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RESEARCH ARTICLE

AN ANNOTATED CHECKLIST OF THE COLEOPTERA OF THE SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER: THE CHRYSOMELOIDEA

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ABSTRACT

A total of 59 species of Chrysomeloidea were detected in a two year inventory at the Smithsonian Environmental Research Center. A total of 10 Cerambycidae species, and 48 Chrysomelidae species were collected.

Keywords: Biodiversity, insects, Maryland.

INTRODUCTION

Chrysomeloidea Latreille contains more than 63,000 described extant species (Ślipiński et al., 2011). It contains the families Chrysomelidae Latreille, Cerambycidae Latreille, Megalopodidae Latreille, Vesperidae Mulsant, Oxypeltidae Lacordaire, Disteniidae J. Thomson and Orsodacnidae C.G. Thomson (Reid, 2014).

Chrysomelidae (leaf beetles) is one of the largest families of beetles with approximately 50,000 described species worldwide (Lopatin, 1977). This makes the family second only to the Curculionidae (weevils, Insecta: Coleoptera) and with over twice the species richness of birds and mammals combined (Klausnitzer, 1981). The Chrysomelidae are very diverse biologically and most species are diurnal. The biology of the species known to occur in the Mid-Atlantic States is summarized in Staines & Staines (2001).

There are 1,700 species of Chrysomelidae known from North America (Riley et al., 2003). 407 species are reported from Maryland (Staines & Staines, 2009). Adults may be collected by sweeping and beating foliage, from flowers, with Malaise traps, flight intercept traps, black lights, and by head lamping food plants.

The Cerambycidae (long horned wood boring beetles) is a large family with over 26,000 species worldwide and 900 species in North America (Turnbow & Thomas, 2002). Adults feed on bark, leaves, pollen, or not at all. Larvae bore into stems of herbaceous plants, roots, and wood. Some species are serious pests of shade and forest trees or processed lumber.

Adults can be collected using blacklight, Malaise, and flight-intercept traps, and by head lamping, sweeping and beating foliage, and examining flowers at which adults feed on pollen. There are 253 species reported from Maryland (Staines, 1987; Glaser, 1992), one of which, *Dryobius sexnotatus* Linsley, is listed as endangered by the state of Maryland (Anonymous, 2016).

MATERIALS AND METHODS

The Smithsonian Environmental Research Center (SERC) [38°33'17.57"N; 76°33'14.29"W] consists of approximately 1,477 ha of hardwood-dominated forest, ponds, creeks, rivers, tidal marshes, and 19.3 km of protected shoreline along the Rhode River and upper Chesapeake Bay in Anne Arundel County, Maryland (SERC, 2018). Forests on the main campus of SERC can be broadly classified into three main types: (1) the majority (~85%) is a tulip-poplar (*Liriodendron tulipifera* L., Magnoliaceae) association; (2) a moist lowland assemblage, comprised of American sycamore (*Platanus occidentalis* L., Platanaceae), ash (*Fraxinus* spp., Oleaceae), elms (*Ulmus* spp., Ulmaceae), river birch (*Betula nigra* L., Betulaceae), and other woody vegetation along freshwater streams; and (3) a somewhat xeric assemblage that fringes tidal marshes, consisting of chestnut oak (*Quercus prinus* L.), white oak (*Quercus alba* L., Fagaceae), black gum (*Nyssa sylvatica* Marshall, Nyssaceae), mountain laurel (*Kalmia latifolia* L., Ericaceae), blueberries (*Vaccinium* spp., Ericaceae) and other woody vegetation.

Like much of the eastern U.S., SERC's forest age and structure reflect historical agricultural activities and local history. SERC's main campus was mostly fallow from the end of the Civil War to approximately 1915, when it was used as a dairy farm with grazing pastures and fields for feed production until 1945. Thus, the majority of SERC's contemporary forests are from 70-150 years old (McMahon et al., 2010; Higman et al., 2016).

Freshwater inputs into the Rhode River are primarily from the North Fork Muddy Creek, South Fork Muddy Creek, and their lower order streams. These streams are associated with several swamps, beaver impoundments, and seasonal wetlands which range from small, tannin-rich, ephemeral wetlands, to larger and clear-water permanent ponds.

