

those which we may with probability expect from the tropical eastern Atlantic, will be sure to increase very widely our knowledge of the class.

238. *Globigerina Ooze*.—Next to the Radiolarian ooze proper the *Globigerina* ooze is the deposit which is richest in the remains of Radiolaria. Often these are so abundant that it is doubtful to which category the specimen should be referred (*e.g.*, Stations 270 and 271, see § 237). In fact, the two pass without any sharp boundary into each other, and both present transitions to the Diatom ooze. Next to red clay (§ 239), *Globigerina* ooze is the most widely distributed of all sediments, and forms a large part of the bed of the ocean at depths of 250 to 2900 fathoms (especially between 1000 and 2000 fathoms). It covers extensive areas at depths below 1800 fathoms, and in still deeper water is replaced by red clay. It is a fine-grained white, grey, or yellowish powder, which sometimes becomes coloured rose, red, or brown owing to the admixture of oxides of iron and manganese. True *Globigerina* ooze consists for the most part of the accumulated calcareous shells of pelagic Foraminifera, principally *Globigerina* and *Orbulina*, but also *Hastigerina*, *Pulvinulina*, &c. It contains usually from 50 to 80 per cent. of calcium carbonate, the extreme values being 40 and 95 per cent. After this has been removed by acids, there remains a residue, which consists partly of the siliceous shells of Radiolaria and Diatoms, and partly of mineral particles identical with the volcanic elements of the red clay.

Regarding the composition and significance of the *Globigerina* ooze, see John Murray (L. N. 27, pp. 523–525, and L. N. 53, vol. i. p. 919). Recently this author has separated from the *Globigerina* ooze (*sensu stricto*), the *Pteropod ooze*, distinguished from the former by the greater abundance of Pteropod shells and calcareous shells of larger pelagic organisms which it contains. It is found in moderate depths (at most 1500 fathoms), and contains fewer Radiolaria.

239. *Red Clay*.—This is quantitatively the most important of all deep-sea deposits, covering by far the greatest extent of the three great ocean basins at depths greater than 2200 fathoms. It thus far surpasses in area the other deposits, both Radiolaria and *Globigerina* oozes, and commonly forms a still deeper layer beneath them. Probably these three deep-sea deposits together cover about three-eighths of the whole surface of the earth, that is, about as much as all the continents together, whilst only two-eighths are covered by the terrigenous deposits. Red clay is principally composed of silicate of alumina, mixed in various proportions with other finely granular substances; its usual red colour, which sometimes passes over into grey or brown, is more especially due to admixture of oxides of iron and manganese. Calcareous matter is usually entirely wanting, or present only in traces, whilst free silica is found in very variable, often considerable quantities. The chief mass of the red clay consists of volcanic ashes, pumice, fragments of lava, &c., whilst a large part of it is generally composed of shells of Radiolaria or fragments of