, 3 fig., 3 tab., Kyoto, 1937. E.N.
4098. OBSERVATORY, "Geophysical Discussion, 1938 February 18," *The Observatory*, No. 769, Vol. 61, 152-156, London, June, 1938.
 Includes discussion of a paper by K. E. Bullen, "Ellipticity Corrections to Waves through the Earth's Central Core," which is a continuation of the study reported as No. 3576 (1) of these lists.

4099. ODDONE, Emilio,

- (1) "Séismicité de l'Éthiopie: Création d'une station séismique à l'Asmara (Érythrée), destinée à l'étude des tremblements de terre de long de la dépression qui, de la vallée du Jourdan en Palestine, par la mer Rouge, va aux lacs équatoriaux africains," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, Fasc. 7, 13-14, Strasbourg, 1937.
- (2) "Comparaison entre les anciens et les nouveaux nivellements le long des plages et au travers des aires séismiques italiennes," *Ibid.*, 41-45.
- (3) "Vérification de la proposition que l'inclinaison magnétique augmente ou diminue selon que le bradyséisme local est ascendant ou descendant," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 131-132, Strasbourg, 1937.

4100. OIL WEEKLY, "New Portability in Seismic Instruments Throws Open Important Gulf Coast Areas Heretofore Largely Unexplored," *Oil Weekly*, Vol. 83, No. 13, 30-34, Houston, 1936.

An abstract by W. Ayvazoglou appears as No. 3588, pp. 19-20, of *Geoph. Abst. 88*, reported as No. 4024 (1) of this list.

4101. OSTROVSKIJ, A. E., "Measurements of the Rate of Propagation of Elastic Vibrations on Small Bases," *Comptes Rendus (Doklady), de l'Académie des Sciences de l'URSS*, Vol. 17, No. 7, 357-360, 3 fig., bib., Moscow, 1937.

4102. OXFORD, UNIVERSITY OBSERVATORY, "The International Seismological Summary, 1932, July, August, September," 265-388, Nov., 1937; and "The International Seismological Summary, 1932, October, November, December," 389-504, Dec., 1937.

4103. PATENTS. The following patent notices of interest to seismologists have appeared in *Geoph. Abst. 88 and 89*, reported as No. 4024 of this list. The number in brackets following each item below indicates the abstract number in *Geoph. Abst.*:

- (1) GREEN, William G., "Seismograph," U.S., 2,062,784, Dec. 1, 1936. (3644)
- (2) HEILAND, Carl A., "Vibration Detector," U.S., 2,067,636, Jan. 12, 1937. (3645)
- (3) McHENRY, Karmon Lorane, "Method of Recording Seismic Waves," U.S., 2,063,820, Dec. 8, 1936. (3646)
- (4) SALVATORI, Henri, "Apparatus for Determining Subsurface Geologic Formations," U.S., 2,064,385, Dec. 15, 1936. (3647)
- (5) VOORHEES, Vanderveer, "Seismic Surveying," U.S., 2,064,451, Dec. 15, 1936. (3648)
- (6) WEATHERBY, Benjamin B., "Method of Making Subsurface Determinations," U.S., 2,062,151, Nov. 24, 1936. (3650)
- (7) BILLS, Robert N., "Subsurface Exploration," U.S., 2,074,161, March 16, 1937. (3783)
- (8) BLAU, Ludwig W., and STATHAM, Louis, "Seismograph," U.S., 2,074,043, March 16, 1937. (3784)

4104. PHYSICAL SOCIETY, "Exhibit of the Physical Society," *Engineering*, No. 3756, Vol. 145, p. 20, London, Jan. 7, 1938.

The note includes a description of a "universal" vibrograph and its records. R.R.B.

4105. PIGMAN, George L., HORNIBROOK, Floyd B., and ROGERS, Jesse S., "A Portable Apparatus for Measuring Vibration in Fresh Concrete," *Jour. Res., U.S. Bur. Stand.*, Vol. 20, No. 5, 707-721, 13 fig., Washington, May, 1938.

The single paper may be purchased from the Superintendent of Documents, Government Printing Bureau, Washington, D.C., for ten cents. In ordering, designate Research Paper 1001.

