

The British Columbia Earthquake, June 23, 1946.*—One of the most severe earthquakes on record, which has affected any part of Canada, occurred along the central east coast of Vancouver Island on June 23, 1946, at 10^h 13^m 19^s, a.m., P.D.T. The tremors were well recorded on seismographs at all stations in North America and excellent seismological records were also obtained from a number of stations in Europe.

The epicentre, tentatively designated by the triangulation from seismograph records, was at Lat. 49°9' N., Lat. 125°3' W., a point about ten miles S.S.W. of Campbell River. This position and also the focal time given above are subject to minor amendment when the collected seismograms now being assembled are studied later at the Dominion Observatory, Ottawa.

A field study of the earthquake indicates that the epicentre was not even approximately a point, but was certainly a line extending along the eastern edge of Vancouver Island from Deep Bay, opposite the south end of Denman Island to Campbell River. Parts of Quadra Island and Read Island were also affected.

The tremors continued, at Deep Bay for example, for about 30 seconds. This was the estimate of reliable observers throughout much of the main epicentral region above designated.

There were marked changes in the land, particularly at Maple Guard Spit which flanks Deep Bay, at Goose Spit and Drew Harbour on the east side of Quadra Island and near Burdwood Bay on the east coast of the southern promontory of Read Island. Cracks many feet in depth and up to 18 inches in width opened up for lengths to several hundred feet on the sand spits. An area of flat land, 15 to 20 acres in extent was down-dropped in level cultivated fields on Read Island. Some of the faces of the drops were 20 to 30 feet in depth. In addition there was much surface damage of a general nature such as broken chimneys, damaged goods in stores, broken crockery and glassware, windows, etc.

At many places along the coast from Deep Bay to above Campbell River, water spouts were seen; these were described in some cases as 30 feet in height and left permanent records on the sand spits, in the form of craters or "sand blows", which varied from a few inches across to craters five feet in diameter and three feet in depth, after several weeks of exposure to rain. At the time of the earthquake some of these "could not be bottomed with a twelve-foot pole"

The coastal waters in many places were found to have increased in depth just off shore, by measured amounts up to 100 feet. At the west end of Comox Lake, a measured water depth of 33 feet was left where, previously, there had been a beach, well above water. No report, authenticated or otherwise, indicates any place where a rise in the ground occurred, or where marine depths were lessened, except for a long welt which appeared on the beach at Westview, on the mainland south of Powell River. It is believed that all marine depth changes will be in the nature of increases.

In addition to the epicentral region of which no doubt is entertained, there is another section which may have participated in the true tectonic shock. This includes Powell River (unlikely), the Alberni Canal opposite Franklin Creek, and some inlets near the outer end of Alberni Canal (unlikely).

* Prepared under the direction of C. S. Beals, Ph.D., D.Sc., Acting Dominion Astronomer, Dominion Observatory, Department of Mines and Resources, by Ernest A. Hodgson, Ph. D., Chief, Division of Seismology.