

## A new species of *Cydistomyia* (Diptera, Tabanidae) from Papua New Guinea

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**Abstract.** A new species, *Cydistomyia kamialiensis*, is described from specimens collected in the Kamiali Wildlife Management Area of Morobe Province, Papua New Guinea.

### Introduction

Mackerras (1964) included the tabanid fauna of Papua New Guinea in his coverage of the fauna of the Papuan (New Guinea) Subregion, an area encompassing the entire island of New Guinea as well as the smaller islands lying approximately between 0° and 12° S. latitude and 129° and 155° W. longitude. Additional information on the tabanids of the subregion appeared in two shorter papers (Mackerras 1971, 1972). A few subsequent papers covering the fauna of other parts of the Australasian and Oceanian Regions were found, and some included taxonomic changes affecting generic and subgeneric names of species found in the Papuan Subregion. These changes were summarized by Daniels (1989) who provided the most current faunal list of Tabanidae for the Australasian and Oceanian Regions. In addition, ChaNEY (1988), which was not mentioned by Daniels (1989), included the description of a new species, *Lilaea (Cyanolilaea) ismayi* ChaNEY, from Papua New Guinea as well as revisionary changes affecting names of other species from the Subregion.

The new species described below is named for the Kamiali Wildlife Management Area in Morobe Province, Papua New Guinea. Commonly referred to as just Kamiali, the wildlife management area, has a marine and land surface area of at least 342 km<sup>2</sup> (possibly as much as 434 km<sup>2</sup>) within the boundaries of the Lababia Village land area. It is located approximately 60 km SSE down the Huon Gulf coast from the provincial capitol of Lae. The land area of 269 km<sup>2</sup> is covered by predominantly pristine coastal rain forest on the surfaces of mountains and ridges ranging from sea level to a little above 2,000 m. The people of Lababia and the smaller villages of the Kamiali have made the decision to set aside most of the area as a wildlife management area rather than sell timber rights to

private companies. They hope in this way not only to conserve their forest holdings for their descendants but also to derive income from activities for which the Kamiali will be the attracting force. Activities planned include hosting training workshops, supporting visiting scientists interested in studies of the biota of the area, and ecotourism. They have been assisted in these endeavors by the Village Development Trust (VDT), a non-governmental organization with offices in Lae. Guest housing, dining facilities, and a training center have been constructed, and the first training courses were carried out in late 1997.

In addition, in early 1997, VDT entered into an agreement with the Environmental Research and Management Centre (ERMC) of the Papua New Guinea University of Technology in Lae to initiate an inventory of the biodiversity of the Kamiali and to train some of the villagers to work with visiting scientists and to serve as guides. I was fortunate to be one of the scientists asked to participate in these studies. I was warmly received by the villagers and received extremely good support during all my visits, an extremely important parameter for field research in Papua New Guinea. Unlike most other countries of the world, close to 95% of the land resources of the country are tribally held, but ownership is never a clear matter. Obtaining permission to collect in an area is difficult at best, and security for oneself and one's equipment is far from guaranteed. As a consequence, being not only invited to collect in the Kamiali, but also being given tremendous support while collecting, will always be remembered with pleasure. It is for this reason that I have elected to name the species described herein in honor of the area, its history, and its people.

I also recommend to others interested in the biota of Papua New Guinea that they consider the Kamiali as an area for investigation. Information can be obtained and/or arrangements made by con-

