

SCIENTIFIC NOTE

NO *KELISIA* FIEBER (HEMIPTERA: FULGOROIDEA: DELPHACIDAE) IN SOUTH AMERICA: NEW TAXONOMIC PLACEMENT OF *PHRICTOPYGA VITTATA* (MUIR) COMB. NOV. FROM BRAZIL¹Charles R. Bartlett²

Kelisia vittata Muir, 1926 is the only New World species nomenclaturally in the Kelisiinae from south of the contiguous USA. The delphacid genus *Kelisia* Fieber, 1866 (Kelisiinae: Kelisiini) consists of 46 species of Laurasian distribution, plus 2 species of uncertain status, one (*Kelisia nigripennis* Muir 1929) from South Africa and one (*Kelisia vittata* Muir 1926) from Brazil. In North America, *Kelisia* includes 12 species found from southern Canada to Texas, all of which appear to be specialized sedge feeders (Beamer 1945, 1951; Bartlett & Wheeler 2007, Bartlett et al., 2014). Muir's (1926) illustrations of *Kelisia vittata* (viz. Figures 50-51) are sufficient to show that it belongs to the Delphacini (Delphacinae), not the Kelisiinae, but they are not adequate to place the genus (hence its omission by Caldwell and Martorell 1951). Muir's type material consisted of 4 males, 3 females from Campinas, Brazil, and 1 male from 'Villa Americana' (both São Paulo state, Brazil). Here the species is briefly diagnosed based on the 'Villa Americana' paratype (Figure 1, from the California Academy of Sciences collection, CASC) to review its higher classification and place it to genus.

The Kelisiinae consists of only 2 genera (the western Palearctic *Anakelisia* Wagner, 1963 and the Laurasian *Kelisia*). Kelisiinae is characterized by the presence of a process on the connection between segment X (the "anal tube") and the phallus (i.e., the "subanal process", unique to the subfamily, see e.g., Bartlett et al., 2014 Fig. 23E), a darkly sclerotized phallus within a weakly sclerotized phalotheca (often with a vestigial flagellum), the absence of an elongate suspensorium, and apparently the absence of processes on segment X. In contrast, the Delphacini lack the subanal process, have a well-developed and elongate suspensorium, have the phalotheca and aedeagus completely fused and indistinguishable (to form a theca), and may have or lack processes on segment X (Asche 1985, 1990).

Muir (1926) originally described 9 species that he placed in *Kelisia* from the Neotropics, but subsequently all except *K. vittata* were transferred into the new genera *Phrictopyga* Caldwell and *Pygospina* Caldwell by Caldwell and Martorell (1951; Delphacinae: Delphacini). *Phrictopyga* and *Pygospina* are similar to each other in being pale slender forms that are slightly dorsoventrally flat-

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tened, and usually bearing some dark or pale longitudinal markings on the face, pro- and mesonotum. The genitalia are similar in general aspect; they bear processes on the ventral margin of the opening of the pygofer which always includes a single median process but may include others. Other than these genera, no other Neotropical genus of similar appearance includes a single median process near the opening of the pygofer (genera with paired median processes are discussed in Bartlett 2014). Other taxa with a single median process of the pygofer include the Nearctic *Akemetopon* Weglarz & Bartlett and the subgenus *Acanthodelphax* Le Quesne of *Kosswigianella* Wagner; but these taxa are not otherwise similar to *Kelisia vittata*.

The diagnostic differences between *Phrictopyga* and *Pygospina* (according to Caldwell and Martorell 1951) include the pygofer of *Pygospina* which bears a simple (i.e., unforked) medioventral process on the ventral margin of the pygofer opening in addition to lateral processes, segment X usually bears a single median spine, and the theca is flattened, ventrally curved and simple. *Phrictopyga* has a 'variously modified' pygofer (i.e., with or without lateral processes on the pygofer opening) with a 'greatly developed' medioventral process of the pygofer (usually elongated and forked), segment X "lacks conspicuous armature", but a short pair of processes is present in several species (e.g., *Phrictopyga curvistylus* (Muir 1926), *Ph. escadensis* (Muir 1926), *Ph. fuscovittata* (Muir 1926), *Ph. graminicola* (Muir 1926), *Ph. holmgreni* (Muir 1930) and *Ph. semele* Fennah 1959), and the theca is varied but 'usually compressed laterally'.

