solidification, the earth consisted, to be that the increase of the square of the density is proportional to the increase of pressure. Now the phenomena of precession and nutation are dependent upon the distribution of the mass of the earth, *i.e.*, upon the moments of inertia about the polar and equatorial axes. If we compute the moments of inertia about these two axes we obtain the constant $(C-A)/C$, where C and A are respectively the moments of inertia about the polar and equatorial axes, we find the value to be ·00327, or $\frac{1}{305}$. The moments of inertia of the earth as an ellipsoid about the principal axes are $C = \frac{a^2 + b^2}{5} m$ for the polar axis, and $A = \frac{b^2 + c^2}{5} m$ for the two equatorial axes. Taking the earth as an oblate spheroid $a = b$, hence $\frac{C-A}{C} = \frac{a^2 - c^2}{2a^2} = \frac{e^2}{2}$, where e = eccentricity.

As will be seen from the expression it is equal to the flattening or compression approximately $\left(f = \frac{e^2}{2} + \frac{e^4}{8} + \frac{e^6}{16} + \ldots\right)$ or to one half of the square of the eccentricity of the earth, and as this latter quantity is known from the other data we find the two to be fairly accordant, from which it might be inferred that Laplace's hypothesis is verified. But it is necessary not to overlook a very important point, and that is, that the density may only to a degree be dependent upon pressure. The density not only may, but very probably is, dependent largely in the depths of the earth on inherent molecular aggregation; and instead of a homogeneity of material throughout the earth, subject only to the respective pressures at different depths, we probably have to deal with matter inherently of different specific gravity.

There is another phenomenon upon the earth which gives us some clue as to the plasticity or rigidity of the earth, it is the tides. Tidal action through the law of gravitation plays a very important factor in the cosmos, but we can now occupy ourselves, and that but very briefly, only with our own planet. In all or nearly all physical investigations the difficulty of absolute deter-