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Hymenoptera (Insecta) of Plummerville Island, Maryland: Symphyta and Selected Families of Apocrita

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Abstract.—Ninety-one species of sawflies (Hymenoptera: Symphyta) are recorded for Plummerville Island, Maryland. Records are from collections during the periods of 1902–1924, 1958–1972, and 2005. An estimated 97 species currently may occur on the Island. Indications are that species composition has changed through the years. Only 22 of the 51 species (43%) collected during 1902–1924 have been collected in subsequent years, and only 26 of the 48 species collected in 2005 (54%) have been collected previously. Records also are given for 20 species of 11 families of Apocrita: 6 species of Aulacidae, 3 of Evaniidae, 1 of Gasteruptionidae, 1 of Heloridae, 1 of Ibalidae, 1 of Pelecinidae, 1 of Ropronidae, 2 of Rhopalosomatidae, 1 of Stephanidae, 2 of Trigonalidae, and 1 of Vanhorniidae.

Key words.—Inventory, Malaise trap, historical records, Aulacidae, Evaniidae, Gasteruptionidae, Heloridae, Ibalidae, Pelecinidae, Ropronidae, Rhopalosomatidae, Stephanidae, Trigonalidae, Vanhorniidae.

The earliest collections of Hymenoptera on Plummerville Island were in 1902. This was the beginning of the first period of collecting activity, which ended in 1924. Some of the early history and exploration of the Island and those involved were given by Krombein (1963). The second period of Hymenoptera collections was during 1958–1972 when Krombein studied the wasp fauna of this Island. In 1963, Krombein reported 274 species of aculeate wasps. This remains the only published list of any Hymenoptera of the Island. The sawfly (suborder Symphyta) fauna has never been studied, as well as that of several other families reported here. Though early collectors concentrated on other orders and Krombein concentrated on the Aculeata, many specimens of other taxa also were collected during these two periods.

In 2005, two Malaise traps were used on the Island to again survey the Hymenoptera fauna, this time concentrating on the sawflies. Here, I report the results of sawfly studies of Plummerville Island as well as several other less common Hymenoptera families. Though collections of sawflies during the 1902–1924 and 1958–1972 periods were incidental, there is a considerable number of records for each. None were collected during the intervening periods of 1925–1957 and 1973–2004. Considering the rich flora of the Island (Shetler et al. 2005), the sawflies, most of which are phytophagous and closely associated with the flora, should be equally diverse. Also, the sawfly

species composition should show changes similar to the floral changes through the years (Shetler et al. 2005). The first sawflies were collected on the Island in the spring of 1902. Through the 2005 collections, I record 91 species of Symphyta that have been taken on the Island over the 103 years. In addition, I record 6 species of Aulacidae, 3 Evaniidae, 1 Gasteruptionidae, 1 Heloridae, 1 Ibalidae, 1 Pelecinidae, 1 Ropronidae, 2 Rhopalosomatidae, 1 Stephanidae, 2 Trigonalidae, and 1 Vanhorniidae.

Materials and Methods

Two sources of data were used, historical data from specimens in the collection of the National Museum of Natural History, Smithsonian Institution (USNM), and collections made in 2005. The USNM collection was surveyed for previous records from Plummerville Island. Data were taken only for those specimens labeled Plummerville Island; specimens that are undoubtedly from the mainland or nearby, e.g., labeled “nr. Plummerville Island,” were not recorded. All previous collections were from two time periods, those from early collectors from 1902 through 1924 and those by Krombein from 1958 through 1972.

The most effective way to survey for sawflies is the use of flight interception traps, and, during 2005, two Townes-style Malaise traps (Townes 1972) were set up on the Island. One trap, termed the “upper trap,” was placed on top of a high knoll just west of

cabin hill. The other, termed the “lower trap,” was at the foot of and east of cabin hill rather near the Potomac River. Traps were set up on April 12 and taken down on October 2, thus allowing continuous collections through that period. The killing media was 95% ethyl alcohol in quart jars placed on one end of the trap. Traps were serviced approximately every two weeks. Target insects were sorted from the trap samples, mounted, and labeled. I identified or rechecked identifications of all taxa listed in this paper. All specimens are deposited in the USNM.

