

the length of the radius vector at the hypocentre and find it to be 6,285 km., the radius of the earth having been taken at 6,370. Hence we have for the depth of the hypocentre, the difference of the two quantities, or 85 km.

In the distance, 120 km., of the epicentre from Ottawa there can be but a very small margin of error; though the direction may be in error a few degrees, the immediate epicentral area is fairly confined within narrow limits. The depth, 85 km., of the hypocentre at first sight seems great. However, the writer believes, with considerable confidence, that it was not less than this. The earth movement as described by residents at Labelle and Nomingue, small hamlets situated near the determined epicentre, was not much more severe than at Ottawa. This affords an indication that the depth was a large fraction of the distance, 147 km., of the hypocentre from Ottawa.

We find that the epicentre as determined falls in the vast area marked 23, Laurentian, of the above geologic map; in an area beneath which there are no sedimentary formations, and we cannot speak here of newer formations settling and adjusting themselves as the cause of the quake; nor is there any evidence of any fault line in the vicinity along which the adjustment of the stresses took place, as is so common in earthquakes. The great St. Lawrence-Champlain fault line is not marked by any pronounced movement, as would be the case if along that line of weakness the adjustment had taken place. An earthquake is a manifestation of adjustment towards equilibrium of the stresses prevailing in that area or part of the earth's crust. In our local quake of the preceding year, the epicentre fell within an area of the Cambro-Silurian period, in which the Calciferous and Trenton predominate, affording us a more plausible explanation of the quake than we are able to offer in the present case. Also in the quake of 1913 we had very pronounced differences of effect, due to varying proximity to the epicentre, which shows that this quake was far shallower than that of February 10 last, which moreover at the computed depth of 85 km. was far below any recognized geological formation, and at two-thirds or more of the theoretical depth of isostatic compensation.

It is gratifying that the number of earthquake stations with recording instruments on this continent is steadily increasing, so that local quakes, such as the one of February last, will have less chance of escaping analysis.