§ 3. **The Interior or Nucleus.**—Though the mere outside skin of our planet is all with which direct acquaintance can be expected, the irregular distribution of materials beneath the crust may be inferred from the present distribution of land and water, and the observed differences in the amount of deflection of the plumb-line near the sea and near mountain-chains. The fact that the southern hemisphere is almost wholly covered with water, appears only explicable, as already remarked, on the assumption of an excess of density in the mass of that half of the planet. The existence of such a vast sheet of water as that of the Pacific Ocean is to be accounted for, says Archdeacon Pratt, by the presence of "some excess of matter in the solid parts of the earth between the Pacific Ocean and the earth's centre, which retains the water in its place, otherwise the ocean would flow away to the other parts of the earth."[29] The same writer points out that a deflection of the plumb-line toward the sea, which has in a number of cases been observed, indicates that "the density of the crust beneath the mountains must be less than that below the plains, and still less than that below the ocean-bed."[30] Apart, therefore, from the depressions of the earth's surface, in which the oceans lie, we must regard the internal density, whether of crust or nucleus, to be somewhat irregularly arranged—there being an excess of heavy materials in the water-hemisphere, and beneath the ocean-beds as compared with the continental masses.

It has been argued from the difference between the specific gravity of the whole globe and that of the crust,

[29] "Figure of the Earth," 4th edit. p. 236.

[30] Op. cit. p. 200. See also Herschel, "Phys. Geog." § 13; O. Fisher, Cambridge Phil. Trans. xii. part ii.; "Physics of the Earth's Crust," p. 75. Phil. Mag. July, 1886. Faye, Comptes rendus, cii. (1886), p. 651.