

between the two is generally sharply defined by the peculiar spicules—marginalia—of the oscular orifice (Pl. XXXVIII. fig. 1).

As in the dermal skeleton, so here, under the more superficial, deeper spicules occur, that is, spicules further removed from the inner bounding surface, and more embedded in the parenchyma. These are strong hexacts or pentacts with their radial rays disposed at right angles to the inner surface, and with the four cruciate transverse rays parallel to the same (Pl. XXII. figs. 2, 5). In harmony with the term hypodermalia, these may be designated *hypogastralia*. I must, however, note that hypogastralia are often wanting where hypodermalia are present, and the same is true of other typical spicules like floricomes, amphidiscs, clavulæ, scopulæ, &c. It may be laid down as a rule that the spicules of the gastral skeleton resemble the dermalia of the same Sponge in general characters, but not in their special development, dimensions, and the like. Thus, for example, the radial axis in one or two rays in the gastralia is frequently well developed, while it is absent in the dermalia, and so hexacts in the gastral membrane are often contrasted with pentacts in the dermal membrane (Pl. LVIII. fig. 2). In other cases the free ray is short and broad in the dermal pinuli, but long and thin in the gastral (Pl. XXV. fig. 3). Where the dermal clavulæ exhibit a knob-like extremity, the corresponding gastralia have long anchor-teeth (Pl. LXXV. fig. 2). Dermal scopulæ with pointed teeth are contrasted with gastral scopulæ with button-like teeth (Pl. LXXVII. fig. 2), and so on.

As the dermalia of the outer skin do not usually pass into the afferent subdermal spaces and canals, so the gastralia do not, as a rule, pass from the inner skin bounding the gastral cavity into the efferent canals (Pl. XXI. fig. 2; Pl. LVI. fig. 2). In not a few Hexactinellida, however, there is a development of peculiar *canalaria*, which lie on the inner surface of the efferent canals, and appear to be a continuation of the gastralia; whether it is that, in the absence of a special continuous gastral skin, the efferent canals open directly with large orifices into the gastral space, and the gastral skeleton simply enters into the efferent passages (Pl. XXXV. fig. 2; Pl. XXXVI. fig. 1), or that a special gastral skin encloses the gastral space with a well-developed gastral skeleton, while the efferent passages are, in addition, provided with similar spicules—*canalaria* (Pl. XLVI. fig. 1). The *canalaria* are usually present only in the main stems and large branches of the efferent canal system, but are not continued into the ultimate blind ends (Pl. XXXVIII. fig. 1).

Parenchymalia.

While in the dermal and gastral skeleton there is always a very distinct and typical agreement in the position and arrangement of the spicules, this is not the case everywhere with the parenchymal skeleton. I think, however, that here also certain simple relations may be recognised as original, from which the less regular have been secondarily developed.