

has undergone profound alteration from the long time it has been exposed to the hydrochemical action of sea water. For analyses of these manganese nodules see Appendix V.

It appears then that Shark's teeth, bones of Cetaceans, cosmic metallic spherules and chondres, highly altered volcanic fragments, manganese nodules, and zeolites occur in greatest abundance in the abysmal red clay regions of the Central South Pacific, at that part of the earth's surface farthest removed from continental land. All these substances occur in the other deposits, but owing to the abundance of other materials present in the more rapidly forming deposits, they are covered up and masked, and the chance of obtaining them in the dredge is greatly reduced; they are probably also in some degree protected in these latter deposits, from the hydrochemical action of sea water. They are less abundant in the Radiolarian oozes than in the red clays, are still less so in Globigerina, Diatom, and Pteropod oozes, and have been dredged in only a few instances in the terrigenous deposits which surround the shores of continents and islands. A few analyses of the bones, teeth, nodules, and deposits referred to above, are given in Appendix V., and fuller details will be given in the forthcoming Report on Deep-Sea Deposits.

*The Stomatopoda.*—Professor W. K. Brooks of Baltimore, who is engaged in the preparation of a Report on the Stomatopoda collected by the Expedition, contributes the following note:—"The general collection of adult specimens is of very little interest, as it contains nothing except well known species, but the surface collections of larvæ are of great value, and they are sufficiently complete to furnish the material for a very exhaustive account of the metamorphoses, although it is impossible to give an intelligible description of them without illustrations.

"The group Stomatopoda is a very compact one, and the adults are almost exactly alike in general structure, differing from each other only in minor points. Contrary to the general rule, however, the larvæ are much more different from each other than the adults. Instead of closely resembling each other at first and gradually changing as they approach maturity, the various species hatched from the egg as larvæ differ from each other in many important features, and become more and more alike as they develop.

"All the Stomatopod larvæ are pelagic animals, and many of them have been collected by explorers, and have received distinct generic names, as adults.

"The Challenger surface collections contain hundreds of specimens of these larvæ, at all stages of growth, and thus furnish the material for a thorough revision of this subject, showing that there are four quite distinct types of larval development, each of which is represented by several hundred specimens.

"I have at present been able to make a thorough study of only one of these, the *Erichthus* type. This is very fully represented in the collections, from a stage younger than the youngest figured by Claus and Faxon, up to a free-swimming animal with very nearly the structure of the adult. The youngest larva is a little Nauplius-like form,