

Spongilla nova terrae POTTS; A FRESH WATER SPONGE NEW
TO NOVA SCOTIA

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Abstract

Several colonies of *Spongilla nova terrae* Potts were collected on July 30, 1949, at Bluff Lake, Halifax County, and later at Eagle Lake, Halifax County. These are the first collections of this species since the original collections in Newfoundland in 1885. Figures are given to illustrate differences in spiculation between the new collections and the original, as well as between the Bluff and Eagle collections. The taxonomic position of the sponge is discussed.

While carrying out routine collections on Bluff Lake on July 30, 1949, we found a small sponge in about 3 feet of water on a rocky bottom. Fortunately gemmules had already formed so that identification was possible. Samples of the sponge were sent to Dr. Minna E. Jewell and Prof. Edward Kintner who both confirmed our identification of the sponge as *Spongilla nova terrae* Potts. On later trips the sponge was found to be very plentiful in other parts of the lake. It was also found by Ord in Eagle Lake later in the year. These are the only collections of this sponge for Nova Scotia. Both lakes are in Halifax County in the vicinity of Halifax.

Spongilla nova terrae encrusts rocks at a depth of 2 to 4 feet in clear water. The tissue of the sponge is loose rather than firm and the gemmules are unusually large, being easily distinguished by the naked eye in the fresh sponge. It is peculiar in the genus *Spongilla* because of the form of its dermal spicules which are birotulate (Figure 1). Indeed, *Ephydatia everetti* is the only other American Freshwater sponge we know of which has dermal birotulates. Its gemmule spicules are also of interest because of the crowding of spines to the two ends of the spicule, giving a somewhat birotulate appearance to the majority of gemmule spicules. Other species of *Spongilla* have smooth acerate gemmule spicules or acerates spined to nearly the same extent over their whole length.

