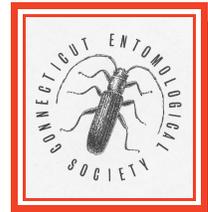




477TH MEETING
Minutes of the
**Connecticut Entomological
Society**



19 February, 2010

Biology Physics Building, University of Connecticut, Storrs
Pre-meeting pizza and beverages were enjoyed by the attendees, 6:30-7:25 p.m.

Business Meeting

Meeting was called to order by President Roberta Engel at 7:30 p.m.; 13 members and 4 guests were present.

Reports: The minutes of the 476th meeting were read by Secretary Munstermann; motion to approve was made (J.O'Donnell), seconded (R.Watson) and passed with no dissent. Treasurer Cowles provided the Treasurer's Report, given by President Engel in his absence, as follows: savings-\$2,317.80, CD-\$5,481.34, checking-\$750.49 = Total-\$8,564.67 and approved.

Old Business: None

New Business: None

Exhibits:

– Rob Watson presented – (a) book: *Freshwater Invertebrates of the United States* (2002) by J. Reese Voshell. 404 p., McDonald & Woodward, publ.

(b) presented a tray of 26 newly tied flies for fly fishing; requested opinions on comparisons to living insects.

– Chris Maier presented – book: *Manual of Central American Diptera*, v.1 (2009), by B.V.Brown, A.Borkent, J.M.Cumming & D.M.Wood. He noted that v.2 is to be published soon.

– William Krinsky presented – photos: “Two esoteric beetles”. (1) An elateroid male beetle in the family Rhagophthalmidae (females wingless), larvae with light organs. (2) Tenebrionid beetle with split eyes and helmet-like pronotum.

Evening Presentation: President Engel introduced Dr. Jadranka Rota, past president of CES and currently a taxonomist with the U.S. National Museum (Smithsonian) in Washington DC. Her interest in Lepidoptera began as an undergraduate at University of Zagreb, Croatia; in 2000 she came to the University of Connecticut for a MSc (2003) and PhD (2007). She will discuss the “*Systematics and defensive behaviors of metalmark moths (Lepidoptera: Choreutidae)*.”

Dr. Rota began by outlining the progress and problems associated with the new taxonomies of Lepidoptera presented by molecular systematics. The problems were especially apparent for the microlepidoptera. The family Choreutidae has been placed in 5 different superfamilies by different analyses and its relationship to other Lepidoptera remains unresolved. In Dr. Rota's analysis using mitochondrial *COI*, *elongation factor alpha*, and *wingless* sequences and 81 representative species, 4 subfamilies were resolved. In her analysis, she compared the 61 x 61 transition probability model with the standard (4x4) nucleotide model. However, the non-Choreutinae subfamilies contained conservative larval morphological features that placed them outside the family Choreutidae. In addition, adult antennal features (filiform vs long basal scales) appeared together in 4 different clades.

She went on to discuss the co-evolution of the Choreutidae with the highly diversified *Ficus* host plant in Papua New Guinea. She has determined 102 Choreutid species, 23 of which are new species. Because many larvae appear to be polyphagous, the Terry Erwin estimate of 30

million insect species is a great overestimate, which had assumed host plant fidelity as an insect norm.

In the third segment of her talk, Dr. Rota discussed her experiments with Choreutidae of Costa Rica that are jumping spider mimics. Species of the genus *Brenthia* look just like jumping spiders in their aggressive stance. In paired experiments, the jumping spider (an active moth predator) did not attack the *Brenthia*, although it immediately devoured other microleps in the caged experiments. Jumping spider mimicry appears in other microlepidoptera, as well as in the homopterans such as derbids and fulgorids. The term is “evasive prey mimicry”.

Finally, predator evasive behaviors of Choreutidae larvae were described. The larvae of *Brenthia* make a hole in the plant leaf and when the leaf or larval web is disturbed, the larva escapes to the opposite side of leaf. The caterpillars have very long sensory setae, including 2 very long terminal segment setae. The web appears to function as an extension of the caterpillar sensory system. These adaptations also appear in the lepidopteran family Pyralidae.

Future work: (1) molecular phylogeny of *Brenthia* and its host plant associations, (2) test hypothesis that the ability to feed on *Ficus*, a plant with multiple defensive mechanisms, also serves as a key defense strategy.

Questions:

- (1) Do larvae eat *Ficus* sap? No, just directly on leaf surface. The sap is a kind of latex that gums up the mouthparts, and the larvae somehow avoid contact with it.
- (2) Any chemical cues to avoid jumping spider predation? No, the spiders are very visually keen and as far as can be seen, no chemical senses are involved in prey detection.
- (3) Why are Choreutidae so beautiful? Unknown, sexual display, possibly.
- (4) What is the degree of host plant specificity? As the samples increase, the number of polyphagous examples increased in the Papua New Guinea study. Temperate species are even less specialized than the tropical species.

Following Dr. Rota’s presentation, refreshments and exhibit viewing commenced.

Respectfully submitted,

Leonard E. Munstermann, CES secretary
16 March, 2010