Neuroptera and Megaloptera—Lacewings, Hellgrammites, etc.—Collected on and Near Plummers Island, Maryland in 2004 and 2005

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Neuroptera and Megaloptera—Lacewings, Hellgrammites, etc.—Collected on and Near Plummers Island, Maryland in 2004 and 2005

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Abstract.—During 2004–2006 insects were collected on or adjacent to Plummers Island, Montgomery County, Maryland by a number of techniques. Most neuropteroids were attracted to an ultraviolet light trap, but some were taken in Malaise traps operated during the season in 2005 and early 2006. Sixteen species of neuropteroids were identified from this material; they belong to 6 families and 14 genera. Although the samples included most of the megalopteran genera and species that are known from the region, the Neuroptera were poorly represented. Five families almost assuredly present on the Island were not found. Most of the documented species are rather widely distributed over North America and none is considered endangered.

Key words.—Inventory, Potomac River, Corydalidae, Sialidae, Chrysopidae, Hemerobiidae, Coniopterygidae, Sisyridae.

Neuroptera, Megaloptera, and Raphidioptera are three closely related orders of holometabolous insects now collectively referred to as the Neuropterida. The Raphidioptera, or snakeflies, are found only in Mexico and North America west of the 100th meridian, and are not further considered here. Neuropterans and megalopterans inhabit a wide variety of habitats from rivers and ponds to forests and grasslands, and to very dry deserts. The superorder Neuropterida contains around 6500 described species over the world (Anderson 2003, Aspöck & Aspöck 2003, Tauber et al. 2003), with around 400 known from North America north of Mexico (Penny et al. 1997). No single collecting method is fully successful in attracting all species, although ultraviolet lights at night, Malaise traps, and sweeping vegetation all produce some examples. Diligent efforts over many years are required to build a picture of an entire local fauna.

During 2004–2006, insects were collected on or adjacent to Plummers Island, Montgomery County, Maryland by a number of techniques. Most neuropteroids were attracted to an ultraviolet light trap, but some were taken in Malaise traps operated during the season in 2005 and early 2006. Only 16 species and 14 genera of neuropteroids were recorded during these efforts, a small percentage of those likely to occur there. All of the region's megalopteran genera and most of its species are present in the samples from the Island. In the Neuroptera, the situation is quite different; many families that are known to occur in the region were not taken in the samples (e.g., Ascalaphidae, Berothidae, Dilaridae, Mantispidae, and Myrmeleontidae). Most of the documented species are rather widely distributed over North America and none is considered endangered or otherwise ''sensitive'' by the resource agencies.

Below are listed in alphabetical order under family by genus and species those taken in the surveys in 2004, 2005, and early 2006, all of which are deposited in the collection of the National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C.. No attempt has yet been made to search the collection for earlier records; many do exist. The dates are chronological by day and month; the years are random.

Order Megaloptera

Family Sialidae (Alderflies)

The sialids have representatives in all the major biogeographic regions, although they seem most common in the northern temperate regions. The larvae are aquatic, inhabiting the substrate where they feed on other small animals. There are 24 species known from North America, 17 of which are recorded from east of the 100th meridian. Some authors recognize an additional genus, *Protosialis,* for *S. americanus,* but the genus seems untenable based on cladistic analysis (Whiting 1994). A considerable number of other sialid species occur in proximity to Plummers Island and may be taken there in the future.

Sialis velata Ross

This species is found widely throughout North America, from coast to coast in Canada, but seems to be lacking from the Pacific coast and southwestern states.

Records.—Malaise trap, 12–23 April 2005, J. Brown & D. Smith; lower Malaise trap, 24 April–8 May 2005, J. Brown & D. Smith.

Family Corydalidae (Fishflies and Hellgrammites)

The family is widespread throughout the world but lacking in Europe and most of Africa, except for South Africa and Madagascar. It is especially diverse in southeast Asia and the Gondwanan fragments. In North America there are six genera, three of which are found in the East. All of the eastern genera were taken on the Island, but additional species of *Neohermes* and *Nigronia* may be taken.

