

Establishment of Magnetical and Meteorological Observatory.—It was not, however, until the British government established a Magnetical and Meteorological Observatory in Toronto, that meteorological observations were begun on a basis which promised continuity and scientific precision. The first observatory building was erected under the direction of Lieutenant Riddell, R.A. It was of logs, rough cast on the outside and plastered on the inside, and was completed during the summer of 1840, magnetical and meteorological observations being begun in September of that year. Lieutenant Riddell returned to England in the spring of 1841, and Captain, afterwards General, Sir Henry Lefroy, who had established an observatory of a similar character in St. Helena, was transferred to Toronto, in order that he might undertake a magnetic survey of British North America. Captain Lefroy remained as director of the observatory until, in the spring of 1853, it ceased to be an Imperial establishment.

Upon the transfer of the observatory to the Government of Canada, arrangements were made for retaining the military observers, and the institution was placed under the direction of Professor Cherriman, professor of mathematics and natural philosophy in the university of Toronto, who continued in charge for two years. During this period a stone observatory was erected on the exact site of the old frame building, the pillars on which the magnetic instruments were placed being left standing and the walls built around them. Presumably there was no change in the position of the meteorological instruments.

In 1855 Professor G. T. Kingston, M.A. was appointed director of the observatory. For about ten years he apparently confined his attention almost exclusively to magnetic work and the local meteorology, but it is quite obvious from correspondence and the various reports made by him to the Government that for some years prior to 1870 he had been considering the possibility of inaugurating a Meteorological Service in Canada along much the same lines as those then existing in Great Britain and the United States. In 1869 he addressed himself by letter and circular to persons actually engaged in meteorology, including the principals of several grammar schools, who for several years had acted as observers, and others who were interested in this movement, requesting their co-operation. The result was a steady increase in the number of observers, who now with unity of purpose and action made systematic and similar observations in different portions of the Dominion.

From October, 1869, to the spring of 1871, meteorological work in Canada was carried on by purely voluntary organization; no emoluments whatever were attached to the services of the observers, and the instruments were provided from private sources or lent from the Magnetic Observatory, Toronto, which also furnished the forms for registration. The work connected with organizing new stations and discussing and compiling returns was also gratuitously performed by the director and assistants of the observatory. Professor Kingston received much assistance from a few persons in the various provinces who recognized the usefulness of the proposed work. Among these were the late Archbishop Machray, of Rupert's Land, the late F. Allison, M.A., of Halifax, the late H. J. Cundall, C.E., of Prince Edward Island, and Captain Ashe, R.N., of Quebec. In more recent years Mr. E. Baynes Reed proved a most valuable officer of the service.

In the spring of 1871, a grant of \$5,000 made by the Dominion Government for the promotion of meteorological research gave considerable impetus to the movement. The preparation of a daily synchronous weather chart was begun in 1873, but the information received in Toronto was quite inadequate to admit of daily forecasts and the issue of storm warnings. However, through the courtesy