

ment, the multiplication of similar parts rather than differentiation into dissimilar,—that the *onus probandi* obviously lies on those who would find in them a *vera causa* for that advance of development, which shows itself in the *production* of the forms among which “natural selection” is to operate. A single dredging brings up three types of *Orbitolites*, all living and thriving on the same bottom, and therefore, it may be inferred, equally well adapted to their common “environment”; yet one is of the very simplest structure and limited size, whilst another is of extraordinarily complex structure, and of comparatively gigantic dimensions. And it is difficult to imagine that the “complex” structure of the large shelly disk of *Orbitolites complanata* can give it the least advantage in the “struggle for existence” over the small and “simple” *Orbitolites marginalis* which is living along side of it.

Again, while abundance of food and a favourable temperature might produce in the spiral shell of *Cornuspira* a large extension upon the same simple plan, we can scarcely attribute to any such influences the peculiar change that shows itself in the periodical interruption of growth by the formation of a partial septum, which converts it into a *Spiroloculina*. Still less would it give any account of the formation of the complete septum traversed by a row of pores, which marks the assumption of the *Peneroplis* type; or of the subdivision of the spirally-growing chambers into chamberlets, which lifts it upwards into an *Orbiculina*; or of the exchange of the spiral for the cyclical plan of growth, which converts it into an *Orbitolite*. For what possible advantage can be supposed to be gained by any of these modifications, when we find that all those intermediate types, which show them in various grades of advance,—as if arrested in their developmental progress,—maintain their ground under exactly the same conditions, as though none had passed them in the race?

Looking now to the other essential condition of the “environment” of *Orbitolites*,—the preying of higher marine animals upon them,—I find it difficult to conceive that any of the foregoing modifications of structure can give to either type the least advantage in the “struggle for existence.” We know that the smaller FORAMINIFERA serve as food both to Echinoidea and to Asteroidea, since the stomachs of these animals are found to be full of them; and it is probable that the larger forms are eaten by Crustacea and Fishes. But it seems scarcely possible that such creatures can have any preference for a cyclical over a spiral form, or for a complex over a simple. The very fact that—like the vast variety of *Operculinæ* which I formerly described (Phil. Trans., 1859, p. 15) from Mr. Cuming’s gatherings—they all abound in the same localities, seems to forbid the idea that any one form is better fitted for survival than another. Getting out of the way of enemies is obviously out of the question with FORAMINIFERA; and the Fishes whose teeth are adapted to browse upon hard Corals, would not be likely to pick out one species of *Orbitolite* from another, when even a practised Foraminiferalist cannot distinguish them without examination with a magnifying-glass.