

## GENERAL REMARKS ON THE ORGANISATION OF THE DEEP-SEA KERATOSA.

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The general organisation of the sponges is widely discussed in the voluminous and most valuable reports on the various main groups of this class, which form such an important part of the Challenger work, viz. :—Sollas on the Tetractinellida (Zool. Chall. Exp., part lxiii. vol. xxv., 1888), F. E. Schulze on the Hexactinellida (Zool. Chall. Exp., part liii. vol. xxi., 1887), Ridley and Dendy on the Monaxonida (Zool. Chall. Exp., part lix. vol. xx., 1887), Poléjaeff on the Keratosa (Zool. Chall. Exp., part xxxi. vol. xi., 1884), and Poléjaeff on the Calcareæ (Zool. Chall. Exp., part xxiv. vol. viii., 1883). The greatest part of the general morphological and physiological considerations which are given in this rich series of reports, and mainly in those of Sollas and F. E. Schulze, may be accepted also for the small group of sponges which are described here as Deep-sea Keratosa. To avoid repetitions, therefore, it is sufficient to refer to the last-named reports, and to add here only a few short remarks on those peculiarities which deserve special attention in the organisation of the horny sponges of the deep sea.

### INDIVIDUALITY AND EXTERNAL FORM.

The external form of sponges, as is well known, is extremely variable, and is generally of little morphological importance, since often sponges of very different internal structure possess the same external form, and, on the other hand, often two closely allied sponges are quite different in external shape. This is easily explained if we consider as the simplest individual sponge the *Olynthus*, or a Gastræa-like simplest tubular person, and if we assume that the body of most sponges is a corm or stock composed of numerous such persons, viz., the flagellated chambers (or, in the Asconidæ and Ammoconidæ the equivalent branches of the tubular body). The external form of the corms or stocks (in contradiction to that of the component persons) is very variable, and subject to adaptation also in other classes of corm-building lower animals, e.g., in the closely-allied Hydroids and Corals (Hydrozoa and Anthozoa). When we compare the single individuals (persons or zooids) of a massive corm of Hydroids or Corals and the