Chauliodes pectinicornis (Linnaeus)

The species has been taken generally east of the 100th meridian with an outlying record from British Columbia.

Records.—Blacklight trap, 22 May 2004, J. Brown.

Chauliodes rastricornis Rambur

This species occurs throughout the United States east of the 100th meridian.

Records.—Malaise trap, 12–23 April 2005, J. Brown & D. Smith; blacklight trap, 24 July 2005, J. Brown.

Corydalus cornutus (Linnaeus)

The species is found all over eastern North America, from southern Canada south to the Gulf of Mexico and west into Texas.

Records.—Lower Malaise trap, 28 July–14 August 2005, J. Brown & D. Smith.

Neohermes concolor (Davis)

The species has the same general distribution as the preceding two: the United States east of the 100th meridian.

Records.—Blacklight trap, 19 June 2004, J. Brown.

Nigronia serricornis (Say)

In the United States this species is found east of the 100th meridian, with an outlying record from Manitoba, Canada.

Records.—Lower Malaise trap, 9–22 May 2005, 22–29 May 2005, 30 May–13 June 2005, J. Brown & D. Smith.

Order Neuroptera

Family Chrysopidae (Golden Eyed Lacewings)

The chrysopids are a large and diverse family found in all vegetated parts of the globe (Brooks & Barnard 1990). The larvae are terrestrial and predators on small invertebrates. There are 17 genera and subgenera recorded from North America, of which 12 have a representative in eastern regions. I expect *Leucochrysa* (*Nodita*) and *Chrysopa* will be taken on the Island in the future, together with more species of *Chrysoperla.*

Chrysoperla rufilabris (Burmeister)

This species is found throughout the eastern United States and Canada west to the 100th meridian.

Records.—Upper Malaise trap, 24 April–8 May 2005, J. Brown & D. Smith.

Leucochrysa insularis (Walker)

The species has scattered records over the eastern United States as far north as central New England, west to Iowa and Arkansas, and south to the Gulf and through the Greater Antilles.

Records.—Lower Malaise trap, 14–26 June 2005, J. Brown & D. Smith.

Meleoma signoretti (Fitch)

The species is found across Canada from British Columbia to Nova Scotia, in the United Sates from Wisconsin east and then south along the Appalachian Mountains to southern North Carolina.

Records.—Blacklight trap, 24 June 2005, J. Brown.

Family Hemerobiidae (Brown Lacewings)

The hemerobiids are a rather large family, widely distributed over the earth (Oswald 1993). Their larvae, like those of most Neuroptera, are predators primarily on other small arthropods. In addition to those listed below, several other genera are known to occur in the environs of Plummers Island, e.g., *Megalomus, Sympherobius,* and *Wesmaelius.* Additional species of *Hemerobius* and *Micromus* are likely to occur on the Island.

Hemerobius humulinus Linnaeus

The species is known from across the United States and Canada, except for the southwestern and Rocky Mountain states, and ranges across all of northern Europe and Asia as well.

Records.—Malaise trap, 12–23 April 2005, J. Brown & D. Smith; upper Malaise trap, 24 April–8 May 2005, J. Brown & D. Smith; lower Malaise trap,

24 April–8 May 2005, 9–22 May 2005, 22–29 May 2005, 30 May–13 June 2005, J. Brown & D. Smith.

Hemerobius stigmaterus Fitch

This species is distributed across the United States and Canada. Many people consider it a synonym of the Eurasian *H. stigma* Stephens, but there seems to be some small genitalic differences between the Old and New World populations. For this reason, I hold them separate until convincing proof one way or the other is adduced.

Records.—Upper Malaise trap, 24 April–8 May 2005, J. Brown & D. Smith.

Micromus posticus (Walker)

This common hemerobiid is known from across the United States and Canada.