The external appearance and coloration of *Kelisia vittata* are similar to *Pygospina* and *Phrictopyga* (Figs. 1A, C). The male pygofer opening (Figs. 1E, F) possesses a simple medioventral process (more prominent in lateral view), but no other strong projections. The diaphragm is prominent and sclerotized, but relatively thin and without dorsal armature; the dorsal margin is roundly sinuate and (from a more lateral view) slightly projected medially (where the theca rests in repose). The theca is strongly and asymmetrically bifurcate, the leftmost portion wide and flat, widest near the apex, with the apex narrowed to a sharp point (upper portion irregularly serrated); rightmost portion shorter and sinuately tubular, with circle of spinules apically near the orifice. The gonostyli (i.e., "genital styles") are flat and diverging, broadest on proximal portion, then narrowing to blunt apex. The suspensorium is strap-like, connecting from segment X to the aedeagus, forming a ring-like structure surrounding the base of the aedeagus proximad to its bifurcation. Segment X is narrow and short, with a pair of short and approximated projections on the medioventral portion of the caudal margin. The epiproct is large, bulbous and comparatively sclerotized.

The simple median process at the opening of the pygofer of *Kelisia vittata* might suggest *Pygospina*, but the balance of features otherwise suggests *Phrictopyga* including the lack of lateral processes on the pygofer opening, the paired processes on segment X and the strongly modified theca (a bifid theca is also present in *Ph. holmgreni*). This makes *Phrictopyga* the most appropriate place-

ment for *K. vittata* making *Phrictopyga vittata* (Muir, 1926) the **new combination** for this species.

The greatly varied features on the terminalia of species among these genera complicate diagnoses, and the single best diagnostic feature separating these genera appears to be the armature of segment X (paired process *Phrictopyga* vs. single or none in *Pygospina*), with other genitalic features serving as confirmatory; however, *Phrictopyga* as currently comprised is rather heterogeneous with respect to genitalic features. Diagnostic differences among these genera require further amplification and phylogenetic analyses should be done to test genus monophyly.

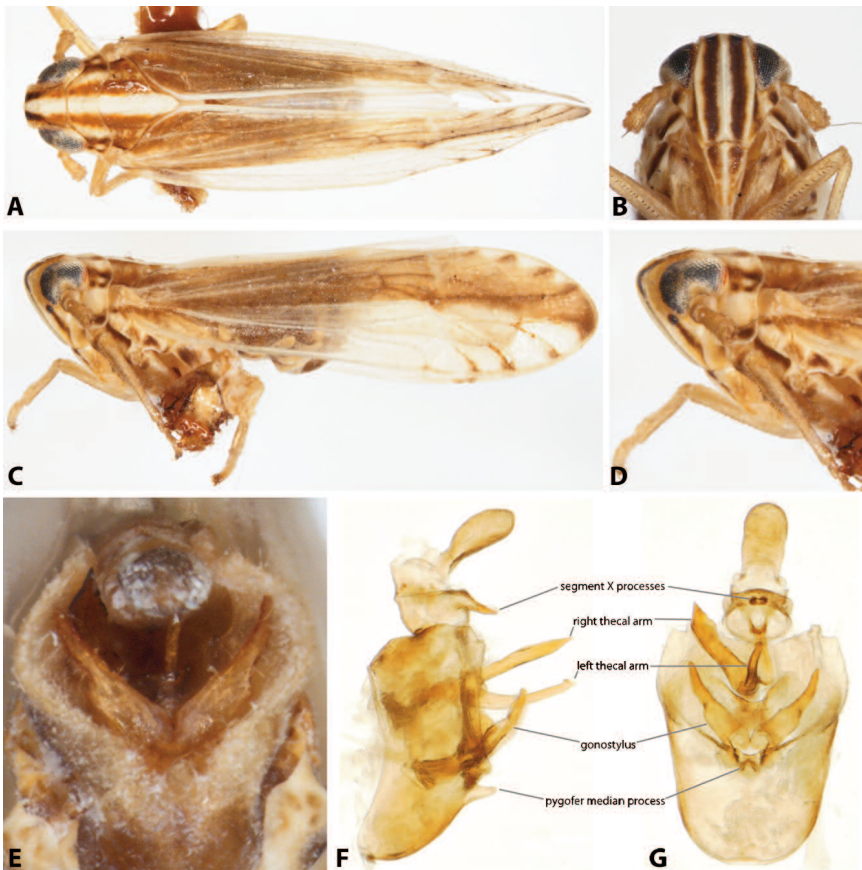


Fig. 1. *Kelisia vittata* Muir 1926, paratype (Villa Americana, Brazil, CASC). A. habitus dorsal view; B. frontal view; C. habitus lateral view; D. detail, head and thorax, lateral view; E. male terminalia in situ, caudal view; F. male terminalia cleared, lateral view; G. male terminalia cleared, caudal view.

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