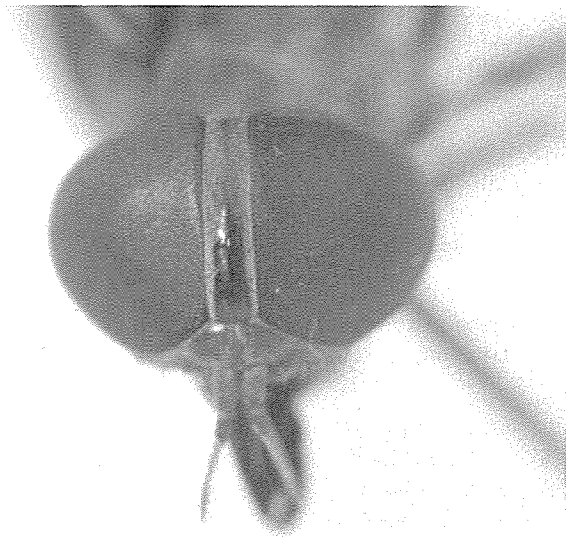


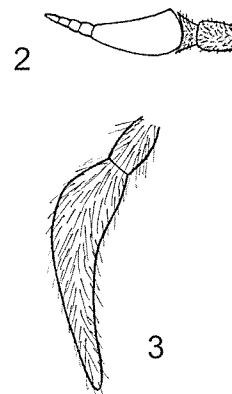
Figure 1. *Cydistomyia kamialiensis* Anterior view (photograph) of head to illustrate frons of holotype female.

tacting the Village Development Trust, P. O. Box 2397, Lae, Morobe Province 411, Papua New Guinea, telephone 675-472-1666, telefax 675-472-4824, e-mail vdt@global.net.pg, web at www.global.net.pg/vdt.

### *Cydistomyia kamialiensis* new species

**Description:** Holotype female: A vivid golden-yellow and black species with emerald green eyes and wings intensely and darkly infuscated except along posterior border. Length 11 mm; wing 10.5 mm long.

**Head:** Eyes unicolorous dark, emerald green; frons (Figure 1) nearly parallel-sided, golden yellow pollinose with scattered blackish brown hairs throughout except for the large shining callus; callus narrowly separated from eyes by pollinose region, extending from subcallus to just above midpoint of frons, widest basally and progressively narrowed dorsally over basal two-thirds and then sharply constricted to pointed apex; callus dark blackish brown over upper three-fourths to four-fifths, orange-brown below; subcallus bare and shining orange-brown, a little lighter in color than basal area of callus; parafacials and face golden yellow pollinose with rather sparse black and golden hairs, the black hairs more prevalent near eyes; antennae (Figure 2) orange-brown, thinly pollinose, scape and pedicel with moderately abundant short black hairs,



Figures 2-3. *Cydistomyia kamialiensis* 2. Diagram of the antenna of holotype female; 3. Diagram of palp of female holotype.

third segment with a tuft of short black hairs on tooth and scattered black hairs on annuli; dorsal excision of plate rather shallow; palpi (Figure 3) sub-shiny, black, with dense black hair, hairs shorter on second versus basal segment; second palpal segment about equal in length to entire antenna.

**Thorax:** Ground color of thoracic dorsum, including scutellum, shiny blackish-brown, but dark color entirely obscured by dense golden yellow pollinosity (NOTE: ground color based on color of shiny non-pollinose areas in middle and at tip of scutellum due to rubbing in the killjar; entire dorsum of thorax and scutellum of type pollinose at time of collection); dorsum with a mixture of scattered, elongate golden and black hairs; upper half of pleura concolorous with dorsum, with rather dense tufts of long golden hairs below wing bases anteriorly and posteriorly; lower half of pleura and venter shiny blackish-brown; legs shiny blackish-brown with black hairs, the only slightly paler areas being the joints at the proximal and distal ends of the tibiae and the pulvilli. Wing (Figure 4; wing of paratype used so as to leave holotype intact) intensely infuscated dark brown to blackish throughout except for clear posterior zone originating in cell  $r_4$  where it occupies most of the apical half of the cell (but not reaching anteriorly to vein  $R_4$ ) and extends towards body in a progressively narrowing strip through  $cua_1$  and then abruptly expands to include much of the anal area.

**Abdomen:** Ground color dorsally primarily orange brown; first tergite entirely orange brown but very slightly darkened posterolaterally; orange brown area progressively narrower on tergites II-V and confined to a small median basal area on tergite VI; remaining areas of dorsum shiny dark brown to

black; hairs mostly dark regardless of ground color; laterally on the first sternite just behind the halteres, there is a conspicuous golden-yellow pollinose and golden haired extension from the similarly colored band occupying the upper half of the pleura; ground color ventrally a brighter orange brown than dorsally, occupying the middle halves of sternites I-IV, middle third of sternite V, and less of sternite VI; remaining areas shiny dark brown to black; hairs generally concolorous with ground color.

