## Otto Klotz

vatories, when the value for the Dominion Observatory was found as  $5^{h} 02^{m} 51^{s}.983$ .

It will be interesting now to make a comparison between the 1857 value and that of 1897, forty years later. Lieut. Ashe connected Montreal with Quebec telegraphically on March 12, 1857, obtaining a difference, signals both ways, of

	44	111	
Difference Quebec Observatory-structure Viger Square	• 0	09	22.70
Longitude of Quebec from Harvard Observatory connection	4	44	49.02
Hence longitude Montreal (Viger Square)	4	54	11.72
The Harvard longitude in 1857 was taken as	4	44	30.70
The Harvard longitude in 1897 was taken as	4	44	31.05
Hence Viger Square would become	4	54	12.07
Point of observation in Viger Square to McGill Observatory,			
difference in longitude 6145 ft			5.75
Hence McGill Observatory deduced from Ashe's 1857 obser's	4	54	17.82
McGill-Harvard campaign of 1883 gave	4	54	18.54
Difference 1883-1857 determinations	0	00	00.72
Difference 1892-1857 determinations	0	00	00.80
Difference 1897-1857 values (1897 adjusted value)	0	00	00.81

These differences of about three-quarters of a second are quite satisfactory remembering that they involve two telegraphic links, Montreal-Quebec and Quebec-Harvard, when longitude by telegraph was in its infancy, besides the link from Viger Square to McGill Observatory, although the length of this last link is believed to be confined to the accuracy of the scaling on the Montreal city map. The linear measure was furnished by the survey department of the city engineer's office who was fortunate in locating within a few feet the place of observation in Viger Square in 1857.

In 1907 the observatory at McGill was supplied (from government funds) with a Riefler astronomical clock with invar pendulum and air-tight case; this, with a modern Troughton & Simms astronomical t.ansit, fitted with micrometer eyepiece, electrically recording on a chronograph, furnishes ample means for the accurate determination of time, which is at present the only astronomical function carried out by McGill Observatory.

It may be interesting to add the longitude determinations made by Lieut. Ashe in 1857, by means of the electric telegraph which at the time was something new in its application to astronomy. The