

ordinary collencyte smooth, shining, clear, colourless globules or granules make their appearance, they take a deep stain with hæmatoxylin and other tinctures, and are probably of an albuminoid nature; at all events they can be shown to be neither starch, fat, inulin, tunicin, cellulose, nor sugar. In *Thenea muricata* I have given the following account of them:—"In an irregularly defined layer, a little below the investing epithelium of the sponge, at or about the level of the first or second vesicle of the incurrent canals, the collencytes have undergone a remarkable internal change (Pl. XVII. fig. 18): within the granular protoplasm a smooth shining globule makes its appearance, it is colourless, transparent, homogeneous, and highly refringent. In some corpuscles only one such body is present, in others several, lying in close contact with flattened apposed faces. The numbers in the several groups are not in any regular progression, nor are the granules of a group all of the same size; there may be one large and several small ones. Sometimes they lie in immediate contact with the protoplasm of the collencyte, more often separated from it, lying in a vacuolated space. We are able fortunately to determine the stage in which they earliest appear by finding them in evidently very young corpuscles [collencytes] distinguished by the presence of a comparatively large quantity of finely granular and deeply staining protoplasm. From this starting point we can readily trace their history as they are followed deeper into the interior of the sponge. In corpuscles a stage older than the preceding we find the protoplasm becoming less granular, staining much less deeply with carmine, and diminished in quantity, so that it forms a mere spherical or oval shell around the granules, but still retains its outwardly radiating processes; these, however, in the next stage disappear, and the [thesocyte] becomes a mere oval or spherical sac filled with the products of its own secretion. The shining granules next begin to diminish in number and size, and finally disappear."¹

Chromatocytes or Pigment-Cells.—Various kinds of pigment-cells are met with in the Choristida; sometimes they present themselves as collencytes crowded with pigment-granules, like those represented by Schulze in *Euspongia officinalis*.² This is the case in *Pachymatisma johnstonia*, pigmented collencytes occurring plentifully scattered throughout the cortex. Sometimes they occur as minute clusters of pigment-granules, without any evident associated protoplasm (*Craniella simillima*, p. 33); more usually they form rounded or oval cells with definite cell-walls, and scarcely any other contents than pigment-granules, which are usually spherical, and of much larger dimensions than those of pigmented collencytes (*Stryphnus niger*, p. 172, Pl. XIX. figs. 11, 20). The chromatocytes of *Stryphnus* are of unusually large size, frequently they are much smaller, as in *Tetilla merguensis* (p. 15). Occasionally by repeated multiplication they form cellular aggregates, or chromatohyme; round or oval masses of such tissue occur in the cortex of *Craniella carteri* (p. 36, Pl. I. figs. 34, 35).

¹ *Thenea muricata*, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. ix. p. 447, pl. xvii., 1881.

² *Zeitschr. f. wiss. Zool.*, Bd. xxxii. pl. xxxv. fig. 7.