Results

Suborder Symphyta

Over the past 103 years, 91 species of Symphyta have been collected on Plummers Island. During 1902–1924, 51 species were collected, during 1958–1972, 29 species were collected, and in 2005, 48 species were collected. Of the 91 species, 29 were collected only during 1902–1924, 10 were collected only during 1958–1971, and 22 were collected only in 2005. Thirty species were collected during two or more of the three collection periods: 4 species were common to 1902–1924 and 1958–1972; 11 species were common to 1902–1924 and 2005; 8 species were common to 1958–1972 and 2005; and 7 species were collected during each of the three time periods.

Sawflies collections from each of the three periods are not thorough enough to assess changes in species composition or evaluate increases or declines in species richness. Additionally, host plants are not known for many of the sawflies; thus, changes cannot be correlated with changes in the flora. Indications are that there have been some changes through time since 29 of the 51 species collected during 1902–1924 have not been taken in ensuing years, and 22 of the 48 species collected in 2005 were not taken in previous years.

Collections likewise are insufficient to predict the number of species that may be on the Island during any one period of time. However, the Malaise trap collections of 2005 may provide a solid basis for an estimate. During a five-year study on sawfly diversity in the forests of Virginia and West Virginia using Malaise traps (Braud et al. 2003), 155 species of sawflies were collected, and approximately 190 species were estimated to actually occur in the forests studied. An estimated 81% of the actual sawfly fauna was collected during the five years. Of the 155 species collected, approximately 60% were taken during the first year of collecting, and of the estimated total fauna, approximately 50% were taken during the first year. These data also are similar to collections I have made over five or more years at localities in the Virginia Coastal Plain and Virginia Piedmont regions and in West Virginia (unpublished data). If the same

percentages can be applied to the fauna of Plummers Island, potentially 78 species could be collected during a five-year study and approximately 97 species could occur at this time on the Island. Thus, the 91 species recorded over 103 years may equal almost the number that occur on the Island at any one point in time, though the species composition would be different.

Comparing the two traps used in 2005, 20 species were taken in the upper trap and 43 species taken in the lower trap. Fifteen of the 48 species collected were taken in both traps, whereas 5 were unique to the upper trap and 28 were unique to the lower trap. The greater richness in the lower trap may be due to the greater diversity of dense, shrubby vegetation around that trap and perhaps a better flight path for insects.

For such a small parcel of land, the sawfly fauna of Plummers Island is surprisingly rich. About 220 species of sawflies occur in the Washington, D.C. area (unpublished data); thus, about 41% occur on Plummers Island. Smith & Barrows (1987) recorded 117 species of Symphyta in urban environments in the Washington, D.C. area, and, of those recorded, 52 (44%) are documented from Plummers Island. Many of those recorded by Smith & Barrows (1987) are associated with ornamental plants, such as roses and conifers, which may not occur on the Island. Studies of sawfly diversity of mixed oak-pine forests in the central Appalachians (Braud et al. 2003, Strazanac et al. 2003) listed 155 species. Fifty-five of these (36%) also have been taken on Plummers Island. Collections in four other sites in the mid-Atlantic regions for five or more years (unpublished data) have produced about 160 species at a coastal plain site in Essex County, Virginia, about 190 species at a Piedmont site in Louisa County, Virginia, about 205 species at a site in the Shenandoah Valley in Clarke County, Virginia, and about 170 species at a site of approximately 2000 feet elevation in Hardy County, West Virginia. Over 120 species of sawflies have been taken in a trap set in a backyard of a suburban Virginia home through 25 years (unpublished data). The 25 years saw changing environments in the neighborhood, e.g., different ornamental plants, and should not be construed to mean that 120 species occur there at one period of time. Normally, about 45–50 species are collected each year.

Sawflies are most active in the spring. In 2005, numbers of species and numbers of specimens caught were greatest from mid-May through the first part of July, e.g., 25 species and 63 and 79 specimens, respectively, were collected during May 9–22 and May 30–June 13. The earliest dates were April 12–23, though some may appear in March. Beginning mid-July through the last collection date of September 12–October 2, only about 10 species and 40 speci-

mens were trapped. Most of those collected late are species with multiple generations a year.

