

derived from the shells of Foraminifera. The sediment of the Atlantic Ocean is so largely constituted of one kind of foraminiferous shell, the *Globigerina bulloides*, that the mud is now frequently spoken of as the 'Globigerina ooze'; and this material is likewise found in the Pacific and other oceans and seas.

In speaking of the composition of the ocean mud, Mr. Thomson remarks: "The dredging at 2435 fathoms at the mouth of the Bay of Biscay gave a very fair idea of the condition of the bottom of the sea over an enormous area, as we know from many observations which have now been made, with the various sounding instruments contrived to bring up a sample of the bottom. On that occasion the dredge brought up about one and a half cwt. of calcareous mud. The matter contained in the dredge consisted mainly of a compact 'mortar', of a bluish color, passing into a thin—evidently superficial—layer, much softer and more creamy in consistence and of a yellowish color. Under the microscope the surface layer was found to consist chiefly of entire shells of *Globigerina bulloides*, large and small, and fragments of such shells mixed with a quantity of amorphous calcareous matter in fine particles, little fine sand, etc. Below the surface layer the sediment becomes gradually more compact, and a slight grey color, due probably to the decomposing organic matter, becomes more pronounced, while perfect shells of *Globigerina* almost entirely disappear, fragments become smaller, and calcareous mud, structureless and in a fine state of division, is in greatly preponderating proportion.

"One can have no doubt, on examining this sediment, that it is formed in the main by the accumulation and disintegration of the shells of *Globigerina*—the shells fresh, whole and living in the surface layer of the deposit, and in the lower layers dead and gradually crumbling down by the decomposition of their organic cement, and by the pressure of the layers above—an animal formation in fact being formed very much in the same way as in the accumulation of vegetal matter in a peat bog, by life and growth above, and death, retarded decomposition and compression beneath."*

When we are thus informed of the constitution of ocean mud, we are fully prepared to learn that vast rock-formations of past ages are composed of the shells of Foraminifera. D'Orbigny observes that the 'calcaire grossier' of the Paris basin, a coarse limestone of Tertiary age, is chiefly com-

* The Depths of the Sea, p. 410.