

a central cross indicating their Hexactinellid character); (2) *acerate* with four tubercles at the middle of the shaft; (3) sparsely spined *acerates*, the spines bent towards the middle of the spicule; (4) four-rayed, (5) five-rayed, and (6) six-rayed spicules, the long arms of which are bent together in all varieties of ways; among these are (7) large and small eight-armed birotulates with dome-shaped heads, and some very minute ones; (8) small *sexradiate* spinules, the arms of which are furnished towards the free end with three, four, or five long spines projecting in the direction of the free end; also (9) a small *acerate* spicule in great abundance *peculiar to the species*, furnished with fine spines not very close together, all of which are bent towards one end of the spicule, increasing in length along one-third of the spicule (*viz.*, from the end from which they look), and then gradually diminishing again from this point to the other end of the shaft; and (10) plumose spicules in great variety."

5. *Pheronema globosum*, n. sp. (Pl. XLIV.).

Besides several other Hyalonematids, some specimens of a *Pheronema* were obtained from Station 192 of the Challenger Expedition, near the Little Ki Island (lat. $5^{\circ} 49' 15''$ S., long. $132^{\circ} 14' 15''$ E.) from a depth of 129 fathoms and a blue mud ground. At first I was inclined to regard the latter as identical with the above described *Pheronema hemisphæricum*, Gray, from the Philippine Island, Zebu. The specimens before me, however, which are for the most part well preserved in spirit, differ so markedly both in external appearance and in the structure of many of their spicules from the latter species, that a separation is certainly necessary. While the smaller specimens, with a diameter of 20 to 25 mm., have an almost spherical appearance, and only exhibit at the superior pole a hemispherical depression with a strong-margined aperture, 10 cm. in diameter, the larger forms, 9 to 10 cm. in breadth and 6 cm. high, have the form of a superiorly truncated and somewhat depressed three-quarter sphere. The circular terminal opening of the shallow hemispherical gastral cavity, 3 to 4 cm. in depth, measures 5 to 6 cm. in breadth, and exhibits a somewhat sharply defined edge, under which a gentle protrusion inwards is distinctly visible. From this oscular margin a wreath of pointed spicules projects perpendicularly for 12 to 15 mm. In the external dermal layer there is a tolerably firm irregularly shaped network, which bears at intervals of $1\frac{1}{2}$ to 2 cm. small knots with slight boss-like projections (Pl. XLIV. fig. 1). From each such boss a tuft of eight to twelve blunt spicules projects radially, attaining a length of 3 cm. and more. The whole uniformly convex basal surface is furnished with these tufts of spicules, at approximately equal intervals, and that all over, not merely forming a circle, or leaving the central portion free (as Higgin described in *Pheronema hemisphæricum*). The spicules of these basal tufts far exceed the pleural in number, and still more in length. The normal length of the basal tuft, which is in all the specimens much thickened