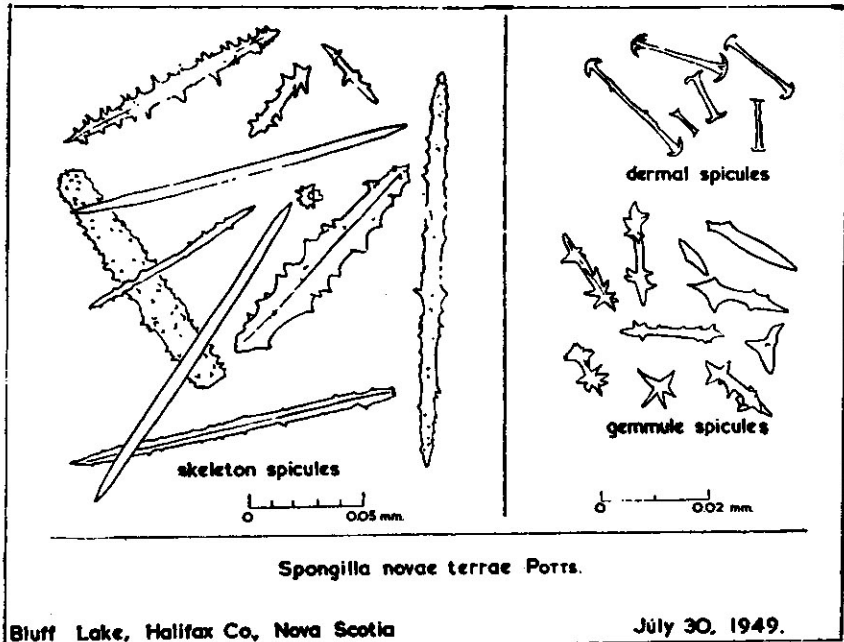


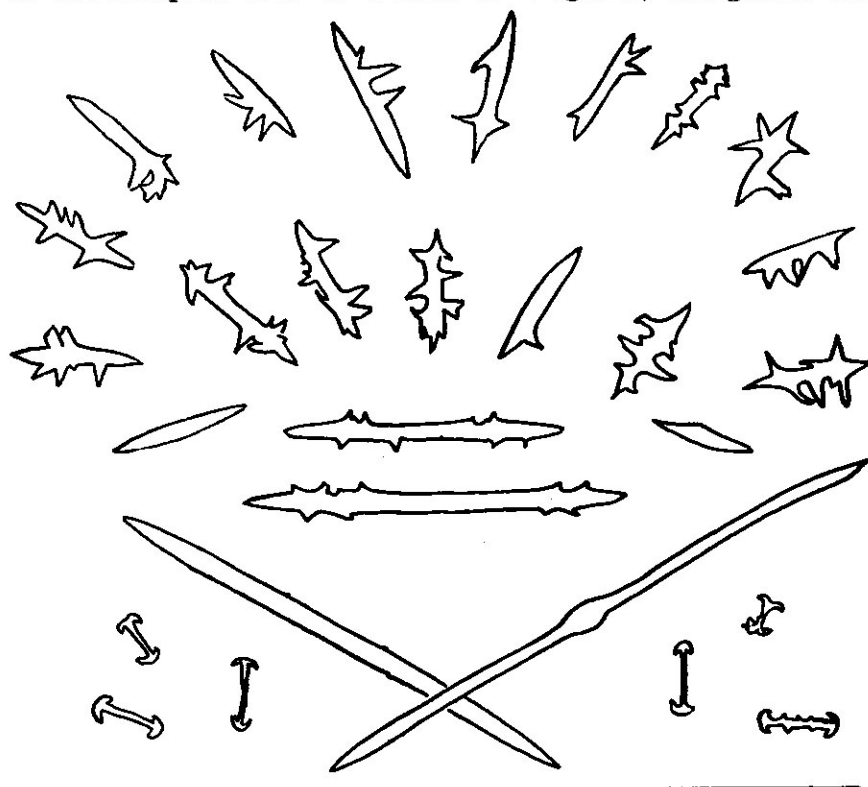
Figure 1

It is not surprising to find a species of freshwater sponge new to Nova Scotia. The only reported collections are those made by A. H. MacKay between 1884 and 1900. MacKay (1884) reported on 4 species of sponge found by him during the summer of 1883 in lakes on the Pictou-Colchester border. In 1885 he was able to report the discovery of 9 species of sponge for Nova Scotia, collected mostly in Pictou and Halifax Counties. In 1900 he named a new sponge *Heteromeyenia macouni*, collected by John Macoun in the pond on Sable Island. Since then no collections have been reported from Nova Scotia.

In 1885 MacKay was able to do some collecting in the region of Trinity Bay, Newfoundland, where he found 7 species, 6 of them already found by him in Nova Scotia, and the seventh one a new species, *Spongilla novae terrae*. This was without doubt the most interesting of his discoveries

among the sponges, and it has given us much satisfaction to have found it in Nova Scotia.

MacKay sent samples of *Spongilla novae terrae* to Potts of Philadelphia and to Carter of England, recognized au-



Spongilla novae terrae Potts.
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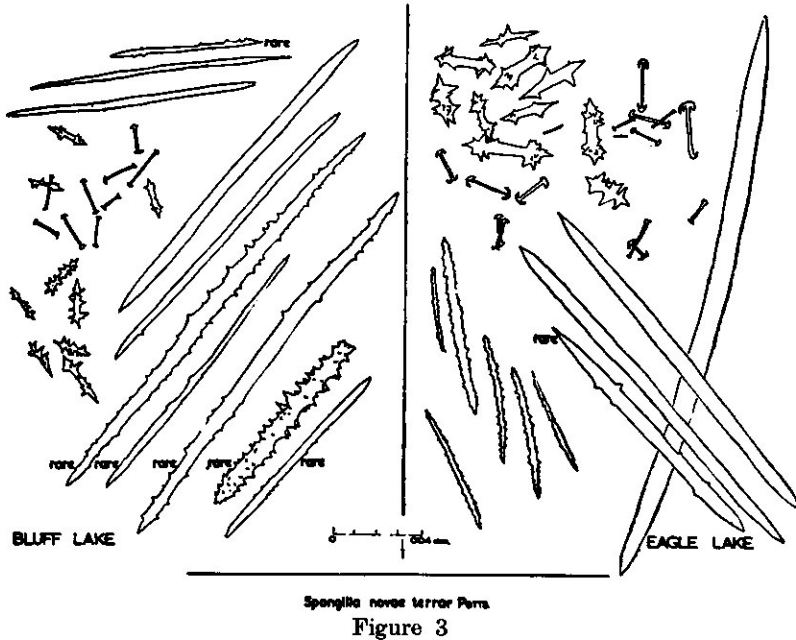
Potts, Ed, Fresh Water Sponges, a Monograph, Philadelphia, 1852 page 207.

