Two new species of the subgenus *Cacoxenus (Nankangomyia)* from the Oriental Region (Diptera, Drosophilidae)

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**Abstract**

Two new species of the subgenus *Cacoxenus (Nankangomyia)* Máca and Lin, 1993 are described: *C. (N.) gani* sp. nov. from southwest China and *C. (N.) unipaxillus* sp. nov. from Myanmar. The diagnosis of *Nankangomyia* is revised.

**Keywords:** Holotype, Myanmar, southwest China, Steganinae, taxonomy

**Introduction**

The *Nankangomyia* was originally established as a subgenus of the genus *Leucophenga* Mik by Máca and Lin (1993). Sidorenko (2002) revised the classification of the tribe Steganini and related taxa, and transferred the subgenus *Nankangomyia* to the genus *Cacoxenus*. Sidorenko’s suggestion is strongly supported by two important characters (as diagnostic): first flagellomere with several internal organs (new examination; Figure 8); mesonotum with dark patches around setal sockets. On the other hand, *Cacoxenus* resembles the genus *Amiota* Loew in sharing a (plesiomorphic) character, the aedeagal apodeme lobe-shaped and horizontally flattened (Figures 4, 5, 10, 11). In the genus *Cacoxenus*, *Nankangomyia* is easily distinguished from the other subgenera by the following characters: arista short, or long and plumose; at least one acrostichal setula between posterior dorsocentral and prescutellar setae thicker and longer than others; mid tarsus with a row of cuneiform setulae. However, *Nankangomyia* resembles the genus *Phortica* Schiner in sharing an important (plesiomorphic) character, palpus with a hollow sense organ, which is also present in *Amiota humeralis* Loew, 1862 (Grimaldi 1990).

To date, only four species from the Oriental Region are known in the subgenus *Nankangomyia*: *C. (N.) academica* (Máca and Lin, 1993) from Taiwan; *C. (N.) leucophengoides* (Sturtevant, 1927) and *C. (N.) philippinensis* (Sidorenko, 1998) from Philippines; and *C. (N.) parallelinervis* (Duda, 1924) from Java, Indonesia. This paper adds two new species from southwest China and Myanmar to this subgenus.
The type specimens are deposited in the following institutions: Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, China (KIZ); Department of Entomology, South China Agricultural University, Guangzhou, China (SCAU); and Systematic Entomology, the Hokkaido University Museum, Hokkaido University, Sapporo, Japan (SEHU).

The morphological terminology and the definition of indices follow Chen and Toda (2001).

**Cacoxenus (Nankangomyia)** Máca and Lin

**Leucophenga (Nankangomyia)** Máca and Lin 1993, p 7. Type species: **Leucophenga (Nankangomyia) academica** Máca and Lin, 1993.

**Cacoxenus (Nankangomyia)** Sidorenko 2002, p 15.

**Diagnosis**

Arista short, or long and plumose, with pubescence (Figures 1, 8); palpus with a hollow sense organ; at least one acrostichal setula between posterior dorsocentral and prescutellar setae thicker and longer than others; mid tarsus with a row of cuneiform setulae; aedeagal apodeme lobe-shaped, horizontally flattened (Figures 4, 5, 10, 11) (modified from Sidorenko 2002).

**Cacoxenus (Nankangomyia) gani** sp. nov. (Figures 1–7)

**Diagnosis**

Surstylus distally elongated, apically pointed, lacking prensiseta (Figures 2, 3); paramere apically pointed (Figures 4, 5); aedeagus basally much expanded, distally sclerotized, slightly curved dorsad, apically pointed (Figures 4, 5).

**Description**

**Head.** Eye brown-red. Postvertical setae as small as interfrontal setulae, slightly behind top of vertex ridge. Ocellar triangle brown, with three (two to four) pairs of small setae above ocellar setae. Frontal vitta dark brown, yellow anteriorly, with several thick interfrontal setulae (Figure 1). Procline orbital seta before anterior reclinate, nearer to frontal margin than to inner vertical seta. Pedicel dark brown; first flagellomere grey-yellow; arista short plumose, with pubescence (Figure 1). Face dark brown; facial carina slightly bulged. Clypeus dark brown. Palpus rod-shaped, grey-yellow, with several stout setae on lateral margin. Vibrissa prominent; other orals small (Figure 1). Gena yellow; postgena brown. Occiput black.

**Thorax.** Yellow, with brown-black patches, grey pollinosity, and dark patches around setal sockets. Postpronotal lobe with a long humeral seta and a few small setae. Acrostichal setulae in ca 12 irregular rows. Anepisternum lacking setulae. Katepisternal setae two. Scutellum yellow, with brown patch; basal scutellar setae divergent; apicals cruciate.

**Wing.** Hyaline; veins grey-yellow. C₁ setae two, less differentiated. Basal medial-cubital crossvein present. Costal vein lacking minute spinules on ventral surface between R₂+₃.
and R₄₊₅. R₂₊₃ slightly curved to costa at tip; R₄₊₅ and M₁ distally nearly parallel. Halters white.

Legs. Yellow. Apical and preapical setae present on all tibiae. Fore femur with one to two row(s) of setae on posterior surface. Hind tarsus without a row of minute cuneiform setulae ventrally.

Abdomen. All tergites brown with grey pollinosity, pale on median of first and second; third to six with narrow, silver-grey bands along posterior margins. Sternites yellow-grey.