Plummers Island is the type locality for five species of sawflies: *Arge salicis* Rohwer, *Monophadnus bakeri* Smith, *Phymatocera smilacinae* Smith, *Ametastegia becri* Smith, and *Tenthredo fisheri* Rohwer. Some other records of interest are *Monoctenus* sp. associated with juniper; *Strongylogaster remota* Rohwer which is rarely collected and presumably associated with ferns; *Leucopelmonus annulicornis* (Harrington) which is more common at higher elevations in the Appalachians and rarely found in the D.C. area but caught in fair numbers on the Island; *Macrophya phylacida* Gibson which is known from very few specimens; and *Tenthredo nimbipennis* Cresson which has not been collected at any other locality in the D.C. area.

The following data are given in the list of species: name; dates of collections formatted month-day-year with the 2005 collections separated by trap and numbers of specimens in parentheses; in some cases, some notes on the species are given if on the labels; and the recorded host-plant genus for the species, if known (from Smith 1979b).

Species Accounts

Pamphiliidae

Neurotoma fasciata (Norton).—IX-1907.

Host.—Larvae gregarious in webs on *Prunus* spp.

Onycholyda luteicornis (Norton).—IV-18-1903; V-9-22-2005, lower trap (1).

Host.—Larvae in leaf folds on *Rubus* spp.

Pamphilius ochreipes (Cresson).—IV-24-V-8-2005, lower trap (1).

Host.—Larvae in leaf folds on *Viburnum opulus* L.

Cimbicidae

Zaraea lonicerae (L.).—IV-12-23-2005, upper trap (2), lower trap (1). This is an introduced species. My collections in 1965 along the Potomac River opposite Plummers Island are the first records in the Washington area.

Host.—*Lonicera*, *Symphoricarpos* sp.

Pergidae

Acordulecera dorsalis Say.—IV-22-1903; V-7-1910; V-28-1911; VI-2-1912; V-5-1924; IV-27; IV-12-23-2005, lower trap (43), upper trap (1); IV-24-V-8-2005, lower trap (14); V-9-22-2005, lower trap (5); V-22-29-2005, lower trap (2); V-30-VI-13-2005, lower trap (31), upper trap (1); VI-14-26-2005, lower trap (1).

Hosts.—*Quercus*, *Carya*, *Juglans*, *Castanea*.

Acordulecera maculata MacGillivray.—V-20-1961; V-23-1961; V-25-1961; VI-4-1961.

Acordulecera melina MacGillivray.—VII-8-20-1968; VII-28-VIII-14-2005, lower trap (2).

Acordulecera pellucida (Konow).—VI-6-1905; VI-20-1913; V-22-29-2005, lower trap (1); VI-27-VII-11-2005, lower trap (1); VIII-29-IX-11-2005, lower trap (4).

Diprionidae

Monoctenus sp.—IV-12-23-2005, upper trap (1).

Host.—*Juniperus*, *Thuja*.

Argidae

Arge cerulea (Norton).—VI-27-1909.

Arge onerosa MacGillivray.—VII-20-1913.

Arge quidia Smith.—One paratype from Plummers Is., 1909 (Smith 1989).

Host.—*Quercus*.

Arge salicis (Rohwer).—Many specimens collected or bred from larvae on *Salix niga* Marsh in 1909. According to Schwarz (1909, reported as “*Hylotoma pectoralis*”) larvae were exclusively on black willow, *Salix nigra*, along the river margins, not on other species of willow nor on birch in the same area, and all willows growing on more elevated ground were left intact. Nearly all willows were completely defoliated. Several parasites of this species were recorded. Type locality of this species (Rohwer 1912).

Host.—*Salix*.

Arge willi Smith.—VI-15-1908.

Host.—*Corylus*.

Atomacera debilis Say.—VI-5-1903; VIII-2-1905; VI-7-1908; VII-24-1910; VIII-3-1912; VIII-11-1912; VI-24-1917.

Host.—*Desmodium*, *Lespedeza*.

Atomacera decepta Rohwer.—VIII-29-1905; VI-1914 (*Hibiscus militaris*).

Host.—*Hibiscus*.

Schizocerella pilicornis (Holmgren).—VII-30-1908.

Host.—*Portulaca*.

