

different disposition, that one would take them for an entirely new formation. And if in *Sycandra compressa* the individuality of the radial tubes still finds its expression in the disposition of the acerate spicules, the radial tubes in *Sycortis lævigata* or *Sycetta cupula*, enclosed between two distinctly parallel layers, that of the cortex and that of the gastric surface, show as yet not the slightest trace of any independence. The tubar skeleton of these latter sponges is still articulated; but, owing to the presence of an independent cortex, its transformation into the non-articulated, under certain conditions, may be very easily imagined.

Let us admit that some of the dermal triradiate spicules, for instance, in *Sycortis lævigata*, develop a fourth apical ray—this ray will have a centripetal direction; and again let us imagine that the subgastric triradiate spicules grow larger, so that their centrifugally directed basal ray approaches more or less nearly the dermal extremity of the tube; it is evident that the tubes thereby receive a new system of supporting spicules, which render the former one—the articulated skeleton—superfluous. There are not always present, however, quadriradiate spicules, which, lying with their facial rays in the plane of the dermal surface, support with their apical rays the radial tubes. Such spicules may be triradiate also, as is the case with *Sycaltis glacialis* (Kalkschwämme, Bd. iii., pl. xlv. fig. 5), *Amphoriscus poculum*, n. sp. (Pl. IV. fig. 4), &c.

Now I have found—and this is a very interesting fact—that in *Amphoriscus poculum* and in *Amphoriscus flamma* (Pl. V. fig. 3b), these subdermal triradiate spicules have precisely the same form as those of the cortex, the former differing from the latter only in the fact that one of their rays exceeds the others in length. According to the position of these subdermal triradiate spicules, their longer ray being directed centripetally, and their two remaining rays diverging towards the dermal surface, one would say that their longer ray is the basal. This, however, is not admissible. Its length being variable, there are in the species just named many subdermal triradiate spicules, which, if removed from the soft parts of the sponge, would certainly be confounded with the spicules of the cortex, and, as their position also is not quite constant, their rays lying sometimes in a plane forming an acute or an obtuse angle with the longitudinal axis of the sponge, the only deduction possible is that these subdermal triradiate spicules are nothing but spicules of the cortex, modified with respect both to their form and to their position, and that, consequently, their longer centripetally directed ray is one of the lateral rays. This conclusion is of great moment, for, in connection with other anatomical and embryological facts, before communicated, it presents a conclusive proof that the Sycones with non-articulated tubar skeleton owe their origin to Sycones whose tubar skeleton was articulated. The transformation of the first type into that characteristic of the family Leucones can now be followed step by step.

There are amongst the Sycones which are characterised by a non-articulated tubar skeleton, forms in which the radial tubes, instead of ending each with its own gastric