

GRAVITY

By F. A. McDIARMID, B.A.

During the season of 1915 there were observed in Canada twenty-four gravity stations as follows: St. John, N.B.; Moncton, N.B.; Charlottetown, P.E.I.; Sydney, N.S.; Truro, N.S.; Halifax, N.S.; Yarmouth, N.S.; Woodstock, N.B.; Edmundston, N.B.; Bathurst, N.B.; Percé, Que.; Kenora, Ont.; Winnipeg, Man.; Brandon, Man.; Moosejaw, Sask.; Medicine Hat, Alta.; Calgary, Alta.; Banff, Alta.; Field, B.C.; Glacier, B.C.; Revelstoke, B.C.; Kamloops, B.C.; North Bend, B.C.; and Vancouver, B.C. Two other stations—Dunmore, Alta., and Yale, B.C.—were on the observing programme prepared by Dr. Klotz, Assistant Chief Astronomer, under whose supervision the gravity work is carried on, but the difficulty of securing suitable observing rooms led to their abandonment.

The first observations were made at St. John on the eleventh of May, and the last at Vancouver on the seventh of September. During that interval more than two weeks were spent in Ottawa standardizing the pendulums. The eleven stations in eastern Canada were observed in six weeks, and the thirteen in western Canada in less than eight weeks.

The instruments, their use, the method of observing, the determination of the instrumental coefficients are all described in the *Publications of the Dominion Observatory*, Vol. II, No. 10. In the observing, only knife-edge No. 1 was used and the pendulums were all swung with the direct face toward the flash apparatus. The flexure was determined by the same method as in 1914.

The observing chronometers were rated by comparisons with standard sidereal clocks. Through the kindness of Mr. D. L. Hutchinson, Director of the St. John, N.B., meteorological observatory, clock signals were sent twice a day from the St. John clock to the stations occupied in eastern Canada, and for the work in western Canada time signals were obtained from the Dominion Observatory Riefler standard sidereal clock. The St. John clock is a Riefler of the latest type, is splendidly mounted in a constant temperature room, and is enclosed under constant pressure. Its rate during the whole of the gravity campaign in the east was very nearly zero, and very constant. Mr. Hutchinson, largely on his own initiative, had built a splendid observatory. It is well equipped with modern instruments and the excellent results show a thorough knowledge of practical observing.

STANDARDIZING OF PENDULUMS

During the season of 1914 considerable difficulty was experienced due to changes in the lengths of the pendulums. On account of some injury to