

“ 3. Chonelasmatidæ, flat or beaker-shaped, with straight funnel-shaped canals which perforate the walls perpendicularly and open alternately on either side.

“ 4. Volvulinidæ, tubular, goblet-shaped, or massive, with crooked canals, more or less irregular in their course.

“ 5. Sclerothamnidæ, whose arborescent body is perforated at the ends and sides of the branches by round narrow radiating canals.

“ The Inermia, which are devoid of either uncinata, clavulæ, or scopulæ, are divided into the following four families :—

“ 1. Myliusidæ, in form of low wide beakers, whose wall is complexly folded and forms lateral exhalent tubes.

“ 2. Dactylocalycidæ, of goblet or flat saucer shape, with thick wall, consisting of numerous parallel anastomosing tubes of equal breadth, which end on the same level without and within.

“ 3. Euryplegmatidæ, in the form of goblets or ear-shaped saucers, in whose walls there run parallel to the surface a number of dichotomously branching canals or partially covered-in grooves, which are due to a deep longitudinal folding.

“ 4. Aulocystidæ, of massive rounded form, consisting of a system of anastomosing tubes, which pass outwards from the sides of an axial cavity, and have intercanals between them. These latter, as well as the lateral terminal apertures of the tubes, are covered by a thin membrane which is provided with slit-like openings over the lamina of the tubes, and thus assumes a sieve-like character.

“ A critical examination of all recent Hexactinellida, hitherto described, has led me to the conclusion that forty-two species have been sufficiently accurately defined for recognition, those being excepted which were described by Professor Wyville Thomson in preliminary communications from the Challenger Expedition; whilst in the rich material which was brought home by this Expedition I have been able to distinguish seventy-nine species, of which nineteen had been already described, while the remaining sixty are new. It is seen therefore that the investigations of the Challenger have raised the number of known species of Hexactinellida from forty-two to one hundred and two.

“ The forty-two species previously known belonged to thirty genera, so that there were on an average 1.5 species to each genus; the sixty species which I have constituted are distributed in thirty genera, allowing on an average two species to each genus, whilst the total number of one hundred and two species, at present known, belong to fifty-three genera. Hence, as the result of the Challenger Expedition, the ratio between the numbers of the genera and species has been diminished from 3:4 to almost 1:2.

“ This is readily understood when we consider that the first forms of a large and hitherto unknown group of animals which chance to be obtained, will as a rule belong to different divisions of the group; whilst the more this group becomes known the