

variation or confusion in our ordinary reckoning by tropical years and their parts. It has been far otherwise, however, with our notation of time by its lesser but fundamental unit, the mean solar day. Every city and town on this continent and over the globe, but a few years ago, had its different hour, minute and second of the day, and often a different day, at the same moment of absolute time. Instead, moreover, of the simple method of numbering the hours continuously from one to twenty-four the rude division of the ancients into 12 A.M. and 12 P.M. was universally retained, and to add to these sources of inconvenience and ambiguity, the Astronomical day had been made to differ from the Civil day, the former beginning twelve hours before the latter, and phenomena and results in Astronomy, Meteorology and Navigation were recorded and calculated sometimes in terms of the one day, and sometimes in terms of the other.

The difficulties and inconveniences arising from these causes, and the want of some uniform system in our daily time-reckoning, have been more and more forcibly brought into view by the rapid growth of railway, telegraph and steamship communication during the last fifty years. They were not so soon felt, nor are they so thoroughly realized, in countries of comparatively small extent as in the British Isles, though there also they exist and have been provided against. The necessity of a change has been most urgently experienced on continents like North America and Europe, or extensive areas like British India. There the vast, and still increasing, number of long lines of railroad and other means of communication has made it evident that the mode of reckoning by local time, until lately everywhere in use, is attended with serious hindrances, and liability to derangement, in the transaction of the ever widening intercourse and commerce of the world. In the United States and Canada, for example, ten years ago, 140,000 miles of railway were run on as many as 75 different local times, and the difficulties thus occasioned in making proper connections, without annoying delays and mistakes, and with due security of life and property, became so great that railway and telegraph directors were at length constrained to seek for a remedy.

As early as 1863 the subject had attracted the attention of Mr. Sandford Fleming, C.E., C.M.G., now Chancellor of Queen's