- PRICE, W. Armstrong, "Shallow Stratigraphic Variations over Gulf Coast Structures" (discussion). See No. 4108 of this list.

- REID, Harry Fielding, "Faults." See p. 106, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.

4106. REPETTI, W. C., S.J., "Microseisms in the Philippines," *U.G.G.I., Ass. Séis., Monographies*, Ser. B, Fasc. 7, 3-12, 4 fig., Strasbourg, 1937. W.C.R.

- RICH, John L., "A Mechanism for the Initiation of Geosynclines and Geo-basins." See p. 106, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.

- RICHTER, C. F., and GUTENBERG, B., "P' and the Earth's Core." See No. 4059 of this list.

4107. RIEBER, Frank, "Geological Causes of Poor Reflection Records" (abstract), *Am. Ass. Pet. Geol. Bul.*, Vol. 20, No. 11, p. 1520, Tulsa, 1936.

See author's abstract as No. 3594, p. 21, of *Geoph. Abst. 88*, reported as No. 4024 (1) of this list.

- ROGERS, Jesse S., PIGMAN, George L., and HORNIBROOK, Floyd B., "A Portable Apparatus for Measuring Vibration in Fresh Concrete." See No. 4105 of this list.

4108. ROSAIRE, E. E., "Shallow Stratigraphic Variations over Gulf Coast Structures," *Geophysics*, Vol. 3, No. 2, 96-121, 3 fig., bib., Houston, March, 1938.

The indicated pagination covers also the discussion on the paper. Those quoted are: W. Armstrong Price, I. I. Gardescu, A. A. Seager, B. B. Weatherby, and S. A. Judson. The figures are used in the discussion by I. I. Gardescu.

4109. ROTHÉ, E., "Séismographe à quartz piézoélectrique," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 151-164, 9 fig., bib., Strasbourg, 1937.

4110. ROTHÉ, Jean-Perre, "Sur le séisme belge du 11 juin 1938," *C.R.*, Tome 206, No. 25, 1910-1912, bib., Paris, June 20, 1938.

4111. RUDASHEVSKY, G. E., "The Bridge and Transformer Inductive Schemes Applied to the Measurements of Small Deformations," *Acad. Sc. URSS., Pub. Inst. Séis.*, No. 84, 32 pp., 29 fig., bib., Moscow-Leningrad, 1938.

The paper is in the Russian language throughout.

N.V.R.

- SALVATORI, Henri, "Apparatus for Determining Subsurface Geologic Formations" (Patent). See No. 4103 of this list.

4112. SAVARENSKIJ, E. F. (E. F. Savarensky), "Epicentral Correction of Distance for Epicentre Determination of Deep Focus Earthquake," *Acad. Sc. URSS., Pub. Inst. Séis.*, No. 80, 12 pp., 4 fig., tab., bib., Moscow-Leningrad, 1937.

The paper is in the Russian language throughout.

N.V.R.

— SAWTELLE, George, and BARTON, Donald C., "Gulf Coast Oilfields." See No. 4025 of this list.

4113. SCHMERWITZ, Gerhard, "Das abweichende Verhalten der Dämpfungskopplung von den bekannten Kopplungserscheinungen," *Ann. Phys.*, Folge 5, Bd. 30, Heft 3, Leipzig, 1937.

4114. SCHNIRMANN, G. L.,

(1) "Théorie élémentaire de la suspension à ressort du séismographe vertical," *Acad. Sc. URSS., Pub. Inst. Séis.*, No. 83, 32 pp., 24 fig., Moscow-Leningrad, 1938. N.V.R.;

(2) "An Elementary Theory of the Spring Suspension of the Vertical Seismograph," *Comptes Rendus (Doklady) de l'Académie des Sciences de l'URSS.*, Vol. 17, No. 6' 311-314, 3 fig., bib., Moscow, 1937. G.L.S.

The former of the two papers above listed is in the Russian language throughout.

