

consists of eight fairly equally developed triangular scales. The spicules of the cœnenchyma form two layers. The upper layer consists of flat, thin, oval scales, the lower of very thin, small, calcareous plates.

[*Plumarella penna* (Lamarck).

*Gorgonia penna*, Lamk., Hist. anim. sans vert., ii. p. 323.

*Primnoa* (?) *plumatilis*, Milne-Edwards, Hist. Nat. des Coralliaires, t. i. p. 141.

" " Kent, Monthly Micr. Journ., 1870, pl. xli. figs. 10-12 (figure of spicules).

*Cricogorgia ramea*, Milne-Edwards, loc. cit., Atlas, pl. n.2. fig. 6.

*Habitat.*—Australia, Captain Baudin's Expedition, 1801.

*Plumarella pourtalesi*, Verrill.

*Habitat.*—Lat. 31° 48' 50" N., long. 77° 51' 50" W. (Verrill).]

1. *Plumarella delicatissima*, n. sp. (Pl. XVI. figs. 1, 1a; Pl. XXI. fig. 8).

Some fragments of a *Plumarella* show such specific differences from any known form that they necessitate the foundation for them of a new species, which may be described as follows:—

Colony exceedingly finely branched, the terminal twigs very thin, flexible. The small, cylindrical calyces are placed on two sides of the branches and twigs in alternating series, their length reaches 0.5 to 0.7 mm. The calyx scales form five longitudinal rows of thin, cycloid, calcareous bodies, which are wanting on the ventral side of the calyx.

The opercular scales form a blunt cone, which does not completely close the calyx opening.

The main stem, of which the base is wanting, is flattened in one plane; at its lower end the larger diameter reaches 2.5 mm. Its axis is hard, horny, calcareous, on the surface shining, with numerous longitudinal furrows. From two sides arise from it, in alternating series, small thin twigs, of barely 0.5 mm. diameter, and larger branches which have at the beginning a diameter of 2 mm. All these come off from the stem at an angle of about 40° and run parallel to one another.

At the point of origin of each twig the stem undergoes a slight twist in the opposite direction, whereby the stem acquires a zigzag outline. The small branches either remain simple or give off at most two or three lateral twigs, the large branches, on the contrary, ramify after the manner of the main stem; the same is the case with the larger secondary twigs of the latter, and so on, so as at length to give rise to a little shrub exceedingly finely ramified in one plane, the simple terminal twigs of which have a diameter of 0.3 mm. and a length of 15 to 30 mm.