On the opposite side of the Rhode River the BiodiversiTREE plots are about 30 acres containing 24,000 trees of 16 species of ecologically important deciduous trees planted in 75 plots. These plots were established over 30 years ago (SERC, 2018). In the annotated species list this area is referred to as Zones 5 and 6.

The goal of this project is to inventory the Coleoptera of the SERC. Collecting techniques was visual survey followed by sweeping or beating the vegetation of the area. Other collecting techniques used were pitfall traps (both baited and unbaited), head lamping, black lighting, and checking lights around building on the main campus.

Field work was conducted from 11 May to 24 October 2018, 30 March to 23 October 2019, and 19-20 March 2020. Voucher specimens are deposited in the SERC and the Department of Entomology Collection, Natural History Museum, Smithsonian Institution.

Numerous papers were used in the identifications of species. The basic references were Ciegler (2007) and Kingsolver (2004) for Chrysomelidae and Lingafelter (2007) for

Cerambycidae. Numerous generic revisions and papers on the biology of various species were also used and are cited for the individual species.

RESULTS

Family Cerambycidae

Eburia quadrigeminata (Say) larvae bore in the heartwood of *Quercus* (oak), *Fagus* (beech, Fagaceae), *Fraxinus* (Oleaceae), *Carya* (hickory, Juglandaceae), *Acer* (maple, Aceraceae), and *Ulmus* (elm). Adults are attracted to light (Staines, 1987). A single specimen was taken at black light along Back Road on 12 August 2019.

Heterachthes quadrimaculatus Haldeman larvae are found in *Carya* and *Liriodendron tulipifera* L., adults are attracted to light (Staines, 1987). A single specimen was taken at black light in the fields opposite Sellman House on 26 June 2019.

Microgoes oculatus (LeConte) has been collected from *Carya* (hickory), *Quercus* (oak), and *Fagus* beech (Staines, 1987). A single specimen was taken at black light on 12 August 2019 along Back Road.

Molorchus bimaculatus Say has been collected from flowers of *Cornus* (dogwood, Cornaceae) and *Viburnum* (Adoxaceae), larvae mine dead branches of hardwoods (Staines, 1987). Specimens were collected from *Cornus florida* flowers in Zone 6 on 23 April 2019.

Neanda brunnea (Fabricius) larvae feed on rotting logs of *Acer*, *Tilia* (basswood, Malvaceae), *Quercus*, *Populus* (Salicaceae), *Castanea* (chestnut, Fagaceae), *Liriodendron tulipifera*, *Ulmus*, and *Pyrus* (pear, Rosaceae). Adults are attracted to light (Linsley, 1962a). Specimens were collected head lamping on 26 July 2019 along Java History Trail and by head lamping and black light on 12 August 2019 along Back Road.

Neoclytus horridus (LeConte) breeds in *Quercus* branches (Glaser, 1992). A single specimen was collected at black light on 27 May 2019 along the Connector Trail between Fox Point Rd. & Java History Trail.

Oberea tripunctata Swederus breeds in *Alnus* (Betulaceae) and *Rhododendron* (Ericaceae) (Staines, 1987). A single specimen was collected sweeping vegetation on 9 July 2018 in the forest plots in Zone 6.

Oeme rigida (Say) breeds in *Juniperus virginiana* L. (eastern red cedar, Cupressaceae) and *Taxodium distichum* (L.) Rich. (bald cypress, Cupressaceae) (Linsley, 1962b). Specimens were collected at black light on 23 June 2018 at Reed Education Center.

Tetraopes tetrophthalmus (Forster) larvae and adults feed on *Asclepias* spp. (Apocynaceae) (Staines, 1987). Specimens were collected on 6 June 2018 off *Asclepias* sp. In the gardens near Mathias Lab and on 21 June 2019 in fields opposite Sellman House.

Tylonotus bimaculatus Haldeman has been taken at light; *Fraxinus*, *Betula* (birch), *Juglans nigra* L. (black walnut, Juglandaceae), *Carya*, *Liriodendron tulipifera*, *Ulmus*, and *Ligustrum* (privet, Oleaceae) (Staines, 1987). A single specimen was taken at black light on 27 June 2019 at Back Road opposite NEON tower.

