

## New *Mycomya* species from the Himalayas (Diptera, Mycetophilidae): 1. Subgenus *Mycomya* s. str.<sup>1</sup>

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The material of genus *Mycomya* Rondani from the Himalayas, mostly Nepal and Myanmar, is revised. Altogether 25 species of *Mycomya* s. str. are recorded from the Himalayas and the Indian subcontinent. The following new species are described: *M. malaisei*, *M. turnix*, *M. binturong*, *M. zig*, *M. capra*, *M. nipalensis*, *M. ketupa*, *M. hystrix*, *M. ikar*, *M. kyan*, *M. tigrina*, *M. minla*, *M. emotoi*, *M. geei*, *M. anneliae*, *M. sus*, *M. manis*, *M. ibex*, *M. macaca*, and *M. viverra*.

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### 1. Introduction

The taxonomy of the genus *Mycomya* Rondani, 1856 is still very poorly known in the Himalayan area and in the Indian subcontinent as it is in the Oriental region in general (Colless & Liepa 1973, Väisänen 1984a, Wu & Yang 1994). This paper is the first contribution in a series on the genus in the Himalayas and it deals with the subgenus *Mycomya* s. str. (*sensu* Väisänen 1984a). The present paper shows that at least 25 species of *Mycomya* s. str. occur there. Twenty new species are described below. Descriptions based on the present material are also given for the remaining of species, first to help the identification of the material from the study area, and second to describe the geographic variation within species. Since there is only scattered material available from the area, it is sometimes difficult to separate geographically distant ends of clinal variation from true species.

As can be anticipated from the studies of other organisms (e.g. butterflies, Smith 1989; plants, Dobremez 1972, 1976), the *Mycomya* fauna of the

Himalayas is a mixture of Palaearctic and Oriental species. However, the proportion of widespread Palaearctic species is relatively low. Certain new and possibly endemic species are common at high altitudes in Nepal. As regards to the small sample size, the material from Kambaiti (E of Myitkyina, near the Chinese border), Myanmar (Burma), was exceptionally diverse and with a high proportion of new species (see also Malaise 1945).

### 2. The Himalayan vegetation

The almost cosmopolitan but mostly temperate genus *Mycomya* is one of the predominant mycetophilid genera of the Himalayan highlands. *Mycomya* species are mostly associated with natural forests, which have seriously suffered from the problems of deforestation and erosion (e.g. Martens 1982, Singh *et al.* 1984, Blower 1985).

According to Dobremez (1972, 1976, Martens 1982) the Himalayan range constitutes a geobotanical region in its own right. The present

<sup>1</sup> Results of Kyushu University Scientific Expedition to the Nepal Himalaya, Diptera 21.

mycetophilid material originates mostly from Nepal. Unfortunately, their labels give little ecological information, except for locality and altitude, but the following brief description of the vegetation can throw some light on their habitats. The vegetation of Nepal can be divided into six vertical belts:

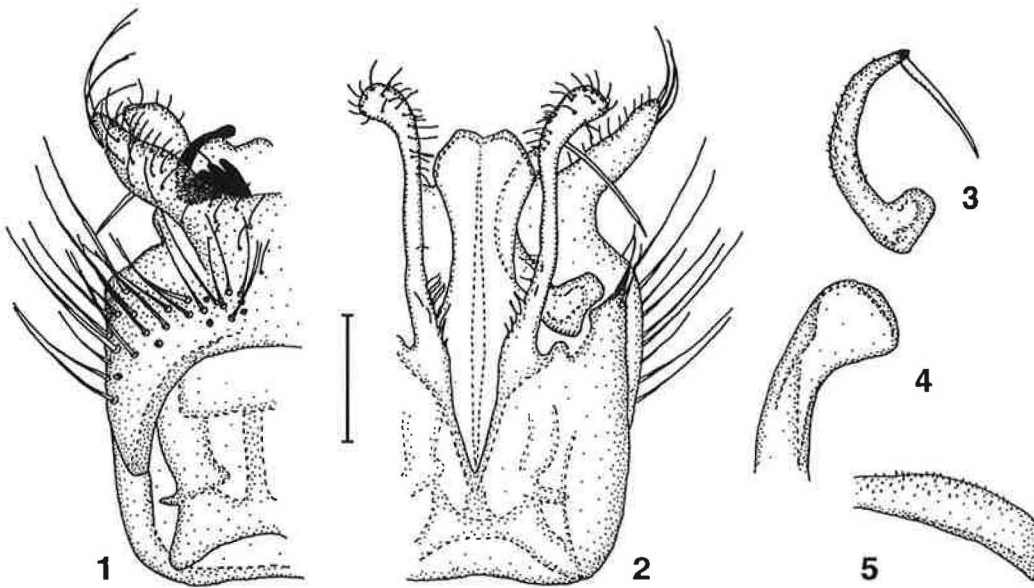
1. The tropical forests include areas up to an altitude of about 1 000 m. These forests are dry in western and damp in eastern Nepal. The upper boundary is characterized by the limit of the range of the sal (*Shorea robusta*, Dipterocarpaceae).
2. The subtropical zone extends from 1 000 to 2 000 m. It is a hilly region characterized by pine forest (*Pinus roxburghii*) in the west and deciduous forest (*Schima*, *Castanopsis*) in the east.
3. The temperate zone extends from an altitude of 2 000–3 100 m in central Nepal and from 1 700–2 700/2 800 in the east. The mean annual temperature varies between 15°C at the lower limit and 8–9°C at the upper limit. The lower hilly part of this zone is forest of evergreen oaks and Lauraceae. The upper part is mostly pine (*Pinus wallichiana*), spruce (*Picea smithiana*) and oak forests in the west and hygrophilic oak forest in the east. In the dry northwestern Nepal the temperate zone is characterized by cypress and juniper forest. In the east, temperate forests extend to northern Myanmar.
4. The subalpine zone has the lower limit at 3 000/3 100 m and the upper limit at 4 200 m in the drier western part and at 3 800 m in the wet eastern part. In the west, the lower part of the zone is dominated by fir forest (*Abies spectabilis*) and the upper part by birch forest (*Betula utilis*). In the east, the subalpine zone is forest of *Rhododendron* trees. As regards butterflies, roughly 90% of them are Oriental below 3 000 m, and 90% of them are Palaearctic above the same critical altitude (Smith 1989).
5. The alpine zone extends roughly from about 4 000 m to about 5 000 m. The lower part of the zone is heath with dwarf junipers in the west and with dwarf *Rhododendron* species in the east. The upper parts are alpine meadows.
6. The steppe zone to the north of the massifs of Manaslu, Annapurna, Dhaulagiri and Hiunchuli is very dry and of little importance for *Mycomya* species.

The Himalayan region can be divided horizontally into western, central and eastern regions. In the east (from Assam and Bhutan eastwards), the monsoon has a strong influence, while in the west (e.g. Kashmir) the climate is dry Mediterranean with practically no monsoonal influence.

### 3. Remarks on Brunetti's types

Brunetti (1912) described several species from Simla (Uttar Pradesh) and Darjeeling ("Darjiling", West Bengal), but most of them are impossible to identify on the basis of the original descriptions. The type material is very badly damaged and was not available for a loan (A. N. T. Joseph and K. K. Tiwari, pers. comm.).

Edwards (1924) re-examined Brunetti's material together with Mr. E. Brunetti himself. Part of the species described as *Mycomya* were removed to the genus *Neoempheria* Osten-Sacken and comments were given on some true *Mycomya* species. On the basis of that study the following conclusions can be drawn: The type of *M. flaviventris* Brunetti, 1912 was a female from Kurseong (5 000 feet) and belonged to the species-rich subgenus *Mycomyopsis* Väisänen. *M. trilineata* Brunetti, 1912 is *M. winnertzi schmidi* Väisänen (discussed by Väisänen 1984a). According to Brunetti (1917) *M. indefinita* Brunetti, 1912, collected from Simla (7 000 feet), may be identical with *M. trilineata* Brunetti, 1912. *M. indefinita* and *M. curvilinea* Brunetti, 1912 have short mid-coxal spur (Edwards 1924) as Palaearctic *M. annulata* (Meigen) and related species of *Mycomya* s. str. However, the *M. curvilinea* specimens from Darjeeling (syntypes) and Bhowali (also labelled as type) were not conspecifics (Edwards 1924). *M. indica* Brunetti, 1912 was described from Simla and Phagu (9 000 feet; Himanchal Pradesh). It belongs to *Mycomya* s. str. and has a long mid-coxal spur, a feature shared by a large proportion of the species. *M. flavithorax* Brunetti, 1912 from Darjeeling belongs to subgenus *Neomycomya* Väisänen and is probably a junior synonym of *M. fimbriata* (Meigen) as stated by Edwards (1924). *M. incerta* (Brunetti, 1912) was originally described as *Polylepta*. It may be a junior synonym of *M. cinerascens* (Macquart). As a whole, the identity of several Brunetti's species remains unsolved.



Figs. 1–5. *M. malaisei* n. sp., male hypopygium. 1–2. tergal and sternal views; 3. gonostylus; 4. apex of aedeagus, lateral view; 5. tergite 8. Scale 0.2 mm.

**4. Material and methods**

The study material comes from following institutions, which are abbreviated in the text by the following abbreviations:

- CNC Canadian National Collection, Ottawa, Canada
- ISU Iowa State University, Ames, USA
- KUC Kyushu University Collections, Biosystematics Laboratory, Ropponmatsu, Fukuoka, Japan
- MZH Zoological Museum, University of Helsinki, Finland
- NHM Natural History Museum, London, UK
- USNM United States National Museum, Washington, D.C., USA

The methodology and morphological terminology in the main follows that of Väisänen (1984a). Leg ratios refer to the length ratio of basitarsus and tibia. The wing vein length ratios (M and Cu ratios) were calculated as follows: first, the ratio of the petiole to the anterior branch (M1 or Cu1) and second, the ratio of the petiole to the posterior branch (M2 or Cu2). The terminology of the genitalia is purely descriptive.

The species are usually readily recognizable on the basis of the male hypopygium, while external characters are relatively unreliable as diagnostic characters. Thus, no key is given for this subgenus. The previous classification proposed for the Holarctic *Mycomya* (Väisänen 1984a) seems to fit the Himalayan material as well, since most species are distinctly related to certain Palearctic species. Unfortunately, it is seldom possible to identify *Mycomya* females with absolute certainty, but females similar to males in the same samples are likely to represent the same species.

**5. Descriptions**

**5.1. Species group *M. malaisei***

***Mycomya malaisei* n. sp.**

Figs. 1–5

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya malaisei* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4.VI.1934, Malaise (MZH).

Description: Head. Palp, other mouthparts and face yellowish, posterior parts of head brownish.

Antenna broken, scape and pedicel yellow. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum yellow, with 3 anteriorly indistinct brownish longitudinal stripes. Mesanepisternum yellow. Mesokatepisternum yellow. Scutellum yellow, with 8 long setae. Laterotergite yellow. Mediotergite yellowish, with 5 small setae. — Legs. Coxae yellow, coxa 3 with indistinct yellowish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 without special setae. Coxa 2 with short curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = ?$ ,  $bt2:t2 = 0.77$ ,  $bt3:t3 = 0.67$ . — Wing. Wing length 4.8 mm. Wing hyaline. Sc ending in C distally to middle of small cell, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell about twice as long as wide. Cu fork proximal to M fork. M ratios: 0.25, 0.29. Cu ratios: 0.73, 1.13. Macrotrichia: M petiole: 0; M1: 9; M2: 6; Cu petiole: 0; Cu1: 4–5; Cu2: 11. Haltere pale yellowish, apically slightly darker. — Abdomen. Tergites 1–5 brownish, with yellow posterior margins, 6–7 brownish to brown. Sternites paler than tergites. Sternite 8 with many long apical setae. — Hypopygium. Figs. 1–5, yellowish. Tergal part with 1 apically club-shaped lateral spine and 6 dark cones on both sides. Sternal synsclerite relatively deeply bilobed, with a few setae on both sides. Sternal submedian appendage long, slender, apical part wider, rounded, setose. Gonostylus long, slender, with 1 dark tooth and 1 very long spur-like apical tooth, basal part of gonostylus wider. Aedeagus comparatively long and large. — Female. Unknown.

*M. malaisei* resembles slightly Holarctic *M. fuscipalpis* Van Duzee, *M. bialorussica* Landrock and *M. ata* Garrett (incorrectly spelled *M. atus* in Väisänen 1984a). The diagnostic characters include the short curved mid-coxal spur and genital characters, e.g. the shape and setosity of sternal submedian appendages, the shape of gonostylus, and the number and shape of tergal cones and spines.

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 000 m) in June.

## 5.2. Species group *M. sieberti*

### *Mycomya turnix* n. sp.

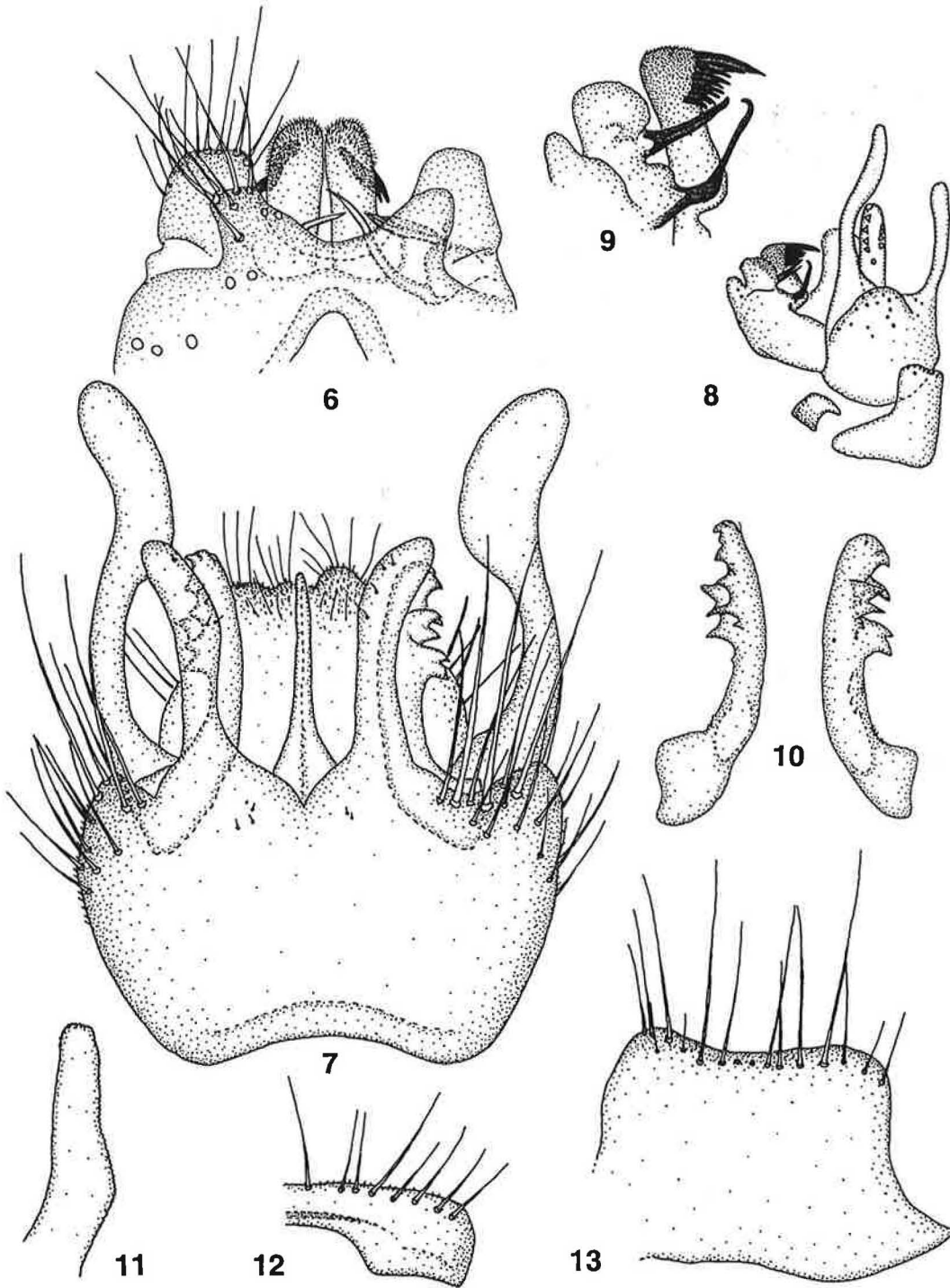
Figs. 6–13

Type locality: Kambaiti (Myanmar).

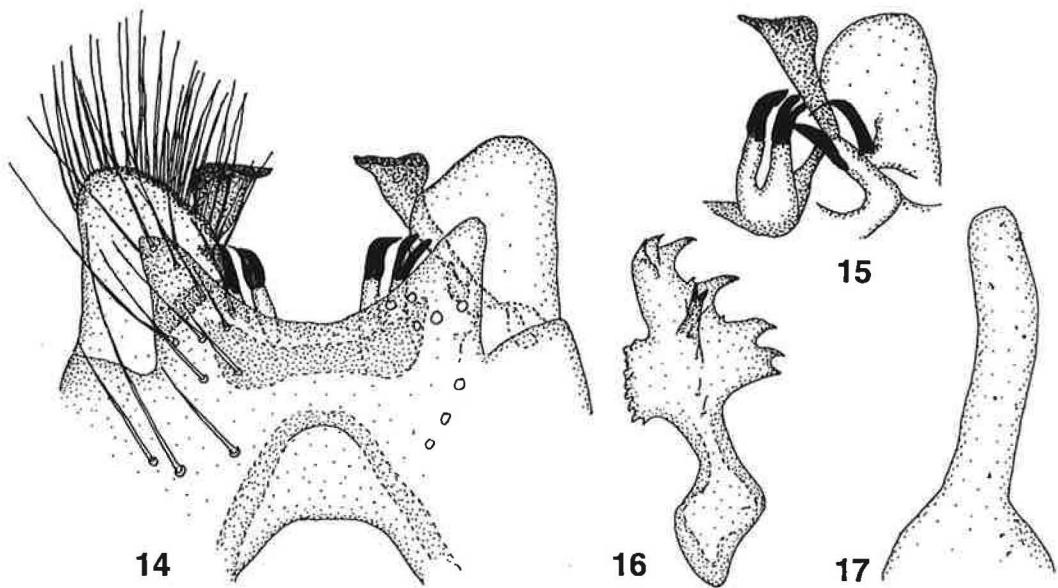
Holotype: m, Myanmar: Holotypus *Mycomya turnix* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4. VI. 1934, Malaise (MZH).

