

A NOTE ON THREE UNUSUAL SPECIES OF PHYTALMIINAE (DIPTERA: TEPHRITIDAE) FROM PAPUA NEW GUINEA

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Abstract

Robertsomyia paradoxa Hardy is transferred back to the Tephritidae from the Platystomatidae and placed in the *Sophira* complex, while *Stymbara vagaria* Walker is transferred from the *Sophira* complex to the *Acanthonevra* subgroup of genera (both in the *Acanthonevra* group of genera in tribe Acanthonevrini). *Tanaodema porrecta* Hardy, originally placed in tribe Trypetini (subfamily Trypetinae) is placed in the *Epacrocerus* group in tribe Epacrocerini.

Introduction

Robertsomyia paradoxa Hardy, *Stymbara vagaria* Walker and *Tanaodema porrecta* Hardy are three unusual fruit fly species found in Papua New Guinea (Hardy 1983, 1987, 1988). Their systematic relationships have been uncertain. *R. paradoxa* was originally placed in tribe Phytalmiini (Hardy 1987) and transferred to family Platystomatidae by Hancock and Drew (2003) but this was incorrect (D.K. McAlpine, pers. comm.). *S. vagaria* was placed in the *Sophira* complex of genera in tribe Acanthonevrini by Hancock and Drew (2003). *T. porrecta* was originally placed in subfamily Trypetinae, tribe Trypetini (Hardy 1987) and provisionally transferred to subfamily Tephritinae by Hancock (1991).

Robertsomyia paradoxa Hardy

As noted by McAlpine (2001, pers. comm.), the break in the costa above the tip of vein Sc is a distinguishing character separating the Tephritidae from the Platystomatidae. Given insufficient weight by Hancock and Drew (2003), its presence excludes *R. paradoxa* from the latter family. While it does appear to belong in subfamily Phytalmiinae, the widely forked vanes of the phallapodeme [= aedeagal apodeme] exclude it from tribes Phytalmiini and Phascini (and also from the unplaced *Polyara* group of genera), in which the vanes are largely fused into an inverted Y-shaped structure.

The vanes of the phallapodeme are also widely forked in the *Sophira* complex in tribe Acanthonevrini; other characters of *R. paradoxa*, including its reduced chaetotaxy and biology, are also consistent with this complex. Accordingly, *Robertsomyia* Hardy is added to the New Guinea-Pacific genera previously placed in the *Sophira* complex of the *Acanthonevra* group of genera by Hancock and Drew (2003). The complete absence of head and thoracic setae and the tuberculate scutellum are characters unique to *Robertsomyia* within the family. The elongate, apically convex, non-lobate wing cell *bcu* and sclerotised metathoracic postcoxal bridge resemble those seen in *Adramoides* Hardy from southern Thailand.

Larvae of *R. paradoxa* breed in living stems of *Bambusa* sp. (Poaceae: Bambusoideae) (Hardy 1983).

***Stymbara vagaria* Walker**

The presence of some yellow setae on the head, the wrinkled preglans area of the distiphallus and the shape of the phallapodeme, hypandrium, epandrium and surstylus (Hardy 1988) clearly ally *Stymbara* Walker with *Cribroriox*a Hering, *Ectopomyia* Hardy, *Hexacinia* Hendel and *Riox*a Walker in the *Acanthonevra* subgroup of genera, to which it is transferred.

***Tanaodema porrecta* Hardy**

The presence of a break in the costa above the tip of vein Sc and a distinct katepisternal seta (D.K. McAlpine, pers. comm.) confirm the placement of *T. porrecta* in the Tephritidae. The shape of both the face and the antenna, with its second segment expanded on its inner margin, suggest a relationship with the *Epacrocercus* group of genera (tribe Epacrocercini) (Hardy 1987, D.K. McAlpine, pers. comm.), in which some genera also show a peculiarly modified head, although to a much lesser extent (Hardy 1982). The presence of a blunt apex to wing cell bcu and the placement of the dorsocentral setae anterior to the line of the supra-alar setae support this suggestion. *Tanaodema* Hardy is therefore added to the genera placed in tribe Epacrocercini by Hancock and Drew (2003). It is characterised by a remarkably elongate head with no frontal setae, 2 pairs of orbital setae and the eye situated medially, porrect antennae with the second and third segments almost circular in shape and the arista almost bare, 2 scutellar setae and narrow wings with no distinct costal seta above the tip of vein Sc and a narrow, elongate pterostigma.

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