Family Chrysomelidae

Acalymma vittatum (Fabricus) has listed hosts of *Ambrosia trifida* L. (giant ragweed, Asteraceae); *Arachis hypogaea* L. (peanut, Fabaceae); *Aster lateriflorus* (L.) Britt. (wild aster), *Aster sagittifolius* Wedemeyer (arrow-leaved aster), *Aster tardiflorus* L. (late flowering aster) (Asteraceae); *Beta vulgaris* L. (beet, Chenopodiaceae); *Brassica* (mustard, Brassicaceae); *Citrullus vulgaris* Schrad. (watermelon, Curcubitaceae); *Citrus* (Rutaceae);, *Cucurbita* (squash, Curcubitaceae); *Geranium maculatum* L. (cranesbill, Geraniaceae); *Pyrus arbutifolia* (L.) L. (red chokeberry), *Pyrus communis* L. (pear), *Malus* (apple) (Rosaceae); *Sechium edule* (Jacq.) Sw. (chayote), *Sicyos angulatus* L. (bur-cucumber) (Curcubitaceae); *Solanum melongena* L. (eggplant), *Solanum tuberosum* L. (potato) (Solanaceae); *Solidago altissima* L. (tall goldenrod), *Taraxacum officinale* Weber, *T. erythrospermum* Andr. (dandelions) (Asteraceae); *Urtica gracilis* Ait. (nettle, Urticaceae); and *Phaseolus vulgaris* L. (snap bean, Fabaceae) (Wilcox, 1979). Specimens were taken sweeping vegetation on 23 April 2019 in fields opposite Sellman House.

Agroiconta bivittata (Say) feeds on Convolvulaceae, having been recorded from *Calystegia sepium* (L.) R. Br., *Convolvulus*, *Ipomoea batatas* (L.) Lam., and *I. pandurata* (L.) G. F. W. Mey. (Balsbaugh & Hays, 1972). Specimens were taken feeding on *Convolvulus* sp. on 23 August 2018 in forests plots of Zone 5.

Altica foliaceae LeConte has been collected on *Cakile edentula* (Bigl.) Hook. (sea rocket, Brassicaceae) (Balsbaugh & Hays, 1972). Taken on *Vigna unguiculata* (L.) Walp. (cowpea) in Arkansas (Rouse & Medvedev, 1972). Specimens were taken sweeping vegetation on 16 May 2019 along Contees Wharf Road.

Altica litigata Fall has been collected on *Heterotheca subaxillaris* (Lam.) Britt. & Rusby (Asteraceae) in South Carolina (Kirk, 1969). Specimens were taken sweeping vegetation on 19 June 2019 near Reed Education Center.

Brachypnoea clypealis (Horn) has been repeatedly collected on *Amaranthus spinosus* L. (spiny amaranth, Amaranthaceae) in Alabama (Balsbaugh & Hayes, 1972). Rouse & Medvedev (1972) reported specimens taken on *Desmodium* (Fabaceae). Flowers et al. (1994) report that *Eupatorium* and *Ambrosia* Asteraceae) appear to be the true host plants of this species in Florida. Specimens were taken sweeping vegetation on 16 May 2019 along Contees wharf Road, on 9 July 2019 in forest plots of Zone 5, and on 19 July 2019 in fields opposite Sellman House.

Brachypnoea convexa (Say) specimens have been hand-picked specimen from *Rudbeckia* (coneflower, Asteraceae), and others swept from areas where the plant grows (Riley & Enns, 1979). Noted on greater ragweed, *Ambrosia trifida*, in Indiana (Blatchley, 1910). Specimens were taken sweeping vegetation on 26 June 2019 in fields opposite Sellman House.

Brachypnoea puncticollis (Say) has been collected on rose (*Rosa*) (Wilcox, 1954). Hatch (1971) reported apple (*Malus*), grape (*Vitis*), strawberry (*Fragaria*, Rosaceae), and pear, peach and plum (*Prunus*) as hosts. Wheeler & Hoebeke (1985) observed feeding on leaves of *Physocarpus opulifolius* (L.) Maxim. (ninebark, Rosaceae). Hight (1990) noted moderate numbers on purple loosestrife, *Lythrum salicaria* L. (Lythraceae). One Missouri collection of several specimens was from honey locust, *Gleditsia triacanthos* L. (Fabaceae) (Riley & Enns, 1979). Specimens were taken sweeping vegetation on 9 July 2018 in forest plots of Zone 5.

