close proximity to the magnetic instruments, and much time and labor have been required to determine the precise effect of this "iron mine" on the various instruments. It was not, however, until the autumn of 1892, when the trolleys began to run, that we began to suspect that sooner or later the Magnetic Observatory would have to be removed to another site.

The magnetic instruments in the Observatory consisted of those brought out by Lieutenant Riddell in 1840, of which eye readings have been taken six times each day, and of another set of instruments, consisting of a bifilar for the measurement of the horizontal component, and a balance needle for the vertical force, and a declinometer, all of which record photographically.

Electric cars first ran in Toronto on August 17th, 1892. The line first put in operation was that on Church Street, which was followed on September 5th, by one on King Street, between George and Dufferin Streets. During the first few weeks, while a very small vibration of the needle was discernible on the V. F. curve, it was generally almost inappreciable, and it was not until September 20th that the movement increased to an extent sufficient to really impair the value of our magnetic curves. A marked increase of current must have been used on that day and afterwards. On October 10th the cars first ran on Yonge Street, and there was only a very small increase in the vibration, but a decrease of about .000070 of a dyne was observed when the current was on.

About 10 a.m., January 14th, there was a marked increase of vibration, and the vertical force increased about .000200 of one dyne. This disturbed period was only temporary, and shortly after 5 p.m. on the 17th there was a reversal to the smaller vibrations. This continued until May 15th, when larger vibrations began again, and continued with varying intensity during the summer, while the decrease of the vibration with the current ranged from about .000200 to .000500. This disturbance was very great between September 12th and October 17th, and at intervals during the following year; but there was no radical change in conditions until December 17th, 1894, when a decrease of V.F., while the current was on, was changed to an increase, this occurring when the cars first ran on McCaul St. Throughout 1895 the vibration and amount of permanent deflection was very nearly as it has been since; but on October 15th, the increase of V.F. with the current was again changed to a decrease, this occurring at the time that the railway company made certain changes in the feed wires. It is noticeable that, although several changes occurred in the V.F., it at times having been less with the current on and at other times greater, the horizontal force showed a decrease on all occasions with the turn on of the current. This decrease during the past two years was .000200 to .000500 of a dyne. No appreciable deflection of the declinometer magnet was noted, the only effect being a continuous vibration, which rendered the curves very ragged and difficult to read with accuracy.

A study of the traces during the times that the various electric lines were put in operation, showed that, with the currents ordinarily used, there was little effect at three-quarters of a mile, and a further survey with a portable instrument afforded further evidence in the same direction.

Before definitely recommending that the Magnetic Observatory should be removed from Toronto, the Director wrote to various well-known magneticians, present at the meeting of the British Association in August, 1897, requesting the favour of their presence at the Observatory to inspect the photographic magnetic curves there obtained with the view of expressing an opinion as to the advisability of continuing the records at the present site, or of removal to some point distant from electric tramways. Professor Rücker, F.R.S., Professor Carey Foster, F.R.S., Professor Fitzgerald, F.R.S., Dr. Van Rijckevorsel, and Professor Frank Bigelow, were the gentlemen who courteously accepted the invitation, and were pleased to sign a statement that, in their opinion, the value of the magnetic observations at Toronto had been seriously impaired by the trolley system, and advised removal to some other site.

It then having been decided to remove the Observatory, a point was chosen nine miles northeast of the former Magnetic Observatory, latitude 43° 47′N., longitude 79° 16′W., easily accessible by railway, and yet very unlikely to be invaded by the trolley system. At present there is no electric railway within seven miles, and little prospect of one within five miles for many years.