

detail ; and as the descriptions and plates of this part of the collection are now finished, and it may be some months before those of the Ascidiæ Compositæ and the Pelagic Tunicates are completed, it is thought best to publish the Report upon the Ascidiæ Simplicæ separately. The Bibliography, however, and some other parts of the Introduction, refer to the whole group of the Tunicata.

The collection generally was in an excellent state of preservation ; but some few specimens, with exceptionally solid tests, had suffered apparently from the apertures having contracted so completely as almost to exclude the alcohol. The precaution of making an incision in the test had been taken in the case of most of the large specimens. Specimens of a few of the Compound Ascidiæ and Pelagic forms had also been preserved in absolute alcohol.

The collection of Ascidiæ Simplicæ consists of eighty-two species arranged in twenty genera. Seventy-four of the species and nine of the genera were new to science.¹ These species added by the Challenger Expedition have not necessitated the formation of a single new family. Although a number of new genera have been required, usually for the forms from great depths, yet these have all found a place in one or other of the four families already known. The new genera have in several cases been of great interest, as they have demonstrated affinities between known forms, and have exhibited combinations of characters necessitating in some cases a revision of the definitions of old genera, and even affecting in one or two instances our ideas with regard to the characters of the families.

In 1876 Professor Moseley described, in the Transactions of the Linnean Society, two very remarkable Ascidiæ which he had investigated during the voyage of the Challenger. The first of these, *Hypobythius calycodes*, belongs to the family Ascidiidæ ; the second, *Octacnemus bythius*, seems to me to be nearer to the Thaliacea than to the Ascidiacea, and consequently comes into the second part of this Report.

The new species are all illustrated and described in detail. Species previously known are not figured, except in cases where they have been imperfectly described, or where the Challenger specimens show some special feature.

¹ Most of these new species were named and briefly described in my four Preliminary Reports upon the collection read before the Royal Society of Edinburgh (see Proc. Roy. Soc. Edin., Sessions 1880-82).