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## BRIEF NOTE

**LOPHOPODELLA CARTERI (HYATT), POTTSIELLA ERECTA (POTTS), AND OTHER FRESHWATER ECTOPROCTA IN THE CONNECTICUT RIVER (NEW ENGLAND, U.S.A.)<sup>1</sup>**

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The distribution of freshwater ectoproct species in New England has received little attention since Hyatt's (1866-1868) discussion of animals from a few localities in Maine and eastern Massachusetts. Aside from Davenport's (1904) few additional records of ectoprocts from New England waters, no new information has become available on the freshwater ectoproct fauna of New England. As part of an ongoing study on the benthic invertebrates of the Connecticut River, collections of ectoprocts were made in the river in Connecticut, Massachusetts, and New Hampshire between 1975 to 1984. These surveys have revealed the presence of eight species of ectoprocts. The occurrence of the entoproct *Urnatella gracilis* Leidy in the Connecticut River has been reported elsewhere (Smith 1980).

Collections were made between the months of July and November. Ectoproct collections were incidental to collections of other invertebrates and therefore were strictly qualitative. Colonies were removed with portions of the substrate and preserved following narcotization of the polypides. All preserved material, except the *Lophopodella carteri* collection, has been deposited into the Invertebrate Division of the Museum of Zoology, University of Massachusetts, Amherst, MA. The *L. carteri* collection has been divided between the above mentioned museum and the Museum of Comparative Zoology, Harvard University, Cambridge, MA.

Among the eight species collected, two were previously unreported from New England. The first, *Lophopodella carteri* (Hyatt), (Lophopodidae), was first reported from North America simultaneously by Dahlgren (1934) and Rogick (1934) in New Jersey and Ohio, respectively. It has

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been recorded in North America by Tenney and Woolcott (1962) (Virginia), Bushnell (1965) (Michigan), and Maciorowski (1974) (Lake Erie).

The present record of *L. carteri* is from the Connecticut River, Deerfield, Franklin Co., MA. The colonies were collected on 16 September 1984, and were mature as evidenced by the abundance of well developed statoblasts. Each statoblast displayed the characteristic barbed, polar spines. Statoblast and polypide morphology, as well as colony shape, conformed to the typical form of *L. carteri* as described by Rogick (1934). All colonies were found living on the internal (nacreous) surfaces of articulated valves of deceased bivalve mollusks (Unionidae: *Alasmidonta undulata* (Say), *Anodonta implicata* Say). The shells were located on a sandy shoal, the depth of which is highly variable due to operations of a dam upstream and seasonal weather conditions. At the time of the collection the water was .5 m deep. The external surfaces of the shells were facing the current, thus providing a protective environment for the colonies within. No other ectoproct species were found in association with the *L. carteri* colonies.

The second species recorded from New England for the first time is *Pottsiella erecta* (Potts) (Paludicellidae). The species is widely distributed throughout southeastern North America (Bushnell 1974) and is at times common (Everitt 1975). The species has recently been found in the Great Lakes (Maciorowski 1974). Colonies of *P. erecta* are epilithic and epizootic (Bushnell 1974). Such colonies are often associated with freshwater mussels (Curry et al. 1981), including species of the genus *Anodonta*. *Pottsiella erecta* was found during this study in the Connecticut River in Suffield, Hartford Co., CT. Colonies were frequently encountered on shells of living specimens of the unionid mussel *A. implicata* and were exposed to constant current in less than one m of water. Individual "zooids" with their erect zoecia were eas-

ily diagnosed from *Paludicella articulata* by the pentagonal shape of the aperture and by tentacle counts (20-21 tentacles for *P. erecta*, 17-19 tentacles for *P. articulata*). In the Connecticut River *P. erecta* formed part of an aufwuchs community (sensu Maciorowski 1974) and was associated with *P. articulata*, and the entoproct *U. gracilis*.

Six other species of ectoprocts have been collected in the Connecticut River proper in areas regularly subjected to current. Since very few northeastern North American records are available for these six species, they are listed below.

## GYMNOLAEMATA

### PALUDICELLIDAE

*Paludicella articulata* (Ehrenberg). CT: Hartford Co., Suffield; MA: Franklin Co., Sunderland. Epilithic, epizootic, and epiphytic. Depth range: 0.5-1.0 m. Ectoproct associates: *P. erecta*, *Fredericella sultana*, *Plumatella emarginata*, and *Cristatella mucedo*.

## PHYLACTOLAEMATA

### FREDERICELLIDAE

*Fredericella sultana* (Blumenbach). MA: Hampshire Co., Hadley; Hampden Co., Longmeadow. Epilithic and epiphytic. Depth range: 0.5-1.0 m. Ectoproct associates: *P. articulata*, *P. emarginata*, *Hyalinella punctata*, and *C. mucedo*.

### PLUMATELLIDAE

*Plumatella emarginata* Allman. CT: Hartford Co., Glastonbury; MA: Hampden Co., Longmeadow; Hampshire Co., Hadley; Franklin Co., Sunderland. Epilithic, epizootic, and epiphytic. Depth range: 0.5-1.0 m. Ectoproct associates: *P. articulata*, *F. sultana*, *H. punctata*, and *C. mucedo*. *Plumatella emarginata* and *P. repens* are often confused. Although *P. repens* is more often reported in the literature than *P. emarginata*, all material examined in this study conformed with the definition of *P. emarginata* as put forth by Thorpe and Mundy (1980) and Mundy (1980).

*Hyalinella punctata* (Hancock). MA: Hampshire Co., Hadley; Franklin Co., Sunderland. Epilithic and epiphytic. Depth range: 0.5 m. Ectoproct associates: *P. articulata*, *F. sultana*, and *P. emarginata*.

#### PECTINATELLIDAE

*Pectinatella magnifica* Leidy. MA: Hampden Co., Longmeadow and Springfield; Hampshire Co., Hadley; NH: Sullivan Co., Plainfield. Epiphytic. Depth range: 0.5-1.0 m. Ectoproct associates: none.

#### CRISTATELLIDAE

*Cristatella mucedo* Cuvier. CT: Hartford Co., Suffield; MA: Hampden Co., Longmeadow and Holyoke; NH: Cheshire Co., Walpole. Epilithic, epipelagic, and epiphytic. Depth range: 0.5-4.0 m. Ectoproct associates: *P. articulata*, *F. sultana*, and *P. emarginata*.

The Connecticut River has been extensively utilized by humans for three centuries (Anon. 1970) and, consequently, the water quality has suffered such that larger sections of the river fail to comply with a class B rating (Federal Power Commission 1976). Nevertheless, ectoproct species flourish as evidenced by the diversity of species reported above. In Walpole, NH, downstream from an historical industrial center (wood processing), *C. mucedo* colonies are so abundant that by the latter part of the growing season they virtually cover the entire substrate (rocks, cobble, sand, silt, living and dead organic matter) for several square meters. Elsewhere, the bottom substrates of man-made hydro-power canals which run through the city of Holyoke, MA, are inhabited by *C. mucedo* as well as many other invertebrate species including the entoproct *U. gracilis*. When full the canals are several meters deep, are often quite turbid, and receive contaminated runoff from the surrounding area. Although the present distributional data of Connecticut River ectoprocts suggests that some species are somewhat pollution tolerant (eg. *P. articulata*, *P. emarginata*, *C.*

*mucedo*, and *P. magnifica*) others are not as indicated by *F. sultana*, *H. punctuata*, and *L. carteri*, which were rarely found and only in sections not near urban centers. One species, *P. emarginata*, was found in a stretch of river (Glastonbury, CT) regularly subjected to tidal influence.

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