Records.—Upper Malaise trap, 27 June–11 July 2005, J. Brown & D. Smith; lower Malaise trap, 30 May–13 June 2005, J. Brown & D. Smith.

Family Coniopterygidae (Dusky-wings)

Another widely distributed family, the coniopterygids are the smallest neuropteroids (Meinander 1972). As with most other families, they are predaceous, feeding on various small-bodied arthropods. Many other genera and species probably occur on the Island such as *Aleuropteryx* and *Conwentzia.*

Coniopteryx species

Only females were taken; they may belong to either *C. simplicior* Meinander, *C. tineiformis* Curtis, or *C. westwoodi* (Fitch).

Records.—Lower Malaise trap, 28 July–14 August 2005, J. Brown & D. Smith.

Semidalis species

As with the other coniopterygids, only unassociated females were in the samples. They might belong to *S. inconspicua* Meinander, *S. vicina* (Hagen), or *S. wallacei* Meinander.

Records.—Lower Malaise trap, 12–28 July 2005, 12 September–2 October 2005, J. Brown & D. Smith.

Family Sisyridae (Spongillaflies)

The spongillaflies have representatives in most parts of the earth, although they are nowhere very diverse (Parfin & Gurney 1956). Their larvae are aquatic, feeding on the liquid contents of freshwater sponges.

Climacia areolaris (Hagen)

The species is widespread across eastern North America from southern Canada south to Florida and westward to approximately the 100th meridian.

Records.—Upper Malaise trap, 7–20 May 2006, J. Brown & D. Smith.

Sisyra vicaria (Walker)

This species is widespread in North America across southern Canada to Oregon on the West Coast, and south to Florida on the east, but generally not west of the 100th meridian.

Records.—Blacklight trap, 23 July 2005, J. Brown; upper Malaise trap, 29 August–11 September 2005, J. Brown & D. Smith.

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Literature Cited

Anderson, N. H. 2003. Megaloptera. Pp. 700–703 *in* V. T. Resh & R. T. Cardé, eds., Encyclopedia of Insects, Academic Press, San Diego.

Aspöck, U., & H. Aspöck. 2003. Raphidioptera. Pp. 973–975 *in* V. T. Resh & R. T. Cardé, eds., Encyclopedia of Insects, Academic Press, San Diego.

Brooks, S. J., & P. C. Barnard. 1990. The green lacewings of the world: a generic review (Neuroptera: Chrysopidae).—Bulletin British Museum (Natural History), Entomology Series 59(2):117–286.

Carpenter, F. M. 1940. A revision of the Nearctic Hemerobiidae, Berothidae, Sisyridae, Polystoechotidae and Dilaridae (Neuroptera).—Proceedings of the American Academy of Arts and Sciences 74:193–280.

Meinander, M. 1972. A revision of the family Coniopterygidae.—Acta Zoologica Fennica 136:1–357.

Oswald, J. D. 1993. Revision and cladistic analysis of the world genera of the family Hemerobiidae.—Journal of the New York Entomological Society 101:143–299.

Parfin, S. I., & A. B. Gurney. 1956. The spongilla-flies, with special reference to those of the western hemisphere (Sisyridae, Neuroptera).—Proceedings of the United States National Museum 105:421–529.

Penny, N. D., P. A. Adams, & L. A. Stange. 1997. Species catalogue of the Neuroptera, Megaloptera, and Raphidioptera of America north of Mexico.—Proceedings of the California Academy of Sciences 50:39–114.

Tauber, C. A., M. J. Tauber, & G. S. Albuquerque. 2003. Neuroptera. Pp. 785–798 *in* V. T. Resh & R. T. Cardé, eds., Encyclopedia of Insects, Academic Press, San Diego.

Whiting, M. F. 1994. Cladistic analysis of the alderflies of America north of Mexico (Megaloptera: Sialidae).—Systematic Entomology 19:77–91.