

the Foraminifera. The abstract question has but little claim on our attention, but connected therewith are certain practical points which invite a moment's consideration. From a purely biological standpoint, the views expounded by Dr. Carpenter and his colleagues, in the Introduction to the Study of the Foraminifera,¹ are for the most part incontestable, but they embody only one aspect of the subject.

It has been said by Prof. Huxley, speaking of the classification of the Invertebrata generally, that we may expect "the progress of knowledge will eventually break down all sharp demarcations and substitute series for divisions."² Abundant evidence may be found in the pages of the present Report of the completeness of the morphological series in certain families of the Foraminifera. In some families not merely reputed species but reputed genera are connected by a close array of intermediate modifications, with characters differing only in degree of development, as well as by dimorphous forms in which the typical features of allied genera are combined; and in such cases it is not too much to say that "all sharp demarcations" have ceased to exist. There are other groups, however, in which, possibly owing to our defective knowledge, the successive modifications appear to be less closely connected and to possess distinctive characters of greater persistence.

But admitting the intimate relationship which often prevails throughout an entire generic group, admitting even that all the members of a genus may be referred to a common ancestral type, the question still remains how the different terms of each series are to be recognised. The various modifications which have been referred to differ not merely in details of form and structure but in habit; they are met with under diverse conditions as to latitude, depth of water, nature of sea-bottom, and the like, and their modes of life are often totally distinct; furthermore, fossil specimens with similar peculiarities appear to have existed under precisely corresponding circumstances. Whether "species" or not, the more important of them possess characters which afford means of easy identification, and it is obviously necessary that they should be provided with distinctive names. It only remains therefore to be determined what system of nomenclature is to be pursued.

An attempt has been made by Messrs. Parker and Jones, in their elaborate memoir on North Atlantic Foraminifera, to indicate the complicated relationship of the various modifications of the generic and subgeneric types, by the names assigned to them. The result is interesting from a biological point of view, but cannot be regarded as otherwise satisfactory. Such terms as "*Lagena sulcata*, var. (*Entosolenia*) *globosa*" or "*Pulvinulina*

¹ "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 this group; 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."—Introd. Foram., preface, p. x. Passages of similar import occur at p. xi, p. 56, and elsewhere in the same work.

² *Journ. Linn. Soc. Lond.*, vol. xii. (Zoology) p. 226.