BOTANY.

ART. XI. *Descriptions of species of Sponges observed on the shores of Long-Island. By* C. S. RAFINESQUE, *Esq.*

THE sponges are one of the most singular productions of nature; and, even to this time, naturalists are divided in opinion respecting their real rank in the scale of organized beings. Some believe that they are animals, belonging to the class of polyps, next to the genus of *alcyonium*, while many contend that they are not animals, but plants, of the tribe of *fuci*, or marine vegetables. I am inclined to adopt this latter opinion, since, in all those which I have seen, in Europe and America, no perceptible motion nor sensibility was to be discerned in any stage of their existence; and those who have acknowledged their animality, bring no stronger proof thereof than an occasional slight shrinking under the hand, and an animal smell, which are common to some marine plants.

Whatever be the truth on the subject, these doubtful opinions prove that they are of the many connecting links between animals and plants. This is not a proper place to decide this controversy; I mean merely to make known new species of this tribe of beings, which I observed last year, on the shores of Long Island. Such a fragment will be, perhaps, the first attempt of the kind; when more species shall be known, the subject may be investigated with more certainty and accuracy.

1. *Spongia Albescens*, Raf. (Whitish sponge.) Effuse, compressed, irregular, perforated, somewhat branched, unequally lobed, whitish, smooth; lobes truncated; cells porose, very minute, nearly equal; small unequal cells inside.

Found near Bath and Gravesend, in sandy bottoms. A large species, sometimes over a foot broad, of quite an irregular shape, rather flattened, about one inch thick; partly gib-

bose; concave now and then, and with large, irregular openings, as if large branches were anastomosed; circumference branched or lobed, very jagged, sinus obtuse, lobes elongated obtuse, truncate or flat, unequally divided. The substance is entirely of a cinereous white, outside and inside, of a soft and brittle nature, rather friable; covered outside with minute pores, of an oblong or round shape, and full of small unequal cells inside.

2. *Sponga ostracina,* Raf. (Oyster sponge.) Very branched, erect, red, papillose; branches unequal, often dichotome, obtuse; cells porose, oblong, nearly equal.

It is often found on the common oyster. *(Ostrea virginica.)* It rises from four to six inches, the colour is a fine red, it branches from the base; the branches are unequal, straight, cylindrical, or compressed. Substance stupose. Surface covered with small papilla and small oblong unequal pores.

3. *Spongia cespitosa,* Raf. (Bushy sponge.) Branched, cespitose, yellowish, rough, papillose; branches fasciculated, upright, unequal, flexuose, compressed, slightly anastomosed, nearly dichotome upwards; cells porose, oblong, nearly equal, margin lacerated.

Found also on the oyster, but more seldom than the foregoing; the specimens which I saw, were found on the Bluepoint oysters, by Dr. Eddy. It becomes brown by drying. It rises from four to six inches, the magin of the cells or pores is torn into papillar, stiff processes, which produce a rough surface. Substance stripose. Internal cells oblong, very small.

4. *Spongia cladonia.* (Cladonian sponge.) Branched effuse, smooth, pale fulvous, stem procumbent, branches distichal, one-sided, erect, simple or divided, obtuse; cells porose, minute; some larger round.

I have found this species at Bath, and at Sandy-Hook, on sandy bottoms. Length about six inches. Stem and branches cylindrical or compressed. Substance fibrose, anastomed, branches divaricate, ascendent, semi-dichotomose or simple, unequal, thicker towards the top.

5. *Spongia virgata.* (Slender spone.) Nearly branched, smooth, fulvous, stem divided, slender, cylindrical, knobby,

branches erect, slender, nearly heads acute; pores unequal, irregular, small.

A small species, three inches high, found at Oysterbay, on rocky bottoms, rare; stem with few branches, and imperfect ones, like knobs. Substance stupose. Branches round, alternate, small. Pores without any determinate shape.

ART. XII. *Memoir on the Xanthium maculatum, a New Species from the State of New-York, &c. by* C. S. RAFINESQUE, ESQ.

PURSH and Michaux mention only one species of American *Xanthium*, the *X. strumarium*, while there are three noticed in the catalogue of Dr. Muhlenberg, the above species, and the *X. orientale*, and *X. spinosum*. The first and the last are natives of Europe, and have been naturalized in the United States, with many other plants. The species called *X. orientale* by Dr. Muhlenberg, appears, however, to be a native; but the *X. orientale* of Linnæus, is a native of Siberia, Japan, and the East Indies; and when plants are found to grow in such opposite quarters of the globe, a strong presumption arises that they are not identical species, which presumption has been confirmed by experience in many instances, whenever the plants of both countries have been accurately examined. Decandolle, in the French Flora, (2d edition of 1815.) vol. 6. p. 356. describes, under the name of *X. macrocarpon*, a species found in France, and which he takes to be the real *X. orientale* of Linnæus. He has changed its name, because, he says, that it is not certain that the *X. orientale* grows in Asia; or, if any grows there, that it is identic with his species; which, however, is really the *X. orientale* of Linnæus, Son, Lamark, and Gaertner. He adds, that he possesses in his herbarium, a species from Canada, different from his *X. macrocarpon*, which has been figured by Morison, on whose authority some authors have asserted that the *X. orientale* grew in Canada, mistaking his figure for that plant.