

mammiformis, nobis. In the particular stage referred to the larva is more or less spherical in form, and composed of an outer (? single) layer of small, ciliated, ectodermal cells, and a central mass of much vacuolated tissue. The central mass of tissue has probably been a good deal affected by the action of the spirit; it appears now to consist of strings of plasma (apparently composed largely of stellate cells) containing numerous spherical nuclei and nucleoli. Probably in the living embryo this central mass was composed of a continuous, structureless, gelatinous matrix with embedded stellate cells, like the ground substance of the adult sponge, but more delicate. Conspicuous in it are numerous stylote and anisochelate spicules, arranged apparently without any order. The palmate anisochelæ are more numerous and appear to have reached a higher state of development than the styli. They average about 0.05 mm. in length as against 0.072 mm. in the adult sponge. The styli on the other hand measure only about 0.34 by 0.005 mm., as against 1.0 by 0.019 mm. in the adult.

The entire embryo measures up to nearly 1.0 mm. in diameter, and is enclosed in a membranous capsule. The ectodermal layer in three specimens which we have examined at about this stage exhibits foldings or invaginations which may or may not be due to the action of the spirit.

In a younger embryo of the same sponge we have been able to trace the development of the palmate anisochelæ, as recorded on p. xx.

In *Esperella biserialis* the embryos found in the spicular axis of the sponge agree essentially with those just described for *Esperella mammiformis*, i.e., they consist of an irregular sphere of small ectodermal cells enclosing a central mass of tissue with numerous spicules. In one embryo, however, the ectodermal layer appears to be absent from one pole, at which the central mass of tissue comes to the surface. The embryos are again enclosed in membranous capsules.

In *Myxilla nobilis* we have found numerous embryos in various stages of development, amongst which a stage corresponding with that first described is again common. The embryo, about 0.24 mm. in diameter, consists of a sphere of ectoderm, which may be invaginated in many places, composed of small, prismatic (?) cells, enclosing a mass of tissue, in this case rather compact, containing numerous megasclera and microsclera. It is important to observe that the styli of the embryo, which are usually arranged in a single dense sheaf with their bases all together at one side of the embryo and their apices projecting into the centre, are all entirely spined and resemble the echinating styli of the adult sponge, and not the large styli, which in the adult are entirely smooth or only very slightly spined at the base (*vide* p. 141). They are straight, and gradually and sharply pointed, sometimes with distinct heads, and measure about 0.11 by 0.005 mm. The chelæ appear to develop before the styli. The characteristic arrangement of the megasclera in the embryo appears to have already been noted by Carter in an embryo of a siliceous sponge.¹

¹ *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xiv. p. 333, pl. xxii. fig. 28, e.