

a great disturbance shook Alaska at Yukatat bay, very close to Canadian territory. On June 28, 1925, an earthquake in Montana, caused tremors which were felt in Alberta. The most serious earthquake for more than two centuries was the St. Lawrence tremor of Feb. 28, 1925. Although very widely felt it cannot be classed as a seriously destructive earthquake such as are experienced in more seismic regions.

At present six seismologic stations, all maintained by the Dominion Government, are in active operation in Canada, and are situated at Halifax, Ottawa, Toronto, Saskatoon, Ste. Anne de la Pocatière and Victoria. Two of these—at Toronto and Victoria—are under the Meteorological Branch of the Department of Marine and Fisheries, while the four remaining stations are controlled by the Dominion Observatory, of the Department of the Interior, with the assistance and co-operation of the universities at Halifax and at Saskatoon and of the Department of Agriculture at Ste. Anne de la Pocatière.

The records for Toronto and Victoria are published from Toronto, whence monthly bulletins are issued to seismologic observatories interested, giving full details of all quakes registered. The records for the remaining stations are published from Ottawa. Monthly bulletins are issued to 219 seismologic observatories situated throughout the world. These are supplemented by a yearly publication giving the location of epicentres of all earthquakes of which any trace is registered at Ottawa and for which the total data are sufficient. Reports are received regularly from all the working seismologic stations of the world.

Regular research work in seismology is carried on at Ottawa, where the full time of two seismologists is given to the work of earthquake study alone. The reports are issued in the publications of the Dominion Observatory, Ottawa.

The natural and instrumental data for each station are as follows:—

Halifax.—Lat., 44° 38' N.; Long., 63° 36' W.; Alt., 47.3 m. Substrata, carbonaceous slate. Equipment:—Small Mainka Pendulum Seismograph. Mechanical registration. Components N., S., E., W. Mass of each 139.3 kgm. Period of each 10 sec. Damping ratio of each 6:1. Magnification of each, about 60. Time is checked automatically each hour by signal from Western Union Telegraph and is to be depended on to one or two seconds.

Ottawa.—Lat., 45° 23' 38" N.; Long., 75° 42' 57" W.; Alt., 82 m. Substrata, boulder clay over limestone (Ordovician). Equipment:—(1) Bosch Horizontal Seismographs. Photographic registration. Independent components, N.S., E.W. Mass of each 200 gm. Period of each, about 5.5 sec. Damping ratios N.S., 2:1, E.W., 18:1. Magnification of each, 120. (2) Milne-Shaw Horizontal Seismographs. Photographic registration. Independent components, N.S., E.W. Mass of each, 1 lb. Period of each, 12 sec. Damping ratio of each 20:1. Magnification of each, 250. (3) Wiechert Vertical Seismograph. Mechanical registration. Mass, 80 kgm. Period, 6 sec. Damping ratio, 20:1. Magnification, 160. (4) Deformation Instrument. Photographic registration. Components, N.S., E.W. Mass of each, 20 gm. Period of each, about 36 sec. No damping. Used for determination of tilt. The time service at Ottawa is that of the Dominion Observatory and the registration on the record is kept correct to within 0.2 sec.

Toronto.—Lat., 43° 40' N.; Long., 79° 24' W.; Alt., 115.5 m. Substrata, sand and gravel on boulder clay to a depth of about 15 m., then shale over crystalline rock (Laurentian) to a depth of about 335.5 metres. Equipment:—(1) Milne Seismograph. Photographic registration. E.W. component. Mass, 0.3 kgm. Period, 18 sec. No damping. (2) Milne-Shaw Horizontal Seismographs. Photographic registration. Independent components, N.S., E.W. Mass of each, 1 lb. Period of each, 12 sec. Damping ratio of each, 20:1. Magnification of each, 150. Time markings by Toronto Observatory clock. The registration has an error of 2 sec. The time is checked by meridian transits.

Saskatoon.—Lat., 52° 8' N.; Long., 106° 30' W.; Alt., 515 m. Substrata, clay and sand. Equipment:—Small Mainka Pendulum Seismograph. Mechanical registration. Components, N.S., E.W. Mass of each, 139.3 kgm. Period of each, approximately 9 sec. Damping ratio of each, 5:1. Magnification of each, about 60. Time by local clock, checked occasionally by telephone with train time.

Ste. Anne de la Pocatière.—Lat., 47° 23' N.; Long., 70° 3' W. Alt., 29.3 m. Substrata, clay. Equipment:—Milne-Shaw Horizontal Seismograph. Photographic registration. One component, N.W., S.E. Mass, 1 lb. Period, 20 sec. Damping ratio, 20:1. Magnification, 250. Time by box chronometer of small daily rate, checked daily by wireless signals recorded by the operator directly upon the seismogram. Time may be determined on the record to within a second.

Victoria.—Lat., 48° 24' 50" N.; Long., 123° 19' 28" W. Alt., 67.6 m. Substrata, igneous rock. Equipment:—(1) Milne Seismograph. Photographic registration. E.W. component. Mass, 0.23 kgm. Period, 18 sec. No damping. (2) Milne-Shaw Horizontal Seismographs. Photographic registration. Independent components, N.S., E.W. Mass of each, 1 lb. Period of each, 12 sec. Damping ratio of each, 20:1. Magnification of each, 250. (3) Wiechert Vertical Seismograph. Mechanical registration. Mass, 80 kgm. Period, 5 sec. Magnification, 70. Time service of the meteorological station. Registration correct to ± 0.1 sec.