

having been found in certain Jurassic strata; and the Cretaceous forms to which the generic name *Cyclolina* was given by d'Orbigny may perhaps be referable to it. But without a careful examination of their internal structure, it cannot be said with any certainty whether these were *Orbiculinæ* (as the prominence of their centre would seem to indicate) or true *Orbitolites*. It seems to have been in the comparatively shallow and probably warm waters of the Maestricht Chalk that the more specialised Orbitoline type first became conspicuous.

CONCLUDING SUMMARY, WITH A STUDY OF THE THEORY OF DESCENT.

Thus it has been shown, that whilst an examination of the central nucleus of the disk of *Orbitolites tenuissima* enables us to trace back the pedigree of the Orbitoline type to the very simplest "jelly-speck" that can form a porcellanous shell, an examination of the inner rings of certain disks of the highly specialised *Orbitolites complanata* makes it clear that this most "complex" of Orbitolites (the most heterogeneous in structure of all existing "porcellanous" FORAMINIFERA) has had its origin in the most "simple." And yet, as has been also shown, this progressive complication of the calcareous skeleton does not seem to involve either any corresponding differentiation of parts in the sarcodic body, or any such change in its physiological character as implies a higher or more special adaptation to the conditions under which these animals exist.

It was sagaciously remarked by Sir James Paget,¹ long before the Biological revolution wrought by the publication of the Origin of Species, that "the highest laws of our science are expressed in the simplest terms in the lives of the lowest orders of creation." And in accordance with this view, I propose to make this remarkable group of facts the subject of a "Study in the Theory of Descent," for which it presents the following special advantages:—

First, that the remoter ancestry, instead of being indicated (as it commonly is in the developmental history of the higher organisms) by obscure and transitory phases, is here distinctly represented in the earlier stages of the completed form. Thus, if the development of a very young *Orbitolites tenuissima* were checked in its early Milioline stage, it would be accounted a *Spiroloculina*; if checked in its short Peneropline stage, it would be accounted a true *Peneroplis*; and if checked in its Orbiculine stage, it would be accounted a true *Orbiculina*. And so, if the development of the "sub-typical" variety of *Orbitolites complanata* were checked in its first stage, it would rank as an *Orbitolites*

¹ Lectures on Repair and Reproduction, delivered at the Royal College of Surgeons in 1848.