

The larger foraminifera are attacked, and instead of being vividly white and delicately sculptured, they become brown and worn, and finally they break up, each according to its fashion: the chamber-walls of *Globigerina* fall into wedge-shaped pieces, which quickly disappear; and a thick rough crust breaks away from the surface of *Orbulina*, leaving a thin inner sphere, at first beautifully transparent, but soon becoming opaque and crumbling away.

In the mean time, the proportion of the amorphous red clay to the calcareous elements of all kinds increases, until the latter disappear, with the exception of a few scattered shells of the larger foraminifera, which are still found, even in the most characteristic samples of the red clay.

There seems to be no room left for doubt that the red clay is essentially the insoluble residue, the *ash*, as it were, of the calcareous organisms which form the globigerina ooze after the calcareous matter has been by some means removed. An ordinary mixture of calcareous foraminifera with the shells of pteropods, forming a fair sample of globigerina ooze from near St. Thomas, was carefully washed, and subjected, by Mr. Buchanan, to the action of weak acid; and he found that there remained, after the carbonate of lime had been removed, about one per cent. of a reddish mud, consisting of silica, alumina, and the red oxide of iron. This experiment has been frequently repeated with different samples of globigerina ooze, and always with the result that a small proportion of a red sediment remains, which possesses all the characters of the red clay. I do not for a moment contend that the material of the red clay exists in the form of the silicate of alumina and the peroxide of iron in the shells of living foraminifera and pteropods, or in the hard parts of animals of other classes. That certain inorganic salts other than the salts of lime exist in all animal tissues, soft and hard, in a certain proportion, is undoubted; and I hazard the speculation that during the decom-