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A Flower Beetle, *Euphoria sepulcralis* (Fabricius) (Insecta: Coleoptera: Scarabaeidae)[1]

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

Euphoria sepulcralis (Fabricius) is a common, day-flying scarab beetle in Florida and much of the eastern half of the United States, and one of the beetles most frequently submitted to the Division of Plant Industry (DPI) Entomology Section for identification. Occasionally, it achieves pest status because of the damage it does to corn, roses, and the flowers of blooming fruit trees.

Figure 1. Adult *Euphoria sepulcralis* (Fabricius), a flower beetle, feeding on black cherry.
Credit: Lyle J. Buss, UF/IFAS

Synonymy

Although the spelling *sepulchralis* occurs in nearly all literature, Ratcliffe (1991) noted that the spelling in the original description (Fabricius 1801) is *sepulcralis*. Casey (1915) described a number of subspecies, which are not considered here.

Distribution

Euphoria sepulcralis is found throughout the eastern United States as far north as Illinois and Indiana and west to Texas (Ritcher 1945; Ratcliffe 1991). There are also specimens in the Florida State Collection of Arthropods (FSCA) from Nassau, Bahamas. It occurs everywhere in Florida, from Escambia County in the western Panhandle to Key West in Monroe County. DPI records and FSCA specimens represent 189 localities in 52 of Florida's 67 counties.

Identification

This species is one of seven in four genera of the scarab subfamily Cetoniinae known from Florida in which the mesepimera are visible from above between the pronotum and elytral humeri and the mandibles are small and mostly membranous. Of these, only *Euphoria seputeralis* and *Protaetia fusca* (Herbst) are dark with white or cream markings. *Protaetia fusca* is an immigrant from the Orient, and is now found in Florida in Dade, Broward, and Palm Beach counties.

Euphoria sepulcralis is 10 mm to 14 mm (0.39 to 0.55 in) long, dark brown to black, with metallic bronze or green reflections. Dorsally, it is heavily punctate, with the surface between punctures smooth and shining. The elytra are slightly dentate at the sutural angle and are ornamented with white cretaceous spots, arranged more or less transversely.

Figure 2. Adult *Euphoria sepulcralis* (Fabricius), a flower beetle.
Credit: Shawron Weingarten, University of Florida

Protaetia fusca is an Asian species established in southeastern Florida. It is sparsely punctate with the surface between punctures dull, the cretaceous spots are present on the elytra and pronotum, and the sutural angle is usually strongly spinose.

Figure 3. Adult *Protaetia fusca* (Herbst), a flower beetle (head is to the left).
Credit: Lyle J. Buss, UF/IFAS

Biology

Little is known about the biology of this species, especially of the immature stages. Larvae have been found in soil beneath dead sod or manure (Ritcher 1945). The length of the larval stage averaged 62.7 days and of the pupal stage 15.4 days (Hayes 1925). Pupation is in an earthen cell (Ratcliff 1991).

In Kentucky, Ritcher (1945) reported the beetles have a one-year life cycle with pupation occurring in August and adults flying from August to October and again in the spring. In Florida, adults have been collected in all months except October and December, with peak summer abundance in August, at least in Alachua County (Landolt 1990). Adults are found on flowers, where they apparently are pollen feeders, at fermenting sap flows, and on ripe or decaying fruit. Landolt (1990) found that adults are attracted to isopropyl (rubbing) alcohol and Cherry and Klein (1992) showed they are attracted to various aromatic compounds used in Japanese beetle (*Popillia japonica* Newman) traps.

Hosts

Ratcliffe (1991) noted: "The adults feed on tree sap, a wide variety of ripening fruits, corn, and the flowers of apple, thistle, mock orange, milkweed, dogwood, sumac, yarrow, daisies, and goldenrod."

Plant associations from DPI records and FSCA specimens are:

Acalypha sp., *Acer rubrum* L. (foliage), *Adonidia* sp., *Alcea rosea* L., *Allamanda* sp., *Ambrosia artemisiifolia* L., *Ambrosia* sp., *Anethum* sp., *Aronia arbutifolia* (L.) Pers., *Asimina reticulata* Chapm., *Asimina triloba* (L.) Dunal, *Asystasia gangetica* (L.) T. Anders., *Averrhoa carambola* L., *Baccharis angustifolia* Michx., *Bidens bipinnata* L., *Bidens* sp., *Bombax* sp., *Borreria* sp., *Brassica juncea* (L.) Czerniak, *Brassica oleracea* L., *Bucida buceras* L., *Bursera simaruba* (L.) Sarg.