4115. SCIENCE NEWS-LETTER. The following brief notes of interest to seismologists have appeared in recent issues of Vol. 33 of the above periodical (Washington, 1938):

- (1) "Japanese Earthquake of May 23, 1938," No. 23, p. 369, June 4.
- (2) "Radio Signals Interfere with Earthquake Records," No. 24, p. 375, June 11.
- (3) "Layer-cake Geology Indicates New Oil Sources," *Ibid.*, p. 380.
- (4) "Geological Society Grant for Earthquake Studies," No. 25, p. 398, June 18.
- (5) "Earth Trembles (June 10)," *Ibid.*, p. 400.
- (6) "Earth Trembles (June 10, 15, 16)," No. 26, p. 415, June 25.

4116. SCIENCE NEWS-LETTER. The following brief notes of interest to seismologists have appeared in recent issues of Vol. 34 of the above periodical (Washington, 1938):

- (1) "Earth Trembles (June 23, 25)," No. 2, p. 31, July 9.
- (2) "Earth Trembles (June 30)," No. 3, p. 45, July 16.

— SEAGER, A. A., "Shallow Stratigraphic Variations over Gulf Coast Structures" (discussion). See No. 4108 of this list.

4117. SEISMOLOGICAL SOCIETY OF JAPAN, "Transactions of the Seismological Society of Japan," Vols. 3-4, 6-8, 10-11; 7 vols., wrappers, Yokohama, 1881-1887.

This old series of publications is included in a list recently issued by Wm. Dawson and Sons, Ltd., London. It is quoted at £3.15.0.

4118. ŠERMAN, D. J. (D. J. Schermann), "Sur la distribution des nombres caractéristiques d'équations intégrales du problème plan de la théorie d'élasticité," *Acad. Sc. URSS., Pub. Inst. Séis.*, No. 82, 24 pp., Moscow-Leningrad, 1938.

The paper is in the Russian language throughout.

N.V.R.

- SHEPARD, Francis P.,
- (1) "Investigations in Submarine Geology off the California Coast." See p. 114, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.
 - (2) "San Clemente Submarine Fault." See p. 252 of same publication.
4119. SHEPARD, Francis P., and BEARD, Charles N., "Submarine Canyons: Distribution and Longitudinal Profiles," *Geog. Rev.*, Vol. 28, No. 3, 439-451, 5 fig., 2 tab., bib., New York, July, 1938.
- SHEPARD, F. P., and GRANT, U. S., "Short-period Oscillations of Southern California Beaches and Adjacent Sea Floor." See p. 84, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.
4120. SIEBERG, A.,
- (1) "Bodenmechanische Erdbebenforschung," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 217-225, bib., Strasbourg, 1937.
 - (2) "Tätigkeitsbericht der Reichsanstalt für Erdbebenforschung für die Zeit vom 1. April 1934 bis zum 1. Oktober 1937," *Veröff., Jena*, Heft 32, 19 pp., Jena, 1937.
Contains a complete list of the publications of the members of the staff of the above institution for the period indicated.
4121. SOMVILLE, O., "Un nouveau type de séismographe vertical," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 137-145, 6 fig., Strasbourg, 1937. O.S.
- STATHAM, Louis, and BLAU, Ludwig W., "Seismograph" (Patent). See No. 4103 of this list.
4122. STETSON, Harlan T., "Correlation of Frequencies of Seismic Disturbances with the Hour Angle of the Moon," *U.G.G.I., Ass. Séis., Trav. Sc.*, Ser. A, Fasc. 15, Part 2, 244-257, 5 fig., 5 tab., bib., Strasbourg, 1937.
4123. STOCKS, Theodor, "Grundkarte der ozeanischen Lotungen 1:5 Millionen, Sheet SII," *Wissenschaftliche Ergebnisse der Deutschen Atlantischen Expedition auf dem Forschungs- und Vermessungsschiff "Meteor", 1925-1927*, Vol. 3, Part 1, *Morphologie des Atlantischen Ozeans*, Part 4, Berlin and Leipzig, 1937.
A review by T. Wayland Vaughan appears on pp. 497-498 of *Geog. Rev.*, Vol. 28, No. 3, New York, July, 1938.
4124. SWARTZLOW, "Earthquakes at Lassen, May, 1936," *Volcano Letter*, No. 435, Honolulu, May, 1936.
- TALIAFERRO, N. L., "San Andreas Fault in Central California." See p. 254, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.
4125. TAMS, E., "Grundzüge der physikalischen Verhältnisse der festen Erde, ihre Beziehungen zur geologischen Gestaltung des Erdantlitzes," Gebrüder Borntraeger, 377+xvi pp. In two sections. Price, unbound, RM 30 each, Berlin, 1938.
The subjects dealt with in each of the two sections are as follows: Part I: Grösse, Gestalt, und Konstitution der Erde, ihre thermischen und gravimetrischen. Verhältnisse (mit 4 Tafeln und 13 Textfiguren, 184+viii pp.); Part II: Die endogenen Bewegungsvorgänge und ihre Äusserungen. Geologischer Bau und Erdmagnetismus (mit 4 Tafeln und 21 Textfiguren, 193+viii pp.). G.B.