Capraita circumdata (Randall) has been found these feeding on *Fagus grandifolia* Ehrhart (American beech), *Juglans cinerea* L. (walnut), *Plantago lanceolata* L. (Plantaginaceae), and adults and eggs on *Verbena urticifolia* L. (Verbenaceae) (Blake, 1927). Balsbaugh & Hays (1972) collected it most frequently on *Vaccinium* (blueberry). Specimens were collected sweeping vegetation on 23 April 2019 in Zone 5.

Capraita obsidana (Fabricius) can be found feeding on *Ilex verticillata* (L.) A. Gray (winterberry, Aquilifoliaceae) and *Euonymus americanus* L. (strawberry bush, Celastraceae) (Blake, 1927). Balsbaugh & Hays (1972) collected on *Vaccinium* (blueberry). Sholes (1987) added *Quercus* (oak). Flowers et al. (1994) reported *Callicarpa americana* L. (French mulberry, Verbenaceae) as a host in Florida. Specimens were collected sweeping vegetation on 30 April 2019 along Contees Wharf Trail

Capraita subvittatum (Horn) Sholes (1987) listed *Aster divaricatus* L. as the primary host, with *A. macrophyllus* L., *Mimulus ringens* L. (Allegheny monkey flower, Phrymaceae), *Veronica officinalis* L. (common speedwell, Asteraceae), and flowers of *Amelanchier* (shad bush, Rosaceae) as additional hosts. Riley & Enns (1979) reported this species as feeding on *Verbascum thapsus* L. (common mullein, Scrophulariaceae), *Physostegia virginiana* (L.) Benth. (obedience plant, Lamiaceae) and collected on *Pentstemon* (beard-tongue, Plantaginaceae). Specimens were collected sweeping vegetation on 30 April 2019 in Zone 5.

Cassida rubiginosa Müller this introduced species feeds on the thistles *Cirsium arvense* C. discolor (Muhl.) Spreng., *C. vulgare* (Savi) Tenore, *Carduus nutans* L., *C. acanthoides* L., and *Arctium minus* (Hill) Bernh. (burdock) (Asteraceae) (Wilcox, 1979). Ward & Pienkowski (1978a) studied the biology of this species and later determined it is an ineffective biological control agent of thistles, due to high mortality and parasitism (Ward & Pienkowski, 1978b). Specimens were collected feeding on *Cirsium arvense* near Java Farm ruins on 8 June 2018 and 23 April 2019.

Chaetocnema fuscata White is reported “from B. Blue stem” and “on *Lespedeza sericea*” (= *cuneata* (Dum.-Cours) G. Don) (Chinese bush clover, Fabaceae) (White, 1996). Specimens were collected sweeping vegetation on 23 April 2019 in Zone 5.

Chaetocnema minuta Melsheimer is associated with corn, *Solidago*, and *Dirca palustris* L. (leatherwood, Thymelaeaceae) and, from the literature, as common on *Aesculus flava* Sol. (yellow buckeye, Sapindaceae) (White, 1996). A single specimen was taken in a horse dung baited pitfall trap near the water tower on 17-18 April 2019. Other specimens were collected sweeping vegetation on 23 April 2019 in Zone 5, on 25 April 2019 at Frog Haven, and 25 April 2019 in the fields opposite Sellman House.

Charidotella xipunctata bicolor (Fabricius) has been collected from *Calystegia sepium* (L.) R. Brown (Convolvulaceae) and is considered it an occasional pest of sweet potato (*Ipomoea batatas* (L.) Lamarck [Convolvulaceae]) (Barrows, 1979). Specimens were collected by visual inspection at the forest plots in Zone 6 on 9 July 2018 and on Hog Island on 2 May 2019.

