

It is indeed difficult while studying this reticulum of connective-tissue corpuscles to resist the idea that we are here dealing with something that plays the part of a nervous system."

In the Challenger sponges I have not yet traced the collencytes into continuity with the ectodermal cells, a fact which makes somewhat for Lendenfeld's theory as to the function of the supposed æsthocytes, but I have repeatedly traced them into connection with each other, with the choanocytes of the flagellated chambers, and with the myocytes, and thus I entertain no doubt as to the general protoplasmic continuity of the cellular elements of the sponge. The continuity of the choanocytes of a flagellated chamber with each other has already been alluded to (p. xxxviii).

### *Scleroblasts.*

Lieberkühn, Müller's Archiv f. Anat. u. Physiol., pts. iv. and v. pl. xv. fig. 22, 1856.

Carter, Ann. and Mag. Nat. Hist., ser. 2, vol. xx. p. 21, pl. i. fig. 8, 1857.

O. Schmidt, Zool. Ergebnisse d. Nordenfahrt, p. 120, pl. i. figs. 19-21, 1872.

Carter, Ann. and Mag. Nat. Hist., ser. 4, vol. xiv. p. 13, pl. xxi. figs. 26, 27, 28, 1874.

Sollas, Ann. and Mag. Nat. Hist., ser. 5, vol. v. pp. 141, 142, pl. vii. fig. 21; p. 256, pl. xi. fig. 18; p. 401, pl. xvii. figs. 18-22, 1880; vol. ix. p. 159, pl. xviii. figs. 12, 17, 18, 1882.

Polejaeff, Calcareae, Zool. Chall. Exp., pt. xxiv. p. 32, pl. vi. fig. 3, 1884.

Lieberkühn and Carter in their classic studies of *Spongilla* describe the oxeas as originating within a fusiform spicule-cell or scleroblast, appearing at first as immeasurably thin, hair-like rods lying transversely to the length of the cell. O. Schmidt describes the chelæ, sigmas, and orthodragmas of *Esperia* as formed within a spicule-cell (scleroblast), the nucleus of which lies on one side of the orthodragma and in the concavity of the chela or sigma. Carter next described the chelæ of *Esperia ægogrophila*, Johnston, as developing within the embryo in scleroblasts of from 0.0084 to 0.028 mm. in length, and mentions the interesting fact that the chelæ, which are anisochelate in the adult, are isochelate at their first appearance. The sigmas and toxas also originate in scleroblasts, the latter several in one cell, so that at their inception they are dragmas. This is not true of all such spicules, however.

My own paper states that the sterraster of the Geodine sponges originates in a scleroblast, the nucleus of which lies in the hilum of the spicule. The young forms of the sterraster occur only in the choanosome, where they are present in considerable numbers, they are supposed to travel thence into the cortex, where they form a dense spicular layer. In this layer none but fully grown spicules are found. I have also shown that the large oxeas of *Tetilla*, *Stelletta*, and *Geodia* are formed each within a single scleroblast, which persists at least up to the time that the spicule has attained its full growth.

Polejaeff represents the remains of a scleroblast enveloping a large oxea in a calcareous sponge. The examination of the Challenger sponges fully confirms previously obtained results, and extends them.