New Mycomyinae from South Africa (Diptera, Mycetophilidae)

Rauno Väisänen

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The South African material of the subfamily Mycomyinae is revised. New species: *Dinempheria enigmata*, *Mycomya natalensis*, *M. londti*, *M. edra*, *Mycomyiella irwini*, *Neoempheria transvaalensis*, and *Parempheriella australis*.

Rauno Väisänen, Nature Conservation Research Unit, National Board of Waters and the Environment, P.O. Box 250, FIN-00101 Helsinki, Finland.

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All species of the mycetophilid subfamily Mycomyinae have the fine tibial setae arranged in regular rows, veins M and Cu separate from the wing base, the middle ocellus absent and the wing membrane without macrotrichia. Eight genera of the Mycomyinae, viz. *Dinempheria* Matile, *Moriniola* Matile, *Mycomya* Rondani, *Mycomyiella* Matile, *Neoempheria* Osten-Sacken, *Parempheriella* Matile, *Syndocosia* Speiser and *Viridivora* Matile, are known from the Afrotropical region (Matile 1973, 1974, 1976, 1979, 1980), but so far only *Mycomya lightfooti* Edwards, 1925 has been recorded from the South African subregion. The present paper shows that at least five genera occur there. Seven new species are described below, but new species were not described on the basis of female specimens only in order to avoid possible taxonomic confusion in the future. However, the material includes three species known only from females.

The study material consists of 116 individuals. It comes from the following institutions, which are referred to in the text by the following abbreviations:

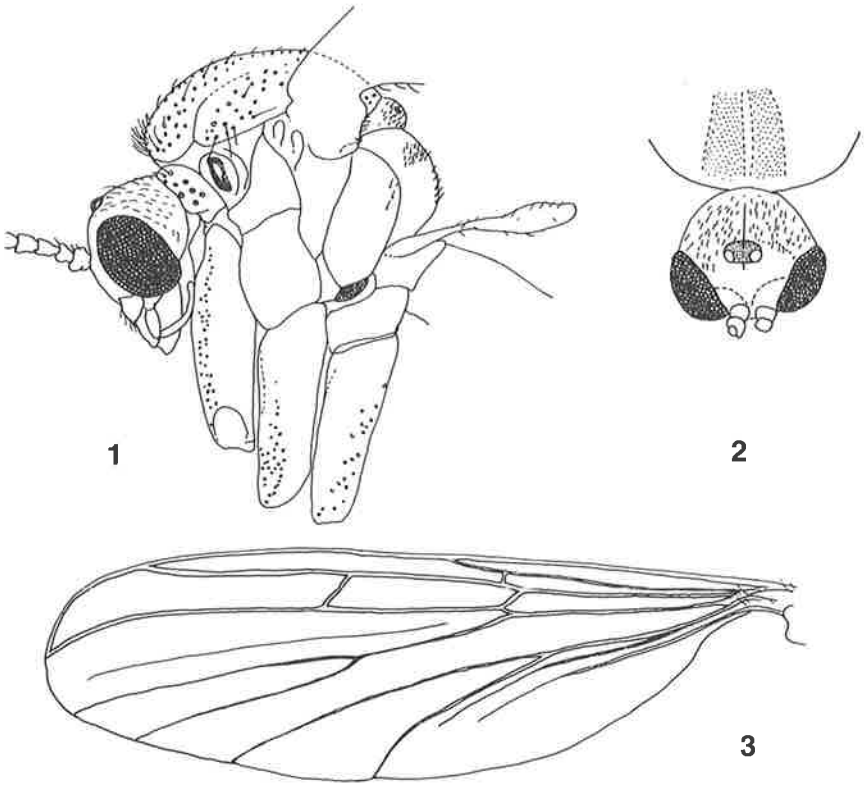
CNC Canadian National Collection, Ottawa, Canada
NAT Natal Museum, Pietermaritzburg, Republic of South Africa
MZH Zoological Museum, University of Helsinki, Helsinki, Finland

The methodology and morphological terminology in the main follows that of Väisänen (1984). Leg ratios refer to the 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 for the *Parempheriella* hypopygium is modified from the French terminology used by Matile (1973).

Key to the afrotropical genera of *Mycomyinae*

The following key is translated and slightly modified from Matile (1979). The genera *Syndocosia*, *Viridivora* and *Moriniola* are not known from South Africa.

1. Ocelli present 2
— Ocelli absent ..... *Syndocosia*
2. Long tibial setae present 3
— Long tibial setae absent ..... *Viridivora*
3. Cu branched, scutellum with long setae, mouthparts normal or elongated 4
— Cu unbranched, scutellum without long setae, mouthparts short (proboscis shorter than 1st palpomere) ..... *Moriniola*
4. R4 present, C ends distad to or in apex of R5 5
— R4 absent, C ends distinctly distad to apex of R5 ..... *Parempheriella*



Figs. 1–3. *Dinempheria enigmata* sp. n. — 1. head and thorax, lateral view; 2. dorsal view of head; 3. wing.

