XI. IDENTIFICATION ON FRESH WATER SPONGES IN THE OKLAHOMA FAUNA

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While searching for fresh water hydra, (*Hydra fusca*) in Shuler's Lake, Durant, Bryan County, Oklahoma, December 9, 1921, in company with students in field zoology, we removed a water-logged timber and found a number of coelenterates. Some dozen or more of the contracted hydra had been removed from the slimy surface of the timber with a penknife when I discovered several small cushion-like bodies hardly so large as English peas,--and recognized them to be fresh water sponges.

Since fresh water sponges are rare in Oklahoma, we carefully removed as many specimens as could be found, and isolated them in a bottle with pond water, for microscopic study and verification. Some dozen sponges were taken, ranging in size from that of a penny in circumference to a pin head

In color, they were grayish, with a suggestion of brown; gray being the predominant color. It was easy to make out the ostcoles, as now and then in the undisturbed specimens particles could be seen emerging from the excurrent orifices. When the laboratory was reached, no time was lost in making a test smear for the study of spicules, and other structures. The first slide revealed the monaxon spicules, and the parenchyma of living tissue. The spicules, alone, supported and confirmed the field identification.

Specimens were then transferred to small aquaria, and their behavior observed. Carmine particles introduced into the water were taken in at the incurrent pores, and later expelled through the excurrent ostcoles.

Since no histological facilities were at hand, material was prepared for the Saint Louis Biological Laboratories, from which prepared slides were to be made. Unfortunately this material was lost. Subsequent searches of these waters have not yet revealed additional specimens. Due to these facts and the scarcity of material, a final determination is not now possible.

Tentatively, however, the writer proposes the following classification, leaving its ultimate taxonomic assignment to rediscovery and histological study.

Branch: Porifera
Order 3: Monaxonida
Sub-Order 1: Halichondrina

Genus: Spongilla
Family 5: Spongillidae
Species: Fragilis, Leidy, 1851.

The question is with reference to the species; as to whether or not this is "fragilis."

Characters. "Sponge encrusting in sub-circular patches, thin at edges, occasionally one or more inches thick at the middle. In most varied situations, apparently preferring standing water, though also in running water. Abundant. Gemmules abundant; primarily in one or more pavement layers. Also in compact groups surrounded by a cellular parenchyma, charged with sub-cylindrical spined acerates. Skeleton spicules smooth, slightly curved, rather abruptly pointed. True dermals wanting. Found in most of United States." --(Ward & Whipple.)

Ecology of Shuler's Lake.

Shuler's Lake is an impound of water fed by springs, which has been undrained for over twenty years. It is situated in the north part of the city of Durant, Bryan County, Oklahoma, where it was established by Dr. Early, in territorial days, soon thereafter passing into the hands of Dr. J. L. Shuler, who maintained a sanitorium near its margin in a grove. The body of water fills a deep ravine, grading from a shelving shore at one end to a depth of fifteen to twenty feet at the other. Deep dark, and oozy at its north end, it shelves to muck and leaf-strewn reaches at the south, giving every gradation in pond life, as well as zonation. In the center is a small island, and near this are submerged timbers of a diving tower. Sunken piles are also to be met with below the surface of the water. It is in such conditions as this, with clear, non-turbulent water, cool depths, and submerged timbers, that the first sponges reported in Oklahoma waters were found, in a very typical optimum environment. During the past two decades of its existence, visited by migratory birds and mammals Shuler's Lake has become the collecting ground and conservatory of a rich and extensive pond fauna and flora.

Biblography.

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