Notes on Flightless Hawaiian Dolichopodidae (Diptera)

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Flightless species of insect groups that are normally fully winged are characteristically found in remote areas and relatively high elevations. In the flightless dolichopodids known from Hawaii (currently all placed in the genus *Campsicnemus*), reduction of the wings to thin straplike structures has severely limited their mobility and restricted their habitat to soil, leaf litter, and low-growing vegetation at sites all normally over 1500 m in elevation. The increase of non-indigenous species, especially ungulates and predaceous arthropods, into native forests in Hawaii, has apparently led to the decline and possible extinction of some populations of these flightless flies. Continued surveys and monitoring of known populations of these flightless flies is highly desired in order to assess and document the potential impact of non-indigenous species on native populations of these flies.

Campsicnemus bryophila (Adachi) **New island record**

This flightless species, previously known only from the island of Molokai has been found recently in a single population on Oahu, where it occurs in leaf litter in association with another species of flightless dolichopodid (undescribed), which will be described elsewhere. These 2 species are the first flightless dolichopodids to be found on Oahu since 1900 when R.C.L. Perkins collected the type series (and only known specimens) of *Emperoptera mirabilis* (Grimshaw 1902). Predaceous ants were thought to be the reason for the possible extinction of the populations of *E. mirabilis* (Zimmerman 1948), and ants presumably also potentially threaten the survival of this vulnerable Oahu population of *Campsicnemus bryophila*.

Material examined: Oahu: 4M, 2F, Mt Kaala, 4000 ft [1219 m], w. slope, *Broussasia* leaf litter, 19.i.1993, S.L. Montgomery (BPBM).

Campsicnemus hawaiiensis Hardy & Delfinado

The original series of specimens of this flightless species were reared in the laboratory from soil samples collected in February of 1972 and 1973. The samples derived primarily from adjacent kipuka, Kipuka "9" and "14" (19 specimens) in the Saddle Road area of the island of Hawaii at an elevation of 5100 ft [1554 m] (Hardy & Delfinado 1974). I visited Kipuka "9" on 4 occasions in 1993 and 1994 but was not able to find additional specimens in any of my collecting attempts. A combination of visual observations, pan trapping, and rearing from collections of soil samples from numerous areas in Kipuka "9" proved fruitless.

Significant pig damage in the kipuka was noticed on the last 2 collecting trips. The presence of these rooting ungulates in the kipuka would have a deleterious effect on the fragile population of this flightless species of fly, which normally is restricted to soil and leaf litter habits within the kipuka.

References

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Status of *Rhynchopalpus brunellus* in the Hawaiian Islands, With Comments on the Systematics of the Nolinae (Lepidoptera: Noctuidae)

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Rhynchopalpus brunellus Hampson (1893) **Resurrected combination**, **new island record**

During a Bishop Museum field trip on 30 September 1989, the species referred to in Hawaiian literature as *Selca brunella* (Hampson 1893) was found at Schofield-Waikane Trail on Schofield Military Reservation, Oahu, at ultraviolet lights at both 370 m and 440 m elevation.

The species was introduced from Kuala Lumpur, Malaysia, and Singapore, for the control of *Melastoma candidum* (previously known as *M. malabathricum*; Almeida in Wagner *et al.* 1990: 910). It was released at Panaewa Forest, Hawaii, in 1965 (*Proc. Hawaii. Entomol. Soc*. 19: 202, 205) and Huleia, Kauai, in 1966 (*Proc. Hawaii. Entomol. Soc*. 19: 376, 378), and is considered to be well established on those islands (*Proc. Hawaii. Entomol. Soc*. 20: 27, 522). This species is considered successful in providing partial control of *Melastoma* (Clausen 1978: 398–99, Julien 1987: 53, Funasaki *et al.* 1988: 147).

Considerable variation among Hawaiian specimens in both size and wing maculation prompted us to verify the identification by comparison of male genitalia against the male syntype from Sri Lanka in The Natural History Museum, London (BMNH arctiid slide 450). The wings and male genitalia are illustrated in Figs. 1 and 2.

The species was described and illustrated as *Rhynchopalpus brunellus* by Hampson (1893: 89, pl. 158, fig. 31), but its taxonomic placement has been problematic. In Hawaiian literature it has been included in Arctiidae or Nolidae. It is currently placed in the subfamily Nolinae of the Noctuidae (Poole 1989). Poole (1989: 693) transferred *brunellus* to *Nola* Leach, but the male genitalia are atypical of this genus. This problem prompted a search for a better generic placement for *brunellus*, via an extensive program of dissection throughout the Nolinae, including the type specimens of type species of genera held at the BMNH and University Museum, Oxford (UMO). The results of these studies will be reported in detail elsewhere. The Nolinae are in great need of a comprehensive revision; we hope these notes will help fill the gap until such a revision can be undertaken.

Notes on the Generic Classification of Nolinae

In his catalog of the Noctuidae, Poole (1989) retained the accepted synonymy (e.g., in Hampson 1900: 31, 46) for *Nola* and transferred all species under the generic concept of "Roeselia" (*Roeselia* Hübner is an isogenotypic synonym of *Nola*) to *Meganola* except

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