Chrysochus auratus (Fabricius) feeds on various species of *Apocynum* (Apocynaceae) (Wilcox, 1979). Specimens were collected on *Apocynum* sp. by visual inspection on 26 June 2018 in the forest plots of Zone 5, on 9 July 2019 in forest plots of Zone 6, and 19 July 2019 along Contees Wharf Road.

Colaspis brunnea (Fabricius) feeds on *Arachis hypogaea* (peanut), *Fragaria* (strawberry), *Phaseolus lunatus* L. (lima bean), *Prunus angustifolia* Marsh. (Chickasaw plum), *Prunus persica* (L.) Batsch. (peach), and *Zea mays* L. (corn, Poaceae) (Blake, 1974). Riley & Enns (1979) noted many specimens on *Medicago sativa* L. (alfalfa) and *Trifolium* (clover) in Missouri. Altieri & Whitcomb (1979) reported feeding on *Chenopodium ambrosioides* in Florida. Wheeler & Mengel (1984) observed feeding on *Polygonum perforatum* L. (mile-a-minute). Specimens were taken on 23 June 2018 at black light at Reed Education Center and sweeping vegetation in fields opposite Sellman House on 26 June 2019.

Crepidodera nana (Say) feeds on 10 different *Salix* sp. (Salicaceae) (Parry 1986). Specimens were taken on *Salix* sp. at Frog Haven on 23 April 2019.

Cryptocephalus calidus Suffrian in Florida, Blatchley (1924) reported the species as scarce on huckleberry (*Gaylussacia* or *Vaccinium*) and other low shrubs. A single specimen were taken on 19 July 2018 off *Coreopsis* flower along Contees Wharf Road.

Demotina modesta Baly this introduced species has been collected on *Quercus nigra* L. (Riley et al., 2001). Specimens were collected off *Quercus* sp. on 26 June 2018 in the forest plots in Zone 5.

Diabrotica undecimpunctata howardi Barber is found on *Arachis hypogaea* (peanut), *Cucumis melo* L. (cantaloupe), *Spinacia oleracea* L. (spinach, Chenopodiaceae), *Zinnia* Asteraceae), and *Phaseolus vulgaris* (snap bean) (Wilcox, 1979). Hilgendorf & Goeden (1981) listed this species on *Helianthus annuus* L. (Asteraceae) in Georgia and Texas. Wheeler & Mengel (1984) observed feeding on *Polygonum perforatum* (L.) H. Gross (knotweed, Polygonaceae). Wheeler & Hoebeke (1985) observed feeding on leaves of *Physocarpus opulifolius*. Considered a “specialist” on *Solidago* (goldenrod) by Messina & Root (1980). Specimens were collected on 6 June 2018 in garden near Mathias Lab, on 26 June 2018 in forest plots on 26 June 2018 in forest plots in Zone 5, and on 19 June 2019 along Contees Wharf Road,.

Disconycha caroliniana (Fabricius) Balsbaugh & Hays (1972) noted 3 specimens collected on loblolly pine, *Pinus taeda* L. (Pinaceae). Collected sweeping "rescue grass" (Kirk, 1970). Blatchley (1924) noted numbers of specimens swept from flowers of a tall St. Johnswort (*Hypericum*, Hypericaceae). Specimens were collected sweeping vegetation in meadow in front of Mathias Lab on 11 May 2019.

Disconycha glabrata (Fabricius) has been collected on *Amaranthus spinosus* (spiny amaranth) and *A. retroflexus* L. (Duckett, 1920). Balsbaugh & Hays (1972) noted collections from sweeping *Salix* (willow) and *Trifolium incarnatum* L. (red clover, Fabaceae). Hemenway & Whitcomb (1968) and Garman (1891) recorded the biology of this species. Specimens were collected sweeping vegetation on 7 May 2019 at Frog Haven and on 11 May 2019 in meadow in front of Mathias Lab.

Disconycha pensylvanica (Illiger) has been collected on *Polygonum* (Blake, 1933). Specimens were collected sweeping vegetation on 6 June 2018 and 23 April 2019 at Frog Haven.

Epitrix fasciata Blatchley feeds on *Brassica* (wild mustard), *Cucurbita* (squash), and several solanaceous plants (White & Barber, 1974). Specimens were collected on sweeping vegetation on 23 April 2019 in fields opposite Sellman House.

