

SPONGES AND BRYOZOANS OF SANDUSKY BAY.

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The two small groups of fresh water sponges and Bryozoa received some attention at the Lake laboratory during the summer of 1900

All our fresh water sponges belong to one family, the *Spongillidae*, which has about seven genera. They differ from the marine sponges in two particulars. They form skeletons of silicon only, while marine sponges may form silicious or limy or spongin skeletons. The spongin skeleton is the one that gives the bath sponge its value.

They also form winter buds or statoblasts which carry the sponge over the winter and reproduce it again in the spring. This peculiar process was probably acquired on account of the changes in temperature and in amount of moisture to which animals living in fresh water streams are subjected. The sponge dies in the fall of the year and its skeleton of silicious spines or spicules can be found with no protoplasm. The character of the spines in the body of the sponge and those surrounding the statoblast differ greatly, and those around the statoblast are the main reliance in identifying sponges. So that if a statoblast is found the sponge from which it came can be determined, and on the other hand it is frequently very difficult to determine the species of a sponge if it has not yet formed its statoblast. The statoblast is a globular or disc-shaped, nitrogenous cell with a chimney-like opening where the protoplasm escapes in the spring. The adult sponge is non-sexual but the statoblasts give rise to ova and spermatozoa which unite and produce a new sponge. The statoblast is considered as the sexual generation.

Three species belonging to one of the seven genera were positively identified.

Spongilla fragilis, Leidy, a very common form was found on submerged rocks on the south side of the bay near the city in great abundance. Its yellow statoblasts are numerous and placed in layers near the base of the sponge on the rock to which it is attached.

Another species *Spongilla cinerea*, Carter, was found on floating timber. It is ashen gray in color.

A third species *Spongilla aspinosa*, Potts, was found in Black Channel and near the city on submerged rocks. Its color is green. Other species were found but not definitely determined.

The fresh water Polyzoa comprise a small group of animals resembling the sponges in the process of statoblast formation, but otherwise totally different. Their real relationship is not definitely

known. They are among the most beautiful of our lower fresh water forms. The body is nearly always protected by a cyst from which the anterior end of the animal projects when undisturbed and into which it can be retracted. There is a larval form resembling that of the worms and several other invertebrate groups, and a marked metamorphosis to the adult form. The statoblasts as in the sponges are of value in identification, and are formed on a strand of tissue connecting the base of the animal to its cyst. The individuals or Polyps increase in number by budding.

Two species are quite common at Sandusky. *Plumatella polymorpha* as its name indicates is quite variable in form. The variety *repens* was very common on the rocks on the south side of bay near city. Its vine-like appearance renders it easy to identify. The Polyps are borne on the ends of the branches. The vine-like cyst clings closely to its support. The second species *Pectinatella magnifica* was found in Black Channel on submerged fish nets. It has a large spherical gelatinous base frequently eight or ten inches in diameter, over which the colonies of polyps are distributed. The individuals in each colony are arranged in the form of an aster. These large colonies are striking in appearance. The larvae are quite numerous and are globular in shape, and swim quite freely when liberated from the parent colony. The statoblasts are found in the fall as in the sponges. The process of statoblast formation and of larval development were studied, but the budding of individuals to enlarge the colony was not followed. The statoblasts of these animals seem to need to be both dried and frozen before development will go on in the spring.