Description: — Head. Palp yellow, other mouthparts yellowish to brownish, face brownish, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.7 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum brownish with yellowish anterolateral corners and brown partly fused longitudinal stripes. Mesanepisternum yellow. Mesokatepisternum yellow, ventral half brownish to brown. Scutellum yellowish, with 2 long and a few short setae. Laterotergite yellow, ventral part brownish to brown. Mediotergite yellowish to brownish, posterior part darker, bare. — Legs. Coxae yellow, coxa 3 with brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 without special setae. Coxa 2 without special structures. Leg ratios:  $bt1:t1 = 1.04$ ,  $bt2:t2 = 0.83$ ,  $bt3:t3 = ?$ . — Wing. Wing length 5.6 mm. Wing hyaline. Sc ending in C distinctly distally to middle of small cell, Sc2 ending in R1 slightly proximally to middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell about twice as long as wide. Cu fork very slightly distal to M fork. M ratios: 0.63, 0.80. Cu ratios: 0.94, 1.54. Macrotrichia: M petiole: 0; M1: +; M2: 3–4; Cu petiole: 0; Cu1: 4–6; Cu2: +. Haltere yellowish, apex brownish. — Abdomen. Tergites 1–5 brownish to brown, with indistinct yellowish lateral and posterior margins, 6–7 brown. Sternites 1–5 brownish with wide yellow posterior margins, 6–7 brown. — Hypopygium. Figs. 6–13, yellowish, tergal part brownish. Tergite 8 narrow band with long setae along posterior margin. Tergal part of hypopygium with complex apical structures including different slender spines and two blunt, setose appendages with a row of sharp dark cones projecting inwards. Sternal synsclerite setose. Sternal submedian appendage long, with some very small setae. Gonostylus relatively wide, with many teeth. Aedeagus comparatively long, slender. — Female. Unknown.

*M. turnix* is closely related to *M. binturong* n. sp. and *M. zig* n. sp., but differs distinctly e.g. in the details of the inner structures of tergal part of hypopygium (Fig. 9) and in the shape of gonostylus. *M. turnix* slightly resembles Palearctic *M. sieberti* Landrock. In the inner tergal structures of hypo-



Figs. 6–13. *M. turnix* n. sp., male hypopygium. 6–7. tergal and sternal views; 8. lateral view, smaller scale (1:2.5); 9. details of apex of tergal part showing slender spines and two blunt, setose appendages with a row of sharp dark cones projecting inwards, lateral view; 10. gonostyli; 11. apex of aedeagus, lateral view; 12. tergite 8; 13. sternite 8.



Figs. 14–17. *M. binturong* n. sp., male hypopygium. 14. tergal view; 15. details of tergal part showing characteristic spines and cones, sternal view; 16. gonostylus; 17. sternal submedian appendage, sternal view.

pygium there are also some similarities to Palaearctic *M. vittiventris* (Zetterstedt).

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 000 m) in June.

### *Mycomya binturong* n. sp.

Figs. 14–17

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya binturong* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4.VI.1934, Malaise (MZH).

Paratype: same data as holotype (1 m MZH).

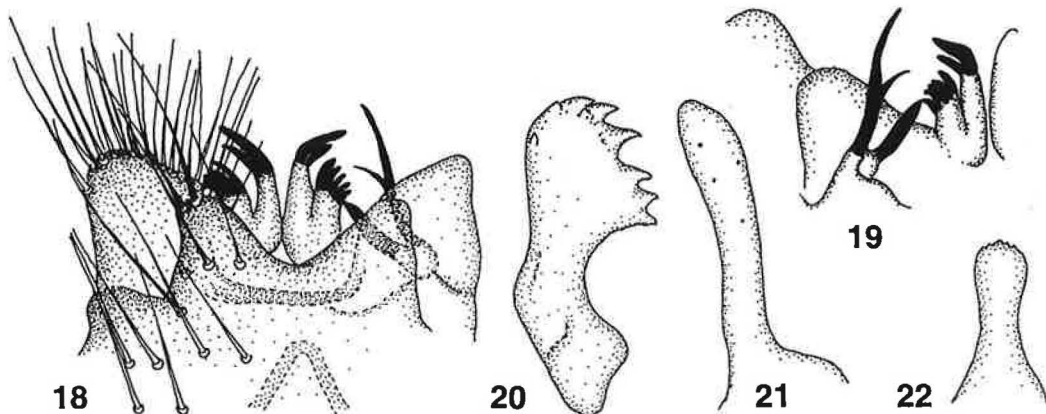
Description: — Head. Palp yellow, other mouth-parts yellowish to brownish, face brownish, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 3 times, 2nd more than twice as long as wide. — Thorax. Pronotum yellow, with 2–3 longer setae. Mesoscutum brownish with brown partly fused longitudinal stripes. Mesanepisternum yellow. Mesokatepisternum yellow, ventral half brownish. Scutellum yellow, with 2–3 long and several very short setae. Laterotergite yellowish, ventral part brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 with yellowish outer

side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 without special setae. Coxa 2 without special structures. Leg ratios: bt1:t1 = 0.98, bt2:t2 = 0.69–0.81, bt3:t3 = 0.72–0.74. — Wing. Wing length 5.0–5.2 mm. Wing hyaline. Sc ending in C distinctly distally to middle of small cell, Sc2 ending in R1 near middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell about twice as long as wide. Cu fork below or slightly distal to M fork. M ratios: 0.57, 0.71. Cu ratios: 0.89, 1.41. Macrotrichia: M petiole: 0; M1: +; M2: 3–5; Cu petiole: 0; Cu1: 1–3; Cu2: +. Haltere pale yellowish, apex brownish. — Abdomen. Brownish to brown. — Hypopygium. Figs. 14–17, yellowish, tergal part brownish. Tergal part with complex structures including 2 short, dark spines, 1 long, broad spine, and deeply subdivided group of 2+2 dark cones on each side. Sternal synsclerite setose. Sternal submedian appendage long, with some very small setae. Gonostylus relatively wide, with many teeth. Aedeagus comparatively long, slender. — Female. Unknown.

*M. binturong* is closely related to *M. turnix* n. sp. and *M. zig* n. sp., but differs distinctly e.g. in the details of the inner structures of tergal part of hypopygium (Fig. 15) and in the shape of gonostylus.

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 000 m) in June.



Figs. 18–22. *M. zig* n. sp., male hypopygium. 18. tergal view; 19. details of tergal part showing characteristic spines and cones, sternal view; 20. gonostylus; 21. sternal submedian appendage, sternal view; 22. apex of aedeagus, sternal view.

***Mycomya zig* n. sp.**

Figs. 18–22

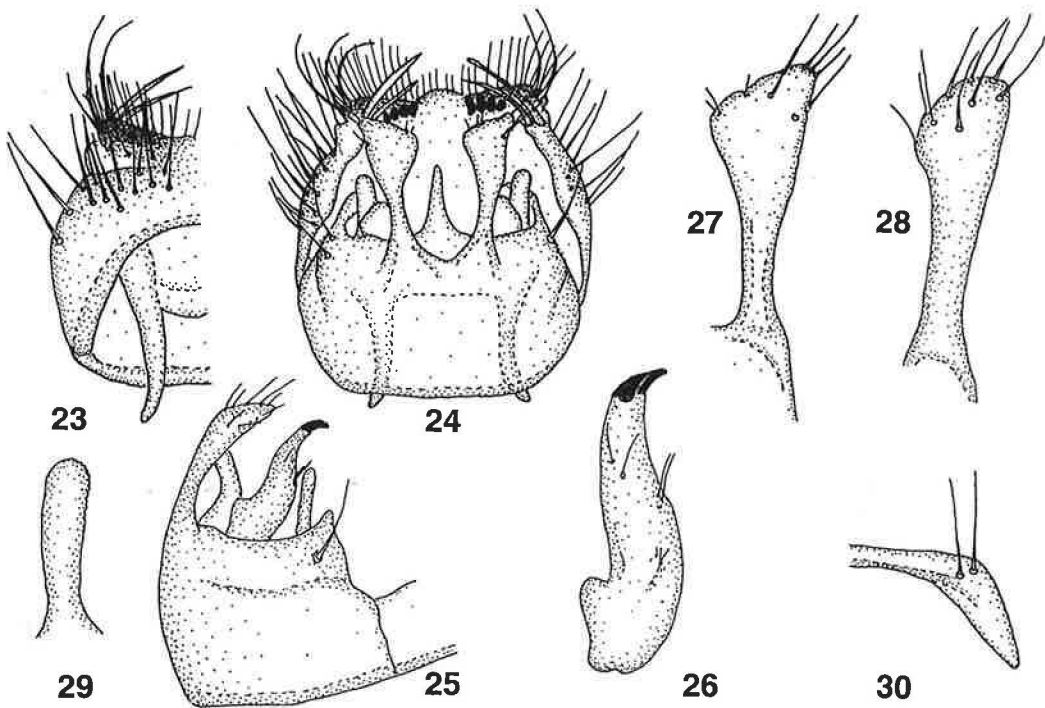
Type locality: Ponktable — Buze (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya zig* Väisänen. (E. Nepal) Ponktable (1 900 m) 27°18'N, 87°35'E — Buze (2 800 m) 27°18'N, 87°32'E, 22.VII.1972 H. Shima leg. Kyushu Univ. Col. (KUC).

Paratypes: Nepal: Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 9.X.1971, A. Nakanishi (2mm 1 f KUC); same data, 10.X.1971 (1 m KUC); same data, 14.X.1971 (1 m KUC); same data, 15.X.1971 (2 mm 4 ff KUC); same data, 19.X.1971 (1 f KUC); same data, 20.X.1971 (9 mm 18 ff KUC); same data, 23.X.1971 (2 mm 7 ff KUC); same data, 24.X.1971 (1 m 5 ff KUC); same data, 25.X.1971 (1 m KUC); same data, 27.X.1971 (1 f KUC); same data, 28.X.1971 (2 mm 6 ff KUC); same data, 30.X.1971 (1 m KUC); same data, Malaise trap, 23–25.X.1971 (1 f KUC); Gupa Pokali, 27°17'N, 87°30'E, 2 900 m — Chouki, 27°17'N, 87°28'E, 2 700 m, 16.VI.1972, J. Emoto (1 m 1 f KUC); Tank, 27°33'E, 87°36'E, 1 900 m — Penmaten, 27°36'N, 87°36'E, 2 600 m, 29.VI.1972, K. Makihara (1 m KUC); Bogara, 83°23'E, 28°35'N, 1 700–2 200 m, 20–21.IX.1971, Malaise trap, A. Nakanishi (1 m KUC); Thudam, 27°45'N, 87°32'E, 3 500 m, 21–30.VI.1972, Malaise trap, Kyushu Univ. Coll. (1 f KUC).

Description: — Head. Palp yellowish, other mouthparts yellow, face yellow with brown transverse stripe, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 3 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 3 longer setae. Mesoscutum yellow to yellowish with 3 undistinct brownish longitudinal

stripes. Mesanepisternum yellow. Mesokatepisternum yellow, ventral half brownish. Scutellum yellow, with 2 long and several very short setae. Laterotergite yellowish to brownish. Mediotergite yellowish, bare. — Legs. Coxae yellow, coxa 3 with light brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 without special setae. Coxa 2 without special structures. Leg ratios:  $bt1:t1 = 1.00$ ,  $bt2:t2 = 0.79–0.82$ ,  $bt3:t3 = 0.65–0.72$ . — Wing. Wing length 4.7–5.7 mm. Wing hyaline. Sc ending in C distinctly distally to middle of small cell, Sc2 ending in R1 proximally or near middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell 1.5–2 times as long as wide, usually rectangular. Cu fork slightly distal to M fork. M ratios: 0.59–0.62, 0.74–0.81. Cu ratios: 0.86–0.97, 1.36–1.57. Macrotrichia: M petiole: 0; M1: 5–11; M2: 1–7; Cu petiole: 0; Cu1: 0–2; Cu2: +. Haltere yellowish, apex sometimes brownish. — Abdomen. Tergites 1–5 brown, with or without yellow posterior margins, 6–7 brownish to brown. Sternites 1–5 yellowish to brownish, posterior margins yellow, 6–7 brownish. — Hypopygium. Figs. 18–22, yellowish to brownish. Tergal part with with complex structures including 3 dark spines and deeply subdivided group of 2+4–5 dark cones on each side. Sternal synsclerite setose. Sternal submedian appendage long, with some very small setae. Gonostylus relatively wide, with several teeth. Aedeagus comparatively long, slender. — Female. Wing length 5.7–6.6 mm. Thorax yellow, meso-



Figs. 23–30. *M. capra* n. sp., male hypopygium. 23–24. tergal and sternal views; 25. sternal part, lateral view; 26. gonostylus, twice enlarged; 27–28. sternal submedian appendages, twice enlarged (27. Myanmar, 28. Nepal); 29. apex of aedeagus, sternal view, twice enlarged; 30. tergite 8.

cutum yellowish with brown longitudinal stripes, middle stripe usually posteriorly yellow and with narrow yellow median line ventral parts of katepisternum, laterotergite and mediotergite brown. Abdominal segments brown with yellow posterior margins. Leg ratios:  $bt1:t1 = 1.00$ ,  $bt2:t2 = 0.83-0.84$ ,  $bt3:t3 = 0.70$ . Terminalia yellow, hypogynal valves tapering apically with many long setae and few shorter curved subapical setae.

*M. zig* is closely related to *M. turnix* n. sp. and *M. binturong* n. sp., but differs distinctly e.g. in the details of the inner structures of tergal part of hypopygium (Fig. 19) and in the shape of gonostylus. *M. zig* females are characterized by their large size, bare Sc and mediotergite and equal  $b1:t1$  ratio, though these differences are probably not diagnostic as to *M. turnix* and *M. binturong*, of which females are not known.

Distribution: Nepal.

Biology: Collected at moderate and high altitudes (1 900–3 500 m) in June–July and September–October, some individuals with Malaise traps.

### 5.3. Species group *M. ornata*

#### *Mycomya capra* n. sp.

Figs. 23–30

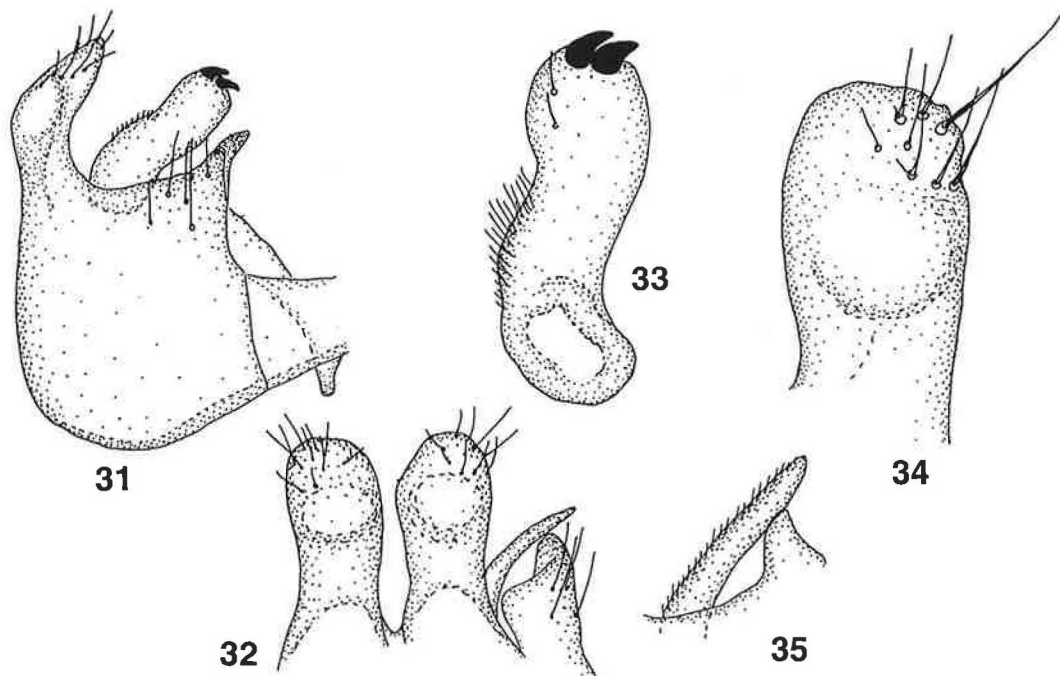
Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya capra* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 13.V.1934, Malaise (MZH).

Paratypes: Nepal: Dobang Kharka,  $83^{\circ}24'E$ ,  $28^{\circ}36'N$ , 2 400 m, 10.X.1971, A. Nakanishi (1 m KUC); same data, 20.X.1971 (3 ff KUC); same data, 24.X.1971 (2 ff KUC); same data, 28.X.1971 (1 m KUC).

Description: — Head. Palp and other mouthparts yellow, face yellow, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 3 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 4–6 longer setae. Mesoscutum shining yellow to yellowish with 3 brownish longitudinal stripes, middle stripe with narrow yellow median line. Mesanepisternum and mesokatepisternum yellowish. Scutellum yellowish, with 4 long setae. La-





Figs. 31–35. *M. nipalensis* n. sp., male hypopygium. 31–32. sternal part, lateral and sternal views; 33. gonostylus, twice enlarged; 34. sternal submedian appendage, twice enlarged; 35. apex of paramere and pointed lateral part of sternal synsclerite, twice enlarged.

terotergite yellowish to light brownish. Mediotergite yellowish to light brownish, with 2 relatively long setae. — Legs. Coxae yellow, coxa 3 with brownish lateral spot, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with dense patch of very short thin setae covering apical fourth of anteromedial surface. Coxa 2 without spur. Leg ratios:  $bt1:t1 = 1.07$ ,  $bt2:t2 = 0.80$ ,  $bt3:t3 = 0.6–67$ . — Wing. Wing length 4.6–4.9 mm. Wing hyaline. Sc ending in C distally to middle of small cell, Sc2 ending in R1 near or proximally to middle of small cell. Apical part of Sc bearing 0–1 macrotrichia. Small cell about twice as long as wide. Cu fork below or slightly distal to M fork. M ratios: 0.57–0.58, 0.76–0.77. Cu ratios: 0.81, 1.19. Macrotrichia: M petiole: 0; M1: 0–9; M2: 0–7; Cu petiole: +; Cu1: 0–3; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–5 brownish, with yellowish posterior margins, 6–7 brownish to brown. Sternites yellowish, 6–7 brownish. — Hypopygium. Figs. 23–30, yellowish. Tergal part with 2 sabre-like spines and 4–5 dark cones on both sides. Sternal synsclerite with 1–2 setae on both sides, without lateral appendages. Sternal submedian appendage relatively long, apical part wider, al-

most triangular, with some small setae. Gonostylus with 2 apical teeth. Paramere short, almost straight. — Female. Wing length 5.0–5.8 mm. Thorax yellow to yellowish, mesoscutum with 3 brown stripes. Abdomen brownish, tergites with yellow posterior margins. Leg ratios:  $bt1:t1 = 1.06$ ,  $bt2:t2 = 0.85$ ,  $bt3:t3 = 0.61$ . Terminalia yellow, hypogynal valves tapering apically, with several setae.

