

more willingly that they are but modifications, to no material extent, of one or other of those which preceded them, are in no respect preferable, and evolve no new principle, for surely the assumption on Oken's part that the orders, families, and genera in this class, as in the animal kingdom generally, are regulated by a law which throws them into quaternary sections—the number 4 exercising throughout a paramount influence—scarcely deserves this praise. It is different with the attempt of Rapp, Professor of Anatomy at Tubingen, who in 1829 published a small work in German on the natural history of the Actiniæ. He proposed to divide the zoophytes, understanding the term in the same restricted sense that I do, into two great orders, the EXOARIA and ENDOARIA,—the former producing their ova or reproductive gemmules from the exterior, while in the latter “the ova are produced in the interior of the body, and are either conveyed outwards by means of oviducts which open by separate orifices, or they are discharged by the mouth.” The distinction here first pointed out is a very important one, but in common with all single characters is of itself insufficient, and if rigorously adhered to leads to artificial and unnatural combinations. The EXOARIA for example has all its members well and distinctly affined, embracing only three families, 1. the *Hydræ*; 2. *Corynea*, consisting of the genera *Sertularia*, *Tubularia* and *Coryne*; and 3. *Millepora*, limiting probably this denomination to *M. truncata*. The ENDOARIA embraces a wider range—the *Alcyonea* equivalent to the *Polypes tubifères* of Lamarck; the *Tupipora*; the *Corallia* including the genera *Corallium*, *Gorgonia*, *Isis* and *Antipathes*; the *Pennatulæ*; *Zoanthes*; and *Madrepores* with the subdivisions which have been introduced by Lamarck.* So far the order labours under little error, or is perhaps unexceptionable, but its definition would entitle us to place in it also the *Escharidæ*, the *Cellepores*, and *Lymnopolypi*, which are all very alien to the families which Rapp seems to have had too exclusively under his view.

The only other classification I shall notice is Blainville's,—the most elaborate of any; and this author, as it appears to me, is the first who allowed the anatomy of the *Polypes*, abstractedly

* See Edin. Journ. of Geogr. and Nat. Science, ii. p. 406, and Blainv. Man. d'Actinol. p. 59.