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often of larger size than the pores of the cell-wall, and of greater length, and branched in a complicated manner. Thus there are microscopic characters by which these curious shells can be distinguished from those of other marine animals; and by applying these characters we learn that multitudes of creatures of this type have existed in former periods of the world's history, and that their shells, accumulated in the bottom of the sea, constitute large portions of many limestones. The manner in which such accumulation takes place we learn from what is now going on in the ocean, more especially from the result of the recent deep-sea dredging expeditions. The Foraminifera are vastly numerous, both near the surface and at the bottom of the sea, and multiply rapidly; and as successive generations die, their shells accumulate on the ocean bed, or are swept by currents into banks, and thus, in process of time, constitute thick beds of white chalky material, which may eventually be hardened into limestone. This process is now depositing a great thickness of white ooze in the bottom of the ocean; and in times past it has produced such vast thicknesses of calcareous matter as the chalk and nummulitic limestone of Europe and the orbitoidal limestone of America. The chalk which alone attains a maximum thickness of 1,000 feet, and, according to Lyell, can be traced across Europe for 1,100 geographical miles, may be said to be entirely composed of shells of Foraminifera imbedded in a paste of smaller calcareous bodies, the Coccoliths, which are probably products of marine vegetable life, if not of some animal organism still simpler than the Foraminifera.

Lastly, while we have in such modern forms as the masses of *Polytrema* attached to corals, and the *Loftusa* of the Eocene and the carboniferous, large fossil foraminiferal species, there is some reason to believe that in the earlier geological ages there existed much larger animals of this grade than are found in our present seas; and that these, always