Figure 4. Adult *Euphoria sepulcralis* (Fabricius), a flower beetle, feeding on *Bidens* sp.
Credit: Lyle J. Buss, UF/IFAS

Callistemon viminalis (Sol. ex Gaertn.) G. Don ex Loud., *Capsicum annuum* L., *Capsicum annuum* L., Grossum group, *Carya illinoensis* (Wangenh.) Koch, *Castanea mollissima* Blume, *Cattleya* sp., *Cenchrus* sp., *Ceratiola ericoides* Michx., *Cereus* sp. (fruit), *Cirsium vulgare* Savi (Ten), *Cirsium* sp., *Citrus aurantifolia* (Christm.) Swingle, *Citrus limon* (L.) Burm. f., X *Citrofortunella microcarpa* (Bunge) Wijnands, *Citrus reticulata* Blanco, Citrus x paradisi (L.) Macf., *Coccoloba uvifera* (L.) L., *Cocos nucifera* L. (in fermenting wound), *Colvillea racemosa* Bojer ex Hook., *Cornus* sp., *Cortaderia selloana* (Schutt and Schutt. f.) Asch. and Gräbn., *Crataegus* sp., *Crinum americanum* L., *Crotalaria* sp., *Cyrilla racemiflora* L., *Dahlia* sp., *Dendranthema* x *grandiflorum* Kitam, *Dendrobium* sp., *Desmodium tortuosum* (Sw.) DC., *Diospyros* sp., *Erigeron quercifolius* Lam., *Eupatorium capillifolium* (Lam.) Small, *Euphorbia pulcherrima* Willd. ex Klotzsch., *Ficus benjamina* L., *Ficus carica* L. (fruit), *Ficus retusa* L., *Foeniculum vulgare* Mill., *Fortunella margarita* (Lour.) Swingle, *Fraxinus caroliniana* Mill., *Ginkgo biloba* L. (stern), *Helianthus* sp., *Hibiscus elatus* Sw., *Abelmoschus esculentus* (L.) Moench., *Hibiscus rosa-sinensis* L., *Hypericum fasciculatum* Lam., *Ipomoea batatas* (L.) Lam., *Lagerstroemia indica* L., *Lantana* sp., *Ligustrum japonicum* Thunb., *Ligustrum lucidum* Ait. f., *Ligustrum sinense* Lour., *Litchi chinensis* Sonn., *Lobularia maritima* (L.) Desv., *Ludwigia* sp., *Lycopersicon esculentum* Mill (fruit), *Magnolia* sp., *Malus* sp. (decaying fruit), *Mangifera indica* L., Musa sp., *Opuntia* sp., *Persea americana* Mill., *Phaseolus lunatus* L., *Philodendron* sp., *Phoenix canariensis* Hort. ex Chabaud., *Pimpinella anisum* L., *Pinus clausa* (Chapm. ex Engelm.) Vasey ex Sarg., *Pinus elliottii* Engelm., *Polyscias guilfoylei* (Bull) L.H. Bailey 'Victoriae', *Pritchardia* sp., *Prunus persica* (L.) Batsch., *Pseudogynoxys chenopodioides* (Kunth) Cabr., *Psidium guajava* L., *Pyracantha coccinea* Roem., *Pyrus communis* L., *Quercus laevis* Walt., *Quercus laurifolia* Michx., *Rhus copallina* L., *Rhus glabra* L., *Rosa* sp., *Rubus* sp., *Sabal palmetto* Lodd., *Schefflera actinophylla* (Endl.) Harms, *Schefflera arboricola* (Hayata) Merr. (foliage), *Schinus terebinthifolius* Raddi, *Serenoa repens* (Bartr.) Small, *Simarouba glauca* DC., *Solanum melongena* L., *Spermacoce verticillata* L., *Stokesia* sp., *Tagetes erecta* L., *Terminalia catappa* L., *Veitchii merrillii* (Becc.) H.E. Moore, *Viburnum*

odoratissimum Ker.-Gawl., *Vitis* sp., *Yucca* sp., *Zea mays* L., *Zigadenus densus* (Desr.) Fern., plus eating honey in beehives, in bromeliads, in millet, and in orchids.

Pest Status

Euphoria sepulcralis has been recorded as a pest of corn (Ritcher 1945; Ratcliffe 1991) and roses (Spencer and Jarratt 1989). DPI records for Florida include many for those hosts, with annotations such as "10–15 beetles per ear of corn." Records also suggest it can be a pest of mango and avocado in southern Florida, where large numbers of the beetles destroy the flowers and thus reduce the number of fruits produced. There are also records of the beetles invading bee hives and damaging combs.

Figure 5. Adult *Euphoria sepulcralis* (Fabricius), a flower beetle, feeding on corn.
Credit: Lyle J. Buss, UF/IFAS

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