

A scuttle fly (Diptera: Cyclorrhapha, Phoridae) that omits sclerotization of the puparium

[Eine Buckelfliege (Diptera: Cyclorrhapha, Phoridae)
ohne Sklerotisierung des Pupariums]

by

Raja Muhammad ZUHA and R. Henry L. DISNEY

Kuala Lumpur (Malaysia)

Cambridge (United Kingdom)

Abstract

During a study of the potential forensic importance of the scuttle fly *Gymnoptera simplex* (BRUES) in Malaysia it became apparent that this species does not form a puparium like most other Cyclorrhapha, but larvae pupate within the unaltered, unsclerotized integument of the last instar larva and adults emerge from these ‘prepupae’.

Key words

Diptera, Cyclorrhapha, Phoridae, puparium

Zusammenfassung

Während einer Untersuchung zur möglichen forensischen Bedeutung der Buckelfliege *Gymnoptera simplex* (BRUES) in Malaysia wurde offenbar, dass diese Art kein Puparium wie andere Cyclorrhapha ausbildet, sondern dass die Larven sich im unveränderten, unsklerotisierten Integument des letzten Larvenstadiums verpuppen. Die Imagines schlüpfen dann aus diesen “Vorpuppen”.

Stichwörter

Diptera, Cyclorrhapha, Phoridae, Puparium

Introduction

During a study in Malaysia of carrion breeding species likely to feature in forensic cases involving human carcasses, rabbit carcasses have been employed. Since the report that there are more species of scuttle flies (Diptera, Phoridae) featuring in forensic cases in the Oriental Region than had been previously reported (THEVAN et al. 2010), special attention was given to Phoridae. Among the species reared from these dead rabbits was *Gymnoptera simplex* (BRUES). This was not surprising in view of previous information on the natural history of this species. Thus the larvae have been reported feeding on dead molluscs (BOHART 1947, BEAVER 1987) and dead beetles (SCHMITZ 1953, BORGMEIER 1960) and adults have been reported on vertebrate carrion (DE MEIJERE 1907, DISNEY 2003). Furthermore, related to these habits it is not surprising that it has been reported from the Afrotropical, Australasian, and Neotropical regions in addition to the Oriental Region and has undoubtedly been transported across the world by man. This wide distribution combined with descriptions of ‘species’ based on one sex only caused the confusions that gave rise to the synonyms listed below.

Conicera simplex BRUES, 1905 – **Literature:** BRUES (1905): 553 [female only].

Gymnoptera simplex SCHMITZ, 1927 – **Literature:** SCHMITZ (1927): 76 [male].

Syneura orientalis DE MEIJERE, 1907 – **Literature:** DE MEIJERE (1907): 255 [female only]; DISNEY (2003): 204.

Parafannia molluscovora BOHART, 1947 – **Literature:** BOHART (1947): 414 [female only]; DISNEY (2003): 204.

Gymnoptera neotropica BORGMEIER, 1958 – **Literature:** BORGMEIER (1958): 307 [male only]; BORGMEIER (1960): 287 [female]; DISNEY (2003): 204.