moon's. Now the mass of the moon is about one 88th part of that of the earth, so that one 88th part of the force that draws them together is due to the moon. By so much then must the space fallen through be diminished, to get that due to the earth's alone. Suppose, now, that the moon's mass assumed should be in error by a 50th part of its whole amount—(and Laplace's estimate of it differs by as much from that at present received)—and we shall find ourselves landed, from this cause of uncertainty alone, in an error to the extent of nearly one 4000th of the quantity sought.

(18.) Lastly, our knowledge of the moon's mass is mainly derived from its effect in producing the phænomenon of nutation, which it does through the medium of the earth's ellipticity, so that not only the dimensions, but the figure of the earth are thus mixed up in our attempt to derive the length of the normal pendulum from the moon's motion.

(19.) I cannot but consider then that the uncertainty of the one mode of obtaining the length of the normal pendulum, and the non-independence of the other, unfit it for being received as the ultimate scientific basis of a universal standard; whatever merit it may possess in an abstract and metaphysical point of view—and that the true and only practical use of the pendulum in relation to such a standard is the ready, cheap, and perfectly unobjectionable means its measurement, at a determinate spot and under defined circumstances, affords of recovering it when lost, by the recorded statement of its length in terms of such standard.