

## METHODS EMPLOYED.

The methods employed in investigating the structure of the Stylasteridæ were mostly similar to those made use of in the case of *Millepora*.

A brief examination of some of the soft structures of certain of the Stylasteridæ was made while they were in the fresh condition, and especially of the various elements of *Sporadopora dichotoma* and of the female gonophores of *Cryptohelia*; but since the trawl-net by which most of the specimens available for examination were obtained came up late in the day, very little, unfortunately, was able to be done in this way.

Portions of the corals were preserved by means of chromic acid, osmic acid, absolute alcohol, and glycerine, and they were subsequently decalcified and examined in the usual manner by means of sections. In cutting the sections, a method described by Milchakovics, Arch. für mikroskopische Anatomie, ii. Bd. 3<sup>tes</sup> Hft., p. 386, was adopted and found to yield most successful results. The method is especially valuable for cutting fine sections of structures, the parts of which are loosely held together, and where it is desirable to maintain the exact relations in position of parts which in the sections otherwise become entirely disconnected from one another. A strong jelly composed of equal parts of glycerine and gelatine is used as an imbedding substance. It permeates the tissues and takes the place of the hard calcareous supporting structures which have been removed by the acid. The sections are mounted in glycerine, and the imbedding substance which is left *in situ* in the sections becomes perfectly transparent; in fact, almost invisible in this fluid. No doubt Dr von Koch's method referred to above will yield valuable results in the future.

STRUCTURE OF THE HARD AND SOFT PARTS IN THE SEVERAL GENERA OF THE  
STYLASTERIDÆ.

I now proceed to a detailed description of the structure of the several genera of the Stylasteridæ.

Each of the members of the family is composed of hard inert calcareous parts, or cœnosteum, and soft living structures. In the case of each genus the structure of the hard parts will be first treated of, and then that of the soft parts. The latter consists of cœnosarc, zooids, and gonophores, and will be described under these several headings in each case. A full description of all details will be given in the case of *Sporadopora*, which will be first accounted for, and in the cases of the other genera only those points in which they differ from it will be dwelt upon.