

me had been the starting-point of my rearrangement of the entire group,—of which it is one of the most conspicuous members,—so the examination I have now made, after a lapse of thirty years, of the vastly greater collection of more diversified forms recently obtained, has given me the opportunity of testing those conclusions by their applicability to a far larger range of facts.

I. “The range of variation is so great among FORAMINIFERA, as to include not merely the differential characters which systematists, proceeding upon the ordinary methods, have accounted *specific*, but also those upon which the greatest part of the *genera* of this group have been founded, and even in some instances those of its *orders*.”

No verification of this proposition could be more complete than that afforded by the discovery of the *Orbitolites tenuissima* just referred to. If its development were arrested in its first stage, it would be taken for a young *Cornuspira*; if in its second, it would be ranked as a *Spiroloculina*; if its third stage had been first a little prolonged, and then checked, it would be recognised as a true *Peneroplis*; a specimen which had attained its fourth would be accepted as a true *Orbiculina*; and only when it has entered its fifth and last does it attain that characteristic Orbitoline structure and cyclical plan of growth, which are manifested in the typical *Orbitolites* from the very commencement. Now in the Classification of M. d'Orbigny, which was in 1860 the one generally followed, *Cornuspira* should, in virtue of its undivided cavity, count as a “Monostègue,” *Spiroloculina* is an “Enallostègue,” *Peneroplis* and *Orbiculina* are “Hélicostègues,” and *Orbitolites* is a “Cyclostègue.” That the fundamental characters of four out of the seven Orders which constitute, in M. d'Orbigny's view, the primary subdivisions of the group, should be thus presented by one and the same individual in the successive stages of its growth, is a sufficient proof that those assemblages cannot possibly be *natural*; and the proof obviously applies, *a fortiori*, to their generic subdivision; a very marked example being presented by the relation between *Orbiculina* and *Orbitolites*,—some advanced forms of *Orbiculina* abandoning the spiral for the cyclical plan of growth characteristic of the Orbitoline type, whilst all, save the highest and most advanced forms of *Orbitolites*, exhibit in the earlier stages of their development more or less of the spiral arrangement of their chamberlets, which is the distinctive characteristic of the Orbitoline type.

II. “The ordinary notion of *species* as assemblages of individuals marked out from each other by definite characters that have been genetically transmitted from original prototypes similarly distinguished, is quite inapplicable to the group of FORAMINIFERA; since even if the limits of such assemblages were extended so as to include what would elsewhere be accounted genera, they would still be found so intimately connected by gradational links, that definite lines of demarcation could not be drawn between them.”

Not only have my own subsequent studies of this group fully confirmed me in this conclusion, but I have found it accepted by every one of my fellow-workers in this