Tenthredinidae

Selandriinae

Hemitaxonus dubitatus (Norton).—IV-24-1908.

Host.—*Onoclea sensibilis* L.

Strongylogaster impressata (Provancher).—IV-19-1972.

Host.—ferns.

Strongylogaster remota Rohwer.—IV-12-23-2005, lower trap (1).

Host.—ferns (?).

Dolerinae

Dolerus centralis Ross.—IV-12-23-2005, upper trap (1).

Dolerus apricus (Norton).—V-9-22-2005, lower trap (1).

Host.—Unknown; elsewhere, adults have been collected abundantly on *Equisetum arvense* L.

Nematinae

Craterocercus fraternalis (Norton).—IV-12-23-2005, upper trap (1).

Host.—*Quercus*.

Nematus abbotii (Kirby).—IV-12-23-2005, lower trap (5); IV-24-V-8-2005, lower trap (1); V-9-22-2005, lower trap (1).

Host.—*Robinia*.

Nematus corylus Cresson.—IX-4-1905.

Host.—*Corylus*.

Nematus ostryae (Marlatt).—IX-4-1972.

Host.—*Ostrya*.

Nematus tibialis Newman.—VI-26-1912; VI-14-26-2005, lower trap (1); IX-12-X-2-2005, lower trap (1).

Hosts.—*Robinia*, *Gleditsia*.

Nematus ventralis Say.—VII-20-1912; VIII-11-1912 (many specimens).

Host.—*Salix*.

Pachynematus corniger (Norton).—IX-6-1960; IV-12-23-2005, upper trap (1); V-9-22-2005, lower trap (1), upper trap (1); V-22-29-2005, lower trap (2); V-30-VI-13-2005, lower trap (4); VI-14-26-2005, lower trap (1).

Host.—*Carex*.

Pristiphora banksi Marlatt.—VII-8-20-1968; IV-12-23-2005, lower trap (1); V-9-22-2005, lower trap (1); V-22-29-2005, lower trap (3); V-30-VI-13-2005, lower trap (3); VI-14-26-2005, lower trap (4).

Host.—*Vaccinium*.

Pristiphora chlorea (Norton).—V-2-1909; IV-25-1915.

Host.—*Quercus*.

Pristiphora paloma Wong and Ross.—VI-14-1912.

Pristiphora zella Rohwer.—V-9-22-2005, lower trap (1).

Hosts.—*Rubus*, *Geum*, other Rosaceae?

Heterarthrinae

Caliroa quercuscoccineae (Dyar).—V-30-VI-13-2005, lower trap (1).

Host.—*Quercus*.

Caliroa fasciata (Norton).—VIII-3-1912; VI-18-1916, VII-6-1921.

Host.—*Quercus*.

Caliroa lobata MacGillivray.—VIII-5-1914, VIII-12-1914; IX-13-1958.

Host.—*Quercus*.

Caliroa lorata MacGillivray.—IV-20-1912; VIII-26-1960.

Metallus rohweri MacGillivray.—VIII-4-1914.

Host.—*Rubus* (leafminer).

Blennocampinae

Monophadnoides pauper (Provancher).—V-11-1911; VI-5-1914; IV-5-1915.

Monophadnus aequalis MacGillivray.—IV-27-1914.

Host.—*Ranunculus*.

Monophadnus bakeri Smith.—VI-1-1913. Type locality for this species (Smith 1969).

Paracharactus rudis (Norton).—V-16-1902; IV-29-1915; IV-12-23-2005, upper trap (6); V-9-22-2005, lower trap (4), upper trap (8); V-22-29-2005, lower trap (3), upper trap (1); V-30-VI-13-2005, upper trap (2).

Periclista media (Norton).—IV-12-23-2005, lower trap (1).

Host.—*Quercus*.

Periclista marginicollis (Norton).—III-29-1903; IV-11-1911.

Host.—*Hicoria*.

Periclista spp. (larvae).—V-9-22-05, lower trap (2), upper trap (2). Larvae cannot be identified to species, but it appears at least two species are present, possibly the above or other species.

Phymatocera fumipennis (Norton).—VI-28-1905; VII-1907; VI-29-1911; VI-24-1917; VI-25-1959; VI-14-26-2005, lower trap (2); VI-27-VII-11-2005, lower trap (1).