Epitrix fuscula Crotch has been collected on *Cirsium* (thistle) and *Trifolium* (clover) (Balsbaugh & Hays, 1972). Wilcox (1979) listed a number of solanaceous plants as hosts. Specimens were collected feeding on *Solanum carolinense* on 24 May 2018 along Contee Wharf Trail, on 5 June 2018 at the intersection of Contees Wharf and Dock Roads, on 6 June 2018 in parking lot near Mathias Lab, on 9 July 2018 in forest pots in Zone 6, on 19 July 2018 along Contee Wharf Trail, on 23 April 2019 in fields opposite Sellman House, on 30 April 2019 in Zone 5, and on 6 May 2019 along Contees Wharf Road.

Exema canadensis Pierce has been collected on *Ambrosia* (ragweed), *Betula* (birch), *Cornus* (dogwood), *Corylus* (hazelnut), *Erigeron quercifolius* Lam. (fleabane), *Haplopappus phyllocephalus* DC. (goldenweed, Asteraceae), flowers of *Prunus virginiana* L. (choke cherry), *Rubus* (blackberry), *Salix* (willow), *Sambucus canadensis* L. (American elder, Adoxaceae), *Solidago altissima* L. (tall goldenrod), *Solidago neglecta* T. & G. (swamp goldenrod), and *Ulmus* (elm) (Karren, 1966). Messina & Root (1980) considered this species a specialist on goldenrod. Specimens were collected sweeping vegetation on 23 April 2019 in Zone 5 and 16 May 2019 along Contees Wharf Road.

Gibbobruchus mimus (Say) larvae develop in *Cercis canadensis*, *C. occidentalis* and *Bauhinia lunarioides*. Adults have been collected on flowers of numerous other species of plants which are not the larval hosts: *Fraxinus* (ash), *Magnolia* sp., and *M. grandiflora* L. (southern magnolia, Magnoliaceae) (Kingsolver, 2004). Specimens were collected sweeping vegetation along Contees Wharf Road on 16 May 2019 and from beating redbud in front of Mathias Lab on 7 and 23 September 2019.

Longitarsus pygmaeus Horn has been recorded from tall dead grass [Poaceae] (Blatchley, 1924), but the beetles probably do not feed on this plant (Clark et al. 2004). Specimens were collected sweeping vegetation on 23 April 2019 in the fields opposite Sellman House.

Longitarsus testaceus Melsheimer has been collected on *Cirsium* (Wilcox, 1979). A large series were collected from *Eupatorium perforatum* L. in Missouri (Riley & Enns 1979). Specimens were

collected sweeping *Euparorium* on 30 April 2019 in Zone 6, on 7 May 2019 in the maintenance area, and on 16 May 2019 along Contees Wharf Road.

Myochrous denticollis (Say) as cited as a pest of corn in Kansas (Douglass, 1929). Blatchley (1924) reported this species on grass, ferns, *Zea mays*, huckleberry (*Vaccinium*) flowers, and once in a carrion trap, in Florida. Additional hosts cited from label data by Blake (1950) include on *Helenium* roots and on *H. tenuifolium* Nutt. (Asteraceae) in Texas, cotton (*Gossypium*, Malvaceae), sugarcane (*Saccharum officinarum* L., Poaceae), turnip (*Brassica rapa*), *Ambrosia*, and many from Iowa from "B. Blue stem" (*Andropogon?*). A single specimen was taken sweeping vegetation on 23 April 2019 in Zone 5.

Neochlamisus gibbosus (Fabricius) Karren (1972) listed the following plant records: adults in series with larvae on species of *Rubus* (*Eubatus*), *Phleum pratense* L. (timothy, Poaceae), *Quercus* (oak), *Salix* (willow), and *Triticum* (wheat, Poaceae). A single specimen was taken sweeping vegetation on 23 April 2019 in Zone 5.

Neofidia viticida (Melsheimer) has been collected on *Vitis* (wild grape), *Parthenocissus* (woodbine, Vitaceae) and at lights in Missouri (Riley & Enns, 1979). A single specimen was taken sweeping *Vitis* on 15 June 2019 near Reed Education Center.

