Zoology Part LIII: Report on the HEXACTINELLIDA. By Professor F. E. Schulze. Bound in Volume 21,1887.

above-described species, in exhibiting a body broader than long (Pl. XXXV. figs. 1, 2). The breadth bore to the length an average proportion of 2 : 1, so that the whole body of the sponge appeared as compressed from above downwards. The lateral margin is, however, never sharp. From the middle of the superior gently convex surface, an irregularly roundish, narrow and sharp, oscular fringe projects, consisting of a circle of parallel rod-like spicules (Pl. XXXV. figs. 1, 2). Through the roundish oscular opening, one sees the bluntly rounded conus centralis projecting to the level of the aperture, while from the sides of the former four cruciately disposed main septa extend laterally and inferiorly. Between these cross septa the ramified efferent canals penetrate into the parenchyma (Pl. XXXV. fig. 2). The surface of the under side is but rarely simply convex, as in Pl. XXXV. fig. 1; it usually appears somewhat flattened or even pressed slightly inwards. The portion from which the tuft of basal fibres springs is however usually somewhat protruded. The spicules of the basal tuft are rather strongly developed, in large specimens almost attaining the thickness of pins. They are, however, not preserved throughout their whole length. Sometimes the bunch of spicules attains the thickness of one's little finger (Pl. XXXV. figs. 1, 2). The largest specimen measured 12 cm. in breadth, and about 6 cm. in height; the smallest was 5 cm. broad, and 3 cm. high. Ten perfect specimens and some fragments were procured.

The parenchyma of the sponge is supported by the usual medium-sized smooth oxyhexacts, and by numerous smooth, straight, oxydiacts with tolerably large central nodes. More rarely a terminal swelling occurs (Pl. XXXVI. fig. 2). Between the above forms lie a great number of small rough oxyhexacts, with straight or curved rays (Pl. XXXVI. figs. 9, 10; Pl. XXXV. figs. 9, 10).

In the dermal skeleton somewhat large, smooth hypodermal oxypentacts occur, in which the four tangential rays are *not* disposed at right angles to the radial proximal in a single plane, but are bent somewhat inwards (Pl. XXXVI. fig. 8). The proximal ray is generally three or more times longer than the tangentials. Externally the skin is thickly covered with numerous autodermal pentact pinuli, with four somewhat short and thick basal rays bearing small firm tubercles, while the moderately long, strong distal exhibits somewhat strong lateral spines directed upwards (Pl. XXXV. fig. 7). The largest of the dermal amphidiscs are about 0·2 mm. in length, and occur somewhat sparsely; they bear a very narrow, smooth, or slightly roughened axial rod, with four or eight lateral teeth. In some cases these middle teeth are curved forward towards the distal umbel of rays (Pl. XXXVI. fig. 3). The terminal umbels are somewhat long and bell-shaped, and consist of eight to twelve lancet-shaped, but usually quite narrow rays (Pl. XXXV. fig. 4). Besides these, medium-sized amphidiscs of similar form occasionally occur, and likewise small forms with many-rayed hemispherical terminal umbels (Pl. XXXVI. fig. 6).

Of similar structure is the gastral skeleton on the free surface of the central cone, on the main septa, and in the large gastral cavities, while it gradually assumes a different

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