corresponding individuals of sponges (the flagello-chambers), we find similar relations between the associated persons and their large community. The variable manner in which the persons or zooids are connected and arranged, and in which the common canal-system of the community (the cœnenchyma) is developed, often shows a striking similarity in both cases.

The theory that the true primordial form of all sponges was an *Olynthus*, and that all the other forms were developed from an *Olynthus* stage (*Olynthula*), was first stated in 1872 in my Monograph of the Calcispongiæ (in connection with the Gastræa theory), and has now been accepted by most modern spongiologists, by F. E. Schulze, Sollas, Lendenfeld, Vosmaer, Marshall, Keller, and others. Many of these recent observers have demonstrated the existence of a homologous larval form (*Olynthula*) in the ontogeny of very different sponges. But ripe and fully-developed sponges, which persist in the primitive *Olynthus* form, and produce in this form eggs and sperm, were known hitherto only among the Calcarea (*Calcolynthus*).[1] It is therefore a fact of general interest that among the Deep-sea Keratosa collected by the Challenger, there occurs a small ripe sponge (with eggs) which seems to be a true horny *Olynthus* (or, more strictly speaking, an arenaceous *Olynthus*), the remarkable *Ammolynthus* figured in Pl. VIII. figs. 1, 2. Unfortunately the delicate soft parts of the tissues, in this as well as in all the other Deep-sea Keratosa, were very badly preserved, so that the histological evidence of its true nature could not be demonstrated with all the desirable certainty.

Regarding the *Olynthus* as the simple sponge individual or zooid (Gastræa), and as equivalent or homologous to a single tubular branch in the Homocœla, and to a single flagello-chamber in the Heterocœla, we must regard all other sponge-forms as corms, composed of numerous Olynths. They exhibit the same relation to *Olynthus* as the various Hydroid corms bear to *Hydra*. The external form of these corms or stocks in the Deep-sea Keratosa has the same variability and wide divergence as in the other groups of the class. This is especially the case in the smaller forms, the Ammoconidæ and Psamminidæ, where we find irregular, crusty, and massive corms, flat discs, tuberose lumps, branched and reticular stocks, &c. Among the larger Keratosa of the deep sea the prevailing and most common form is that of a thin flabelliform leaf (*Stannophyllum*, Pl. I.; *Psammophyllum*, Pls. IV., V.). This form (rarely occurring in other sponges) is remarkable for its perfect bilateral symmetry (or, strictly speaking, the amphithect ground form). The regular symmetry is especially striking in those forms in which branched ribs are disposed on both sides (Pl. I. figs. 3, 4; Pl. IV. fig. 5). The two flat sides of the reniform leaf exhibit constantly the same structure; it is therefore probable that these flabelliform sponges arise vertically from the sea-bottom, attached by the slender pedicle, which is inserted in the middle of the basal concave margin.

[1] See pl. i., pl. vi. fig. 1, pl. xi. figs. 6–9, pl. xiii., &c., in my Monograph.