

The only representative of the genus *Dactylocalyx* procured by the Challenger Expedition was found in the north temperate zone. On the other hand *Myliusia callocyathus* and *Aulocystis zittelii* were found in several localities in the tropics.

I have discussed in some detail the topographical distribution of the Challenger Hexactinellida, because I believe that the uniformity of the exploring and collecting methods, as well as the wide extent of the exploration, make the results of great value.

In estimating the number of species obtained by the Challenger in different localities, it is instructive to compare the statistics with those which are afforded us by the prolonged and enthusiastic industry of Dr. Döderlein, who made during his lengthened residence in Japan a collection of Hexactinellids, partly by purchase in Enoshima, and partly by his own dredging in Misaki Bay near Tokio, which was also explored by the Challenger. The results of his explorations have been described in detail in this Report along with the Challenger material. His collection included in all 16 species:—

1. *Euplectella oweni*, Marshall, dry.
2. *Acanthascus cactus*, F. E. S., dry.
3. *Rhabdocalyptus mollior*, F. E. S., dry.
4. *Crateromorpha meyeri*, Gray, dry.
5. *Hyalonema sieboldii*, Gray, dry.
6. *Farrea occa*, Carter, well preserved in spirit.
7. *Farrea vosmaeri*, F. E. S., dry.
8. *Farrea sollasii*, F. E. S., dry.
9. *Periphragella elisæ*, Marshall, dry and well preserved in spirit.
10. *Aphrocallistes bocagei*, Wright, in spirit.
11. *Aphrocallistes ramosus*, F. E. S., well preserved in spirit.
12. *Aphrocallistes vastus*, F. E. S., dry.
13. *Chonelasma dæderleinii*, F. E. S., well preserved in spirit.
14. *Chonelasma calyx*, F. E. S., dry.
15. *Hexactinella tubulosa*, F. E. S., dry.
16. *Hexactinella cyathus*, F. E. S., dry.

On the Challenger Expedition three soundings were made in the Bay of Misaki, at Stations 232, 236 and 236A. Station 232 yielded, from a depth of 345 fathoms, several specimens of *Hyalonema (Stylocalyx) apertum*, and Station 236, from a depth of 775 fathoms, a fragment of an undefined species of Dictyonina. In the cursory exploration of the Challenger only two Hexactinellida were thus obtained at the same locality where the prolonged search of Dr. Döderlein was rewarded by finding sixteen species. It is further of interest that among these sixteen species, the species found by the Challenger—*Hyalonema (Stylocalyx) apertum*—is not included, though it