

this outwards, from a thin layer of sarcode immediately surrounding the capsule. Outside the gelatinous envelope the pseudopodia form a network, and show the same granular movement as in other Rhizopoda, by means of which nutrition, locomotion, and perception are carried on. Their extreme terminations are free radial threads. Oil-globules, pigment-granules, vacuoles, &c., not unfrequently occur in the extra-capsularium.

“In many Radiolaria, but by no means in all, are found, in addition to these, scattered round about the central capsule, numerous yellow cells, which contain starch. These have been lately recognised as unicellular Algæ (*Zooxanthellæ*), which live in a state of symbiosis with the Radiolaria, just as do the Gonidia with the Lichens. They also have an independent power of reproduction.

“The inner protoplasm, which is enclosed in the central capsule, is intimately connected in two different ways with the outer sarcode which surrounds it. In the *Holotrypasta*

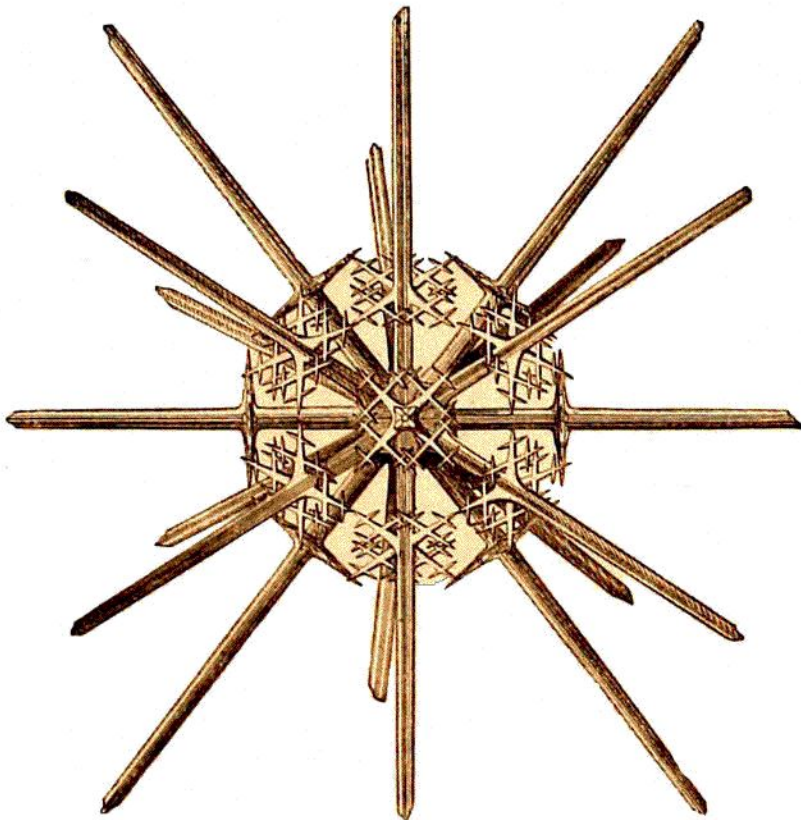


FIG. 89.—*Xiphacantha murrayana*, n. sp.

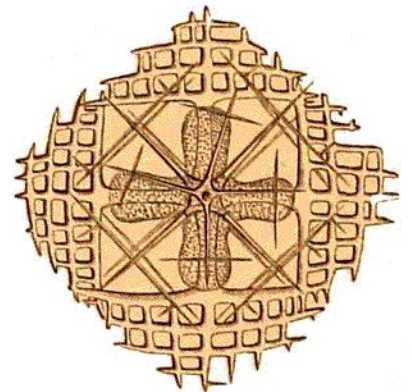


FIG. 90.—*Lithoptera darwinii*, n. sp.

(*Acantharia* and *Spumellaria*) the membrane is everywhere perforated by numberless small pores, through which the two communicate. In the *Merotrypasta* (*Nassellaria* and *Phæodaria*), on the contrary, there is only a single large opening in the capsule, through which the pseudopodia protrude. There are, however, not unfrequently found, beside this, two or more small accessory openings.

“The great majority of Radiolarians, with indeed few exceptions, are remarkable for skeletons of the most varied and delicate forms. In one order (the *Acantharia*) these consist of acanthin, a peculiar organic substance related to chitin; in the other three orders, on the contrary, of silica or an organic silicate. In the *Phæodaria* the separate siliceous portions which constitute the skeleton are, for the most part, hollow tubes, but