Carteriospongia otahitica, Esper, sp. (Pl. IV. fig. 4).

Spongia otahitica, Esper, Pflanzenthiere, Bd. ii. p. 270.
Carteriospongia otahitica, Hyatt, Revision, &c., vol. ii. p. 541.

This species, represented in the collection by numerous specimens from Admiralty Islands, was established in the year 1794, and there are in spongiological literature many descriptions of it. Accordingly, I consider it unnecessary to enter here into particulars, and refer the reader to the best of these descriptions, that of Hyatt, in the hope that with the help of my drawing on Pl. IV. the characters of the species may be easily comprehended.

Colour.—Dirty pale yellowish.

Habitat.—Off Wild Island, Admiralty Islands; reefs; March 1875.

Family APLYSINIDÆ, Vosmaer.

Aplysinæ (e.p.), Hyatt.
Ceratina (e.p.), Carter.
Aplysinidæ (e.p.), F. E. Schulze, v. Lendenfeld.

Keratosa with small either hemispherical or pear-shaped flagellated chambers communicating with exhalent and inhalent cavities, each by means of one comparatively long and narrow inhalent and exhalent canaliculus. Axis of fibres thick; ground-mass in the neighbourhood of the flagellated chambers overloaded with granules.

Luffaria, O. Schmidt.

Aplysinidæ with thick-walled heterogeneous skeletal fibres, their central part but little differentiated optically from the surrounding horny lamina.

Luffaria variabilis, n. sp. (Pl. IX. figs. 1–6).

As I remarked before (p. 33), I am not prepared to say whether all *Luffariæ* in addition to thick skeletal fibres also possess fine ones. But should such be the case, the species I am going to describe may still be readily distinguished from all others of the genus by the following peculiarities; its skeletal fibres are not at all so glass-like and fissile as Schmidt states with regard to the specimens he had for examination. Again, though on the whole its skeleton admits of comparison with a burst but still only with a very imperfect one, the distance between the prominent outer fibres reaching 1 to 2 mm. In addition to some small fragments, the species is represented in the Challenger collection by two specimens, one of massive shape, the other on the contrary