

its clear demonstration of the close affinity between *Orbitolites* and *Orbiculina*, whereby, as the place of the latter in the group FORAMINIFERA was beyond all question, that of the former also was assured,—the Bryozoic doctrine of Ehrenberg being thus altogether disposed of. And it followed, as a corollary, that any classification of Foraminifera must be based on wrong principles, which ranked two organisms so essentially similar as *Orbitolites* and *Orbiculina* in different Orders.

Having afterwards come into possession, by the kindness of Mr. Jukes, Mr. Hugh Cuming, Prof. E. Forbes, Prof. J. Quekett, and other friends, of a large series of different types of Orbitoline structure, obtained from different localities, including several very perfect specimens which had been taken alive and preserved in spirit, I applied myself afresh to the study of the genus; and soon found it to have a most important bearing on the great question of the “Range of Variation within the Limits of Species,” which was occupying the attention of some of the most thoughtful Naturalists of that date (1850–56), before the appearance of the new light thrown upon it by the publication of the *Origin of Species*. And in 1855 I presented to the Royal Society a Monograph of the genus *Orbitolites* (Phil. Trans., 1856, p. 181), in which I treated all its forms—fossil as well as recent—that I had been able to examine as varieties of one fundamental type, incapable of being ranged under specific definitions, because of the gradational transition clearly traceable throughout the entire series, from the smallest and simplest *Orbitolites marginalis* to the largest and most complex *Orbitolites complanata*,—this transition showing itself alike in the progressive complication of the general structure, and in the exchange of the *spiral* plan of growth for the *cyclical*.

My subsequent studies of other types of FORAMINIFERA gave me a clearer insight into the place of *Orbitolites* in the series: and in the concluding summary appended to my fourth Memoir (Phil. Trans., 1860, p. 571), I showed how completely the results of my researches were opposed to the principles on which the classification of M. d'Orbigny had been framed; and sketched-out the line of “descent with modification,” by which a division of the primary segments that form the simply-chambered shell of a *Peneroplis* into sub-segments, would give origin to the spiral *Orbiculina*, while the transition from the latter to the perfectly cyclical *Orbitolites* is quite gradational.

When I subsequently undertook, in conjunction with my friends W. K. Parker and T. Rupert Jones, to frame an entirely new classification of FORAMINIFERA on the basis of the principles I had laid down, I felt no difficulty in assenting to their view that the pedigree of this series might be traced yet further back, viz., to those simplest forms of the Milioline type whose shell is a flattened nautiloid spire, altogether destitute of partitions, belonging to that “monothalamous” section which all previous systematists had ranked as fundamentally distinct from the “polythalamous.” “From the undivided spiral of *Cornuspira*” (I pointed out in my Introduction to the Study of the Foraminifera, p. 67) “to the regular scarcely-divided spiral of certain Spiroloculine forms of *Miliola*,