

times the cladi may be seen applying themselves to the whole length of the epactine of an adjacent desma. The syzygial tubercles expand and adapt themselves to the attached surface in the usual fashion (Pl. XXXI. fig. 6*b*).

Genus *Neosiphonia*, n. gen.

*Jereopsis*, O. Schmidt, Spong. Meerb. Mexico, p. 20, 1879.

Tetracladidæ with a rounded body, supported on a longer or shorter stem; canal-system as in the fossil genus *Siphonia* or *Jerea*. The ectosomal megascleres are dichotrichotriænes. The microsclere is a spiraster.

Schmidt states that ectosomal megascleres are absent in the specimens he examined, but he does not add whether these were fresh or deciduous examples. A fragment sent me by Professor Agassiz is certainly deciduous. If Schmidt's statement should be confirmed as true of fresh specimens, it would necessitate alterations in our classification; but since dichotrichotriænes are associated with the species from Fiji, one would be surprised if they should prove to be absent in that from the Gulf of Mexico.

*Neosiphonia superstes*, n. sp. (Pl. XXXI. figs. 7-12).

*Sponge* (Pl. XXXI. figs. 7, 7*a*, 7*b*).—A somewhat spherical body, produced below into a short, stout, compressed pedicel, which ends without expanding into a base for attachment. Oscules collected in a somewhat depressed area on the summit, the patent ends of the excurrent canals, which descend into the sponge perpendicularly along the axis, but in a direction more and more parallel to the surface as they lie nearer to it. Pores (?). Small, circular holes scattered thickly over the outer surface of the sponge, including the pedicel, are the open ends of the incurrent canals, which are smaller than the excurrent, and enter the sponge perpendicularly to the surface, proceeding towards the centre along radial lines.

*Spicules*.—I. Megascleres. 1. *Desma* (Pl. XXXI. figs. 11, 11*a*). The four epactines, about 0.10 to 0.20 by 0.07 mm., bifurcate into cladi, some or all of which again subdivide once or oftener into smaller, irregular, twig-like branches. These end in syzygial tubercles, which apply themselves to the cladi or tubercles of adjacent desma, and unite with them by clasping and intergrowth in the usual manner (Pl. XXXI. figs. 12, 12*a*). Small cladi ending in tubercles are given off from the surface of the desma generally, except from the epactines, which are devoid of accessory processes as far at least as the extension of the axial fibre. The axial fibre extends from the centre through the epactines for a distance varying from about 0.065 to 0.16 mm., sometimes, but rarely, extending as far as the point of bifurcation, though in one or two instances it has been traced a little beyond it, bifurcating with the epactine, and extending as a