5. Laterotergite (pleurotergite) bare, anal lobe normal 6
— Laterotergite with small setae, anal lobe reduced .... *Dinempheria*
6. Costa ends distad to apex of R5 7
— Costa ends in apex of R5 ..... *Mycomya*
7. Wing with subradial fold (vena spuria), Sc complete ending in C, wing with more or less distinct markings ..... *Neoempheria*
— Wing without subradial fold, Sc incomplete ending in R, wings without distinct markings ..... *Mycomyiella*

Dinempheria enigmata sp. n.

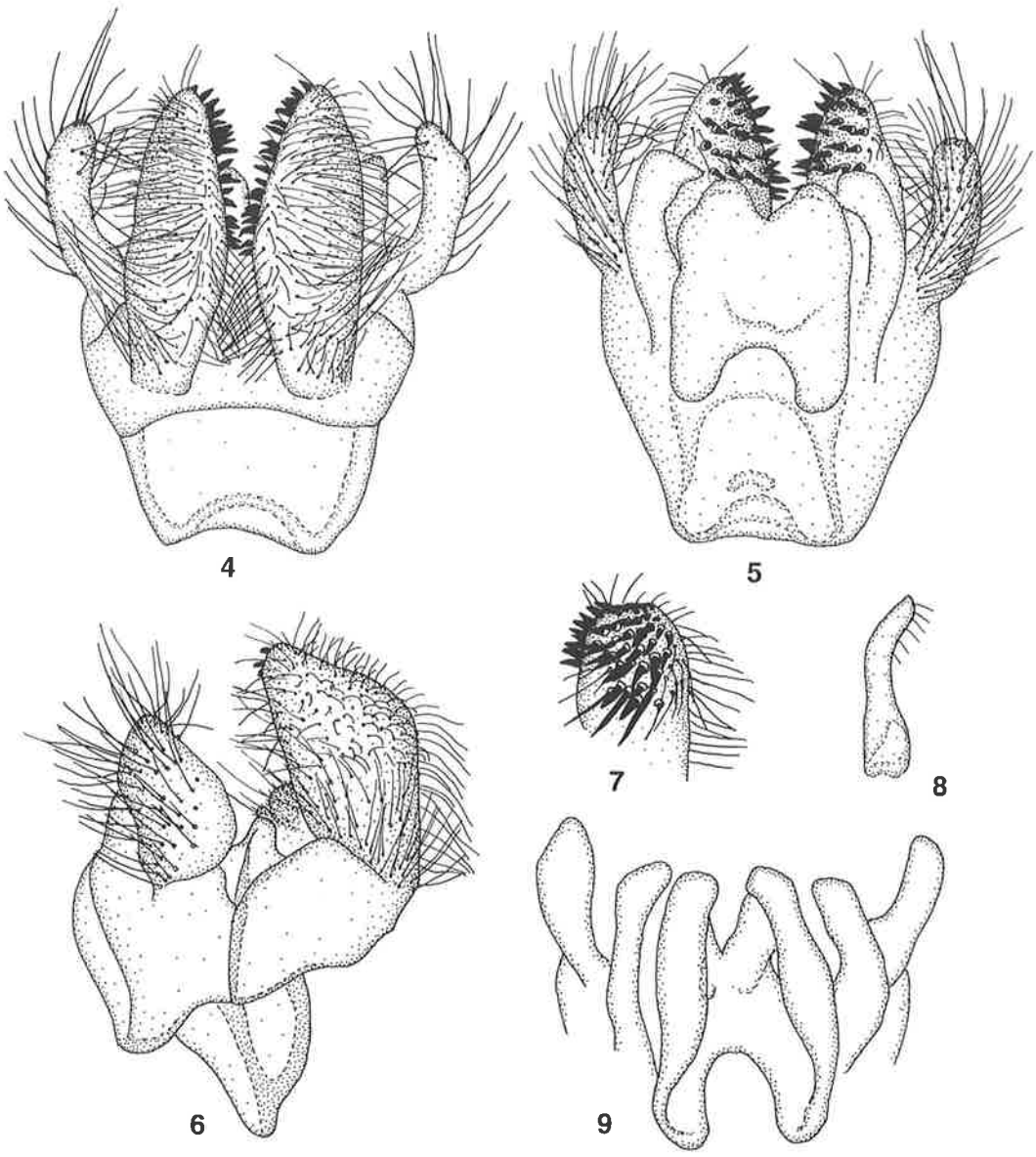
Figs. 1–9

Type locality: Transvaal (South Africa)

Holotype: ♂, S. Africa: E. Transvaal 9 km nw. Sabie 2530BB Bridal Veil Falls XII 3, 1976. R. Miller (NAT, Type number 2155)

Paratype: Natal, Cathedral Peak area, 2839Cc, 16–18. XII. 1977, JGH Londt (♀ NAT).

