

Every part of the globe, which is not animal or vegetable, including water and air, is regarded as *mineral*.

The term *rock*, in its popular acceptation, embraces only the solid parts of the globe; but in geological language it includes also the loose materials, the soils, clays, and gravels, that cover the solid parts.

*The Earth as a Whole.*—The form of the earth is that of a sphere, flattened at the poles: technically, an oblate spheroid. The polar diameter is about 26 miles shorter than the equatorial. Not only does astronomy prove this theoretically, but the measurement of the degrees of the meridian in different latitudes shows it to be true.

Hence it is inferred that the earth must have been once in a fluid state; since it has precisely the form which a fluid globe, revolving on its axis with the same velocity as the earth, would assume.

Taken as a whole, the earth is from five to six times heavier than water; or 2.5 times heavier than common rocks.

*Proof 1.* Careful observations upon the relative attracting power of particular mountains and the whole globe, with a zenith sector. 2. The disturbing effect of the earth upon the heavenly bodies.

We hence learn that the density of the earth increases from the surface to the centre; but it does not follow that the nature of the internal parts is different from its crust. For in consequence of condensation by pressure, water at the depth of 362 miles, would be as heavy as quicksilver; and air as heavy as water at 34 miles in depth; while at the centre, steel would be compressed into one fourth, and stone into one eighth of its bulk at the surface.

*Configuration of the surface.*—The surface of the earth, as well beneath the ocean as on the dry land, is elevated into ridges and insulated peaks, with intervening valleys and plains.

The highest mountains are about 29,000 feet above the ocean level, and the mean height of the dry land is about 1,000 feet.

The highest mountain in Asia is Mt. Everest, one of the Himalayahs, 29,002 feet; the highest in Europe is Mt. Blanc, 15,700 feet; the highest in North America is Mt. Elias, 17,850 feet; the highest in South America is Aconcagua, in Chile, 23,910 feet. The mean height of land in Asia is 1,100 feet; in Europe, 600 feet; in North America, 710 feet, and in South America, 1,000 feet.