inference from this hypothesis would be that successive rings would increase in density from without toward the centre, and that as each ring became broken there would be a rearrangement of the parts according to the density of the materials out of which it was formed. This view is to a large extent substantiated by the fact that the planets and their individual satellites for the most part conform to this law. The materials of the earth thus become gradually more dense as its centre is approached.

If we accept the nebular hypothesis and consider that condensation and cooling have taken place, then as our globe slowly changed from a state of igneous fusion the first rocks must have been formed by solidification at the surface of the molten mass, while as yet the oceans and many of the more volatile substances existed in the dense cloudy atmosphere. Whether or not any portion of this first cooling crust now remains where it is accessible to man is a matter of doubt. It is probable, however, that ages must have elapsed before the crust had so far cooled as to allow the concentration of the oceans upon it; and ages more must have passed before this hot and chemically surcharged ocean had so far cooled and purified itself as to allow the development of life within it. We get a still further conception of the vast lapses of time which these early rocks imply, when we discover that, even after the waters had become suited for living beings, a great part of the development and differentiation of organic life went on in beings which have left no trace of their existence. Hardly a more remarkable fact confronts us in geology than the variety and complexity of types in the earliest rocks which contain any trace of life at all. This fact, which is all the more remarkable for being attested by the best of evidence from all parts of the earth's surface, compels us to assign to the history of life before its first permanent record was deposited a longer period perhaps than all that has since elapsed. These earliest forms were either unsuited for preservation or else they have been obliterated in the subsequent alteration of the rocks containing them.

All of the oldest rocks which are to-day entirely without, or with only slight traces of former life, are referred to the first great division