

Ascones, and this is just the circumstance to which Vosmaer does not pay sufficient attention. "And an Olynthus," says Dr. Vosmaer further, "is nothing but a primitive Ascon." I understand the Olynthus otherwise. The Olynthus is a neutral being, and the Ascon one of its modifications, the Sycon another. An Olynthus may increase longitudinally only, without lateral growth, and in that case it will give origin to an Ascon, the most marked peculiarity of which, in comparison with all other sponges, consists in the slight development of its mesoderm, in other words, in very marked thinness of its walls. An Olynthus may also grow in all directions, in length as well as laterally. This lateral growth would consequently necessitate a larger increase of the mesoderm. Its strong development is not a matter of absolute necessity: a good number of Calcarea (Ascones), though almost devoid of mesoderm, prosper notwithstanding. The mesoderm is, however, a very important constituent part of the organisation of the sponge, for in it the skeleton and generative elements are situated, and it is evident that under certain circumstances its strong development might have proved to be of great importance—the majority of sponges are rich in mesoderm, and we know that its early development is one of the chief characters differentiating the Porifera from the Cœlenterata proper. Its strong growth, however, according to the law of correlation of the organs and with respect to Olynthus, cannot remain without consequence. Let us now suppose—and this supposition will be, if not proved in the scientific sense of the word, at least shown to be probable—let us suppose that the cells which are charged with the feeding of the sponge are chiefly pavement-cells, indifferently of ecto- or endodermic origin, and not flagellated cells. The lateral growth in the Olynthus must in any case have a limit, for, its walls becoming thicker, the outer surface covered with pavement-cells must, sooner or later, according to geometrical laws, become too small to feed the whole. If this limit be passed, a change in the organisation becomes necessary, the surface covered with pavement-cells must, in some way or other, grow larger. In order to form a Sycon, pocket-like invaginations are formed in the Olynthus; we have seen, however, that these invaginations, viz., radial tubes, bring about an absolute not comparative enlarging of the outer as well as of the inner surface, and that, alone, they would be of no use; every thin-walled radial tube, like an independent Ascon, would be able to take care of its own feeding, but would be of no service to the comparatively thick-walled central tube representing the supporting apparatus of the whole. We should therefore expect here a corresponding accommodation, and this accommodation I see in the substitution of pavement-cells for the flagellated cells covering its inner surface in the embryonal stage of development, the radial tubes taking upon themselves alone the function of the circulation of the water. To sum up, I formulate my conclusions in the following manner:—

The Ascones and the Sycones are two fundamentally different modifications of the Olynthus, their chief distinction consisting in the unequal development of the mesoderm,