*M. capra* males can be separated from the closely related species of *M. ornata* group, such as *M. neimongana* Wu & Yang, *M. prominens* (Lundström) or *M. ketupa* n. sp., on the basis of the structure of sternal submedian appendages and parameres. *M. capra* females cannot be distinguished with full certainty from *M. nipalensis* n. sp., but they appear to be smaller.

Distribution: Nepal, Myanmar.

Biology: Collected at moderate altitudes (2 000–2 400 m) in May and October.

***Mycomya nipalensis* n. sp.**

Figs. 31–35

Type locality: Dobang Kharka (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya nipalensis* n. sp. Väisänen. Nepal, Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 14–15.X.1971, Malaise trap, A. Nakanishi (KUC).

Paratypes: Nepal: same data as holotype, 21–22.IX.1971 (1 m KUC); same data, 26–28.X.1971 (1 m 1 f KUC); same locality, 9.X.1971, A. Nakanishi (2 ff KUC); same data, 19.X.1971 (2 ff KUC); same data, 20.X.1971 (1 m KUC); 22.X.1971 (1 f KUC); same data, 23.X.1971 (2 ff KUC); same data, 28.X.1971 (1 f KUC); same data, 30.X.1971 (1 f KUC).

Description: — Head. Palp and other mouthparts yellowish, face yellow, posterior parts of head brownish to brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 5–6 longer setae. Mesoscutum shining, yellow to yellowish with 3 brownish to brown longitudinal stripes. Mesanepisternum yellowish to brownish. Mesokatepisternum yellow, ventral half light brownish. Scutellum yellowish to brownish, with 4 long and several very short setae. Laterotergite brownish. Mediotergite brownish, with 2 small setae. — Legs. Coxae yellow, coxa 3 sometimes with brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with dense patch of very short thin setae covering apical third of anteromedial surface. Coxa 2 without spur. Leg ratios:  $bt1:t1 = 1.04-1.07$ ,  $bt2:t2 = 0.82$ ,  $bt3:t3 = 0.61-0.65$ . — Wing. Wing length 4.8–5.6 mm. Wing hyaline. Sc ending in C near or slightly distally to middle of small cell, Sc1 occasionally broken, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell about twice as long as wide. Cu fork below M fork. M ratios: 0.58–0.68, 0.66–0.86. Cu ratios: 0.71–0.86, 1.11–1.22. Macrotrichia: M petiole: 0; M1: + (distal part); M2: + (distal part); Cu petiole: +; Cu1: + (distal part); Cu2: +. Haltere pale yellowish, apex slightly darker. — Abdomen. Tergites 1–5 brown, with yellow posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 31–35, yellowish. Tergal part with 2 sabre-like spines and 4 dark cones on both sides. Sternal synsclerite with several setae on both sides, with pointed lateral part but without real lateral appendages. Sternal submedian appendage relatively long, very wide, with some small and some longer setae. Gonostylus with 2 apical teeth. Paramere short, slightly curved laterally, pubescent. — Female. Wing length 5.7–7.0 mm. Thorax yellowish, mesoscutum with 3 brownish longitudinal

stripes, pronotum and scutellum yellow, ventral parts of katepisternum, laterotergite and mediotergite brownish. Abdominal tergites 1–6 brown with yellow posterior margin, tergite 7 brown, sternites yellowish to brownish with yellow posterior margins. Apical part of Sc without macrotrichia. Leg ratios:  $bt1:t1 = 1.09-1.10$ ,  $bt2:t2 = 0.77$ ,  $bt3:t3 = 0.63-0.65$ . Terminalia yellow, hypogynal valves triangular tapering posteriorly, with several long setae.

*M. nipalensis* is a large species which can be distinguished from related Palaearctic *M. ornata* (Meigen), Holarctic *M. lambi* Edwards and Nearctic *M. dura* Garrett, all with similar wide sternal submedian appendage, on the basis of the details of male hypopygium, e.g. the pubescent parameres and only 2 sabre-like spines on each side. There are no absolute diagnostic characters of *M. nipalensis* females. However, they have mediotergite with setae, bare Sc and widely setose hypogynal valves, and they are distinctly larger than any sympatric species of *M. ornata* group.

Distribution: Nepal.

Biology: Collected at moderate altitudes (2 400 m) in September–October, some individuals with Malaise trap.

### *Mycomya ketupa* n. sp.

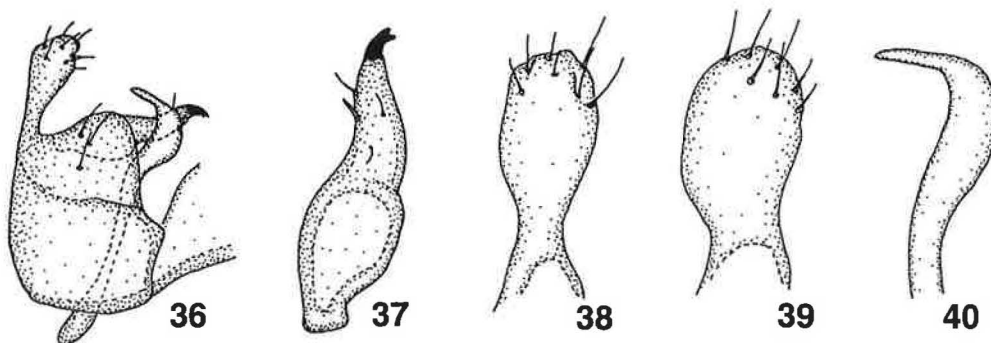
Figs. 36–40

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya ketupa* n. sp. Väisänen. N.E. Burna, Kambaiti, 2 000 m, 4.VI.1934, Malaise (MZH).

Paratype: same data as holotype (1 m MZH).

Description: — Head. Palp, other mouthparts and face yellowish, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 5–6 longer setae. Mesoscutum yellowish with 3 brownish longitudinal stripes. Mesanepisternum and mesokatepisternum yellowish. Scutellum yellowish, with 4 long setae. Laterotergite yellowish. Mediotergite yellowish, with 2 small setae. — Legs. Coxae yellow, coxa 3 with light brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with dense patch of very short thin setae covering apical fourth of anteromedial surface. Coxa 2 without spur. Leg ratios:  $bt1:t1 = 1.00$ ,  $bt2:t2 = 0.86$ ,  $bt3:t3$



Figs. 36–40. *M. ketupa* n. sp., male hypopygium. 36. sternal part, lateral view; 37. gonostylus, twice enlarged; 38–39. sternal submedian appendages, twice enlarged; 40. apex of paramere, twice enlarged.

= 0.59–0.65. — Wing. Wing length 3.9–4.5 mm. Wing hyaline. Sc ending in C distally to middle of small cell, Sc2 ending in R1 near or proximally to middle of small cell. Apical part of Sc bearing 1–2 macrotrichia. Small cell about 1.5–2 times as long as wide. Cu fork slightly distal to M fork. M ratios: 0.56–0.66, 0.72–0.80. Cu ratios: 0.77–0.88, 1.16–1.40. Macrotrichia: M petiole: 0; M1: 0–2; M2: 0–1; Cu petiole: +; Cu1: 0; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–5 brown, with yellowish posterior margins, 6–7 brownish to brown. Sternites 1–6 yellow to brownish, 7 brownish. — Hypopygium. Figs. 36–40, yellowish. Sternite 8 with several setae. Tergal part with 2 sabre-like spines and 4–5 dark cones on both sides. Sternal synsclerite with 3 setae on both sides, lateral part rounded, without lateral appendages. Sternal submedian appendage relatively long, basal part narrow, apical part wide, rounded, with some small setae. Gonostylus with 2 apical teeth. Paramere long, curved, bare. — Female. Unknown.

*M. ketupa* is closely related to Nearctic *M. mendax* Johannsen and Palearctic *M. kuusamoensis* Väisänen, but differs from them in the details of male hypopygium and by having 1–2 subcostal macrotrichia.

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 000 m) in June.

#### 5.4. Species group *M. hystrix*

##### *Mycomya hystrix* n. sp.

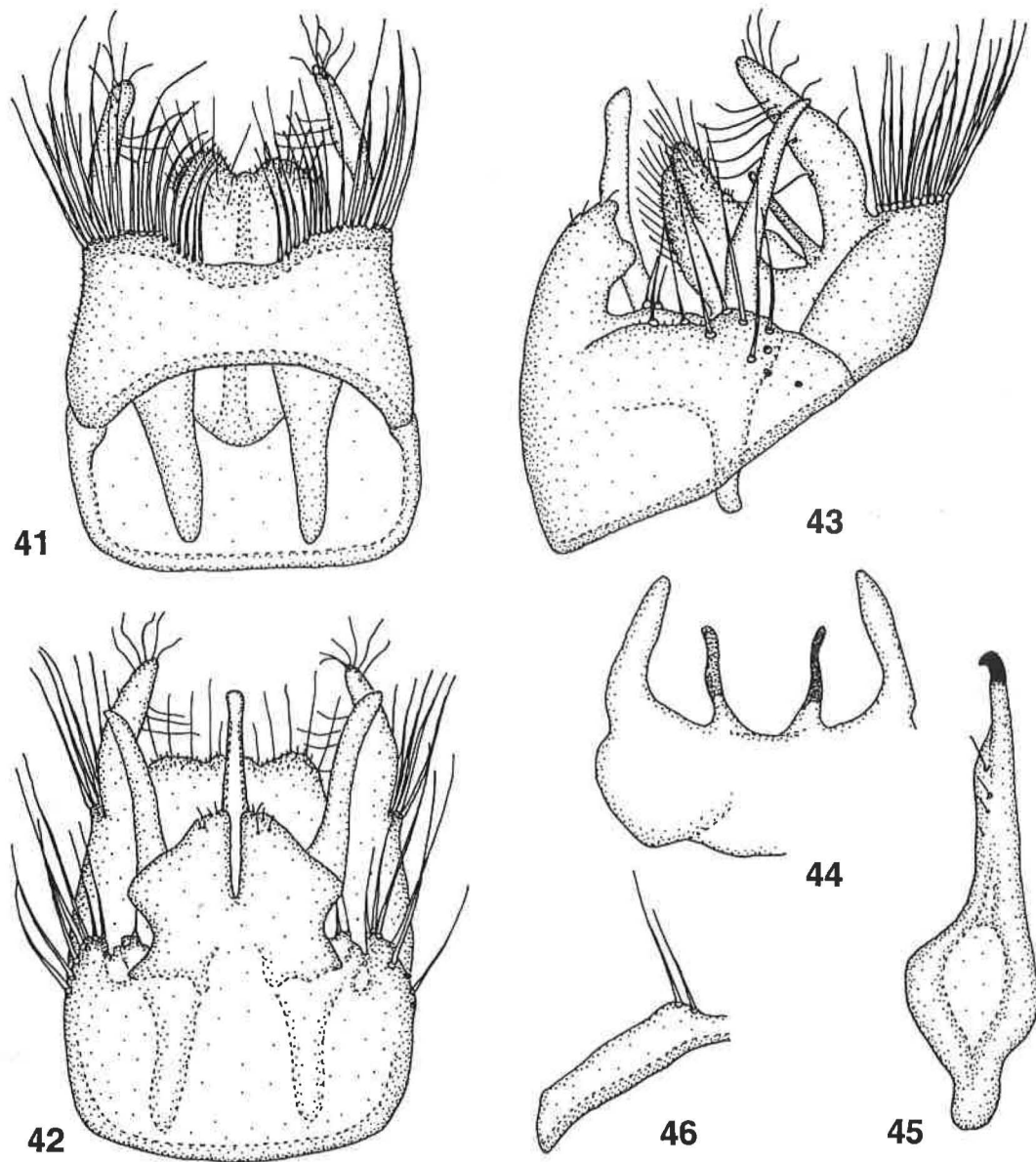
Figs. 41–46

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya hystrix* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4.VI.1934, Malaise (MZH).

Paratype: same data as holotype (1 m MZH).

Description: — Head. Palp, other mouthparts and face yellowish, posterior parts of head brownish. Basal part of palp with a few long setae. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere more than twice, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 2 longer setae. Mesoscutum anterolaterally yellow with brownish indistinct posteriorly fused longitudinal stripes. Mesanepisternum and mesokatepisternum light brownish. Scutellum brownish, with 4 long setae. Laterotergite brownish. Mediotergite brownish, with 2 small setae. — Legs. Coxae and femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with many strong long spines and thin setae along anteromedial surface. Coxa 2 with long curved spur with cone-like basal appendage and with 1 apical tooth. Leg ratios: bt1:t1 = 1.29–1.30, bt2:t2 = 0.84, bt3:t3 = 0.64. — Wing. Wing length 5.0–5.2 mm. Wing hyaline. Sc ending in R1 near middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell 2–2.5 times as long as wide. Cu fork distinctly distal to M fork. M ratios: 0.76–0.87, 1.04–1.23. Cu ratios: 1.00–1.17, 1.67–1.84. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere yellowish. — Abdomen. Light brownish. — Hypopygium. Figs. 41–46, yellowish. Tergite 9 apically setose. Sternal synsclerite with some setae on both sides, without lateral appendages. Sternal submedian appendage large, with some small setae. Paramere long, slender. Gonostylus relatively long, with 1 apical tooth. Aedeagus long, slender. — Female. Unknown.



Figs. 41–46. *M. hystrix* n. sp., male hypopygium, 41–43. tergal, sternal and lateral views; 44. inner structures of tergal part, caudal view; 45. gonostylus, twice enlarged; 46. tergite 8.

*M. hystrix* resembles Palaearctic *M. spinicoxa* Väisänen in having strong spines on the anteromedial surface of coxa 1, but differs from it in many details of hypopygium.

Distribution: Myanmar.

Biology: Collected at moderately high altitudes (2 000 m) in June.

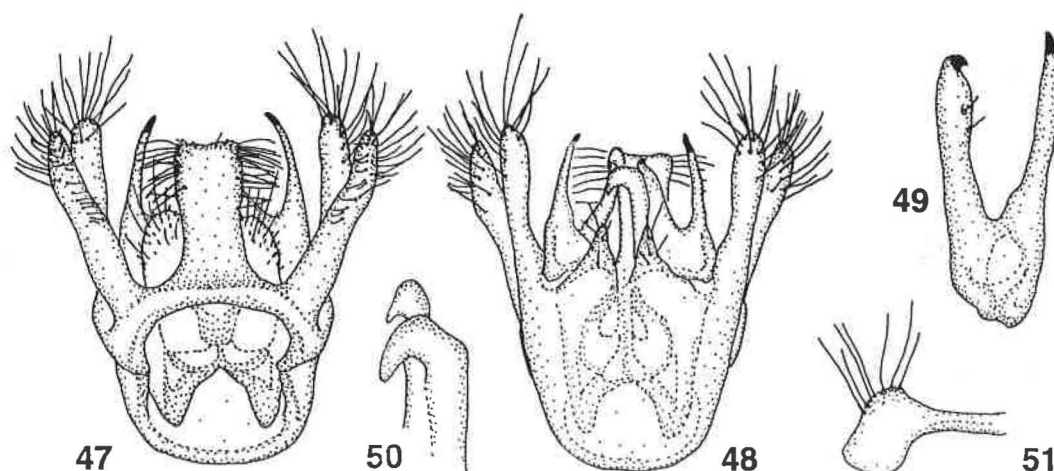
##### 5.5. Species group *M. marginata*

##### *Mycomya ikar* n. sp.

Figs. 47–51, 56

Type locality: 27°58'N, 85°00'E (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya ikar* n. sp.



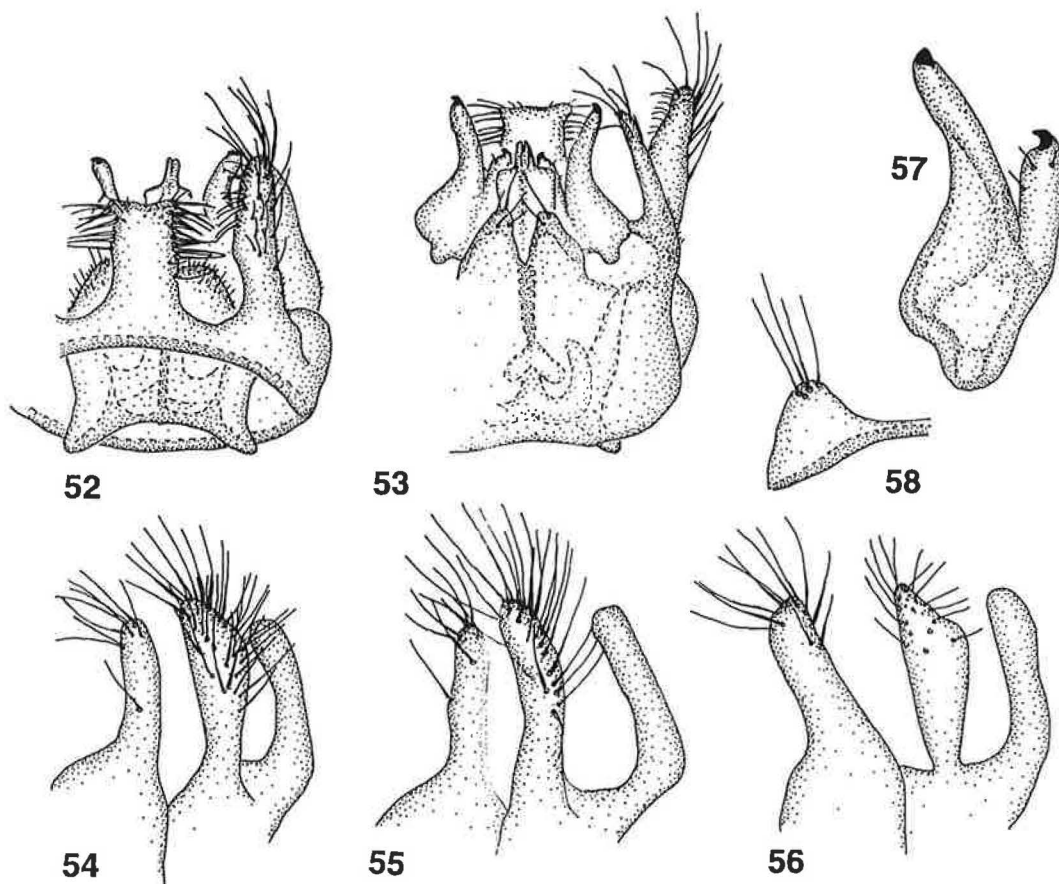
Figs. 47–51. *M. ikar n. sp.*, male hypopygium. 47–48. tergal and sternal views; 49. gonostylus, twice enlarged; 50. apex of aedeagus, twice enlarged; 51. tergite 8.

