lation would land us) to our British standard ounce, of which this our globe is equivalent to about 210 *quadrillions.* *

(32.) It is an elementary proposition in physical astronomy that the time in which two masses so connected into a system by their mutual attraction, revolve about each other in elliptic orbits, depends only on *the sum* of their masses or weights, and on the *length* of the elliptic *relative* orbit, and not at all on its *breadth*, and is therefore the same as if the orbit were circular, *i.e.*, as if the two masses were retained constantly at the same distance from each other, viz., that which we have called their mean distance; and which mean distances, as we have seen in the cases before us, are respectively in round numbers fifteen and thirty times that of the sun from the earth.

(33.) It is an equally elementary conclusion from the theory of gravitation, and was long since demonstrated by Newton, that, so far as the time of revolution is concerned, it is unimportant in what proportions the sum of the masses or the entire ponderable matter of the system is distributed between the two, the distance being unaltered.   That time, therefore, would remain unaltered,

* Adopting that nomenclature which calls 1 followed by 6 ciphers a million, by 12 a billion, by 18 a trillion, and by 24 a quadrillion. For the weight of our globe in tons (5852 trillions), see Herschel's "Physical Geography," 2d edit. sect. 5.   The elastic forces with which Mr Bailey, in his repetitions of the celebrated "Cavendish Experiment" (from which this estimate of the weight of our globe is concluded) compared that weight, varied from less than one 29,000th part of a grain in some experiments to one 2500th in others!   The result, however, being corroborated in various ways, is received without hesitation.