Host.—*Smilacina*.

Phymatocera smilacinae Smith.—Many specimens collected from mid-April through mid-May in 1912, 1913, 1914, 1915, 1916, 1920. Type locality for this species (Smith 1969).

Host.—*Polygonatum*, *Smilacina*.

Tethida barda (Say).—IV-30-1965.

Host.—*Fraxinus*.

Allantinae

Ametastegia aperta (Norton).—VII-4-1907; IV-26-1908; IV-14-1910; IV-15-1910; VI-20-1911; IV-14-1912; IX-18-1912; IV-18-1913; VI-8-1913; VI-17-1913; VI-29-1912, VII-31-1913; V-1-1914; IV-14-15-1915; IX-5-1915; V-10-1916; VI-18-1916; VIII-29-1959; IX-5-1959; X-24-1959; VII-2-1960; IX-5-1960; V-5-1961; IV-12-23-2005, lower trap (1); V-9-22-2005, lower trap (1); VI-27-VII-11-2005, lower trap (1).

Ametastegia articulata (Klug).—VI-15-1911; VI-17-1961; VIII-30-1961; IX-6-1961; VI-2-1962; VII-28-1962.

Hosts.—*Rumex*, *Polygonum*.

Ametastegia becria Smith.—VI-26-1912; IV-24-

- 1915; XI-11-1915. Type locality for this species (Smith 1979a).
- Ametastegia glabrata* (Fallén).—IX-9-1962.
Host.—*Rumex*.
- Ametastegia pallipes* (Spinola).—V-9-22-2005, lower trap (1).
Host.—*Viola*.
- Ametastegia pulchella* (Rohwer).—IV-22-1903; VI-9-1907; V-1908; V-7-1910; VII-28-1912; IV-12-23-2005, lower trap (1); V-9-22-2005, lower trap (4); V-22-29-2005, lower trap (2); V-30-VI-13-2005, lower trap (1), upper trap (1); VI-14-26-2005, lower trap (10), upper trap (4); VI-27-VII-11-2005, lower trap (1), upper trap (1); VIII-29-IX-11-2005, lower trap (3), upper trap (1).
Host.—*Tovara*.
- Empria maculata* (Norton).—IV-12-23-2005, upper trap (2); V-9-22-2005, lower trap (2); V-22-29-2005, lower trap (2).
Hosts.—*Fragaria*, *Potentilla*, *Rubus*.
- Eriocampa juglandis* (Fitch).—VII-22-1914.
Host.—*Juglans*.
- Macremphytus testaceus* (Norton).—VI-15-1902; VI-28-1905.
Host.—*Cornus*.
- Taxonus epicera* (Say).—IV-28-1914; V-8-1915; V-9-1916; IV-23-1971; IV-12-23-2005, lower trap (1).
- Taxonus pallidicornis* (Norton).—VIII-3-1912; IX-5-1915; V-9-22-2005, lower trap (2); V-22-29-2005, lower trap (1); V-30-VI-13-2005, lower trap (2); VI-27-VII-11-2005, lower trap (1).
Host.—*Rubus*.
- Taxonus pallipes* (Say).—VIII-29-1959; V-9-22-2005, lower trap (1); V-30-VI-13-2005, lower trap (2); VI-27-VII-11-2005, lower trap (4).
- Taxonus rufocinctus* (Norton).—VII-24-1902.
Host.—*Rubus*.
- Tenthredininae
- Aglaostigma semiluteum* (Norton).—VI-17-1912; VI-19-1913; VI-11-1914; VI-10-1917.
Host.—*Impatiens*.
- Lagium atroviolaceum* (Norton).—VI-2-1971.
Host.—*Sambucus*.
- Leucopelmonus annulicornis* (Harrington).—V-1-1971; IV-12-23-2005, lower trap (1), upper trap (2); IV-23-V-8-2005, lower trap (2), upper trap (1); V-9-22-2005, lower trap (2), upper trap (4).
- Macrophya albomaculata* (Norton).—VIII-18-1916.
- Macrophya bifasciata* (Say).—IV-24-V-8-2005, lower trap (1); V-9-22-2005, lower trap (3); V-30-VI-13-2005, lower trap (1).
- Macrophya cassandra* Kirby.—V-26-1972; V-9-22-2005, upper trap (1); VI-14-26-2005, lower trap (1).
