The Toronto Magnetic Observatory. By R. F. Stupart, Director.

(Read January 14th, 1899.)

On the recommendation of the Royal Society and the British Association the British Government determined in 1840 to establish a fixed Magnetic Observatory in Canada, and it was decided that it should be placed under the general supervision of the Ordnance Department of the Army. Arrangements having been completed, Lieutenant Charles James Buchanan Riddell, R.A., was selected for duty in Canada. Leaving his detachment, consisting of four non-commissioned officers of the artillery to embark with the instruments on a vessel bound direct to Quebec, he proceeded himself to Canada by the more expeditious route of the United States. Having waited on the Governor-General at Montreal to present a letter of introduction with which he had been furnished by the Master-General of Ordnance, and having communicated with the commanding engineer, to whom he was the bearer of instructions and authority to build an Observatory, he proceeded to examine different localities which were suggested as convenient sites. The preference was finally given to Toronto, where a grant of two and a half acres of land belonging to the University of King's College was offered by the Council of the University. The first Observatory building was of logs, rough cast on the outside and plastered on the inside; it was completed during the summer of 1840, and the observations were begun in September. The operation of the Observatory as an Imperial establishment was brought to a close in the early part of the year 1853, and was resumed under the authority of the Provincial Government in July of the same year.

In the autumn of 1853 the present Observatory was commenced, to take the place of the old building. Very great care was taken during construction to insure freedom from magnetism in all the stone used, and all nails and fastenings were of either copper or zinc. For twenty-three years the position of the Observatory was, as far as known, faultless; observations were carried on systematically and carefully, and results were given to the scientific world which, with those obtained under the old military régime, have made the Toronto Observatory famous in the history of Terrestrial Magnetism.

In 1876, however, trouble began with the erection of buildings close to the Observatory, causing some very small changes in zero values. Then followed a few years later electric light circuits, which produced a change in the force instruments whenever the currents were turned on and off; this difficulty was in part overcome by the Light Company courteously agreeing to arrange their wires in the vicinity of the Observatory in such a manner that the currents would counteract each other. The next difficulty occurred when a large addition was made to the neighbouring buildings before mentioned, tons of iron were used in construction in all too