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Condensed from a Paper read before the Wentworth Teachers' Association, by the President, W. H. BALLARD, M. A.

PROFESSOR Proctor, the astronomer, begins one of his admirable Essays in "Light Science for Leisure Hours" in this way :—

"A distinguished French astronomer remarks, that a man would be looked upon as a maniac who should speak of the influence of Jupiter's moons on the cotton trade, yet as he proceeds to show, there is an easily traced connection between the ideas that at first sight appear so incongruous. The link is found in the determination of celestial longitude..

"Similarly," Mr. Proctor goes on to say, "what would be thought of an astronomer who, regarding thoughtfully the stately motion of the sidereal system as exhibited on a magnified and therefore appreciable scale by a powerful telescope, should speak of the connection between this movement and the intrinsic worth of a sovereign? The natural thought with most men would be that too much learning had made the astronomer mad. Yet when we come to inquire closely into the question of a sovereign's intrinsic value we find ourselves led to the diurnal motions of the stars, and that by no very intricate path. For what is a sovereign? A coin containing so many grains of gold mixed with so many grains of alloy. A grain we know is the weight of such and such a volume of a standard substance, that is, so many cubic inches or parts of a cubic inch of that substance. But what is a cubic inch? It is determined we find as a certain fraction of the length of a pendulum vibrating seconds in the latitude of London. A second we know is a certain portion of a mean solar day, and is practically determined by what is called a sidereal day, the interval namely between the successive passages of the same star over the celestial meridian of any fixed place, that is the time in which the earth makes one complete revolution on its axis. This interval is assumed to be constant, and it has indeed been described as the one constant element known to astronomers.

We find then that there is a connection, and a very important connection, between the motions of the stars and our measures, not merely of value but of weight, length, volume and time. In fact our whole system of weights and measures is founded on the apparent diurnal motion of the sidereal system, that is on the real diurnal rotation of the earth." The unit of time, then, is the foundation on which the English or Imperial system of