Odontota dorsalis (Thunberg) larvae mine and adults feed on the leaves of *Robinia pseudoacacia* L. (black locust), *R. hispida* L. (bristly locust), *Sophora japonica* L. (Japanese pagodatree), and *Glycine max* (L.) Merrill (soybean) (Fabaceae) (Ford & Cavey, 1985). In spring before mating, adults feed on a wide variety of plants, including many not related to the fabaceous larval hosts (Williams 1989). Occasionally, adults are collected in black light traps. Haviland (1943) and Fritz (1983) studied the biology of this species. Larvae were observed mining leaves of *Robinia pseudoacacia* on 21 September 2019 near Reed Education Center.

Odontota mundula (Sanderson) larvae mine and adults feed on the leaves of hog peanut, *Amphicarpa bracteata* (L.) Fernald (Fabaceae) (Butte, 1968; Ford & Cavey, 1985). A single specimen was taken sweeping vegetation on 17 May 2019 along Back Road.

Ophraella notulata (Fabricius) marsh-elder, *Iva oraria* (Bartlett) Fern. & Grisc. (Asteraceae) is reported as a (reliable) host for larvae and adults (LeSage, 1986). Welch (1978) described the biology of this species. Specimens were collected beating *Iva* on 19 June 2019 near Reed Education Center.

Oulema sayi (Crotch) *Commelina virginica* L. (Commelinaceae) is the larval and adult host (White, 1993). Specimens were collected sweeping *Commelina virginica* on 23 August 2018 in forest plots of Zone 6 and 7 May 2019 in maintenance area.

Paria fragariae Wilcox adult feeding has been observed on leaves of *Physocarpus opulifolius* (ninebark) (Wheeler & Hoebeke 1985). Hight (1990) noted moderate numbers on purple loosestrife, *Lythrum salicaria*. Specimens were collected sweeping vegetation on 23 April 2019 in Zone 5.

Paria pratensis Balsbaugh has been collected on prairie rose, *Rosa setigera* Mich. (Balsbaugh 1970). This species is variable in markings and Barney et al. (2010) reported a number of specimens which are intermediate between *P. fragariae* and *P. pratensis*. However, these specimens match the description of *P. pratensis*. Three specimens were taken at black light on 20 March 2020 near Mathias Lab.

Paria quadrinotata (Say) specimens have been taken on *Juglans*, *Carya*, *Corylus*, *Prunus*, *Sorbus*, *Crataegus*, *Passiflora*, *Rubus*, *Malus*, and *Juniperus* (Wilcox, 1957). Wheeler & Hoebeke (1985) observed feeding on leaves of *Physocarpus opulifolius* (ninebark). Specimens were taken sweeping vegetation on 9 July 2018 in forest plots in Zone 6 and 30 April 2019 along Contees Wharf Road.

Paria sexnotata (Say) has been collected from Virginia red cedar, *Juniperus virginiana* (Wilcox, 1957). Specimens were taken sweeping vegetation on 7 May 2019 in the maintenance area.

Paria thoricaca (Melsheimer) is commonly found sweeping goldenrod, *Solidago*, in Missouri prairies (Riley & Enns, 1979). Balsbaugh & Hays (1972), cited hosts as *Amaranthus retroflexus* L., *Aster*, *Fragaria virginiana* Duch. (strawberry) and *Trifolium* (clover). Specimens were taken sweeping vegetation on 19 June 2019 near Reed Education Center.

Phyllotreta striolata (Fabricius) has been collected from a number of crucifer and other hosts for adults and the following as hosts for the root-feeding larvae: cabbage, horseradish, radish, and turnip (Smith, 1985). Specimens were taken sweeping *Brassica* sp. 23 April 2019 in Zone 5 and on 30 April 2019 along Contees Wharf Trail.

Plagioderia versicolora (Laicharting) has preferred hosts of *Salix nigra* Marshall (black willow) and *S. alba vitellina* (L.) Koch (golden willow), noted that it also feeds on *S. babylonica* L. (weeping willow) and *S. lucida* Muehlenberg (shiny willow), and estimated 3-4 generations a year in Massachusetts (Hood, 1940). Wade & Breden (1986) noted that *Salix interior* Rowlee (sand bar willow) was preferred over *S. nigra* in Illinois. Hight (1990) noted moderate numbers on purple loosestrife, *Lythrum salicaria*. Larvae and adults were collected off *Salix* sp. on 5 June 2018 at intersection of Contees Wharf and Dock Roads and on 7 May 2019 at Frog Haven.