- Macrophya epinota* (Say).—V-26-1972.
- Macrophya flavolineata* (Norton).—V-9-22-2005, lower trap (4).
- Macrophya formosa* (Klug).—VII-20-1912; VII-30-1960; VI-18-1971; V-30-VI-13-2005, lower trap (3), upper trap (1); VI-14-26-2005, lower trap (4), upper trap (4); VI-27-VII-11-2005, lower trap (1), upper trap (1).
- Macrophya macgillivrayi* Gibson.—VII-24-1902; VII-10-1910; VI-20-1911; VI-29-1913; VI-7-1914; VII-21-1912; VII-28-1912; VI-11-1914, VII-3-1959; VII-4-1921; V-30-VI-13-2005, upper trap (1); VI-14-26-2005, upper trap (1); VI-27-VII-11-2005, lower trap (1).
- Macrophya mensa* Gibson.—VI-8-1913; VI-27-VII-11-2005, lower trap (1).
- Macrophya pannosa* (Say).—V-9-22-2005, lower trap (1).
Host.—*Sambucus*.
- Macrophya phylacida* Gibson.—V-9-22-2005, lower trap (1).
- Macrophya pulchella* (Klug).—VI-11-1914; VI-11-1972.
- Macrophya simillima* (Rohwer).—V-4-1965.
- Macrophya trisyllaba* (Norton).—VII-8-20-1968; V-22-29-2005, lower trap (1); V-30-VI-13-2005, lower trap (2); VI-14-26-2005, lower trap (2); VI-27-VII-11-2005, lower trap (1).
Host.—*Sambucus*.
- Macrophya varia* (Norton).—V-30-VI-13-2005, lower trap (1).
- Macrophya zoe* Kirby.—IV-12-23-2005, upper trap (4); IV-23-V-8-2005, lower trap (2); V-9-22-2005, lower trap (1), upper trap (1).
- Tenthredo fernowi* Goulet and Smith.—V-9-22-2005, lower trap (5); V-22-29-2005, lower trap (1).
- Tenthredo fisheri* (Rohwer).—VII-7-1907; VII-21-1907; V-30-1908; VII-11-1909; VI-26-1959; VI-9-1962; VI-3-1972; V-9-22-2005, lower trap (1); V-30-VI-13-2005, lower trap (3), upper trap (1); VI-14-26-2005, lower trap (5); VI-27-VII-11-2005, lower trap (3). Type locality for this species (Rohwer 1913).
- Tenthredo mellicoxa* Provancher.—V-19-1918; IV-12-23-2005, upper trap (3); IV-23-V-8-2005, lower trap (2); V-9-22-2005, lower trap (3); V-22-29-2005, lower trap (1).
- Tenthredo nimbipennis* Cresson.—VI-20-1911; VI-23-1914; VII-2-1957; VII-3-1959; VII-5-1959; VII-2-1960; VI-14-1961; VI-17-1971; VI-1-26-1971; VII-21-1971.
- Tenthredo rufopecta* (Norton).—VI-17-1913; V-30-VI-13-2005, upper trap (1).
- Tenthredo yuasi* MacGillivray.—IV-12-23-2005, lower trap (1).

Orussidae

Orussus minutus Middlekauff.—Several specimens, IV-11-1971. The type locality for this species is on the mainland opposite Plummers Island.

Host.—Possible parasitoid of wood-boring beetles.

Xiphydriidae

Xiphydria abdominalis Say.—IX-1912; VI-27-VII-11-2005, lower trap (1); VII-12-28-2005, lower trap (1); VIII-29-IX-11-2005, lower trap (1).

Host.—Wood borer in small limbs of *Tilia americana* L.

Xiphydria maculata Say.—VI-15-1903; numerous specimens reared from *Acer* in 1912 and 1913; V-21-1918; VIII-27-1960; VI-14-26-2005, lower trap (1), upper trap (1).

Host.—Wood borer in small limbs of *Acer* (preferred); also recorded from *Tilia*, *Malus*.

Xiphydria tibialis Say.—VII-8-20-1968; V-30-VI-13-2005, upper trap (3); VI-27-VII-11-2005, lower trap (1); VII-12-28-2005, upper trap (1).

