

I have endeavoured as much as possible to keep pace with the rapid additions of new species for which science has been indebted to various observers, amongst whom more particularly should be mentioned the Rev. T. Hincks, Mr. P. H. Macgillivray, Mr. J. B. Wilson, and Mr. Goldstein and others. But with the utmost desire to do full justice to priority of publication, numerous omissions will, I fear, be observed, in extenuation of which I can only plead either complete oversight or the circumstance that in many cases I have not found it possible to identify with certainty the species intended from the published figures and descriptions, in the absence of specimens. This remark applies more especially to certain more or less well-marked natural groups or families in which the common characters, so to speak, are so strongly marked as in some cases to mask the more minute specific features. Amongst these groups may be noticed more particularly the Reteporidae, Salicornariadæ, Celleporidæ, and Adeoneæ, amongst which, as well as in many other of the provisional or artificial escharan genera, are numerous forms which cannot be distinguished with certainty in the absence of the characters afforded by the chitinous parts.

The number of species of CHEILOSTOMATA contained in the Challenger Collection, so far as I have been able to determine them, is about two hundred and eighty-six, of which, at the time when the collection came into my hands seven years ago, no less than one hundred and eighty appeared to be new, or were unrecognisable by me.

Nor is this large proportion of new species much to be wondered at, seeing the peculiar conditions, especially as to depth of water and distance from land, under which the majority of the Challenger's dredgings and trawlings were made.

Though more or less visible throughout the greater part of the collection, the difference between a collection of Polyzoa made in deep water or at a distance from shore, and one made in the same geographical region near the shore, or in shallow water, is in no case so strongly exemplified as in that of the almost exclusively Australian genus *Catenicella*.

On the voyage of H.M.S. "Rattlesnake," employed in a surveying expedition on the coast of Australia and the neighbouring islands, the collections were of course chiefly made near the shore or in soundings of a moderate depth. On that expedition Mr. J. Macgillivray collected no less than seventeen or eighteen species of the genus, to which, either from Australia or New Zealand, about as many more have since been added, so that the number of known species of *Catenicella* living in comparatively shallow water may be roughly estimated at between thirty and forty; all with two or three exceptions peculiar to the Australian region.

Belonging to this genus the Challenger Collection contains eight species, seven of which only were procured in the Australian region at depths varying from 30 to 120 fathoms, and from closely contiguous Stations. An eighth, and the only new species, was obtained in the South Atlantic region off the coast of Brazil, where the depth is recorded as 350 fathoms.