

solution; but according to Dittmar, even alkaline sea-water, if given sufficient time, will take up carbonate of lime in addition to what it already contains.¹⁹ Another of the constituents of sea-water is diffused organic matter, derived from the bodies of dead plants and animals, and no doubt of great importance as furnishing food for the lower grades of animal life.²⁰

II.—*The Solid Globe or Lithosphere*

Within the atmospheric and oceanic envelopes lies the inner solid globe. The only portion of it which, rising above the sea, is visible to us, and forms what we term Land, occupies rather more than one-fourth of the total superficies of the globe, or about 52,000,000 square miles.

§ 1. **The Outer Surface.**—The land is placed chiefly in the northern hemisphere and is disposed in large masses, or continents, which taper southward to about half the distance between the equator and the south pole. No adequate cause has yet been assigned for the present distribution of the land. It can be shown, however, that portions of the continents are of extreme geological antiquity. There is reason to believe, indeed, that the present terrestrial areas have on the whole been land, or have, at least, never been submerged beneath deep water, from the time of the earliest stratified formations; and that, on the other hand, the ocean-basins have always been vast areas of depression. This subject will be discussed in subsequent pages.

In the New World, the continental trend is approxi-

¹⁹ Dittmar, *op. cit.* p. 222.

²⁰ Different estimates have been made of the proportion of organic matter. According to the researches of L. Schmelck (Norwegian North-Atlantic Expedition, 1876-78, Part. ix. p. 4), the proportion is 0.0025 gramme in 100 c.c. of water.