Male terminalia. Epandrium pubescent, with about 15 setae near posterior margin; anteroventral corners not protruded (Figure 2). Surstylus separated from epandrium, basally with strong setae, submedially protruding with several setulae (Figures 2, 3). Cercus separated from epandrium, entirely pubescent and setigerous. Membrane between epandrium and cercus pubescent. Hypandrium broad, plate-like, lacking pubescence and
paramedian setae (Figures 4, 5). Parameres sclerotized, basally articulated with aedeagal apodeme; with ca 10 sensilla arranged longitudinally (Figures 4, 5). Gonopods anteriorly not fused to aedeagus, forming posteromedian low plate, posterolaterally contiguous to posterior ends of hypandrium and anteroventral corners of epandrium (Figures 4, 5). Aedeagal apodeme lobe-like, horizontally flattened, with a pair of arms fused to base of parameres (Figures 4, 5).

**Female terminalia.** Epiproct with a few setae (Figure 6). Circus setigerous, lacking pubescence (Figure 6). Spermatheca deeply introverted (Figure 7).

**Measurements.** BL=3.35 mm in holotype, range in 3♂ paratypes: (3.20–3.35); ThL=1.70 mm (1.65–1.70), WL=3.20 mm (2.90–3.20); WW=1.50 mm (1.40–1.50).

**Indices.** arb=8–10/7–8 (8–11/7–9), avd=0.50 (0.50–0.60), adf=1.10 (1.00–1.20), flw=2.20 (2.10–2.20), FW/HW=0.30 (0.30), ch/o=0.14 (0.12–0.14), prorb=1.00 (0.94–1.00), rcorb=0.86 (0.76–0.86), vb=0.35 (0.30–0.35), dcl=0.50 (0.45–0.50), presctl=0.75 (0.70–0.80), sctl=1.10 (1.10), sterno=0.92 (0.90–0.95), orbot=1.90 (1.80–1.90), dcp=0.24 (0.24), sctlp=1.00 (1.00), C=2.33 (2.46–2.73), 4c=1.00 (0.96–1.00), 4v=1.86 (1.85–2.11), 5x=1.00 (0.92–1.00), ac=1.76 (1.58–1.75), M=0.46 (0.46–0.53), C3F=0.65 (0.63–0.64).

**Type material**
Holotype: ♀, China: Qiongzhusi, Kunming, Yunnan, alt. 2100 m, 21 July 2004, H. W. Chen leg. (SCAU). Paratypes: 3♂, 2♀, same data as holotype except for 13 July 1986, Y. X. Gan leg. (2♂, 1♀, KIZ; 1♂, 1♀, SCAU).

**Distribution**
China (Yunnan).

**Relationship**
This species is very similar to Ca. (Na.) academicus in the arista short plumose and shape of paramere, but can be distinguished from the latter in surstylus and aedeagus (in academicus: surstylus neither distally elongated nor apically pointed; aedeagus neither basally expanded nor distally sclerotized).

**Etymology**
Patronym, in honor of Prof. Yunxing Gan (KIZ).

*Caecoxenus (Nankangomyia) unipaxillus* sp. nov.
(Figures 8–11)

**Diagnosis**
Arista long, plumose (Figure 8); cercus protruded on posteroventral corner (Figure 9); surstylus with a distinct, apically pointed, peg-like prensiseta (Figure 9); paramere apically
with a small, incised notch (Figure 11); aedeagus thick, dorsally membranous, ventrally sclerotized, basally slightly pubescent, apically with a small, triangular projection (Figures 10, 11).

**Description**

Some characters commonly seen in *A. gani* are not referred to in the following description.

**Head.** Ocellar triangle brown, with three pairs of small setae above ocellar setae. Frontal vitta, pedicel, first flagellomere, gene, and postgena brown. Occiput brown-black.

**Thorax.** Obscure brown, with brown-black patches, grey pollinose pattern, and dark clouds around sockets of setae. Postpronotal lobe with a long humeral seta and seven or eight small setae.

**Legs.** Yellow, partly brown.

**Male terminalia.** Epandrium pubescent dorsally, with about 11 setae near posterior margin; anteroventral corners protruding (Figure 9). Parameres slightly sclerotized, with ca 17 sensilla arranged longitudinally, basally articulated with tip of lateral arm of aedeagal apodeme (Figures 10, 11). Vertical lobe of gonopod slightly sclerotized (Figure 11).
Measurements. BL=2.80 mm; ThL=1.25 mm; WL=2.20 mm; WW=0.95 mm.

Indices. arb=5/4, avd=1.00, adf=1.00, flw=1.30, FW/HW=0.30, ch/o=0.06, prorb=1.25, rcorb=0.90, vb=0.30, dcl=0.60, presctl=0.60, sctl=1.10, sterno=1.00, orbito=2.00, dcp=0.26, sctlp=0.90, C=2.00, 4c=1.36, 4v=2.18, 5x=1.40, ac=2.50, M=0.64, C3F=0.73.

Female. Unknown.

Type material
Holotype: ♂, Myanmar: Mandalay, 26 December 1981, M. J. Toda leg. (SEHU).

Distribution
Myanmar (Mandalay).

Etymology
A combination of the Latin words: unus + spina, referring to the surstylus with a paxillus-like prensiseta.

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