Hosts.—Wood borer in small limbs of *Acer*, *Betula*, *Fagus*, *Malus*, *Quercus*, *Tilia*, *Ulmus*.

Siricidae

Tremex columba (L.).—VII-12-28-2005, upper trap (1); VIII-29-IX-11-2005, upper trap (1); IX-12-X-2-2005, upper trap (1); lower trap (2).

Hosts.—Wood borer in *Acer*, *Ulmus*, *Quercus*, *Hicoria*, *Fagus*, probably other deciduous trees.

Cephididae

Janus bimaculatus (Norton).—VI-6-1912.

Host.—Twig borer in *Viburnum*.

Janus integer (Norton).—VI-6-1908.

Host.—Twig borer in *Ribes*.

Suborder Apocrita

Data for selected non-Symphyta families were recorded for the same periods of time as the Symphyta and include 20 species of 11 families. The families reported here are listed alphabetically. The format is the same as for the previous list.

Aulacidae

Fifteen species are known in the mid-Atlantic states (Smith 1996b), only six of which have been taken on Plummers Island. Species are parasitoids of wood-boring Coleoptera (Cerambycidae and Buprestidae) and Hymenoptera (Xiphydriidae).

Aulacus burquei (Provancher).—VIII-20-1907 (*Carpinus americana*); VIII-23-1907; VIII-9-1910;

VIII-29-1912 (*Acer*); V-26-1913 (*Acer*); VI-6-1913 (*Acer*); V-22-29-2005, lower trap (3), upper trap (1); V-30-VI-13-2005, lower trap (3), upper trap (1).

Hosts.—Parasitoid of *Xiphydria maculata* Say, *Xiphydria* sp. (Xiphydriidae) Specimens reared from wood of *Acer* in 1912 and 1913 were from the same rearings as *Xiphydria maculata*.

Aulacus impolitus Smith.—V-9-22-2005, upper trap (1).

Aulacus lovei (Ashmead).—V-30-VI-13-2005, lower trap (1).

Host.—Parasitoid of *Xiphydria* sp. (Xiphydriidae).

Pristaulacus flavicrurus (Bradley).—V-30-VI-13-2005, upper trap (3); VI-14-26-2005, upper trap (2); VI-27-VII-11-2005, upper trap (1).

Pristaulacus stigmaterus (Cresson).—V-30-VI-13-2005, lower trap (3), upper trap (9); VI-14-26-2005, lower trap (1), upper trap (3).

Pristaulacus strangaliae Rohwer.—VII-5-1909.

Hosts.—*Anoplodera* spp. (Cerambycidae).

Evaniidae

Six species are known in the mid-Atlantic states (Smith 1998), two of which are introduced and occur only in urban situations. Of the other four found in field collections, three have been taken on Plummers Island. Species are egg parasitoids of cockroaches.

Evaniella semaeoda Bradley.—VII-3-1959; VII-15-1959; VII-20-1961; VII-21-1963; VII-8-20-1968; VI-6-1971; VII-5-1971; VIII-1-1971; VI-14-26-2005, lower trap (4); VI-27-VII-11-2005, lower trap (6), upper trap (1); VII-12-28-2005, lower trap (5).

Hosts.—Parasitoids of *Parcoblatta* spp.

Hyptia harpyoides Bradley.—VI-28-1908; VII-11-1909; VI-20-1912; VI-6-1959; VI-20-1959; VI-25-1959; VII-5-1959; VI-20-1960; VII-2-1960; VII-9-1961; VII-8-20-1968; VI-18-1971; VII-5-1971; V-30-VI-13-2005, lower trap (2), upper trap (1); VI-14-26-2005, lower trap (6), upper trap (1); VI-27-VII-11-2005, lower trap (5), upper trap (5); VII-12-28-2005, lower trap (1).

Hosts.—Parasitoids of *Parcoblatta* spp.

Hyptia thoracica (Blanchard).—VI-27-VII-11-2005, upper trap (1).

Gasteruptiidae

Five species are known in eastern North America (Smith 1996c) and at least three should occur on Plummers Island. To date, only one has been found and none were taken in 2005. Species are parasitoids of wood-nesting wasps and bees.

