Genus 2. *Polylophus*, n. gen.

1872. Gray, Ann. and Mag. Nat. Hist., ser. 4, vol. x. p. 137.
1873. Gray, *Op. cit.*, ser. 4, vol. xi. p. 234.
1873. Carter, *Op. cit.*, ser. 4, vol. xii. p. 361.
1875. Carter, *Op. cit.*, ser. 4, vol. xv. p. 118.
1877. Marshall and Meyer, Mittheil. Zool. Mus. Dresden, vol. ii. p. 261.

History.—Among the Hexactinellida which Dr. A. B. Meyer brought with him from Zebu (Philippines), Gray found in 1872 a comparatively large specimen which bore peculiarly disposed projecting tufts of needles on the posterior half, while the anterior extremity exhibited the wide aperture of a spacious gastral cavity. He compared this sponge with *Tetilla polyura*, O. Schmidt, while Carter, to whom it was handed over, at once detected a close relationship between this form and his *Rossella antarctica*. Gray therefore named it *Rossella philippinensis*. In 1873 Gray received some young buds of the same sponge, which were also obtained from Dr. A. B. Meyer. These were briefly described under the title *Psetalia globulosa*, Gray. In 1875, however, Carter published a detailed description with good figures of the form and structure both of the older specimen and the young buds (*Psetalia globulosa*, Gray). Both the general structure and the form of the spicules exhibited the close resemblance which those specimens bore to Carter's *Rossella antarctica*. Finally, Marshall and Meyer subjected these results to a close scrutiny in 1877, and described in detail the form and structure both of the entire sponge and of the various spicules.

The characteristic anchors found in the root and tuft-spicules were regarded by Marshall and Meyer not as homologous, but as analogous to the anchors in the tuft-spicules of *Euplectella*, *Semperella*, and *Hyalonema*, since the double cross was not found in these latter genera in the anchor head itself but further up in the shaft, so that the anchor teeth could not be looked upon as modified rays of hexradiate spicules. The nine distinct forms of spicules observed were found by Marshall and Meyer to be distributed as follows :—

A. Appendicular spicules :—
   1. Root-spicules of anchor-like form.
   2. Uniaxial spicules of the spicular wreath.
B. Spicules of the dermal skeleton :—
   3. Five-rayed spicules.
   4. Four-rayed spicules with tubercles.
C. Spicules of the parietes :—
   5. Gastral and facial five-rayed spicules.
   6. Six-rayed spicules.
   7. Uniaxial spicules.
   8. Rosettes.
D. Gastral spicules :—
   9. Small six-rayed spicules.

A young specimen, 5 mm. in diameter, in which the anchor-tufts were tolerably well developed, already showed the same spicular forms in a similar arrangement. A specimen preserved with its soft parts in spirit was found to be filled with small green and grey granules; some cell-nuclei were seen, and here and there a fragment of