Väisänen. Nepal 27°58'N, 85°00'E, Mal. tr. 1, 11 100', 5.VI.1967, Can. Nepal Exp. (CNC).

Paratypes: Nepal: same data as holotype, but 8–11.VI.1967 (3 mm 1 f CNC); same data, 12.VI.1967 (1 m CNC); same data, 18.VI.1967 (2 mm CNC); same data, 22.VI.1967 (2 mm CNC); same data, 24.VI.1967 (3 mm CNC, 1 m MZH); same data, 25.VI.1967 (4 mm CNC); same data, 26.VI.1967 (2 mm 1 f CNC); same data, 27.VI.1967 (1 f CNC); same data, 29.VI.1967 (1 m CNC, 1 m MZH); same locality, 16.VI.1967, Can. Nepal Exp. (1 m CNC); same locality, black light, 26.VI.1967, Can. Nepal Exp. (1 f CNC); Penmaten, 27°36'N, 87°35'E, 2 600 m — Topke Gola, 27°38'N, 87°35'E, 3 700 m, 30.VI.1972, H. Makihara. (2 mm KUC); Thudam, 3 500 m, 1–4.VII.1972, Malaise trap, Kyushu Univ. Coll. (1 m 2 ff KUC); NE of Thudam, 27°47'N, 87°36'E, 4 000 m, 27.VI.1972, H. Shima (2 ff KUC); same data, 28.VI.1972 (1 m KUC); same locality and date, J. Emoto (16 mm 24 ff KUC); same data, 30.VI.1972 (51 mm 34 ff KUC); same locality and date, H. Sima (74 mm 45 ff KUC); Shibku, 27°30'N, 87°41'E, 2 100 m — Shawa, 27°29'N, 87°39'E, 2 300 m, 8.VI.1972, J. Emoto (1 m KUC).

Description: — Head. Palp and other mouthparts yellow, clypeus and face brownish, posterior parts of head dark brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.3 times, 2nd 1.7 times as long as wide. — Thorax. Pronotum yellow, with 3–5 longer setae. Mesoscutum brownish, with 3 brown, indistinct longitudinal stripes. Mesanepisternum and mesokatepisternum brownish. Scutellum brownish, with 2 long setae, and occasionally with 2 short lateral setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 with in-

distinct brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish. Coxa 1 with many long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.13-1.23$ ,  $bt2:t2 = 0.79-0.86$ ,  $bt3:t3 = 0.64-0.65$ . — Wing. Wing length 4.2–4.7 mm. Wing hyaline. Sc ending in C near middle of small cell, occasionally Sc1 broken, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing 0–9 macrotrichia. Small cell 1.5–2 times as long as wide. Cu fork proximal to M fork. M ratios: 0.73–0.92, 0.96–1.21. Cu ratios: 0.66–0.79, 0.96–1.24. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish, with yellowish to brownish apex. — Abdomen. Tergites 1–5 brown, with narrow, indistinct yellowish to brownish lateral and posterior margins, 6–7 brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 47–51 and 56, yellowish. Processus relatively long and wide. Tergal lateral appendage long and comparatively slender. Sternal lateral appendage long, brownish, with several setae. Sternal submedian appendage short, with some small setae. Gonostylus with 2 long, slender branches, both with 1 apical tooth. Aedeagus comparatively long, slender. — Female. Wing length 4.8–5.5 mm. Thorax similar to that of male or paler with more distinct stripes. Abdominal tergites brown, with yellow posterior margins, sternites yellow. Leg ratios:  $bt1:t1 = 1.09-1.29$ ,  $bt2:t2 = 0.81-0.89$ ,  $bt3:t3 = 0.65-0.72$ . Terminalia yellowish.



Figs. 52–58. *M. kyan* n. sp., male hypopygium. 52–53. tergal and sternal views; 54–55. variation in processus, tergal lateral appendage and sternal lateral appendage (54. Myanmar, 55. Nepal; 56. *M. ikar*, for comparison); 57. gonostylus, twice enlarged; 58. tergite 8.

*M. ikar* resembles *M. kyan* n. sp., but differs from it e.g. in having proportionally larger sternal lateral appendage, only 2 long scutellar setae and in having branches of gonostylus approximately of an equal length. Male hypopygium resembles also those of Palaearctic *M. pseudocurvata* and *M. livida*, but differs in details. The females listed above most likely belong to *M. ikar*, though absolute diagnostic characters are not known to separate them from *M. cinerascens* (Macquart), *M. alpina* Matile and *M. rosalba* Hutson.

Distribution: Nepal.

Biology: Collected mostly at high altitudes (3 400–4 000 m) in May–July, the lowest altitude record is 2 100–2 300 m. Some individuals have been collected with Malaise traps and one female with black light.

### *Mycomya kyan* n. sp.

Figs. 52–55, 57–58

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya kyan* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4.VI.1934, Malaise (MZH).

Paratypes: India: Ootacamund, 7 500 ft., 24–31.XII.1913, Fletcher (1 m 1 f NHML). — Nepal: Bogara, 1 700–2 200 m, 31.X.1971, A. Nakanishi (1 m KUC); Dobang Kharka, 83°24'E, 28°36'N, 9.X.1971, A. Nakanishi (1 m KUC); same data, 20.X.1971 (2 mm KUC); same data 23–25.X.1971 (2 mm KUC); same data, 26–28.X.1971 (1 m KUC), same data, 30.X.1971 (1 m KUC); Chouki, 27°12'N, 87°28'E, 2 700 m — Basantapur, 27°07'N, 87°24'E, 24.VI.1972, H. Makihara (1 m KUC); Basantapur, 27°07'N, 87°24'E, 1–5.V.1972, Malaise trap, Kyushu Univ. Coll. (1 m KUC). — Myanmar: N. E. Burma, Kambaiti, 7 000 ft, 11.V.1934, Malaise (1 m MZH); same data, 2 000 m, 4.VI.1934 (2 mm MZH); same data, 7.VI.1934 (1 m MZH).

Description: — Head. Palp yellowish, other mouthparts and face yellow, posterior parts of head brownish to brown. Antennae brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.3 times, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum brownish with indistinct longitudinal stripes. Mesanepisternum yellow. Mesokatepisternum yellow, ventral half light brownish. Scutellum brownish, with 4 long setae, laterals shorter than medials. Laterotergite light brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 and sometimes also coxa 2 with brownish lateral spot, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with many long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.08-1.24$ ,  $bt2:t2 = 0.74-0.83$ ,  $bt3:t3 = 0.58-0.64$ . — Wing. Wing length 4.2–5.3 mm. Wing hyaline, small cell and wing apex slightly infuscate. Sc ending in C distally to middle of small cell, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing 0–12 macrotrichia. Small cell 1.5–2 times as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.74–0.92, 0.92–1.26. Cu ratios: 0.64–0.79, 0.96–1.13. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere apically brownish. — Abdomen. Tergites 1–5 brown, with yellow lateral and posterior margins, 6–7 brownish to brown. Sternites yellow. — Hypopygium. Figs. 52–55 and 57–58, yellowish. Processus relatively long and wide. Tergal lateral appendage long and comparatively slender. Sternal lateral appendage long, with several setae. Sternal submedian appendage short, with some small setae. Gonostylus with 2 branches, medial branch shorter than lateral branch, both with apical tooth. Aedeagus comparatively long, slender. — Female. Wing length 4.8–5.6 mm. Thorax yellowish, as in male. Abdominal tergites 1–6 brown with yellow posterior margins, tergite 7 brown, sternites yellow. Leg ratios:  $bt1:t1 = 1.05-1.09$ ,  $bt2:t2 = 0.70-0.79$ ,  $bt3:t3 = 0.59-0.63$ . Hypogynal valves tapering apically, with 2–3 subapical setae. Apical segment of cercus oval.

*M. kyan* differs from Nepalese *M. ikar* n. sp. e.g. narrower sternal lateral appendage and more widely setose tergal lateral appendage, which is larger than sternal lateral appendage (Figs. 54–55 vs. 56), and in having medial branch of gonostylus distinctly shorter than lateral branch and in having

4 scutellar setae. Females are difficult to separate from co-existing species with 4 scutellar setae.

Distribution: India (Tamil Nadu), Nepal, Myanmar.

Biology: Collected at moderate altitudes (1 300–2 400 m) in April–July, October and December.

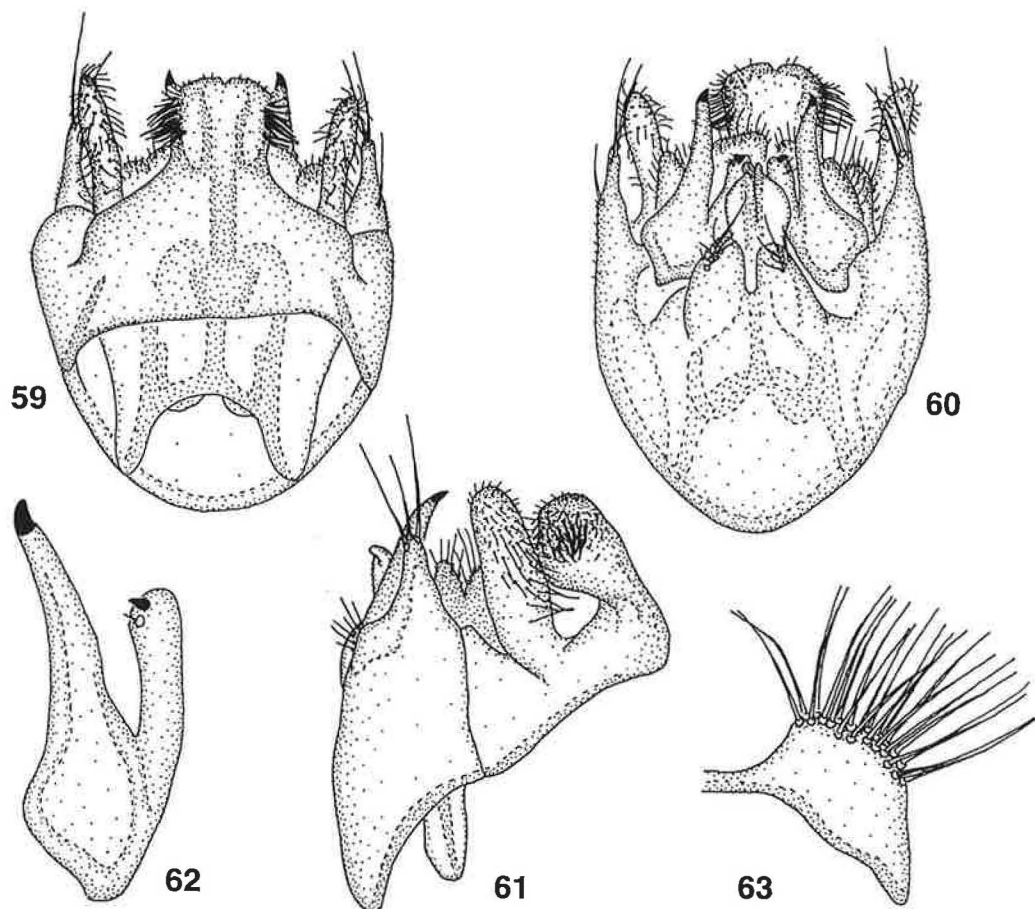
### *Mycomya tigrina* n. sp.

Figs. 59–63

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya tigrina* n. sp. Väisänen. N.E. Burma, Kambaiti 7 000 ft., 11.V.1987, Malaise (1 m MZH).

Description: — Head. Palp, other mouthparts and face yellowish, posterior parts of head brownish. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum yellow with 3 indistinct light brownish longitudinal stripes. Mesanepisternum yellow. Mesokatepisternum yellowish. Scutellum yellowish, with 4 long setae. Laterotergite yellowish. Mediotergite yellowish, bare. — Legs. Coxae yellow, coxa 3 with brownish lateral spot, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with brush of comparatively strong setae near apex on anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = ?$ ,  $bt2:t2 = 0.79$ ,  $bt3:t3 = 0.62$ . — Wing. Wing length about 5.2 mm. Wing hyaline, small cell slightly infuscate. Sc ending in C distally to middle of small cell, Sc2 ending in R1 distally to middle of small cell. Apical part of Sc bearing 22 macrotrichia. Small cell about 1.5 times as long as wide. Cu fork proximal to M fork. M ratios: ?, ?. Cu ratios: 0.68, 1.00. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–6 brown, with yellowish posterior margins, 7 brown. Sternites yellowish. — Hypopygium. Figs. 59–63, brownish. Processus long, wide. Tergal lateral appendage about as long as processus. Sternal lateral appendage shorter than gonostylus, with some long setae. Sternal submedian appendage short, with some small setae. Gonostylus with 2 branches, lateral branch longer, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Unknown.



Figs. 59–63. *M. tigrina* n. sp., male hypopygium. 59–61. tergal, sternal and lateral views, 62. gonostylus, twice enlarged; 63. tergite 8.

*M. tigrina* resembles Palaearctic *M. punctata* (Meigen) and *M. marginata* (Meigen) as well as to Nearctic *M. rebellicosa* Väisänen, but differs in details of male hypopygium.

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 100 m) in May.

### *Mycomya rosalba* Hutson, 1979

Figs. 64–67

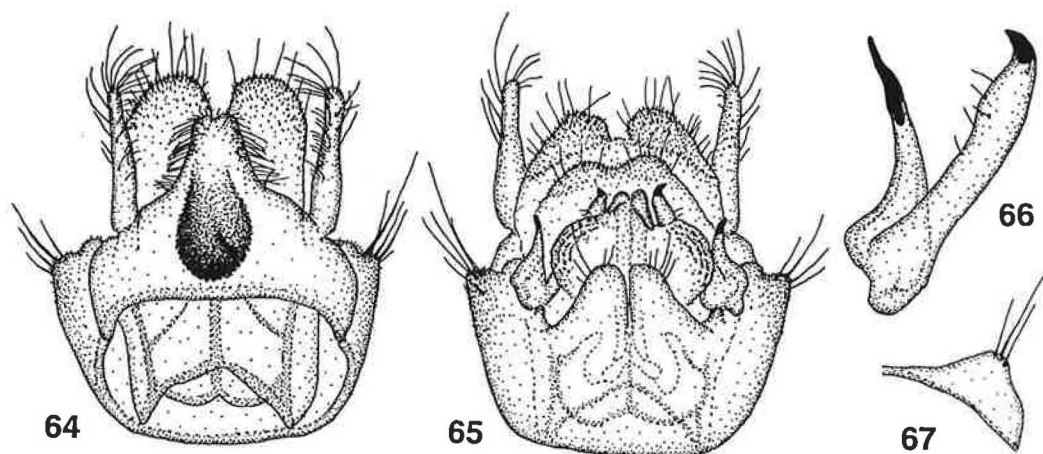
*Mycomya rosalba* Hutson, 1979. Hutson 1979: 131. Väisänen 1984a: 167.

Type locality: N. Yorks, Scargill (England).

Holotype: m, England: Yorks, N. Scargill, 16.VI.1977, P. J. Chandler, alderwood by stream. Holotype. *Mycomya rosalba* Hutson. (m BMNH).

Material examined: India: Jammu and Kashmir, Mahtantir Gah, 11 000', 9–11.VIII.1954, F. Schmid (1 m ISU); Jammu and Kashmir, Shardi, about 34.8°N, 74.2°E, 6 100', 19.V.1954, F. Schmid (2 mm ISU); Jammu and Kashmir, Katzarah Tso, about 35.4°N, 75.5°E, 7 500', 5.X.1953, F. Schmid (3 mm ISU, 1 m MZH); Jammu and Kashmir, KEL, 6 500', 19.V.1954, F. Schmid (1 m ISU). — Nepal: 28°00'N, 85°00'E, 10 500', 27.V.1967, Can. Nepal Exp. (2 mm 1 f CNC); same data, Mal. tr. 6, 1.VI.1967 (1 m CNC); same locality, Mal. tr. 7, 9 900', 1.VI.1967, Can. Nepal Exp. (1 f CNC); 27°58'N, 85°00'E, 11 200', 1.VI.1967, Can. Nepal Exp. (1 f CNC); 27°56'N, 85°00'E, 10 100', 28.V.1967, Can. Nepal Exp. (1 f CNC); NE Thudam, 27°47'N, 87°36'E, 4 000 m, 20.VI.1972, H. Shima (1 m KUC); Thudam, 27°45'N, 87°32'E, 21–23.VI.1972 Malaise trap, Kyushu Univ. Col. (5 mm KUC); same data, 1–4.VII.1972 (2 mm KUC); same data, 8–9.VII.1972 (1 m KUC); Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 22.X.1971, A. Nakanishi (1 m KUC); Basantapur, 2 300 m, 27°06'N, 87°23'E — 27°08'N, 87°26'E, 6.V.1972,





Figs. 64–67. *M. rosalba* Hutson, male hypopygium. 64–65. tergal and sternal views. 66. gonostylus, twice enlarged; 67. tergite 8.