**Variation:** Three female specimens were collected. Observed variations as follows: one paratype is approximately 0.5 mm shorter than the holotype, the other less than 0.5 mm longer; the orange brown of the venter of the abdomen of the holotype is more sharply delimited by the dark lateral areas than in the paratypes; otherwise all three specimens are similar.

**Locality data:** Holotype: Mountain rain forest, 50-250 m., 1-3 km W of Lababia, Morobe Pr., Papua New Guinea, 20-22 X 1997, J. T. Goodwin; Paratypes (2): Walking trail just W of Kamiali Training Center, 10-150 m, nr Lababia, Morobe Prov., Papua New Guinea, 16-19 Feb 1998, J. T. Goodwin (1) and Mountain rain forest, 50-250 m., 1-3 km W of Lababia, Morobe Pr., Papua New Guinea, 12-14 VI 1997, J. T. Goodwin (1).

**Identification:** Although Mackerras (1971, 1972) include descriptions of species of *Cydistomyia* Taylor, none is closely similar to the species described here. Consequently, Mackerras (1964) includes the most recent key to the fauna of the New Guinea Subregion. In the initial key to *Cydistomyia* in Mackerras (1964, p. 112), the genus is separated into three species groups. One, the *basifasciata* group, has been returned to generic status as the genus *Chasmia* Enderlein (Daniels 1989). Of the two remaining species groups, *C. kamialiensis* would key to the *albithorax* group. In the key to the *albithorax* group (p. 131), it would key to *C. imitans* Oldroyd in couplet 1.

In the description of *C. imitans* Oldroyd provided by Mackerras (1964, p. 136), he makes reference to a New Caledonian species, *C. colasbelcourii* Mackerras and Rageau, noting that *C. imitans* is distin-

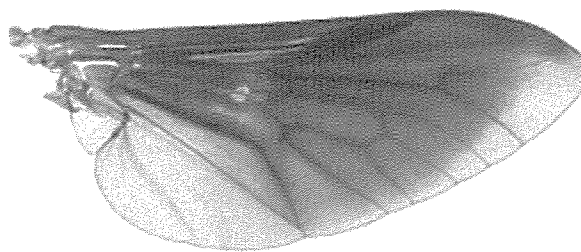


Figure 4. *Cydistomyia kamialiensis*. Wing (photograph) of female paratype.

guished from *C. colasbelcourii* by having a pale callus, a shining subcallus, orange antennal segment 3, and brown abdomen. Examination of specimens of both *C. imitans* and *C. colasbelcourii* confirmed these differences.

*Cydistomyia kamialiensis* differs from *C. imitans* and *C. colasbelcourii* as follows: the pleura are densely golden pollinose and concolorous with the mesonotum, there are distinct tufts of long golden hairs below the wing bases anteriorly and posteriorly, and the lateral margins of tergite one are densely golden pillinose and concolorous with the pleura, whereas, in *C. imitans* and *C. colasbelcourii*, the pleura are dark brown and contrasting with the golden colored mesonotum, the hair tufts below the wing bases are predominantly brownish, and the lateral areas of the first tergite are dark brown.

#### Literature cited

- Chainey, J. E.** 1988. A review of the genus *Lilaea* Walker (Diptera: Tabanidae). *Invertebrate Taxonomy* 2:749-753.
- Daniels, G.** 1989. Family Tabanidae, pp. 277-294. *In: N. L. Evinhuis (Ed.) Catalog of the Diptera of Australasian and Oceanian Regions.* Honolulu and Leiden: Bishop Museum Press & E. J. Brill.
- Mackerras, I. M.** 1964. The Tabanidae (Diptera) of New Guinea. *Pacific Insects* 6:69-210.
- Mackerras, I. M.** 1971. Papuan-Melanesian Diachlorini (Diptera: Tabanidae). *Pacific Insects* 13:405-427.
- Mackerras, I. M.** 1972. Melanesian-Pacific *Tabanus* (Diptera: Tabanidae). *Pacific Insects* 14:133-149.