

THE OCCURRENCE OF THE FRESHWATER BRYOZOAN  
*POTTSIELLA ERECTA* (POTTS) 1884 (GYMNOLAEMATA:  
PALUDICELLIDAE) IN LAKE ERIE<sup>1</sup>

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ABSTRACT

The collection of *Pottsiella erecta* in western Lake Erie in August 1972 represents the first reported occurrence of this species in the Great Lakes and a 110 km northward extension of its known range.

Although the bryozoan fauna of the Great Lakes region has been surveyed more than any other area of the world (Ward 1896; Landacre 1901; White 1915; Rogick 1935, 1937, 1941; Rogick and Van der Schalie 1950; and Bushnell 1965a, b, c), no occurrence of *Pottsiella erecta* has ever been reported. In August 1972, Jarl K. Hiltunen of the Great Lakes Fishery Laboratory collected several colonies of this species in western Lake Erie. They were attached to several small rocks taken with an Ekman grab sampler from a depth of 6 m, west of South Bass Island (lat. 40°42'30" W, long. 82°51'50" N). This collection is not only the first reported occurrence of the species in the Great Lakes, but represents a northward extension of its range.

While this manuscript was in preparation, a note on the distribution of *Craspedacusta* and *Cordylophora* in western Lake Erie (Hubschman and Kishler 1972) mentioned parenthetically that hydroids were sometimes found on deteriorating colonies of *Paludicella* and *Pottsiella*, but no data were presented concerning the bryozoan genera.

SYSTEMATICS

*Pottsiella erecta* was originally described as *Paludicella erecta* by Potts in 1884. Kraepelin (1887) subsequently reassigned it to the genus *Pottsiella*, the only species of the genus. Rogick (1959) described the colonies as consisting of stolons from which erect, single, more-or-less cylindrical, hyaline zooids, with pentagonal terminal orifices, arise at intervals; the lophophore is circular and bears 19-21 tentacles.

Unfortunately, the Lake Erie specimens were held in the laboratory (in a small quantity of lake water) for three days after collection before they were examined and identified. Although none of the degenerating polypides were in an extended position, the presence of the pentagonal terminal orifice and the erect individual zooids arising from stolons ensured positive identification.

Attempts to culture the colonies in an aquarium apparatus, like that described by Wood (1971), in order to obtain tentacle counts from living organisms were unsuccessful. Dissection of the lophophores from preserved specimens also proved to be unsatisfactory for tentacle counts. This was due to polypide degeneration and the small size of the organisms. The mean zooecial length and diameter of the L. Erie specimens is 1.69 mm and 0.25 mm respectively. The largest specimen measured was 2.12 mm long and 0.29 mm in diameter. The mean zooecial length of 1.10 mm given by Bonetto and Cordiviola (1965) for Brazilian zoaria is less than the mean length of the L. Erie specimens. The

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zoecial diameter of the Brazilian zoaria averages 0.30 mm which is in fair agreement with the mean diameter of the L. Erie specimens.

Kraepelin (1887) published the original illustration of *Pottsiella erecta* in the literature; the illustration was later republished by Davenport (1904), Pennak (1953), and Rogick (1959). Kraepelin's illustration shows two young zooids arising from hibernacula. Bonetto and Cordiviola (1965) published the only other illustrations of *P. erecta*. Their figures show three elongate zooids, two of which arise from hibernacula. In the L. Erie specimens, no hibernacula were present and the zooids resemble those illustrated by Bonetto and Cordiviola. Photographs of the present specimens of *P. erecta* show an individual zooid attached to a portion of the stolon (fig. 1) and the erect habit of the individual zooids (fig. 2).

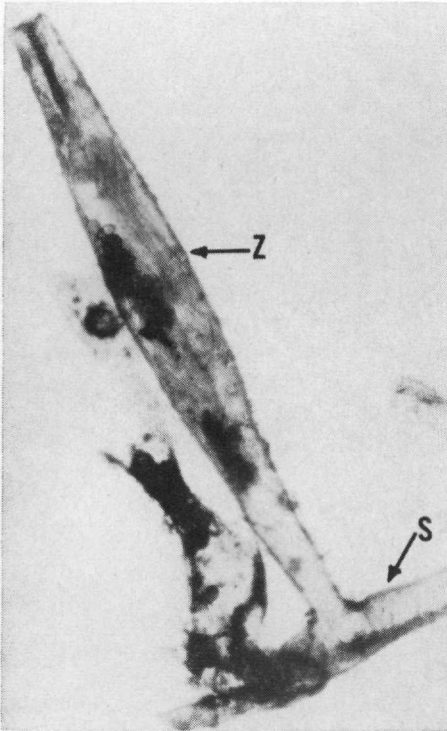


FIGURE 1. *Pottsiella erecta*: an individual zooid (Z) connected to a portion of the stolon (S).

FIGURE 2. (Right) *Luoq;a:n agahonl* showing the erect habit of the zooids.

#### DISTRIBUTION

Precise locality records for *P. erecta* are scarce. Potts (1884) originally described it from Southeastern Pennsylvania; Davenport (1904) reported it from Tacony Creek, Montgomery County, Pennsylvania; and Rogick (1959) reported it from the Schuylkill and Delaware Rivers in Pennsylvania, Lake Dallas in Texas, the James River in Virginia, and the Loosahatchie River in Tennessee. Sinclair and Isom (1963) found colonies in the Tennessee River (miles 101 and 98.5), and at Eva Harbor, Harmon Creek, and at New Johnsonville on Kentucky Lake, Tennessee. Bonetto and Cordiviola (1965) reported it from the Middle Parana River in Brazil. Thus, the collection of this organism in Lake Erie represents about a 110 km northward extension of its known range.

## ASSOCIATED ORGANISMS

The Lake Erie specimens of *P. erecta* were associated with an aufwuchs assemblage that included seven other bryozoans; *Urnatella gracilis*; *Paludicella articulata*; *Pectinatella magnifica*; *Fredericella sultana*; *Plumatella* sp.; *Lophopodella carteri*; and *Cristatella mucedo*. The entoproct *U. gracilis*, and the ectoprocts *Palud. articulata* and *Pect. magnifica* were found as viable colonies interspersed among the *P. erecta* colonies. The other bryozoan species were identified from statoblasts associated with the *P. erecta* zoaria. In addition to the bryozoans, the assemblage included a small colony of the freshwater sponge *Heteromyenia latitentus*; several hydroids and one frustule of the coelenterate *Craspedacusta sowerbyi*; and numerous tubes of undetermined species of sessile rotifer. These observations support the statements of earlier workers (Potts 1897; Davenport 1904; Sinclair and Isom 1963; and Bushnell 1966) that *P. erecta* is usually part of an intricate sessile community.

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