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Freshwater Triclad Planarians (Turbellaria) from Plummers Island, Maryland

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Abstract.—Five species of freshwater triclad planarians were found on Plummers Island and the adjacent mainland property, Montgomery County, Maryland. One species (*Dugesia* [*G.*] *tigrina*) occupying the Potomac River and a tributary, is tolerant of degraded habitat. The other four occupy vernal pools (*Hymanella retenuova* and *Phagocata velata*) or spring-seeps (*Phagocata morgani* and *Paraplanaria dactyligera*) and appear to be indicators of high quality aquatic habitat. These five species represent 36% of the total known Maryland fauna of 14 species.

Key words.—Potomac River, aquatic invertebrates, inventory.

Fourteen species of triclad planarians have been recorded from freshwater habitats in Maryland, five of which (*Cura foremani, Dugesia* [*G.*] *tigrina, Hymanella retenuova, Phagocata gracilis,* and *Phagocata morgani*) have been recorded from Montgomery County (Norden et al. 1990). From 1995 to 2005, planarians were collected on Plummers Island and the adjacent mainland property, a 16-hectare tract previously owned by the Washington Biologists' Field Club (1901–1959) and now included within the C&O Canal National Historical Park. Located about 14.5 km west of central Washington, D.C., the property is situated along the northern shore of the Potomac River between the Capital Beltway (I-495) and Rock Run, Montgomery County, Maryland. There are no previous records of planarians from this portion of the C&O Canal National Historical Park.

The Plummers Island property exhibits a notable diversity of aquatic habitats including the main stem of the Potomac River, a shallow channel between the Island and the Maryland mainland, vernal pools, short duration temporary pools, small rock pools, seepage/spring wetlands, Rock Run, and the C&O Canal. Plummers Island was visited on numerous occasions from 1995 to 2005, and these aquatic habitats were examined for the presence of various invertebrates, including freshwater triclads. The five species recorded are discussed below. Taxonomy follows that of Kenk (1989).

Dugesia (*Girardia*) *tigrina* (Girard, 1850)

On several occasions *D. tigrina* were observed in water filled ''potholes'' worn in a rock outcrop near the river bank at the east end of Plummers Island. Several individuals also were found in a container being used to transport *Corbicula fluminea* (Muller, 1774) collected in the overflow channel from Lock 10 during the summer of 2005. Those planarians were either picked up incidentally with the clams, or were inside of the clam shells. Those in the potholes were undoubtedly brought there by the flood waters that regularly inundate this portion of the flood plain.

Hymanella retenuova Castle, 1941

During the spring of 2002, *H. retenuova* were found in fallen deciduous leaves on the bottom of a vernal pool near the river south of Lock 12. Some individuals were carrying the dark cocoons that give this planarian its specific name. *Phagocata velata* also were found in these pools at the same time, but *Hymanella* were notably more numerous.

Paraplanaria dactyligera (Kenk, 1935)

In February 2005, two small, densely pigmented black planarians were found in floodplain seepage wetlands on each side of the river access road from Lock 10. Although neither individual was sexually mature, both were externally identical to Maryland specimens of *P. dactyligera.* Norden et al. (1990) showed a tight cluster of localities for this species in Garrett County and a single site on the Atlantic Coastal Plain in southern Prince Georges County. The specimens from Plummers Island bridge part of the gap between those localities.

Phagocata morgani (Stevens & Boring, 1906)

Phagocata morgani were found in small numbers during spring of 2002 in an intermittent wetland flowing to the river in the vicinity of Lock 12 and in a permanent seepage wetland just west of the river access road running south from Lock 10. These pla-

narians were always found where springs or groundwater seeps emerged.

Phagocata velata (Stringer, 1909)

Phagocata velata were found with *Hymanella* in the vernal pool during the spring of 2002. Although they also inhabit springs and seepage areas (Castle 1927, Kenk 1944, Ball et al. 1981), none was found in those habitats in the vicinity of Plummers Island.

Discussion

This is the first report of *P. dactyligera* and *P. velata* in Montgomery County. The three other species were recorded from that county by Norden et al. (1990). With the exception of *P. dactyligera,* these species are widespread and common in Maryland, and their presence at Plummers Island is not surprising. *Paraplanaria,* as noted above, shows a major disjunction between a population in the far western part of Maryland and a single locality on the coastal plain east of Washington, D.C. There are no previous records for triclad planarians from the Plummers Island vicinity, possibly because these soft bodied invertebrates are very difficult to preserve and identify.

Dugesia (*G.*) *tigrina* is a common inhabitant of most bodies of flowing water in Maryland, and it is probably more abundant in the Potomac River and its tributaries in the vicinity of Plummers Island than these few observations suggest. Both *H. retenuova* and *P. velata* are common elements in the fauna of vernal pools in the Northeast (Castle 1927, 1941; Kenk 1949, Ball et al. 1981, Norden et al. 1990) and typically can be found in the layer of deciduous leaves that blankets the substrate. *Phagocata morgani* are very common inhabitants of springs and seepage areas west of the Fall Line.

Although *D.* (*G.*) *tigrina* have been shown to tolerate high temperatures (Chandler 1966), low oxygen concentrations (Abbott 1960, Russier-Delolme 1974), and substantial levels of organic enrichment (pers. obs.), the other four species found on the Plummers Island property all appear to be indicators of high quality aquatic habitat. The presence of both *H. retenuova* and *P. velata* in the Plummers Island vernal pools shows that the pools are of high quality despite occasional flooding by the Potomac River. The occurrence of *Phagocata morgani* and *P. dactyligera* in spring/seepage areas shows that the local groundwater resurgences are cool and clean.

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