that the interior must consist of heavier material, and may be metallic. But the effect of the enormous internal pressure, it might be supposed, should make the density of the nucleus much higher, even if the interior consisted of matter which, on the surface, would be no heavier than that of the crust. In fact, we might, on the contrary, argue for the probable comparative lightness of the substance composing the nucleus. That the total density of the planet does not greatly exceed its observed amount, may indicate that some antagonistic force counteracts the effect of pressure. The only force we can suppose capable of so acting is heat, though to what extent this counterbalancing takes place is still unknown. It must be admitted that we are still in ignorance of the law that regulates the compression of solids under such vast pressure as must exist within the earth's interior. We know that gases and vapors may be compressed into liquids, sometimes even into solids, and that in the liquid condition another law of compressibility begins. We know also from experiment that some substances have their melting-point raised by pressure.[31] It may be that the same effect takes place within the earth; that pressure increasing inward to the centre of the globe, while augmenting the density of each successive shell, may retain the whole in a solid condition, yet at temperatures far above the normal melting-points at the surface. Hence, on this view of the matter, it is conceivable that the difference between the density of the whole globe and that of the crust may be due to pressure, rather than to any essential difference of composition. Laplace proposed the hypothesis that the increase of the square of

[31] Under a pressure of 792 atmospheres, spermaceti has its melting-point raised from 51° to 80·2°, and wax from 64·5° to 80·2°.