Figure 2

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thorities on the classification of fresh-water sponges. After some hesitation they assigned it to the genus *Spongilla*, although both agreed that it bore a strong resemblance to

Ephydatia. Potts noted the resemblance between the gemmule spicules of *S. novae terrae* and *E. fluviatilis* var. *acuminata*, and said, "while their form and position probably more closely associates them with the genus *Spongilla*, in which I have, after considerable hesitation, placed the species, the grouping of the ray-like spines is forcibly suggestive of



Meyenia (now *Ephydatia*); it will be therefore no cause for surprise, if further examination shall cause its transfer to the sister genus." This was in 1886. When he wrote his last classification of the sponges in 1918 he left it in *Spongilla*, but he added that it was "placed by some in genus *Ephydatia*." A comparison of Potts' figure of the original (Figure 2) with our sponge (Figure 1) shows how closely they agree in appearance.

It should not be forgotten that the fresh-water sponges are classified generically according to the spiculation of the

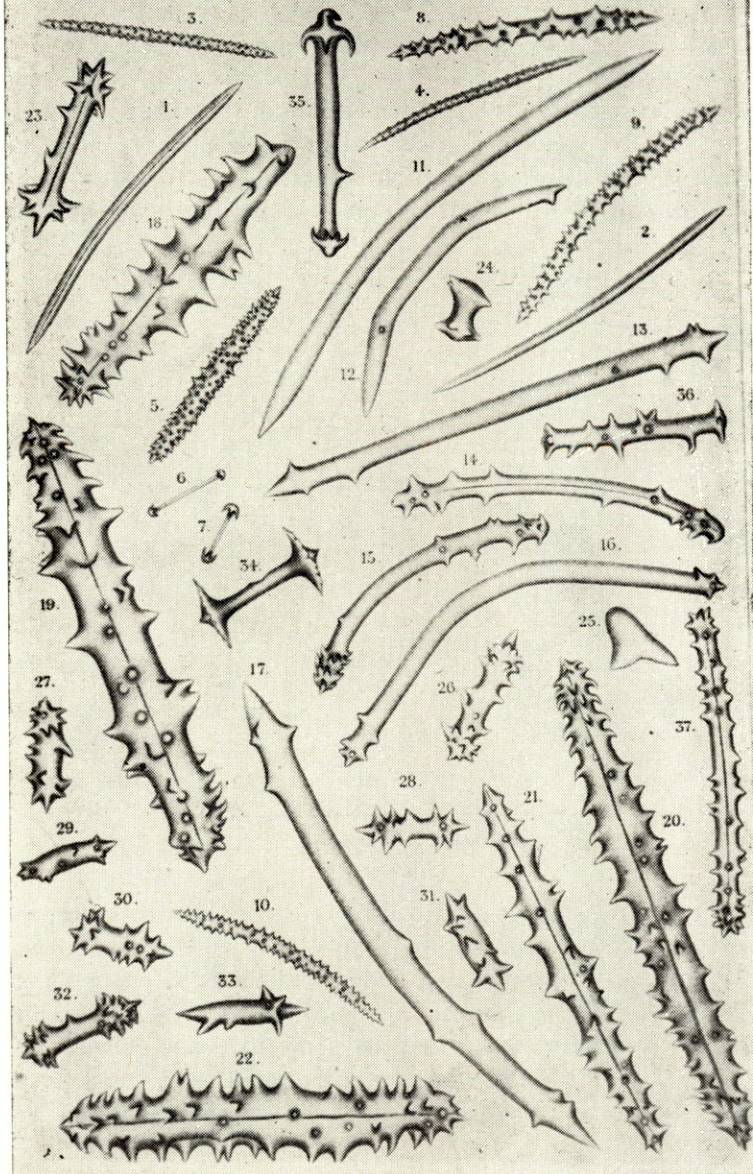


Figure 4

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gemmules; all genera except *Spongilla* have a more or less birotulate type of spicule. Examination of Figure 3 will show why so much doubt arose as to the proper place of *S. nova terrae*. Our first encounter with Eagle Lake specimens cost us some time trying to assign it to a species of *Heteromeyenia*. It was only careful comparison with the Bluff Lake specimens, already identified, that led us to put it in *Spongilla*.

Wierzejski reported the discovery of a sponge in Galacia closely resembling *S. novae terrae* and placed both species in *Ephydatia*. Traxler of Hungary obtained from MacKay a piece of the Newfoundland specimen and after careful study concluded that it was a cross between *Spongilla lacustris* and *Heteromeyenia ryderi* (Figure 4).

Jewell (1935) has shown that the environment has profound effects on the appearance of the spicules, causing normal variations so great as to "abrogate accepted generic criteria." On this account we feel that an attempt should be made to extend the range of the sponge as much as possible, and, if the birotulate form can be found to be maintained or accentuated in other environments, definite steps can be taken to make a further attempt at fixing the genus.

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