J. Emoto (1 m KUC). — Myanmar: N. E. Burma, Kambaiti, 6 800 ft, 20.III.1934, Malaise (1 m MZH).

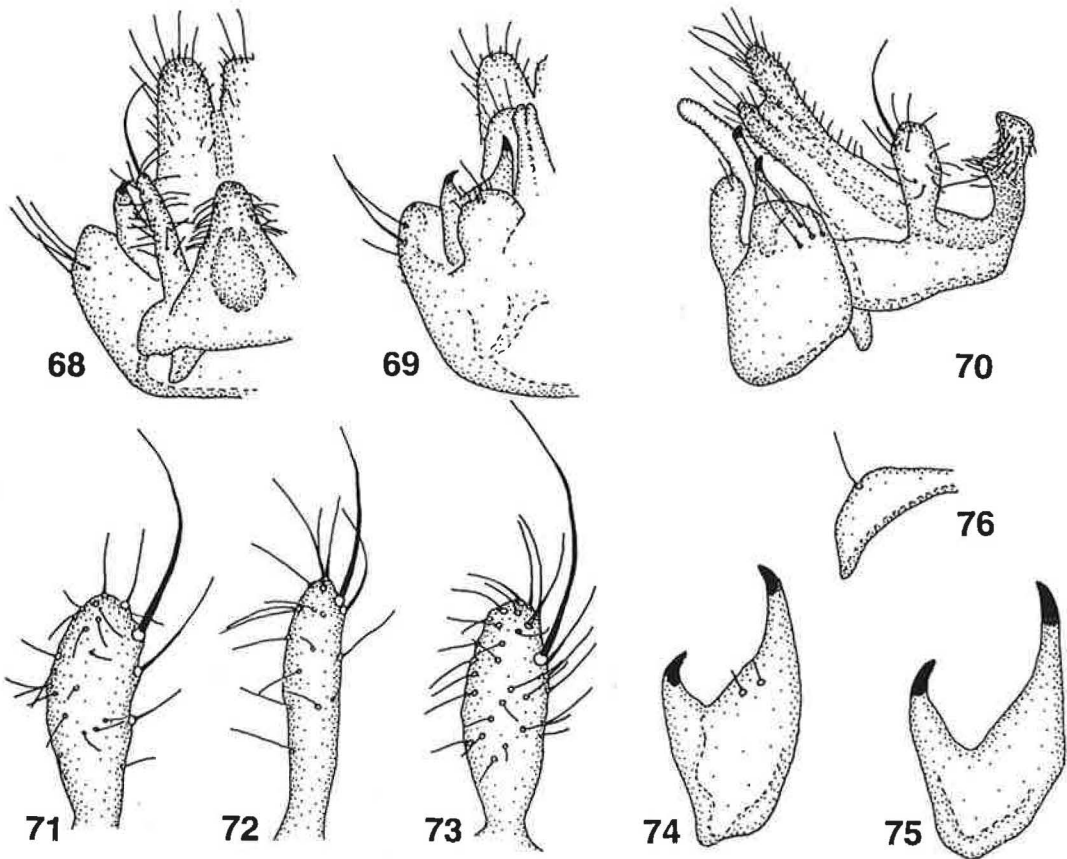
**Description:** — Head. Palp and other mouthparts yellow, clypeus and face brownish, posterior parts of head dark brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 4–5 longer setae. Mesoscutum yellow with 3 undistinct brownish to brown partially fused longitudinal stripes. Mesanepisternum brownish. Mesokatepisternum brownish, dorsal part paler. Scutellum yellowish to brownish, with 2 or 4 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 often with brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along antero-medial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.11-1.34$ ,  $bt2:t2 = 0.82-0.95$ ,  $bt3:t3 = 0.66-0.73$ . — Wing. Wing length 4.3–5.4 mm. Wing hyaline. Sc ending in C near or slightly distally or proximally to middle of small cell, Sc2 ending in R1 slightly proximally to middle of small cell. Apical part of Sc bearing 0–15 macrotrichia. Small cell 1.5–2.5 times as long as wide. Cu fork proximal to M fork. M ratios: 0.54–0.81, 0.67–0.96. Cu ratios: 0.51–0.64, 0.75–1.05. Macrotrichia: M petiole: 0–1; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere yellowish or apically brownish. — Abdomen. Tergites 1–5 brown, with wide or narrow yellow lateral and posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs.

64–67, yellowish. Processus long and basally very wide, apically tapering. Tergal lateral appendage long and slender, with several long apical setae. Sternal synsclerite with some setae on both sides, without lateral appendages. Sternal submedian appendage short and wide, with some small setae. Gonostylus with 2 branches, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Wing length 4.7–5.0 mm. Thorax similar to that of male but paler. Abdominal tergites 1–6 brown with yellow posterior margins, tergite 7 brown, sternites yellow, sternite 7 slightly darker. Leg ratios:  $bt1:t1 = 1.19$ ,  $bt2:t2 = 0.83$ ,  $bt3:t3 = 0.62$ . Terminalia yellow.

Oriental individuals are similar to the European *M. rosalba* holotype, though some minor differences may be seen in the male hypopygium. Holotype and Indian individuals (in Figs. 64–67) have 4 scutellar setae, while Nepalese and Burmese have only 2 scutellar setae. Some Nepalese individuals have very thin tergal alateral appendages, with setae only in the apical part. Wing length of the British holotype is 5.3 mm. The identity of the females is slightly uncertain, since the females are difficult to separate from those of coexisting *M. ikar* n. sp. and *M. cinerascens* (Macquart).

**Distribution:** England, India (Jammu and Kashmir), Nepal, Myanmar.

**Biology:** Males collected at moderate to high altitudes (1 900–4 000 m) in May–June, August and October, some of them with Malaise traps. The holotype was collected in an alder (*Alnus*) wood by a stream.



Figs. 68–76. *M. cinerascens* (Macquart), male hypopygium. 68–70. tergal, sternal and lateral views; 71–73. variation in tergal lateral appendage (71–72. Nepal, 73. Myanmar), twice enlarged; 74–75. variation in gonostylus (74. Nepal, 75. Myanmar); twice enlarged; 76. tergite 8.

***Mycomya cinerascens* (Macquart, 1826)**

Figs. 68–76

*Sciophila cinerascens* Macquart, 1826. Macquart 1826: 101.

*Mycomya cinerascens*: Väisänen 1984a: 171.

Type locality: Not stated (Northern France).

Types: See Väisänen (1984a: 172).

Material examined: Nepal: 27°56'N, 85°00'E, Mal. tr. 8, 10 100', 26.V.1967, Can. Nepal Exp. (1 m CNC, 1 m MZH); 27°58'N, 85°00'E, 11 000', 7.VI.1967, Can. Nepal Exp. (1 f CNC); 27°58'N, 85°00'E, 11 100', 18.VI.1967, Can. Nepal Exp. (2 mm CNC); same locality, Mal. tr. 1, 11 100', 26.VI.1967, Can. Nepal Exp. (1 m CNC); same locality, Mal. tr. 7, 9 900', 26.VI.1967, Can. Nepal Expedition (1 m CNC); NE of Thudam, 27°47'N, 87°36'E, 4 000 m, 28.VI.1972, J. Emoto (3 mm KUC); same data, H. Shima (1 mm KUC); same locality, 30.VI.1972, J. Emoto (5 mm KUC); same data, H. Shima (2 mm KUC); Thudam, 27°45'N, 87°31'E–27°46'N, 87°33'E, 3 500–3 800 m, 20.VI.1972, H. Shima (1 m KUC); same data, Y. Nishida (1 m KUC); same locality, 27.VI.1972, H. Shima

(3 mm KUC); same data, Y. Nishida (1 m KUC); Thudam, 27°45'N, 87°32'E, 3 500 m, 21–30.VI.1972, Malaise trap, Kyushu Univ. Coll. (2 mm KUC); Dobang Kharka, 83°24'N, 28°36'N, 22.X.1971, A. Nakanishi (2 mm KUC); Topke Gola, 27°38'N, 87°35'E, 3 700 m — Thurukpa, 27°36'N, 87°36'E, 2 600 m, 9.VII.1972, P. Norbu (1 m KUC); Gurza, 27°18'N, 87°33'E, 2 100 m — Gupa Pokali, 27°17'N, 87°30'E, 2 900 m, 15.VII.1972, J. Emoto (1 m KUC). — Myanmar: Kambaiti, 2 000 m, 31.III.1934, Malaise (1 m MZH); same data, 4.VI.1934 (1 m MZH); same data, 7.VI.1934 (1 m MZH).

Description: — Head. Palp and other mouthparts yellow, face brownish, posterior parts of head dark brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 3 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum yellowish with 3 brown longitudinal stripes, or brown with indistinct longitudinal stripes, anterolateral cor-

ners yellow to brownish. Mesanepisternum brownish. Mesokatepisternum brownish. Scutellum brownish, with 2 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 with brownish spot on outer surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.31-1.43$ ,  $bt2:t2 = 0.90$ ,  $bt3:t3 = 0.68-0.72$ . — Wing. Wing length 4.2–5.3 mm. Wing hyaline, sometimes wing apex very slightly infuscated. Sc ending in C near or slightly distally to middle of small cell, Sc2 ending in R1 near or proximally to middle of small cell. Apical part of Sc bearing 0–4 macrotrichia. Small cell about 1.5–2 times as long as wide. Cu fork proximal to M fork. M ratios: 0.67–0.79, 0.91–1.00. Cu ratios: 0.63–0.75, 0.89–1.14. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–5 brown, with or without narrow yellow lateral and posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 68–76, yellowish. Processus comparatively short. Tergal lateral appendage about as long as processus, with 1–2 long apical setae. Sternal synsclerite with 2–3 setae on both sides, without lateral appendages. Sternal submedian appendage short and wide, with some small setae. Gonostylus with 2 branches, lateral branch short, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Wing length 5.6 mm. Thorax similar to that of male. Abdominal tergites brown, 1–6 with yellow posterior margins, sternites yellow. Leg ratios:  $bt1:t1 = 1.22$ ,  $bt2:t2 = 0.85$ ,  $bt3:t3 = 0.66$ . See Väisänen (1984a: 175 and figs. 582–584). — Larva: Not known from the Oriental region, described by Plachter (1979b). Length 9 mm. Diameter 0.87 mm.

Tergal lateral appendage of male hypopygium is relatively slender in the Oriental individuals. In an aberrant Nepalese male (28°00'N, 85°00'E, Mal. tr. 7, 9 900', 26.V.1967) tergal lateral appendage is thin and of even thickness (Fig. 72). There is also some variation in the shape of gonostylus (Figs. 74–75). *M. cinerascens* females are difficult to separate from the coexisting *M. alpina* Matile, *M. ikar* n. sp. and *M. rosalba* Hutson.

Distribution: Widely distributed in the Holarctic region, including Algeria, Europe, Altai Mts., Kuril Is., Alaska, Canada and eastern USA (Väisänen

1984a). Also reported from Japan (Sasakawa 1961) and Mongolia (Edwards 1935). Nepal, Myanmar.

Biology: The species has been reared from *Streum* in Britain (Edwards 1925). Adults have been caught in a wide variety of habitats (see Väisänen 1984a). Oriental individuals have been collected at high to moderate altitudes (2 000–4 000 m) in March (Myanmar) and May–July (Nepal).

### *Mycomya minla* n. sp.

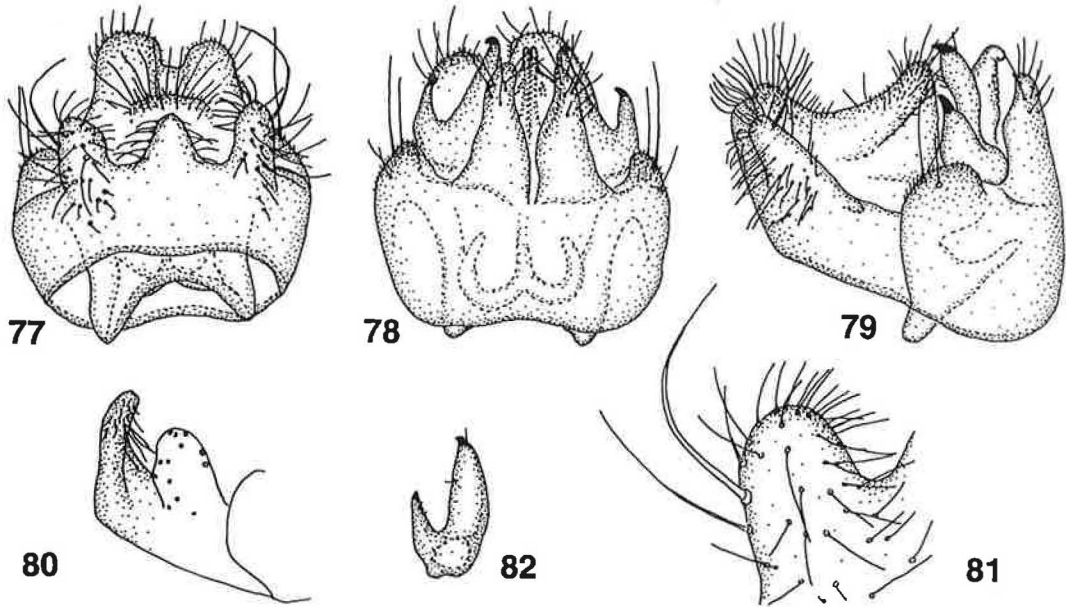
Figs. 77–82

Type locality: Dobang Kharka (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya minla* n. sp. Väisänen. (Nepal) Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 20.X.1971, A. Nakanishi (KUC).

Paratypes: Nepal: same data as holotype, 22.X.1971 (1 m KUC); same locality, 15–19.X.1971, Malaise trap, A. Nakanishi (1 m KUC); same data 25–26.X.1971 (1 m KUC). — Myanmar: Kambaiti, 2 000 m, 11.V.1934, Malaise (1 m MZH); same data, 13.V.1934 (1 m MZH); same data, 4.VI.1934 (1 m MZH); same data, 7.VI.1934 (1 m MZH).

Description: — Head. Palp, other mouthparts and face yellow, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum yellow with 3 brownish longitudinal stripes. Mesanepisternum and mesokatepisternum yellowish to brownish. Scutellum yellow, with 2 long setae. Laterotergite yellowish to brownish. Mediotergite yellowish to brownish, bare. — Legs. Coxae yellow, coxa 3 with brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.33-1.40$ ,  $bt2:t2 = 0.85$ ,  $bt3:t3 = 0.62-0.67$ . — Wing. Wing length 3.6–4.6 mm. Wing hyaline. Sc ending in C near or slightly distally to middle of small cell, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing 2–11 macrotrichia. Small cell 1.5–2 times as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.66–0.96, 0.91–1.25. Cu ratios: 0.74–0.85, 1.19–1.29. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere yellowish. — Abdomen. Tergites 1–5 brown, with yellow posterior margins, 6–7 brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium.



Figs. 77–82. *M. minla* n. sp., male hypopygium. 77–79. tergal, sternal and lateral views; 80. processus and tergal lateral appendage, lateral view; 81. tergal lateral appendage, twice enlarged; 82. gonostylus.

Figs. 77–82, yellowish. Processus comparatively short. Tergal lateral appendage about as long as processus, apically rounded, with 1–2 long apical setae and several thin, relatively long setae standing out. Sternal synsclerite with 2–4 setae on both sides, without lateral appendages. Sternal submedian appendage relatively long, tapering apically, with some small setae. Gonostylus with 2 branches, lateral branch short, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Unknown.

*M. minla* is very similar to *M. cinerascens* (Macquart) but differs in having shorter tergal lateral appendages with unique setosity. The tergal lateral appendages are much smaller than those of Holarctic *M. shermani* Garrett, which has usually bare Sc.

Distribution: Nepal, Myanmar.

Biology: Collected at moderate altitudes (2 000–2 400 m) in May–June and October, some individuals with Malaise trap.

### *Mycomya alpina* Matile, 1972

Figs. 83–84

*Mycomya alpina* Matile, 1972. Matile 1972: 74.

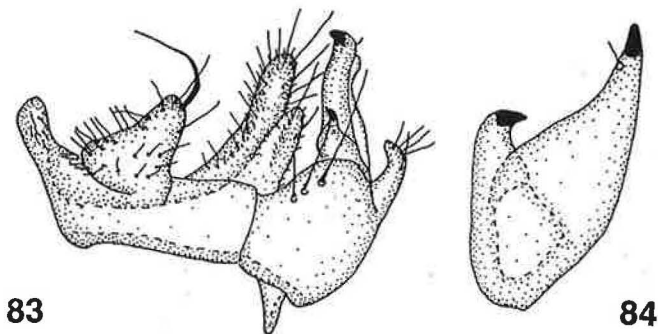
*Mycomya alpina*: Väisänen 1984a: 176.

Type locality: Drome, Foret de Lente (France).

Holotype: Ft de Lente (Drome), alt. 1 400 m, 25.VI.1970. Holotype. *Mycomya alpina* n. sp. holotype L. Matile det. 1971 (m MNHN).

Material examined: Nepal: 28°00'N, 85°00'E, 10 500', 27.V.1967, Can. Nepal Exp. (1 m CNC); NE of Thudam, 27°47'N, 87°36'E, 4 000 m, 30.VI.1972, J. Emoto (1 m KUC).

Description: — Head. Palp and other mouthparts yellow, clypeus and face brown, posterior parts of head dark brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, twice as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum brownish with 3 indistinct brown longitudinal stripes. Mesanepisternum and mesokatepisternum brownish. Scutellum brownish, with 2 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 with brown spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.51$ ,  $bt2:t2 = 0.91$ ,  $bt3:t3 = 0.70$ . — Wing. Wing length 4.9–5.0 mm. Wing hyaline. Sc ending in C distally to middle of small cell, Sc2 ending in R1 near or slightly proximally to middle of small cell. Apical part of Sc bearing 0–3 mac-



Figs. 83–84. *M. alpina* Matile, male hypopygium. 83. lateral view; 84. gonostylus, twice enlarged.

rotrichia. Small cell almost twice as long as wide. Cu fork proximal to M fork. M ratios: 0.71, 0.92. Cu ratios: 0.69, 1.14. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–5 brown, with slightly paler lateral and posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 83–84, brownish. Processus triangular, comparatively long, dark. Tergal lateral appendage triangular, apically relatively wide and short, with 1–2 long apical setae. Sternal synsclerite with a few setae on both sides, without lateral appendages. Sternal submedian appendage short, with some small setae. Gonostylus with 2 branches, lateral branch shorter than medial one, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Not known from the Oriental region area. Described by Matile (1972) and Väisänen (1984a: 176).

The Oriental individuals of *M. alpina* are very similar to the Palearctic ones. The shapes of processus and tergal lateral appendages are very diagnostic.

Distribution: Palearctic, including Kuril Islands. China (Zhejiang) (Wu & Yang 1994). Nepal.

Biology: Collected at high altitudes (3 200–4 000 m) in May–June.

***Mycomya winnertzi* (Dziedzicki, 1885)**

***M. winnertzi schmidi* Väisänen, 1984**

Figs. 85–87

(?) *Mycomya trilineata* Brunetti, 1912 (preocc. Zetterstedt, 1838). Brunetti 1912: 75.

(?) *Mycomya winnertzi*: Edwards 1924c: 293 (Syn. *M. trilineata* Brunetti)

(?) *Mycomya winnertzi*: Colless & Liepa in Delfinado & Hardy 1973: 452.

