part of its polar *semi-axis :* that is to say, if we disregard so insignificant an error as a furlong upon 8000 miles, or one part in 64,000.

(15.) It follows, moreover (as may be verified by any one who will make the calculation), that if we consent to disregard so trifling an error as one part in 8000 ; one cubic *geometrical* foot of distilled water at our standard temperature weighs exactly 1000 of our *actual* imperial ounces, and is exactly filled by 100 of our *actual* imperial half-pints.*

(16.) Having thus exhibited the connexion between our ordinary measures of length, weight, and capacity, and the dimensions of the globe we inhabit (a connexion of singular felicity, when we consider the simplicity of the numerical relations), we are prepared to take a further step, and, by using the diameter of the earth itself as a base-line, carry on the same principle of triangulation into our solar and planetary system. In this, the natural unit—that to which astronomers have agreed with one accord to refer all its dimensions—is the mean or average distance of the earth from the sun, or the semi-axis of the ellipse which it describes about that luminary.

(17.) The way in which a knowledge of this distance is obtained being very fully described in our Lectures on "The Sun" and on "Comets," † it is unnecessary to re-

* The deviation of the *actual* French litre and gramme from their true theoretical values, is more than three times as great, being one part in 2730.

† A very unfortunate *erratum* exists in one of the numbers in p.