

might, from the general structure of the tube, have been expected. Of these eight, four are primary, arranged as described in the stage of four, the remaining four are smaller secondary tubes, they lie in the outer angles of the four primaries, one between each pair of these. *Stage of ten canals.*—Ridley also figures a stage of ten, in which the four primary have the usual arrangement, but there are only two secondaries, one at each end of an axis of symmetry passing between the pairs of primaries; the remaining four canals are of the third order (tertiaries), and occupy the outer angles between the primaries and secondaries. *Stage of sixteen canals* (Pl. XVIII. figs. 1, 18, 19).—In the largest cloacal tube in the Challenger collection is a stage of fifteen (sixteen, with one tube, required to complete the symmetry, suppressed), the four primary tubes (I., fig. 18) have the usual arrangement, then follow four secondaries (II., fig. 18), situated in the outer angles formed by contiguous pairs of primaries, and finally seven (8-1) tertiary (III., fig. 18) are present, situated each in the outer angle between a primary and secondary canal. The eighth required for complete symmetry is altogether absent, not being represented even by a rudiment; the basal part of the tube, however, is not present, or possibly a trace of the missing canal might be found near its proximal end. In *Agilardiella*, Marshall represents a stage of eight, in which all the tubes are of the same value, *i.e.*, primaries.

Proximally the cloacal tube is traceable into continuity with the cortex and choanosome; the main excurrent canals of the latter are continued as the component tubes of the cloaca, and its radiating spicular sheaves are continued into the skeleton of these tubes.

The spicular sheaves which approach the cloacal tube differ from the rest which enter the cortex, their cladomes are developed earlier, so that the young triænes are found quite close to the spicular nucleus, and from the earliest developed cladomes of these a regular series of growing forms succeed till the cloacal tube is reached and entered. The arrangement of these spicules is similar to that already described in *Tribrachium* (p. 157); but as there are at least four tubes present in the cloaca of *Tethyopsis*, and never more than one in *Tribrachium*, so in the former case the spicules are more numerous; in the latter the young spicules of the tube could be traced into connection with an inflexion of the cortex; in the former nothing of the kind is to be observed, the spicules destined to enter the cloaca lying entirely within the choanosome.

The youngest form of the cloacal cladoxea closely resembles that of the orthodiæne of *Tribrachium*; there is indeed no discernible difference, except in the absence of a rudimentary third cladus, which I could not find, owing probably to the fact that I did not employ all the means of research available. Having found the rudiment in *Tribrachium*, there was less necessity to do so in this case. The young spicules observed are not only like those of *Tribrachium*, but, except for the absence of a third cladus, precisely similar to those of normal Stellettidæ, the differences which distinguish the adult spicule being due to subsequent excess and defect of development.