4126. TRAPPE, Fr., "Die Anwendung der seismischen Reflexionsmethode in Deutschland," *Oel und Kohle*, Vol. 12, No. 42, 901-904, Berlin, 1936.

An abstract by W. Ayvazoglou appears as No. 3602, pp. 22-23, of *Geoph. Abst.* 88, reported as No. 4024 (1) of this list.

4127. TYDEMAN, G. F., "Vier Opstellen," G. Naef, 126 pp., 5 fig., bib., Gravenhage, 1938.

The sub-titles of the four sections are as follows:

- (1) De orde in het Zonnestelsel.
- (2) De Zon en de Zonnevlekken.
- (3) De poolvlucht en de Sima-Sial-Drift-Theorie.
- (4) De aard-rotatie en de seculaire variatie van het Oceaan-niveau. G.F.T.

4128. UCHIDA, K., *et al.*, "The Sakurajima's Memorial: The Eruption of January 12, 1914," 42 pp., 28 illus., Tokyo, 1938.

The above is a deluxe publication 10" x 12" on excellent paper. It is dedicated to Prof. F. Omori and to Dr. S. Hase. The illustrations are reproductions of sketches made at the time by the various members of the expedition: K. Uchida, M.D., T. Morowoka, M.D., Y. Ootawa, M.D., and H. Iijima, M.D. The entire paper is in Japanese except for the explanations of the illustrations which are in both Japanese and English, and a four-page article in English at the end of the booklet by Dr. Iijima, entitled "On the Bacteriological Examination of Volcanic Ashes and the Various Injuries Caused by the Eruption." The paper is listed in this bibliography largely because of the excellent illustrations which are of interest to seismologists.

4129. URREN, L. C., "New Method of Seismic Survey Affords More Information," *Oil and Gas Jour.*, Vol. 35, No. 43, 52-55, Tulsa, 1937.

An abstract by W. Ayvazoglou appears as No. 3734, p. 67, of *Geoph. Abst.* 89, reported as No. 4024 (2) of this list. The paper is a description of the Rieber "sonograph" method.

4130. VAN DIJK, G., "Seismische Registreringen in DeBilt, 1935," *Koninklijk Nederlandsch Meteorologisch Instituut Pub.*, No. 108, 49 pp., Gravenhage, 1937.

The above is No. 23 of the series on seismological registration.

4131. VAN DUERSEN, A., "Uz, het land van Job" (Uz, the country of Job), *Comptes Rendus du 15^e Congrès International de Géographie, Amsterdam, 1938*, Tome 2, Section 4, 203-205, Leiden, 1938.

According to the author, who describes Uz geographically, the scene of the history of Job is imagined in a territory which is characterised by earthquakes and post-volcanic phenomena. The group of faults of El Ophor would be one of the regions with the greatest seismic frequency. This group belongs to the Araba and the territories on either side of it. J.F.S.

- VAUGHAN, T. Wayland, "A Bathymetric Map of the Atlantic Ocean, 1:5,000,000, Sheet SII₂." See No. 4123 of this list.

