

on the time of its vibration ; as if the 86,400th part of a day which we call a second of time were not as definite and as invariable a quantity as the 100,000th part which, in their rage for decimalization, they proposed to call one ; and as if they might not have fixed on a pendulum vibrating 100,000 times in a day (which would have given a very near approach to our yard). But their stumbling-block was the introduction of an extraneous element, *time*, at all, into the subject : as if the length of the day were not as much an invariable, universal, and physical element as the dimensions of the earth or its gravitation. But in this they seem to have overlooked the fact that their adoption of the quadrant of a meridian for the base of their system does really admit this extraneous element, time, into that system, though in a much more insidious way. For the total bulk or mean radius and the total mass or gravitating energy of the earth remaining the same, the ellipticity of its meridians, and therefore their absolute length, depends on the period of its rotation or the length of the day. The same objection, to be sure, if it be one, would equally apply to the adoption of the polar axis, or the equatorial diameter of the earth ; and the only way to exclude all ideas of time and force from a metrical system, and render it *purely* metrical, *i.e.*, dependent on geometrical magnitude alone, would be to take for a fundamental unit the radius, diameter, or circumference of a sphere, or the side of a cube, equal in volume to that of the earth. And perhaps were a *tabula rasa* made ; were the ground totally unoccupied and the whole matter to do