

only were the Foraminifera, whether judged by individual specimens or by an average, very definitely smaller than those of the bottom-deposits, but the shells were unmistakably thinner and more delicate. The same has not been the case in many of the mountings I have since examined; and the result of a fresh and somewhat extensive series of comparative measurements has convinced me that (with some reservation as to *Orbulina*) there is no sufficient difference between the surface- and bottom-shells, either as to size or substance, to serve as the foundation of a general argument.

It appears at first sight a very simple matter to determine whether organisms dredged from the sea-bottom have in reality lived there; but this is far from being the case with respect to the microzoa. The bed of the ocean is composed of deposits of unknown thickness, consisting in many places chiefly of Foraminiferal remains which have been accumulating for countless ages. Under any circumstances it is only in the thin superficial film that living specimens are to be found, and even there they are mixed with a large proportion of dead and empty shells. The masses of ooze brought up by means of a heavy dredge or trawl, possibly representing a layer of the sea-bottom several inches thick, are manifestly useless for investigations of this sort unless examined immediately on arriving at the surface, before the different portions have become intermixed; indeed it would be almost as reasonable to expect to find sarcode animals in a Tertiary deposit as in the bulk of the material so obtained. This remark does not apply in the same degree to the samples obtained by the smaller sounding appliances. The old method of taking soundings with the greased lead, though of little utility for the wider purposes of zoological research, was perhaps better adapted for securing a knowledge of the thin superficial layer; and it is quite possible that some of the discrepancies in the accounts given by different observers may be due to the different methods by which their material was collected.

Where a tow-net can be attached to the dredge or trawl, so as to receive amongst other things the organisms thrown up by the rough disturbance of the surface of the bottom-mud, the contents are often of somewhat different character to those of the dredge itself. Not unfrequently a portion of the Foraminiferal shells collected by this means are filled with sarcode; and from such material, after treatment with acid, I have obtained the sarcode-bodies of a number of pelagic species; amongst them, in addition to some of the varieties of *Globigerina*, easily recognised specimens of *Sphæroidina dehiscens* and *Pulvinulina menardii*. It is possible, of course, that these may have been pelagic specimens collected by the net during its passage through the water, but there was nothing in their appearance to suggest that their origin was different from that of the other Foraminifera in the same gatherings; and they have at times presented themselves in numbers far too large, as it appears to me, to be satisfactorily accounted for on that supposition. The sarcode, in all cases, was yellowish-brown and granular, precisely resembling that of in-shore Rhizopods that have in like manner been kept some time in alcohol before being decalcified. The soft, jelly-like lobes