

figuring an eight-tentacled polype as extending itself from one of its (supposed) open cells. It was under the influence of his authority that, when I first published (Quart. Journ. Geol. Soc., 1849, p. 31) the results of my examination of the structure of the Australian *Marginopora* (*Orbitolites*), in specimens collected by Prof. Jukes, and kindly placed in my hands by Prof. Edward Forbes, I did not feel justified in calling its Bryozoic characters in question, though I expressed myself doubtfully as to its claim to that position. It was Prof. W. C. Williamson, as I have already pointed out (p. 5), who first asserted the Foraminiferal nature of *Orbitolites*, on the basis of its near affinity to the well-known *Orbiculina adunca*; describing, under the designation *Orbiculina tonga*, what are clearly small specimens (only  $\frac{1}{4}$  of an inch in diameter) of *Orbitolites complanatus*, which he had obtained from shore-sand. This determination partly rested on the structure of the central "nucleus" of the disks, which had been wanting in my own specimens; and of this Prof. Williamson gave a very accurate description, which I was subsequently able to verify in the perfect specimens received from Prof. J. Beete Jukes himself, as well as from other sources,—some of these having been preserved in spirit, and containing the sarcodic body of the animal. It was on these specimens that I based the description of what I then distinguished as the "complex" type of *Orbitolites*, which I gave in my original Memoir on this genus (Phil. Trans., 1856). And having lately made a careful re-examination, both of the shelly disks and of the sarcodic bodies of their contained animals, collected by the naturalists of the Challenger on the slope and summit of the Fiji reef, I am in a position not only to confirm that description in every particular, but to add to it several particulars of much interest.

It is probable that the younger and more delicate forms of *Orbitolites complanata* habitually attach themselves to the surface of marine plants, the most perfect of those which I received from Prof. Jukes, whose surfaces were nearly flat, having been found thus attached; and some of them being so thin in proportion to their diameter, that I can scarcely think it possible that they could remain unbroken in the turbulent water of a reef-slope if not thus supported. The case is different, however, in regard to those more massive disks whose thickness increases as rapidly as their diameter, so that they become more or less deeply biconcave; for as such could only adhere at their margins, they must be liable to become easily detached; and as they are brought up alive by the dredge, they probably go through the later stages of their growth in the free condition. That such must be the case in regard to these large, irregular, "lacinate" forms, of which examples are figured in Pl. VII., is very obvious; and I learn that the specimens of these which contain the coloured sarcodic body were taken alive from sheltered nooks in rock-pools on the summit of the reef, while the dead specimens (distinguished by their absence of colour) were picked up on its surface.

It is of the disks of this species that the great bulk of the Challenger collection on the Fiji reef is composed; and these disks present a range of diameter from 0.04 inch,