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Coccinellidae or Ladybird Beetles (Insecta: Coleoptera) of Plummers Island, Maryland

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Abstract.—Based on historical specimens in the collection of the National Museum of Natural History, Smithsonian Institution, Washington, D.C., 25 species of Coccinellidae (Coleoptera) were collected on Plummers Island between 1902 and 1960. This represents approximately 32% of the recorded fauna of Maryland. *Neoharmonia venusta venusta* (Melsheimer) was the most commonly collected species.

Key words.—Historical records, inventory, predaceous beetles, introduced species.

The Coccinellidae (ladybird beetles) are primarily predaceous as adults and larvae on soft-bodied insects. However, a few species are plant or fungus feeders. Some predaceous species prefer certain species of prey or are restricted to specific habitats, while many are generalists. Coccinellids are effective predators when prey is abundant, but are considered less effective in low prey populations. There are 481 species in North America (Vandenberg 2002), with 78 in Maryland (Gordon 1985). They may be collected by beating or sweeping foliage and examining flowers, or by using blacklight, Malaise, and flight-intercept traps.

There is concern that population explosions of two introduced species, *Coccinella septempunctata* L. and *Harmonia axyridis* (Pallas), may competitively exclude native species. Staines et al. (1990) first observed this when *Coccinella novemnotata* Herbst was out-competed by the introduced *C. septempunctata*. The introduction of *H. axyridis* has further depressed populations of native species.

The insect collection at the National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C., was examined for specimens collected on Plummers Island, Maryland. This collection is the major repository for specimens from Plummers Island since most of the entomologists who worked on the Island were members of the Washington Biologists' Field Club and affiliated with the USNM. Species identifications were confirmed, and label data were recorded for specimens. Literature on various genera was examined for additional Plummers Island records. The taxa are listed below alphabetically by genus and then by species.

There are 78 coccinellid specimens in the USNM collection from Plummers Island representing 25 spe-

cies (32% of the Maryland fauna). Consistent with many groups of insects studied from the Island, all but two of the specimens were collected prior to 1920. Hence, this paper is based on historical records. Specimens have been collected throughout the year.

Species Accounts

Adalia bipunctata (Linnaeus) feeds on aphids (Homoptera: Aphididae) (Gordon 1985). Three specimens were collected from 21 May 1902 to 3 November 1907.

Anatis labiculata (Say) feeds on aphids (Gordon 1985). Three specimens were collected from 17 May 1908 to 11 July 1909.

Axion tripustulatum (DeGeer) feeds on scale insects (Homoptera: Coccoidea) (Gordon 1985). One specimen was collected on 3 August 1919.

Brachicantha felina (Fabricius) has been associated with aphids (Staines et al. 1990). Two specimens were collected on 19 April 1902 and 29 June 1911.

Brachicantha quadripunctata quadripunctata (Melsheimer) feeds on Coccidae and Aphididae (Homoptera) (Wheeler 1911, Montgomery & Goodrich 2002). Three specimens were collected on 27 April and 15 June 1902.

Brachicantha ursina (Fabricius) feeds on aphids (Montgomery & Goodrich 2002). One specimen was collected on 6 June 1914.

Coleomegilla maculata lengi Timberlake feeds on aphids (Gordon 1985). Two specimens were collected on 4 June 1905 and 20 July 1920.

Delphastus pusillus (LeConte) feeds on whiteflies (Homoptera: Aleyrodidae) (Gordon 1985). Four specimens were collected from 21 May 1902 to 2 August 1908.

Epilachna borealis (Fabricius), the only phytoph-

agous species found on Plummers Island, feeds on various members of Cucurbitaceae (Gordon 1985). Three specimens were collected from 21 August 1917 to 12 December 1920.

Hyperaspis signata signata (Olivier) feeds on *Carulaspis* sp. (Homoptera: Diaspididae) (Staines et al. 1990). Two specimens were collected on 22 April 1903 and 2 July 1915.

Microweisea misella (LeConte) feeds on armored scale insects (Homoptera: Diaspididae) (Gordon 1985). One specimen was collected on 12 June 1910.

Mulsantina picta (Randall) feeds on aphids and scales (Gordon 1985). One specimen was collected on 27 August 1922.

Myzia pullata (Say) feeds on aphids (Gordon 1985). One specimen was collected on 17 June 1913.

Neoharmonia venusta venusta (Melsheimer) was the most commonly collected species with 19 specimens from 30 May 1908 to 13 July 1913. This is a widespread species in Maryland, frequently found in trees. Larvae feed on *Chrysomela* spp., *Plagioderia* spp., and *Phratora* spp. (Coleoptera: Chrysomelidae) but also on aphids (Homoptera: Aphididae) (Whitehead & Duffield 1982).

Nephus flavifrons (Melsheimer) feeds on scale insects (Gordon 1985). Two specimens were collected on 11 May 1905 and 1 June 1908.

Psyllobora vigintimaculata (Say) feeds on mildew fungi (Gordon 1985). Two specimens were collected on 15 June 1902 and 25 July 1903.

Scymnus brullei Mulsant feeds on scale insects (Gordon 1976). Two specimens were collected on 4 June 1905 and 8 May 1913 at light.

Scymnus cervicalis Mulsant has been associated with aphids (Staines et al. 1990). Five specimens were collected from 28 June 1905 to 12 July 1919.

Scymnus compar Casey feeds on scale insects (Gordon 1976). Five specimens were collected from 16 May 1902 to 27 September 1960.

Scymnus fraternus LeConte feeds on scale insects (Gordon 1976). Five specimens were collected from 13 June 1905 to 12 July 1919.

Scymnus kansanus Casey feeds on scale insects (Gordon 1976). One specimen was collected on 25 August 1908.

Scymnus puncticollis LeConte feeds on scale insects (Gordon 1976). One specimen was collected on 19 June (no year).

Scymnus rubricaudus Casey feeds on scale insects (Gordon 1976). One specimen was collected on 19 August 1905.

Scymnus tenebrosus Mulsant feeds on scale insects (Gordon 1976). Six specimens were collected from 5 June 1903 to 14 July 1915.

Stethorus punctum punctum (LeConte) feeds on spider mites (Arcari: Tetranychidae) (Gordon 1985). One specimen was collected on 27 September 1960.

Only one of the 25 species collected on Plummers Island was collected more than ten times. Nine species were collected once; six were collected twice; four were collected three times; one was collected four times; three were collected five times; and one was collected six times. Because of the lack of recent material, data analysis is not possible.

This family would be an excellent candidate for future work. Adults are easily collected and identified, and their biology is fairly well understood. A comparison of the current fauna with that prior to 1920 could provide insight into the possible impacts of introduced species on the native fauna.

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