Gasteruption tarsatorium Say.—V-30–1908; VII-19–1913; V-28–1958.

Heloridae

Species are parasitoids of lacewings. No specimens were taken in 2005.

Helorus anomalipes Panzer.—X-22–1960; X-19–1963.

Ibaliidae

This is the first record of ibaliids for Plummers Island. Its host also has been taken in the Island. One other species occurs in the mid-Atlantic states (Smith & Schiff 2002).

Ibalia anceps Say.—V-30–VI-13–2005, lower trap (3), upper trap (2); VI-14–26–2005, lower trap (1).

Host.—Parasitoid of *Tremex columba* (L.) (Hymenoptera: Siricidae).

Peleciniidae

The single North American species has been taken on Plummers Island from 1902 to the present.

Pelecinus polyturator (Drury).—IX-11–1902; IX-17–1905; IX-8–1907; VIII-24–1907; VIII-25–1907; IX-22–1907; IX-29–1912; X-6–1912; VIII-4–1912; IX-7–1913; IX-5–1915; IX-10–1915; VII-21–1917; IX-28–1963; VIII-21–1971; VII-12–28–2005, lower trap (1); VII-28–VIII-14–2005, upper trap (1), lower trap (3).

Host.—Parasitoid of *Phyllophaga* spp. (Coleoptera: Scarabaeidae).

Roproniidae

Two species occur in the mid-Atlantic states. Hosts are uncertain. This is the first record for Plummers Island for this family.

Ropronia garmani (Ashmead).—VI-27–VII-11–2005, lower trap (1).

Rhopalosomatidae

Krombein (1963) recorded both mid-Atlantic species from Plummers Island. I repeat these records because of the unusual number of specimens collected in 2005. Hundreds were taken on a single collection date in the lower trap. Species are external parasitoids of nymphal crickets.

Rhopalosoma nearcticum Brues.—VII-12–28–2005, lower trap (46), upper trap (2); VII-28–VIII-14–2005, lower trap (200–300), upper trap (41); VIII-14–28–2005, lower trap (27), upper trap (6); VIII-29–IX-11–2005, lower trap (6), upper trap (5); IX-12–X-2–2005, upper trap (1); lower trap (2).

Olixon banksii (Brues).—Recorded by Krombein (1963).

Stephanidae

One native species is known in the mid-Atlantic states, though Smith (1997) also recorded a western species taken in Virginia. None were taken in 2005. Species are parasitoids of wood-boring Coleoptera and Hymenoptera.

Megischus bicolor (Westwood).—VI-6–1908; VI-17–1961.

Trigonalidae

Two of the three species known in the mid-Atlantic area (Smith 1996a) have been taken on Plummers Island, both during 1902–1924 and 2005. Numerous specimens of *O. pulchella* were taken in the lower trap in 2005. Species are parasitoids of ichneumonid and tachinid parasitoids of Lepidoptera and Diptera and parasitoids of social wasps.

Orthogonalys pulchella (Cresson).—VI-26–1905; VI-17–1913; V-22–29–2005, lower trap (3), upper trap (1); V-30–VI-13–2005, lower trap (45), upper trap (9); VI-14–26–2005, lower trap (23), upper trap (4); VI-27–VII-11–2005, lower trap (10), upper trap (2); VII-12–28–2005, lower trap (1); VIII-14–28–2005, upper trap (2); VIII-29–IX-11–2005, lower trap (1); IX-12–X-2–2005, lower trap (2).

Hosts.—Tachinidae (Diptera) parasitoids of Lepidoptera.

Taeniogonalys gundlachi (Cresson).—VI-27–1905; V-30–VI-13–2005, lower trap (1).

Hosts.—Tachinidae (Diptera) parasitoids of Lepidoptera.

Vanhorniidae

The single eastern species of this family has been collected since 1908. Smith (1995) cited collections in the mid-Atlantic states and gave the seasonal flight activity.

Vanhornia eucnemidarum Crawford.—V-31–1908; VI-25–1960; VI-30–1960; V-30–VI-13–2005, lower trap (1); VI-14–26–2005, lower trap (1).

Host.—Parasitoid of larvae of Eucnemidae (Coleoptera).

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