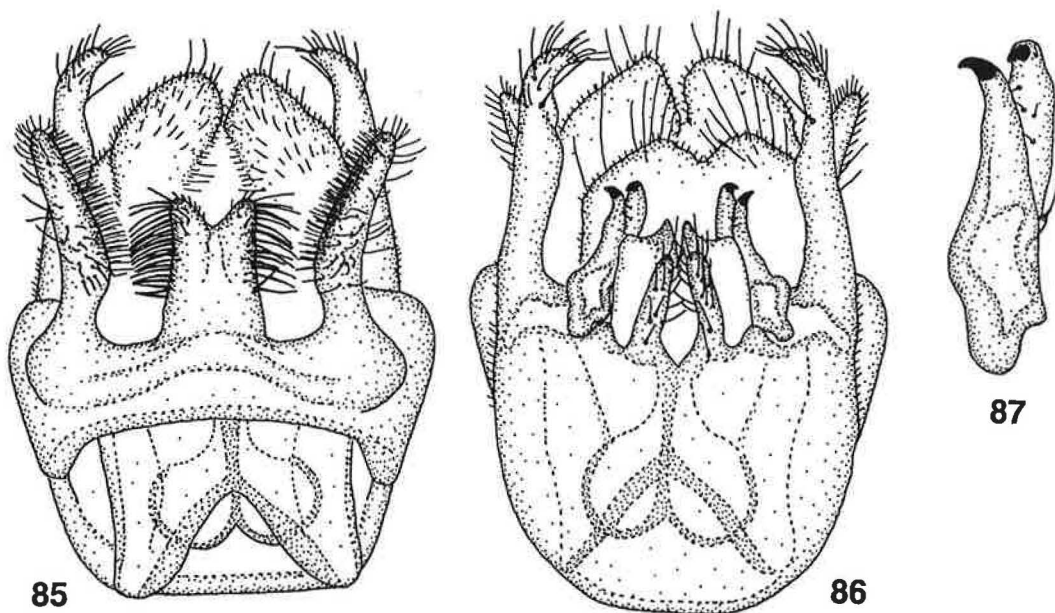
*Mycomya winnertzi schmidi* Väisänen, 1984. Väisänen 1984a: 227.

Type locality: Jammu & Kashmir (India).

Types: — *Mycomya winnertzi schmidi*: Holotype: m, India: Jammu & Kashmir, KEL, 6 500', 19.V.1954, F. Schmid (USNM). — *Mycomya trilineata*: Two syntypes originally, now one badly damaged specimen present in Calcutta, India (Dr. A. N. T. Joseph, Zool. Survey of India, pers. comm., type not seen) India: Simla, 7 000 feet, 10.V.1909, Annandale.

Material examined: Nepal: 27°56'N, 85°00'E, Mal. tr. 8, 10 100', 26.V.1967, Can. Nepal exp. (3 mm CNC, 1 m MZH); 27°57'N, 84°59'E, 10 100', 30.V.1967, Can. Nepal Exp. (1 m CNC); 27°58'N, 85°00'E, Mal. tr. 1, 11 100', 31.V.1967, Can. Nepal Exp. (1 m CNC); 27°58'N, 85°00'E, Mal. tr. 1, 11 100', 22.VI.1967, Can. Nepal Exp. (1 f CNC); Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 23–25.X.1971, Malaise trap, A. Nakanishi (1 m KUC). — India: Jammu and Kashmir, Kel, 6 500', 19.V.1954, F. Schmid (holotype USNM); Jammu and Kashmir, Lilam, about 34.9°N, 74.4°E, 9 000', 23.V.1954, F. Schmid (1 f ISU); Kashmir, Gulmarg, 8 500 ft., 17–24.VII.1923, Fletcher (1 m NHM).

Description: — Head. Palp and other mouthparts yellow, face yellowish, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd 1.8 times as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum yellow with 3 brown longitudinal stripes, middle stripe with narrow yellow medial band. Mesanepisternum yellowish to brownish. Mesokatepisternum yellowish, ventral part brownish. Scutellum yellow, with 4 long setae. Laterotergite yellowish, ventral part brownish. Mediotergite yellow to yellowish, posterior part brownish, bare. — Legs. Coxae yellow, coxa 3 with brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with some long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios: bt1:t1 = 0.97–1.03,



Figs. 85–87. *M. winnertzi schmidi* Väisänen, male hypopygium. 85–86. tergal and sternal views; 87. gonostylus, twice enlarged.

bt2:t2 = 0.73–0.81, bt3:t3 = 0.62–0.66. — Wing. Wing length 4.4–5.4 mm. Wing hyaline. Sc ending in C near or slightly distally to middle of small cell, Sc1 sometimes weak, apically broken or entirely missing, Sc2 ending in R1 near or slightly proximally to middle of small cell. Apical part of Sc bearing 4–12 macrotrichia. Small cell about 1.5–2 times as long as wide. Cu fork proximal to M fork. M ratios: 0.63–0.83, 0.77–1.04. Cu ratios: 0.56–0.72, 0.82–1.13. Macrotrichia: M petiole: 0–3; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish, sometimes apically darker. — Abdomen. Tergites 1–5 brown, with wide yellow posterior margins, sometimes also lateral margins yellow, tergite 6 with narrow posterior margin, 7 brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 85–87, yellow. Processus comparatively short with strong spines. Tergal lateral appendage longer than processus, with many very short thin setae or spines on medial surface. Sternal lateral appendage long, slender, without long apical seta. Sternal submedian relatively long, slender, not distinctly widened apically, with some small setae. Gonostylus with 2 branches, medial branch longer than lateral one, both with apical tooth. Aedeagus comparatively long, apically bilobed. — Female. Wing length 5.5–6.0 mm. Thorax similar to that of

male. Abdominal tergites brown, with wide yellow posterior margins, tergite 7 entirely brown, sternites yellow, 6–7 brownish with yellow posterior margins. Leg ratios: bt1:t1 = 1.03, bt2:t2 = 0.69, bt3:t3 = 0.66. Terminalia yellow.

*M. winnertzi schmidi* differs from *M. w. winnertzi* in having sternal lateral appendage slender, without long apical seta, and sternal submedian appendage relatively long, slender, not distinctly widened apically (Väisänen 1984a). *M. w. schmidi* females are very similar to several other *Mycomya* species.

Distribution: India (Jammu & Kashmir, probably also Simla [Brunetti 1912, 1917]), Nepal.

Biology: Collected at moderate to high altitudes (2 000–3 400 m) at least in May, July and October.

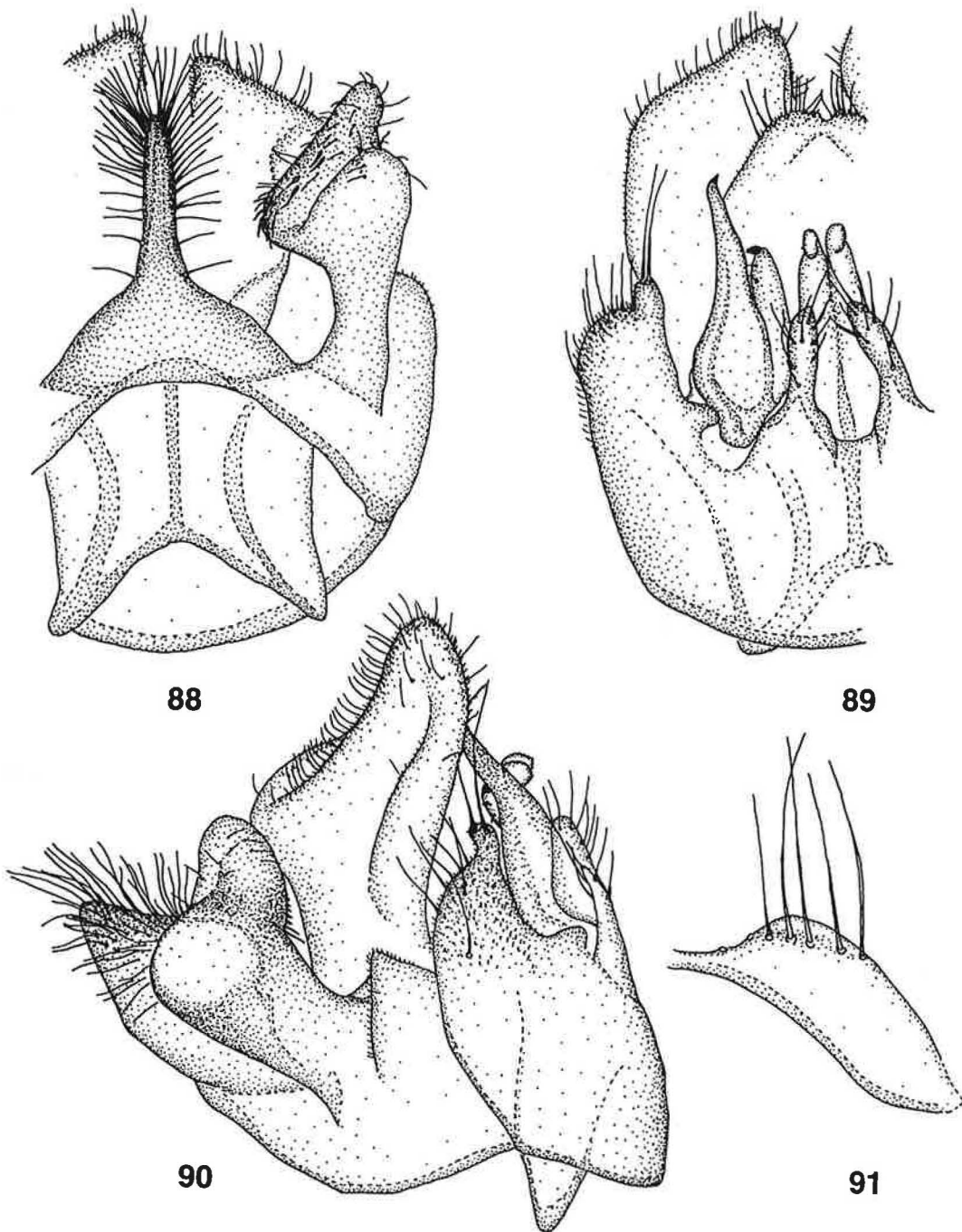
#### *Mycomya emotoi* n. sp.

Figs. 88–91

Type locality: Thudam (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya emotoi* n. sp. Väisänen. (E. Nepal) Thudam (3 500–3 800 m) 27°45'N, 87°31'E–27°46'N, 87°33'E. 26.VI.1972 J. Emoto leg. Kyushu Univ. Col. (KUC).

Description: — Head. Palp yellowish, other mouthparts and face brownish, posterior parts of



Figs. 88–91. *M. emotoi* n. sp., male hypopygium. 88–90. tergal, sternal and lateral views; 91. tergite 8.

head brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellowish. 1st flagellomere about 3 times, 2nd twice as long as wide. — Tho-

rax. Pronotum yellow, with 3 longer setae. Mesoscutum yellowish with 3 brown longitudinal stripes. Mesanepisternum and mesokatepisternum yellow-

ish. Scutellum yellowish, with 4 long setae, laterals shorter than medials. Laterotergite yellowish. Mediotergite light brownish, bare. — Legs. Coxae yellow, coxa 3 with brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface and small dense group of strong setae near apex of coxa on inner side. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.00$ ,  $bt2:t2 = 0.81$ ,  $bt3:t3 = 0.64$ . — Wing. Wing length 5.4 mm. Wing hyaline, small cell and apex of wing slightly infuscated. Sc ending in C distally to middle of small cell, Sc2 ending in R1 near middle of small cell. Apical part of Sc bearing 10 macrotrichia. Small cell 1–1.5 times as long as wide. Cu fork proximal to M fork. M ratios: 0.71, 0.93. Cu ratios: 0.70, 1.00. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere yellowish, apex darker. — Abdomen. Tergites 1–5 brown, with yellowish posterior margins, 6–7 brown. Sternites 1–5 yellowish, 6–7 brown. — Hypopygium. Figs. 88–91, yellowish, processus brown. Processus tergally long, narrow, keel-like, with long, thin setae. Tergal lateral appendage about as long as processus, apically wide, with small spines on inner surface and lateral protuberance. Sternal lateral appendage small, with 2 long setae. Sternal submedian appendage relatively small, narrow, with some setae. Gonostylus with long lateral and shorter medial branch, both with small, black apical tooth. Aedeagus relatively long, apically bilobed. — Female. Unknown.

*M. emotoi* can be easily identified on the basis of the unique structure of male hypopygium bearing only slight resemblance to *M. geei* n. sp., Nearctic *M. pyriformis* Väisänen and Holarctic *M. winnertzi* (Dziedzicki).

Distribution: Nepal.

Biology: Collected at high altitudes (3 500–3 800 m) in June.

### *Mycomya geei* n. sp.

Figs. 92–96

Type locality: Topke Gola (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya geei* n. sp. Väisänen. (E. Nepal) Topke Gola (3 700 m) 27°38'N, 87°35'E. 8.VII.1972 J. Emoto leg. Kyushu Univ. Col. (KUC).

Material examined: Nepal: same data as holotype (1 m KUC).

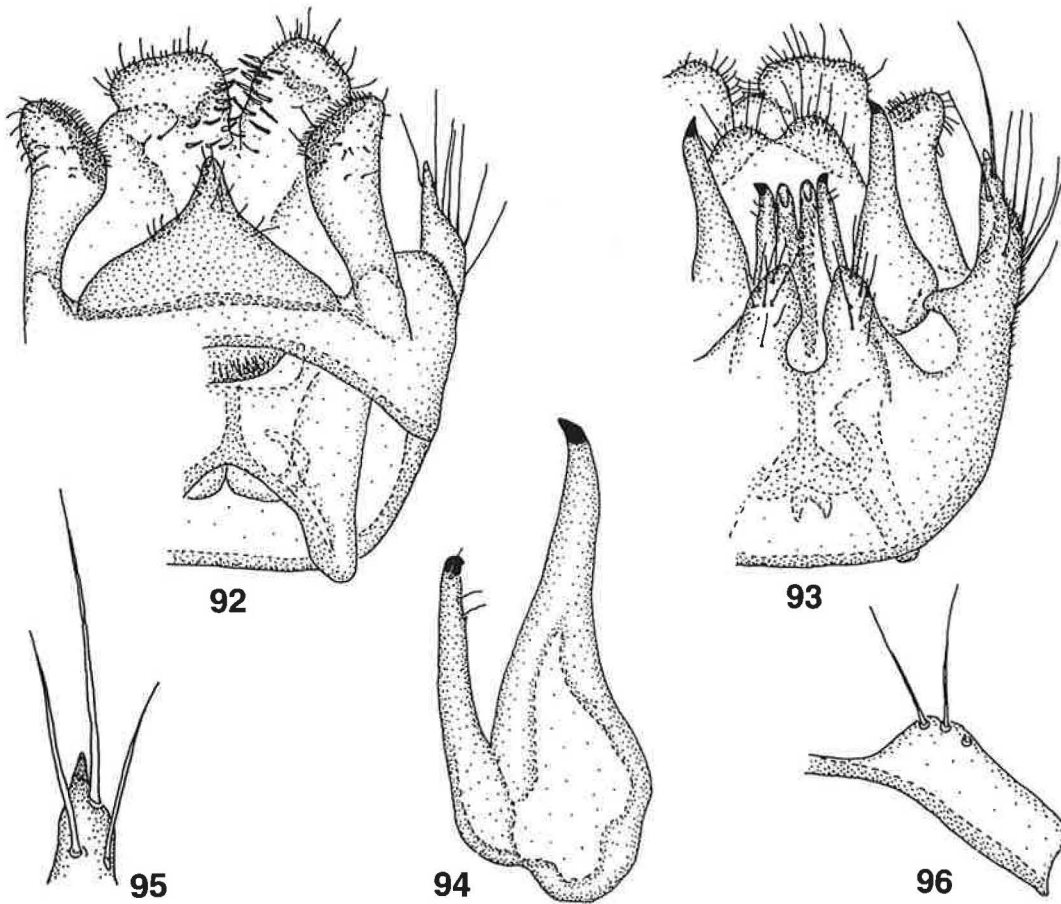
Description: — Head. Palp and other mouthparts yellow, face brownish, posterior parts of head brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellowish. 1st flagellomere about 3 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 3 longer setae. Mesoscutum brown, anterolateral corners yellow. Mesanepisternum and mesokatepisternum brownish. Scutellum brownish, with 4 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxae 2 and 3 with brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface and small dense group of strong setae near apex of coxa on inner side. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.09$ – $1.11$ ,  $bt2:t2 = ?$ ,  $bt3:t3 = 0.64$ – $0.68$ . — Wing. Wing length 5.2 mm. Wing hyaline, small cell and wing apex slightly infuscated. Sc ending in C distally to middle of small cell, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing 2–8 macrotrichia. Small cell 1–1.5 times as long as wide. Cu fork distinctly proximal to M fork. M ratios: 0.71–0.80, 0.96–1.09. Cu ratios: 0.68–0.70, 1.07–1.08. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish, apex brown. — Abdomen. Tergites 1–5 brown, with yellow posterior margins, 6–7 brown. Sternites 1–5 yellowish, 6–7 brownish. — Hypopygium. Figs. 92–96, yellowish. Processus tergally triangular, with some small setae. Tergal lateral appendages slender, slightly longer than processus, inner surface with dense patch of short setae. Sternal lateral appendage relatively long, pointed, with small, pale apical tooth and several long setae. Sternal submedian appendage relatively short, with several setae. Gonostylus with long lateral branch and shorter medial branch, both with small, black apical tooth. Hypopygium relatively long, apically bilobed. — Female. Unknown.

*M. geei* slightly resembles *M. emotoi* n. sp. and *M. anneliae* n. sp., but can be easily distinguished on the basis of male hypopygium, e.g. the structure of processus and tergal lateral appendages.

Distribution: Nepal.

Biology: Collected at high altitudes (3 700 m) in July.





Figs. 92–96. *M. geei* n. sp., male hypopygium, 92–93. tergal and sternal views, 94. gonostylus, twice enlarged; 95. apex of sternal lateral appendage, twice enlarged; 96. tergite 8.