- VINE, A. C., EWING, Maurice, and WOOLLARD, G. P., "Geophysical Investigations in the Submerged and Emerged Atlantic Coastal Plain (Part III)." See p. 80, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.

4132. VLODAVETS, V. I.,

- (1) "Macroseismographical Observations in the Region of Kliuchevskoi Volcano, from September 1 to December 31, 1935," *Acad. Sc. USSR., Bul. Kamchatka Volcan. Station*, No. 1, p. 17, Moscow-Leningrad, 1937.
- (2) "Macroseismographical Observations in the Region of Kliuchevskoi Volcano, from January 1 to October 1, 1936," *Ibid.*, No. 2, 25-26, 1938. V.I.V.

4133. VOLCANO LETTER, "The Maui Earthquake of January 22, 1938," *The Volcano Letter*, No. 457, 1-5, 4 fig., Honolulu, March, 1938.

The description of an earthquake which occurred in the Hawaiian islands but was registered on distant seismographs.

— VORHEES, Vanderveer, "Seismic Surveying" (Patent). See No. 4103 of this list.

4134. VOSS, Karl Heinz, "Vergleich der Bodenbewegungen bei Sprengungen und Maschinenschwingungen," Dissertation, 24 pp., 2 fig., 3 pl., bib., printed by W. Fr. Kaestner, Göttingen, 1937.

The above is listed as No. 31 of the series: *Seismische Untersuchungen des Geophysikalischen Instituts in Göttingen*.

— WEATHERBY, B. B., "Method of Making Subsurface Determinations" (Patent). See No. 4103 of this list.

— WEATHERBY, B. B., "Shallow Stratigraphic Variations over Gulf Coast Structures" (discussion). See No. 4108 of this list.

— WENNER, Frank, and McCOMB, H. E., "Recherches à la plate-forme d'essai sur les séismomètres téléseismiques," and "Le séismomètre Galitzine; sur les divergences entre la théorie de Galitzine et les résultats expérimentaux d'un séismomètre Wilip-Galitzine." See No. 4087 of this list.

4135. WESTLAND, A. J., S.J., "Eastern Section of the Seismological Society of America," *Science*, No. 2267, Vol. 87, p. 534, New York, June 10, 1938.

A brief report of the thirteenth annual meeting of the Eastern Section at Cambridge, and Weston, Mass., May 2 and 3, 1938.

— WILLIS, Bailey, "Asthenolith (Melting Spot) Theory." See p. 120, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.

— WILSON, R. M., and GABRIEL, V. G., "Shot Point and Short Distance Geophones in Seismic Prospecting." See No. 4054 of this list.

— WOOLLARD, G. P., VINE, A. C., and EWING, Maurice, "Geophysical Investigations in the Submerged and Emerged Atlantic Coastal Plain (Part III)." See p. 80, *Proc. 1937, G.S.A.*, reported as No. 4056 of this list.

4136. WOOLLCOTT, Alexander, "The Prodigal Father," from the book, *While Rome Burns* (Penguin Edition), 143-151, Penguin Books, Ltd., Harmondsworth, Middlesex, England, 1937.

An intimate pen picture of Frank Lloyd Wright, the "Father of Modern Architecture," who achieved such an outstanding success in designing the Imperial Hotel, Tokyo, to withstand earthquakes.

Another article about Wright appears in the *Readers Digest* for September, 1937. See No. 4137 of this list.

4137. WRIGHT, Frank Lloyd, "Building against Doomsday," *Readers Digest*, No. 185, Vol. 31, 70-74, Pleasantville, N.Y., Sept., 1937.

The above is a short review of a section of the autobiography of Frank Lloyd Wright (Longmans, Green and Co., 1932. Price \$3.50) dealing with the building of the great Imperial Hotel in Tokyo, which was designed to withstand earthquakes and has triumphantly done so. See also No. 4136 of this list.

4138. ZSCHOCHER, W., "Le rayonnement séismique des villes et les normes de la construction antiséismique," *Acad. Sc. URSS., Pub. Inst. Séis.*, No. 85, 19 pp., 7 fig., Moscow-Leningrad, 1938. N.V.R.

The paper is in the Russian language throughout.

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