Stenispia metallica (Fabricius) larvae feed on developing leaves in the crown of *Scirpus atrovirens* Willd. (bullrush), and adults were collected on the larval host and *Carex stricta* (sedge) (Cyperaceae) (Ford & Cavey, 1985). Specimens were taken sweeping *Scirpus atrovirens* on 30 April 2019 along Contees Wharf Trail and on 16 May 2019 along Contees Wharf Trail.

Sumitrosis rosea (Weber) larvae mine the leaves of various Fabaceae, especially *Robinia pseudoacacia* (black locust) and *Desmodium* (tick-trefoil) (Ford & Cavey, 1985). A single specimen was taken sweeping vegetation on 6 June 2018 at ponds at Frog Haven.

Systema hudsonias (Forster) recorded host plants are *Ambrosia artemisiifolia* (common ragweed) and *A. trifida* L. (giant ragweed) (Wilcox, 1979). Williams (1990) observed that this beetle is most often associated with the Asteraceae, including *Arctium minus*, *Aster nova-angliae* L. (New England aster), *Chrysanthemum maximum* Raymond, *Eupatorium fistulosum* Barratt., *Helianthus*

annuus, and *Rudbeckia hirta* L. (black-eyed susan), and that it was also abundant on *Mentha spicata* L. (spearmint, Lamiaceae) and *Verbena urticifolia* L. On goldenrods, *Solidago* (Messina & Root 1980). Specimens were collected sweeping vegetation on 26 June 2019 in fields opposite the Sellman House.

Tymnes tricolor (Fabricius) has been recorded from ironweed [*Vernonia*] (Asteraceae); hornbeam [*Carpinus caroliniana* Walt.], hazel [*Corylus*], *Ostrya virginiana* (Mill.) K. Koch (Betulaceae); chestnut [*Castanea*], *Quercus* (Fagaceae); *Carya illinoensis* (Wang.) K. Koch, hickory [*Carya*], *Juglans* (Juglandaceae); tulip tree [*Liriodendron tulipifera* L.] (Magnoliaceae); blackberry [*Rubus*] (Rosaceae); and wild grape [*Vitis*] (Vitaceae) (Clark et al., 2004). Specimens were collected by visual inspection on 5 June 2109 along Java History Trail and by sweeping vegetation on 19 June 2019 at the intersection of Contees Wharf and Dock Roads.

Xanthonia villosula (Melsheimer) is commonly swept from oak (*Quercus*), in Kansas (Douglass 1929). Beaten from hazel (*Corylus*) and oak in Indiana (Blatchley, 1910). Reported from *Crataegus punctata* Jacq. (Rosaceae), in New York, by Wellhouse (1922). One record as beaten from wax myrtle (*Myrica*) was cited by Blatchley (1924) for Florida. Specimens were collected beating *Quercus* on 19 June 2019 near Reed Education Center.

DISCUSSION

There are few published inventories which deal with Mid-Atlantic States Chrysomeloidea. Most distribution information is scattered in various taxonomic papers.

Staines (1987) and Glaser (1992) presented checklists of 253 Cerambycidae seen in various insect collections and data-mining the literature. Staines (2008b) reported the 63 species collected on Plummers Island, Montgomery County, Maryland from 1902-2004. Steury & MacRae (2014) found 80 species from George Washington Memorial Parkway, Fairfax County, Virginia. The 10 specimens found at SERC is surprisingly low since the habitat for various species is present. Additional work needs to focus on this family.

Staines & Staines (2001), Staines (2004, 2008a) reported 161 Chrysomelidae collected on Plummers Island from 1902-1997. Only 47 species were collected during a focused inventory on the island (Staines, 2004). Cavey et al. (2013) documented 107 chrysomelids from George Washington Memorial Parkway. The 48 species found at SERC is lower than expected. However, since most chrysomelids are open field, woods-edge, and early successional species (Staines 2004), habitats not common on SERC, it is not that unexpected.

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