***Mycomya anneliae* n. sp.**

Figs. 97–100

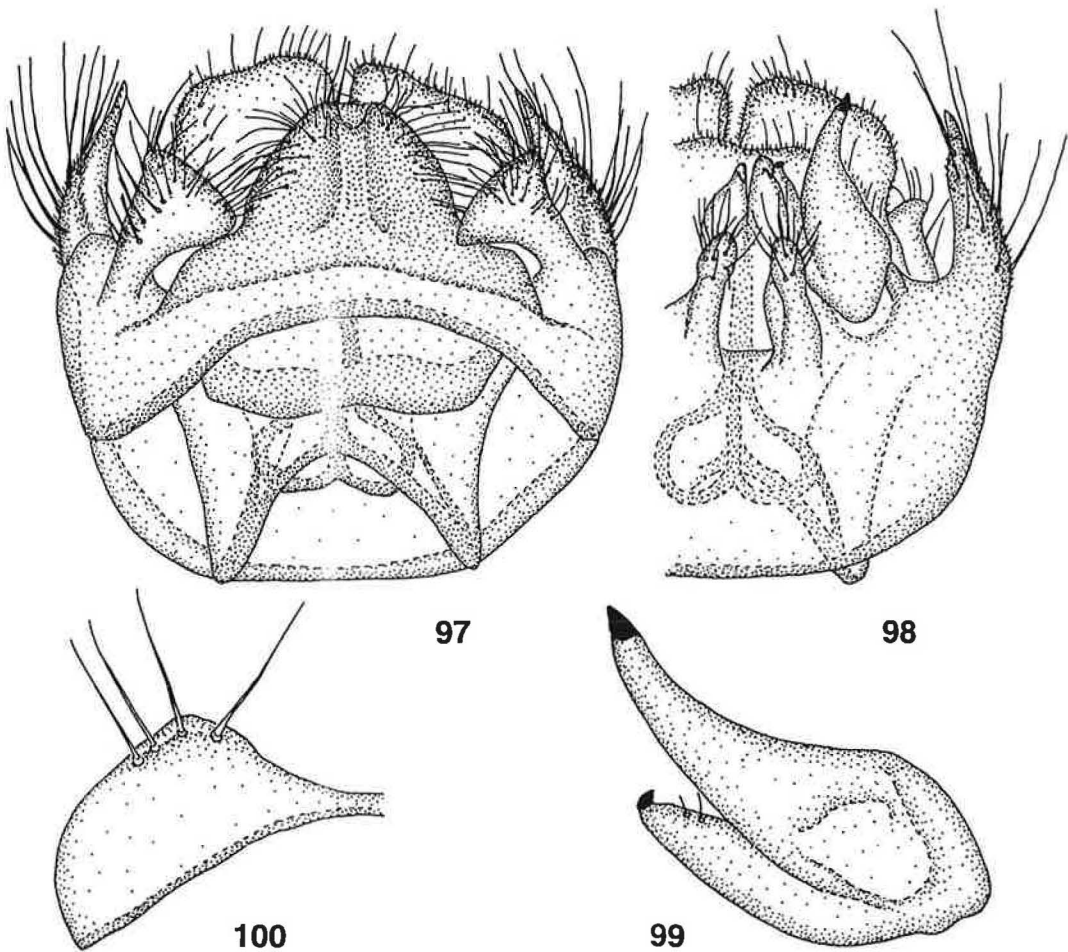
Type locality: Between Topke Gola and Thurukpa (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya anneliae* n. sp. Väisänen. (E. Nepal) Topke Gola (3 700 m) 27°38'N, 87°35'E — Thurukpa (2 600 m) 27°36'N, 87°36'E. 9.VII.1972 Pemba Norbu Kyushu Univ. Col. (KUC).

Paratypes: Nepal: Thudam, 27°45'N, 87°32'E, 3 500 m, 21–30.VI.1972, Malaise trap, Kyushu Univ. Col. (7 mm KUC), same data, 1–4.VII.1972 (5 mm 1 f KUC); same data, 8–9.VII.1972 (4 mm KUC); NE of Thudam, 27°47'N, 87°36'E, 30.VI.1972, J. Emoto (2 mm KUC).

Description: — Head. Palp yellowish, other mouthparts and face brownish, posterior parts of head brownish to brown. Antenna brown, scape, pedicel and base of 1st flagellomere yellowish. 1st

flagellomere 2.5–3 times, 2nd 1.5–2 times as long as wide. — Thorax. Pronotum yellowish, with 4–5 longer setae. Mesoscutum yellowish with 3 brownish longitudinal stripes. Mesanepisternum and mesokatepisternum yellowish to brownish. Scutellum yellowish, with 4 long setae. Laterotergite yellowish to brownish. Mediotergite yellowish to brownish, bare. — Legs. Coxae yellow, coxa 3 sometimes with light brownish spot on outer side, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along anteromedial surface and small dense group of 4–5 strong setae near apex of coxa on inner side. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios: bt1:t1 = 1.10–1.15, bt2:t2 = 0.83–0.85, bt3:t3 = 0.66–0.70. — Wing. Wing length 5.9–7.1 mm. Wing hyaline, small cell distinctly and wing apex slightly infuscated. Sc ending in C distally

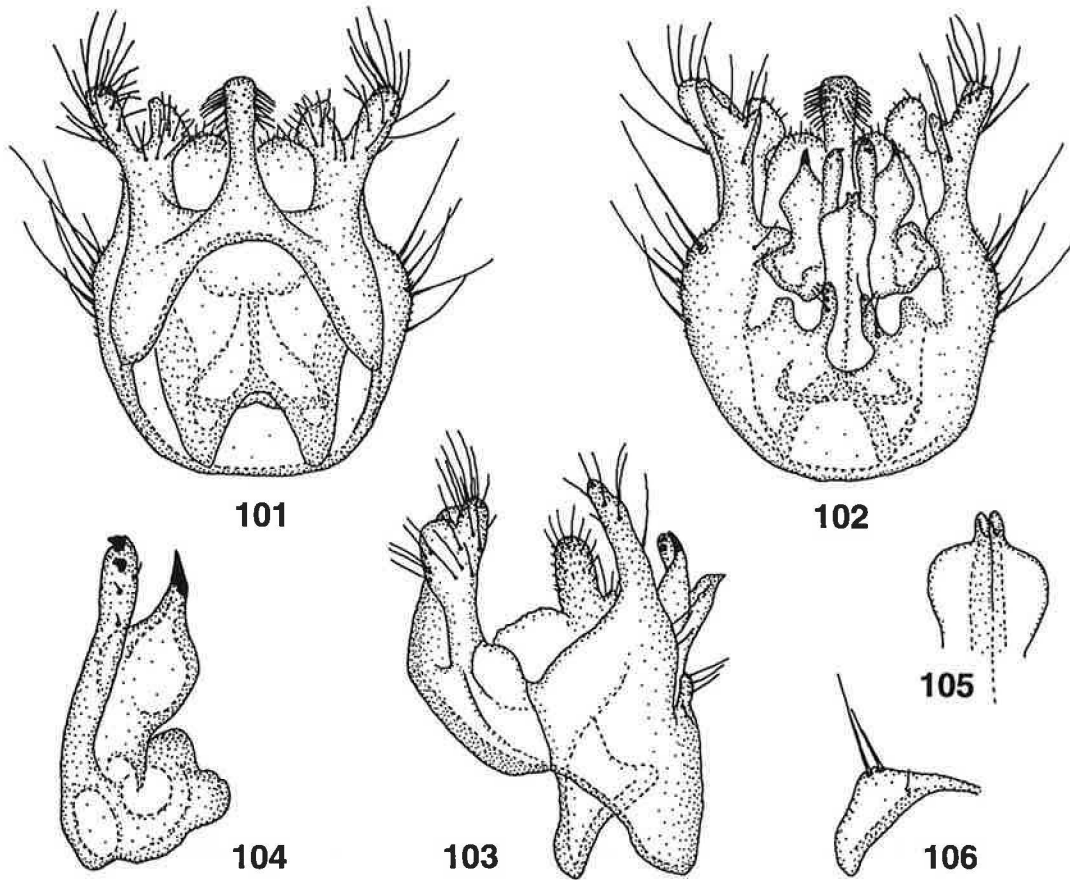


Figs. 97–100. *M. anneliae* n. sp., male hypopygium. 97–98. tergal and sternal views; 99. gonostylus, twice enlarged; 100. tergite 8.

to middle of small cell, Sc2 ending in R1 near of distally to middle of small cell. Apical part of Sc bearing 1–12 macrotrichia. Small cell 1–1.5 times as long as wide. Cu fork distinctly proximal to M fork. M ratios: 0.58–0.76, 0.90–0.97. Cu ratios: 0.49–0.55, 0.68–0.80. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish, apex light brownish. — Abdomen. Tergite 1 yellowish, tergites 2–5 brown, with wide yellow posterior margins, tergite 6 brown with or without yellow posterior margin, 7 brown. Sternites 1–5 yellow, 6 brown with yellow posterior margin, 7 brown. — Hypopygium. Figs. 97–100, yellowish. Tergal part very wide. Processus brown, very large, apically rounded, with relatively long setae. Tergal lateral appendage short, basally narrow, apically much wider, curved medially, with

setae. Sternal lateral appendage relatively long, with apical tooth and some long setae. Sternal submedian appendages relatively narrow, with several setae. Gonostylus with long lateral branch and shorter medial branch, both with small, black apical tooth. Aedeagus relatively long, apically bilobed. — Female. Wing length 6.9 mm. Thorax yellowish, mesoscutum with 3 brown longitudinal stripes. Abdominal tergites brown with yellow posterior margins, sternites yellow. Leg ratios: bt1:t1 = 1.09, bt2:t2 = 0.78, bt3:t3 = 0.62. Terminalia yellow. Hypogynal valve tapering apically with several long setae mainly on the margin. Apical segment of cercus relatively long, oval.

*M. anneliae* is a large species, which can be readily distinguished on the basis of the diagnostic characters in male hypopygium, e.g. the structure



Figs. 101–106. *M. sus* n. sp., male hypopygium. 101–103. tergal, sternal and lateral views; 104. gonostylus, twice enlarged; 105. apex of aedeagus, twice enlarged; 106. tergite 8.

of processus and tergal lateral appendages. *M. anneliae* females can be identified on the basis of its large size and  $bt1:t1$  ratio, but absolute diagnostic characters separating it from the related species of *M. marginata* group are not available.

Distribution: Nepal.

Biology: Collected mostly at high altitudes (2 600–4 000 m) in June–July.

***Mycomya sus* n. sp.**

Figs. 101–106

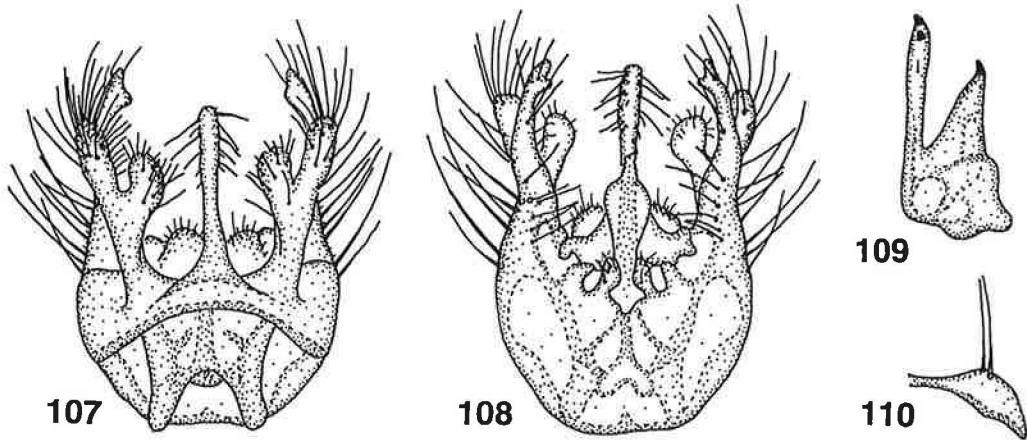
Type locality: 28°00'N, 85°00'E (Nepal).

Holotype: m, Nepal: Holotypus *Mycomya sus* n. sp. Väisänen, Nepal, 28°00'N, 85°00'E, 10 500', 27.V.1967, Can. Nepal Exp. (CNC).

Paratypes: Nepal: 28°00'N, 85°00'E, 10 500', 27.V.1967, Can. Nepal Exp. (1 f CNC); same locality,

Mal. tr. 6, 10 500', 26.V.1967, Can. Nepal Exp. (2 mm CNC); 27°56'N, 85°00'E, Mal. tr. 8, 10 100', 26.V.1967, Can. Nepal Exp. (1 m CNC); 27°58'N, 85°00'E, 11 100', 21.V.1967, Can. Nepal Exp. (1 f CNC); same data, 26.V.1967 (3 mm 1 f CNC, 2 mm MZH); Thudam, 27°45'N, 87°32'E, 3 500 m, 8–9.VII.1972, Malaise trap, Kyushu Univ. Coll. (1 m KUC); NE of Thudam, 27°47'N, 87°36'E, 4 000 m, 30.VI.1972, H. Shima (2 mm KUC); same data, J. Emoto (1 m KUC); Thudam, 27°45'N, 87°31'E–27°46'N, 87°33'E, 3 500–3 800 m, 28.VI.1972, J. Emoto (1 f KUC).

Description: — Head. Palp and other mouthparts yellow, clypeus and face brownish, posterior parts of head dark brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.3 times, 2nd 1.7 times as long as wide. — Thorax. Pronotum yellowish, with 3–4 longer setae. Mesoscutum yellowish to brownish with 3 indistinct brown longitudinal stripes. Mesanepisternum and mesokatepisternum brownish to



Figs. 107–110. *M. manis* n. sp., male hypopygium. 107–108. tergal and sternal views; 109. gonostylus, twice enlarged; 110. tergite 8.

brown. Scutellum brownish, with 4 long setae or 2 long and 2 short setae. Laterotergite brownish to brown. Mediotergite brownish to brown, bare. — Legs. Coxae yellow, coxa 3 with or without brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 without special setae. Coxa 2 with short (about half of coxal length) curved spur with 1 apical tooth. Leg ratios:  $bt1:t1 = 0.82-0.85$ ,  $bt2:t2 = 0.66-0.70$ ,  $bt3:t3 = 0.59-0.63$ . — Wing. Wing length 3.9–4.8 mm. Wing hyaline. Sc ending in R1 proximally to middle of small cell, Sc1 weak, apically broken or entirely missing. Apical part of Sc bearing 0–9 macrotrichia. Small cell about 1.5 times as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.69–0.91, 0.91–1.18. Cu ratios: 0.54–0.72, 0.85–1.05. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–4 brown, with wide yellow posterior margins, 5–6 brown with narrow yellow to brownish posterior margins, 7 brownish to brown. Sternites 1–5 yellowish to brown, with yellow posterior margins, 6–7 brownish to brown. — Hypopygium. Figs. 101–106, yellowish, base of processus brownish. Processus long slender. Tergal lateral appendage longer than processus, apically wide, deeply bilobed. Sternal lateral appendage long wide. Sternal submedian appendage short, with some small setae. Gonostylus with 2 branches, both with apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Wing length 4.1–4.7 mm. Thorax similar to that in male. Abdomen brown, posterior margins of segments widely yellow.

low. Leg ratios:  $bt1:t1 = 0.71-0.80$ ,  $bt2:t2 = 0.69-0.70$ ,  $bt3:t3 = 0.58-0.62$ . Terminalia yellow.

*M. sus* resembles *M. manis* n. sp. and Palaearctic *M. annulata* (Meigen). Relatively broad processus, deeply bilobed tergal lateral appendage and the shape of sternal lateral appendage of male hypopygium are the most prominent diagnostic characters of the present species.

Distribution: Nepal.

Biology: Collected at high altitudes (3 100–4 000 m) in May–July, a few with Malaise traps.

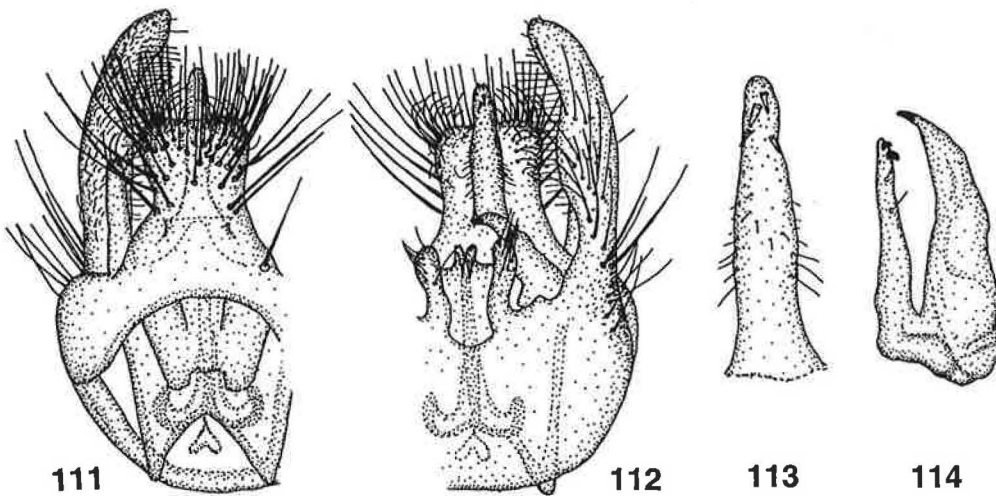
#### *Mycomya manis* n. sp.

Figs. 107–110.

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya manis* n. sp. Väisänen. N.E. Burma, Kambaiti, 7 000 ft., 11.V.1934 Malaise (MZH).

Description: — Head. Palp yellow, other mouthparts and face yellowish, posterior parts of head brown. Antenna broken, scape and pedicel yellow. — Thorax. Pronotum yellowish, with 3–4 longer setae. Mesoscutum anterolaterally yellowish, with brownish fused longitudinal stripes. Mesanepisternum and mesokatepisternum brownish. Scutellum brownish, with 4 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae and femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with some thin setae along antero-medial surface. Coxa 2 with short curved spur measuring less than half its length, with 1 apical tooth.



Figs. 111–114. *M. ibex* n. sp., male hypopygium. 111–112. tergal and sternal views; 113. processus, twice enlarged; 114. gonostylus, twice enlarged.

Leg ratios:  $bt1:t1 = 0.86$ ,  $bt2:t2 = 0.76$ ,  $bt3:t3 = 0.57$ . — Wing. Wing length 3.4 mm. Wing hyaline. Sc ending in R1 near middle of small cell, Sc1 missing. Apical part of Sc bearing 7–8 macrotrichia. Small cell about 1.5 times as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.83, 1.12. Cu ratios: 0.54, 0.78. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites brownish to brown, 4–5 with yellow posterolateral corners. Sternites 1–5 yellow, 6 brownish, 7 yellow. — Hypopygium. Figs. 107–110, yellowish. Processus long, very slender. Tergal lateral appendage long, apically wide, deeply bilobed. Sternal appendage long, slender. Sternal submedian appendage small, with some small setae. Gonostylus with 2 branches, medial with 2 apical teeth, lateral with 1 tooth. Aedeagus comparatively long, slender. — Female. Unknown.

*M. manis* resembles *M. sus* n. sp., Palearctic *M. flavicollis* (Zetterstedt) and Nearctic *M. pura* Väisänen, but differs in the details of male hypopygium, e.g. in the shape of processus, tergal lateral appendages and sternal lateral appendages. Chinese *M. guizhouana* Yang & Wu may belong to the same species group (no material has been available for a loan).

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 100 m) in May.

