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EENY-413

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Banded Net-Winged Beetle, *Calopteron discrepans* (Newman) (Insecta: Coleoptera: Lycidae)[1]

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Introduction

The banded net-winged beetle, *Calopteron discrepans* (Newman), is a colorful black and orange net-winged beetle commonly found resting on vegetation in moist woods throughout much of the eastern United States.

Distribution

Found in the eastern United States from New England south to Florida and west to Oklahoma and Kansas.

Description

Adults: The adults range in length from approximately 10 to 15 mm. Males are smaller than females. The elytra have the elevated lengthwise ridges and cross ridges characteristic of most lycids and are orange with a median and a terminal black band.

The banding patterns of *C. discrepans* and the closely-related *Calopteron reticulatum* (Fabricius) are very similar in appearance. In *C. discrepans*, the sutural extension of the median black band is expanded basally and is widest at the scutellum. Also, the metasternum and second antennal joint are totally black in *C. discrepans* whereas the metasternum of *C. reticulatum* is more or less rufous antero-medially, and the second antennal segment is fulvous or brown (Green 1952, Dillon and Dillon 1961).

Figure 1. *Calopteron discrepans* (Newman) adults mating. The smaller male is on top. Credits: D.W. Hall, University of Florida

A third sympatric species, *Calopteron terminale* (Say) usually lacks the median black band on the elytra, and the elytra when viewed from the side are wavy with a depression anterior to the apical band. If

1. This document is EENY-413 (IN749), one of a series of Featured Creatures from the Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published: July 2007. This document is also available on Featured Creatures Website at **http://creatures.ifas.ufl.edu**. Please visit the EDIS Website at **http://edis.ifas.ufl.edu**.

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a median band is present in *C. terminale*, it is not produced along the suture toward the bases of the elytra. Because of their similarity in appearance and variability of the banding patterns, the *Calopteron* species have often been misidentified.

Larvae: Larvae are black with burnt-orange patches.

Figure 2. *Calopteron discrepans* (Newman) distended prepupal larva (dorsal view). Credits: D.W. Hall, University of Florida

Figure 3. *Calopteron discrepans* (Newman) distended prepupal larva (ventral view). Credits: D.W. Hall, University of Florida

Pupa:

Figure 4. *Calopteron discrepans* (Newman) pupa within last instar larval pupal case. Credits: D.W. Hall, University of Florida

Life Cycle and Biology

Nothing is known of the egg stage and oviposition site of *Calopteron* species. *Calopteron* larvae are reported to live in rotten logs, under loose bark or, less commonly, in soil or leaf litter. Lycid larvae are reported to be predacious by some authors (Miller 1988, Triplehorn and Johnson 2005) whereas other authors (Lawrence 1991, Marshall 2006, McCabe and Johnson 1979, Withycombe 1926) report that they feed on myxomycetes, fungi, or fermenting plant juices.

Full-grown larvae of *Calopteron* species aggregate prior to pupation (McCabe and Johnson 1979, Moffat 1883, Withycombe 1926).

Figure 5. Prepupation aggregation of larvae of *Calopteron* sp. Credits: Lyle J. Buss, University of Florida

These aggregations may contain hundreds of pupae packed together in shingled masses. The *C. discrepans* aggregation pictured below is part of a larger aggregation that contained over 600 pupae.

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Figure 6. *Calopteron discrepans* (Newman) pupal aggregation and newly emerged adult. Credits: D.W. Hall, University of Florida

The colorful adults of *C. reticulatum* have been shown to contain pyrazines (that likely impart the repugnant scent of the beetles) and lycidic acid and other fatty acids that may render them distasteful to predators (Eisner et al. 2005), and other species of *Calopteron* are also likely distasteful. The integument of *Calopteron* larvae also displays bright, contrasting coloration, and the larvae are likely distasteful. Pupation occurs within the last instar larval exoskeleton (Young and Fischer 1972). The exoskeletons which retain the bright larval coloration probably provide not only shelter but also aposematic (warning coloration) benefit to the pupae. Aggregation of aposematic insects is generally believed to be adaptive as a defensive mechanism against predators (Riipi et al. 2001, Vulinec 1990), and that is the presumed benefit of the pre-pupation aggregation behavior of *Calopteron*.

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