interval between the departure and return of a meridian to the sun's centre is called a *solar* day. In the case of the moon the interval is called a *lunar* day ; and in that of a star a *sidereal* day. Of these, the sidereal day alone is of invariable length, and is, on this account, the time shewn by astronomical clocks, at observatories. For the ordinary purposes of life, however, it would be an inconvenient standard of time, its commencement not being marked by any sufficiently striking phenomenon. That luminary then which regulates the operations of mankind, seems pointed out by nature to fix the standard of time. Owing to the obliquity of the ecliptic and the unequal velocity of the earth in her orbit, the solar day is an ever-varying interval of time. Unlike the sidereal, no two consecutive solar days are exactly equal. Instead of attempting to make our clocks and watches correspond with this variation, which has been found impossible, all the resources of philosophy have been called in to aid mechanical skill in contriving timepieces which shall accurately measure the computed average length of these solar days. Watches and clocks, therefore, are intended to show *mean* time ; sun-dials, and other such contrivances, show *solar* or *apparent* time ; and the equation of time for any day is the difference between these two. There are, however, four days in each year, at some instant of which the apparent and mean time are the same ; these are, in the present year, April 15th, June 14th, August 31st, and December 24th. On these days the clock and sun-dial should agree, but on any other, in setting a clock by a sun-dial, or *twelve o'clock mark* (and there should be such in every house) the proper equation for that particular day must be applied.

For instance, if I want to set my clock on the 2d February next, when the sun-dial shows 12, the clock should show 14 minutes past 12, as we find from the equation table of that day that the sun is slow of clock 13′ 59″

Again, on November 1st, when the sun-dial shows 12, the clock should show 11h 43′ 43″, the sun being fast of clock on that day, 16′ 17″. Should the clock show more or less than this, it should be altered accordingly.

However, as the calculations for the rising and setting of the sun and moon have been made for mean time, clocks and watches can be regulated by these phenomena with sufficient accuracy.