#### *Mycomya ibex* n. sp.

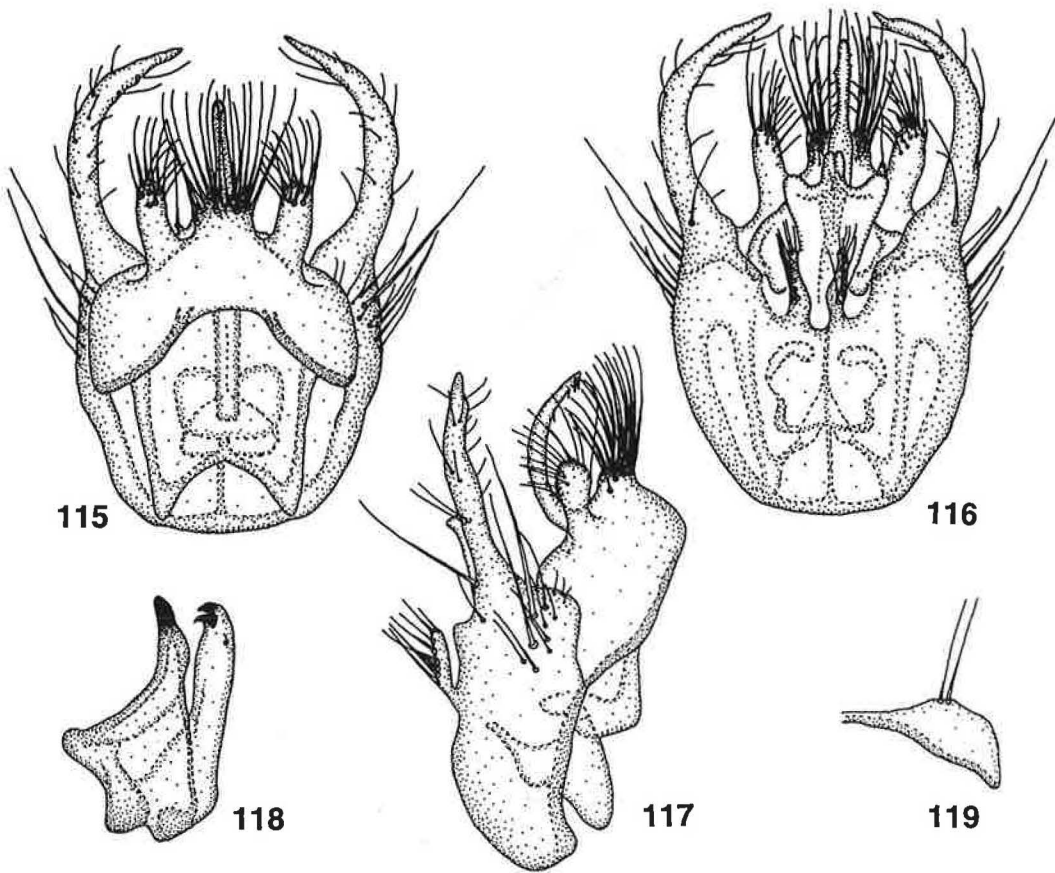
Figs. 111–114

Type locality: Jammu & Kashmir (India).

Holotype: m, India: Holotypus *Mycomya ibex* n. sp. Väisänen. Jammu and Kashmir, KEL 6 500', 19.V.1954, F. Schmid (USNM).

Paratypes: India: Jammu and Kashmir, Lilam, about 34.9°N, 74.4°E, 9 000', 23.V.1954, F. Schmid (1 m MZH). — Nepal: Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 25–26.X.1971, Malaise trap, A. Nakanishi (1 m KUC).

Description: — Head. Palp and other mouthparts yellow, face yellowish, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about twice, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 3–4 longer setae. Mesoscutum yellow with 3 brownish more or less fused longitudinal stripes. Mesanepisternum and mesokatepisternum light brownish. Scutellum brownish, with 3–4 long setae. Laterotergite brownish. Mediotergite brownish, bare. — Legs. Coxae yellow, coxa 3 with indistinct light brownish spot on lateral surface, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with long thin setae along antero-medial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.19$ –1.31,  $bt2:t2 = 0.83$ –0.84,  $bt3:t3 = 0.66$ –0.70. — Wing. Wing length 4.7–5.0 mm. Wing hyaline. Sc ending in C distally to middle of small cell or Sc1 apically broken, Sc2 ending in R1 proximally to middle of



Figs. 115–119. *M. macaca* n. sp., male hypopygium. 115–117. tergal, sternal and lateral view; 118. gonostylus, twice enlarged; 119. tergite 8.

small cell. Apical part of Sc bearing 2–10 macrotrichia. Small cell about 1.5 times as long as wide. Cu fork distinctly proximal to M fork. M ratios: 0.61–0.70, 0.77–0.88. Cu ratios: 0.60–0.61, 0.82–0.90. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites 1–5 brown, with wide yellow posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 111–114, yellow. Processus long, slender, with small subapical spines. In front of processus long, wide, setose lobe. Tergal lateral appendage shorter than processus, slender. Sternal appendage very long, relatively wide, setose. Sternal submedian appendage relatively small, with some small setae. Gonostylus with 2 branches, medial branch with 2 apical teeth, lateral with 1 tooth. Aedeagus apically bilobed. — Female. Unknown.

*M. ibex* is probably related to *M. macaca* n. sp. and Holarctic *M. danielae* Matile, though the dif-

ferences in the male hypopygium, e.g. the structure of processus, tergal lateral appendages and sternal lateral appendages, are very diagnostic.

Distribution: India (Jammu & Kashmir), Nepal.

Biology: Collected at moderately high to high altitudes (2 000–2 700 m) in May and October.

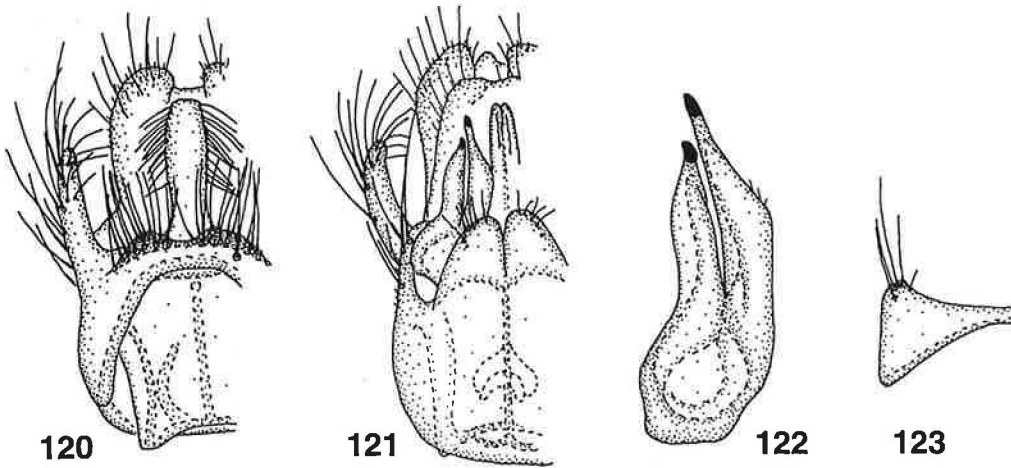
***Mycomya macaca* n. sp.**

Figs. 115–119

Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya macaca* n. sp. Väisänen. N.E. Burma, Kambaiti, 2 000 m, 4.VI.1934 Malaise (MZH).

Description: — Head. Palp light brownish, other mouthparts and face yellowish, posterior parts of head brownish, ocellar prominence brown. Antenna broken, scape and pedicel yellow. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum



Figs. 120–123. *M. occultans* (Winnertz), male hypopygium. 120–121. tergal and sternal views; 122. gonostylus, twice enlarged; 123. tergite 8.

yellow with indistinct yellowish longitudinal stripes. Mesanepisternum and mesokatepisternum yellow. Scutellum yellow, with 4 long setae. Laterotergite yellow. Mediotergite yellow, bare. — Legs. Coxae and femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with some thin setae along antero-medial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.42$ ,  $bt2:t2 = 0.89$ ,  $bt3:t3 = ?$ . — Wing. Wing length 4.0 mm. Wing hyaline. Sc ending in C distinctly distally to middle of small cell, Sc2 ending in R1 slightly distally to middle of small cell. Apical part of Sc bearing 13–16 macrotrichia. Small cell about twice as long as wide. Cu fork below M fork. M ratios: 1.02, 0.78. Cu ratios: 0.69, 1.02. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere yellowish. — Abdomen. Tergites 1–5 brown, with wide yellow posterior margins, 6 brown with narrow yellowish posterior margin, 7 brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 115–119, yellowish. Processus long, slender, curved, with 2 small apical spines. In front of processus relatively wide, apically bilobed, setose lobe. Tergal lateral appendage shorter than processus, comparatively wide, setose. Sternal appendage very long, slender. Sternal submedian appendage small, narrow, with small setae. Gonostylus with 2 branches, medial branch with 2 apical teeth, lateral with 1 tooth. Aedeagus long, relatively wide. — Female. Unknown.

*M. macaca* resembles to some degree *M. ibex* n. sp. and Palaearctic *M. danielae* Matile, but dif-

fers distinctly in the details of male hypopygium, e.g. in the structure of processus and tergal lateral appendages.

Distribution: Myanmar.

Biology: Collected at moderate altitudes (2 000 m) in May.

### *Mycomya occultans* (Winnertz, 1863)

Figs. 120–123

*Sciophila occultans* Winnertz, 1863. Winnertz 1863: 719.

*Mycomya occultans*: Väisänen 1984a: 243.

Type locality: Not stated (Germany).

Types: Male syntypes not located, apparently destroyed.

Material examined: India: U. P., Mussoorie, elev. 5 400 feet, 21.V.1962, J. P. Donahue (3 mm MICH). — Myanmar: Kambaiti, 2 000 m, 23.V.1934, Malaise (2 mm MZH); same data, 4.VI.1934 (1 m 1 f MZH); same data, 7.VI.1934 (2 m MZH); same locality, 7 000 ft., 11.V.1934, Malaise (1 m MZH).

Description: — Head. Palp, other mouthparts and face yellow, posterior parts of head brownish. Antenna brownish, base of 1st flagellomere yellow. 1st flagellomere about twice, 2nd less than 1.5 times as long as wide. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum yellow to yellowish with 3 relatively indistinct fused brownish longitudinal stripes. Mesanepisternum yellow to light brownish. Mesokatepisternum yellow to light brownish, ventral half usually brownish. Scutellum yellowish, with 4 long setae. Laterotergite yellowish to

light brownish, ventral part brownish. Mediotergite yellowish to brownish, bare. — Legs. Coxae yellow, coxa 3 sometimes with brownish lateral spot, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with some long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 apical teeth. Leg ratios:  $bt1:t1 = 1.00$ ,  $bt2:t2 = 0.70$ ,  $bt3:t3 = 0.60$ . — Wing. Wing length 4.0–4.5 mm (Palearctic 3.3–5.0 mm). Wing hyaline with small cell usually distinctly and wing apex slightly infusate. Sc ending in C distinctly distally to middle of small cell and usually distally to apex of R4, Sc2 ending in R1 distally to middle of small cell. Apical part of Sc bearing 8–17 macrotrichia. Small cell about 1–1.5 times as long as wide. Cu fork proximal to M fork. M ratios: 0.68–0.80, 0.86–0.95. Cu ratios: 0.64–0.68, 0.92–1.05. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish, apically darker. — Abdomen. Tergites 1–5 brownish to brown, with usually widely yellow to yellowish lateral and posterior margins, 6–7 brown. Sternites yellow. — Hypopygium. Figs. 120–123, yellowish. Processus long, slender. In front of processus two patches of long setae. Tergal lateral appendage long, slender. Sternal lateral appendage indistinct, short, with some setae. Sternal submedian appendage broad, short, with small setae. Gonostylus with 2 branches and membranous lobe, both branches with 1 apical tooth. Aedeagus comparatively long, slender, apically bilobed. — Female. Wing length 4.2 mm (Holarctic 4.2–5.9 mm). Abdominal tergites brownish to brown with posterior margins broadly yellow. Terminalia yellow. See Väisänen 1984a: 244, Figs. 799–801. — Larva. Not known from the Oriental region, described by Plachter (1979b: 282). Length 10–11 mm. Diameter 0.73 mm. — Pupa. Not known from the oriental region, described by Plachter (1979c: 432). Length about 3 mm. Dark, ochraceous brown.

**Distribution:** Widely distributed in the Palearctic region, including Kuril Islands. Japan (Sasakawa 1961, Väisänen 1984b). China (Shanxi, Zhejiang, Guizhou) (Wu & Yang 1994). India (Uttar Pradesh), Myanmar.

**Biology:** Collected at low and moderate altitudes (800–2 100 m) in May–June (India, Myanmar). *M. occultans* has been reported from several fungi in the Palearctic region: *Daedalea quercina* Fr., “*Polyporus*” (Winnertz 1963), *Inonotus radi-*

*atus* (Fr.) Karst. (Väisänen 1984a), *Lenzites betulina* (Fr.) Fr. and *Plicaturopsis crispa* (Fr.) Reid. (Eisfelder 1955). The larval web has been described by Plachter (1979a: 187).

### *Mycomya viverra* n. sp.

Figs. 124–128

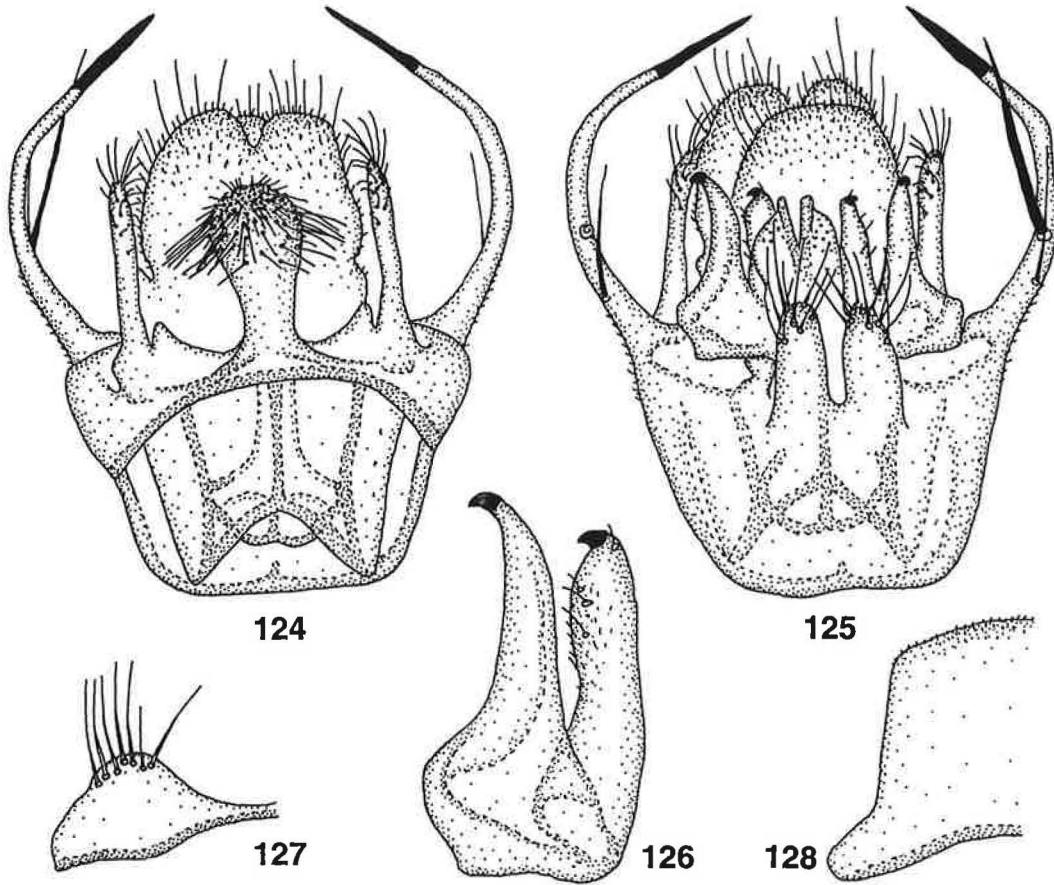
Type locality: Kambaiti (Myanmar).

Holotype: m, Myanmar: Holotypus *Mycomya viverra* n. sp. Väisänen. N.E. Burma, Kambaiti, 7 000 ft., 11.V.1934, Malaise (MZH).

Paratype: Nepal: Dobang Kharka, 83°24'E, 28°36'N, 2 400 m, 20.X.1971, A. Nakanishi (1m KUC).

**Description:** — Head. Palp light brownish, other mouthparts yellow, face yellow, posterior parts of head brownish. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 2.5 times, 2nd twice as long as wide. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum yellowish with 3 indistinct brownish longitudinal stripes. Mesanepisternum and mesokatepisternum yellowish to brownish. Scutellum yellowish to brownish, with 4 long setae. Laterotergite yellowish to brownish. Mediotergite yellowish to brownish, bare. — Legs. Coxae yellow, coxa 3 with brownish lateral spot, femora yellow, tibiae and tarsi brownish to brown. Coxa 1 with many long thin setae along anteromedial surface. Coxa 2 with long curved spur with 2 small apical teeth. Leg ratios:  $bt1:t1 = 1.08$ –1.19,  $bt2:t2 = 0.80$ –0.83,  $bt3:t3 = 0.65$ –0.66. — Wing. Wing length 5.0–5.5 mm. Wing hyaline, small cell slightly infusate. Sc ending in C distinctly distally to middle of small cell near apex of R4, Sc2 ending in R1 distally to middle of small cell. Apical part of Sc bearing 7–9 macrotrichia. Small cell 1.5–2 times as long as wide. Cu fork distinctly proximal to M fork. M ratios: 0.44–0.45, 0.55–0.57. Cu ratios: 0.56, 0.82. Macrotrichia: M petiole: 0; M1: +; M2: +; Cu petiole: +; Cu1: +; Cu2: +. Haltere pale yellowish. — Abdomen. Tergites brown, with yellow posterior margins. Sternites yellow. — Hypopygium. Figs. 124–128, yellowish. Processus basally narrow, apically rounded, setose. Tergal lateral appendage very long, slender. Sternal appendage very long, narrow, curved, with long apical spine. Sternal submedian appendage short, relatively wide, with several setae. Gonostylus with 2 branches, both





Figs. 124–128. *M. viverra* n. sp., male hypopygium. 124–125. tergal and sternal views; 126. gonostylus, twice enlarged; 127. tergite 8; 128. sternite 8.

with apical tooth. Aedeagus long, apically bilobed. — Female. Unknown.

*M. viverra* can be easily distinguished from other *Mycomya* species on the basis of the structure of male hypopygium, e.g. processus, tergal lateral appendages and sternal lateral appendages with long spines.

Distribution: Myanmar, Nepal.

Biology: Collected at moderate altitudes (2 100 m) in May.

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