Description: Head. Figs. 1–2. Palp and other mouthparts light brownish, face yellow, posterior parts of head yellow to yellowish, ocellar area dark brown. Apical segment of palp long, slender, next segment slender with short apical extension, next segment wide. Antenna yellowish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere almost twice, 2nd 1.5 times as long as wide, apex of antenna slightly rounded. Eye rounded, not emarginate above antennal base. — Thorax. Fig. 1. Pronotum yellow, with 4–5 dark longer setae. Mesoscutum shining, yellow, with 3 brown longitudinal stripes, middle stripe with yellow median line. Mesanepisternum and mesokatepisternum yellow. Scutellum yellowish, with several very short and 2 slightly longer setae. Laterotergite yellow, with few small setae. Mediotergite yellow to yellowish, dorsal part brownish, with 8–9 small setae on posteromedial part and large group of small setae on both laterodorsal parts. — Legs. Coxae and femora yellow, setae of coxae mostly very thin and pale, with a few stronger and darker setae on distal parts. Tibiae and tarsi brownish,



Figs. 4–9. *Dinempheria enigmata* sp. n., male hypopygium. 4–6. tergal, sternal and lateral views; 7. apex of tergal submedian lobe, sternal view; 8. gonostylus; 9. aedeagal structures, posterosternal view, twice enlarged.

tibial setae weak, longest about as long as tibial setae. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.94, bt2:t2 = 0.83, bt3:t3 = 0.63. — Wing. Fig. 3. Wing length 6.7 mm. Wing hyaline, surroundings of both ends of small cell slightly darkened. Sc ending in C distinctly proximally to middle of small cell, Sc2 ending in R1 near proximal end of small cell. Sc bearing no macrotrichia. Small cell about 4 times as long as wide. Cu fork proximal to M fork. M ratios? Cu ratios: 0.73, 1.33. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +,

Cu2: +. Haltere yellowish, knob apically darker. Abdomen. Tergites 1–2 yellow, with brown dorsal line, tergite 3 yellow with brown dorsal line and posterior margin, tergites 4–6 brown with yellowish anterolateral spots, tergite brown with yellow anterolateral corners and lateral margins. Sternites 1–5 yellow, sternites 6–7. — Hypopygium. Figs. 4–9, yellowish. Sternite 8 triangular, with 2 small anteromedian setae. Wide, setose tergal submedian lobes of tergite 9 with strong teeth on inner sides. Sternal lateral appendages wide and setose. Gonostylus long, slender, with some apical-subapical setae. Aedeagus large, apically bilobed with wide hook-like projections. — Female: Wing length 8.7 mm. Head as in male but posterior parts of head brownish and 1st flagellomere about 2.5 times as long as wide. Thorax as in male, but laterotergite covered with small setae. Abdominal tergites 1–3 yellow with brownish posterior edges and dorsal line, tergites 4–6 brownish with darker posterior edges and with small yellow anterolateral spots, tergite 7 yellowish. Sternites 1–3 yellow, sternites 4–6 yellow with narrow brownish posterior edges, sternite 7 yellow. Leg ratios: bt1:t1 = 0.85, bt2:t2 = 0.82, bt3: t3 = 0.64. M ratios: 0.59, 0.76. Cu ratios: 0.55, 1.11. Terminalia yellow, apical segment of cercus rounded, hypogynal valves wide, rounded, widely setose.

The new species evidently belongs to the genus *Dinempheria*, although the male hypopygium differs distinctly from the other species of this genus (Matile 1979). *Dinempheria* resembles *Mycomya* and the South American genus *Echinopodium* in having C ending in R5 at wing apex differing thus in wing venation from all the other genera of Mycomyinae (Matile 1973, 1974, 1976, Väisänen 1984). *Dinempheria* has setae on mediotergite like *Echinopodium* and several *Mycomya* species. *Dinempheria* differs from *Mycomya* and *Echinopodium* in having setose laterotergite and rounded eyes. Among other Mycomyinae, setose laterotergite is known from the Japanese *Neoempheria ornata* Okada, 1938. *Dinempheria* is similar to *Neoempheria* in having rounded eyes and a distinct subradial fold. The apex of antenna is more pointed in *Dinempheria* species, resembling more *Mycoleia* and some *Mycomya* species.

Distribution: Transvaal, Natal.

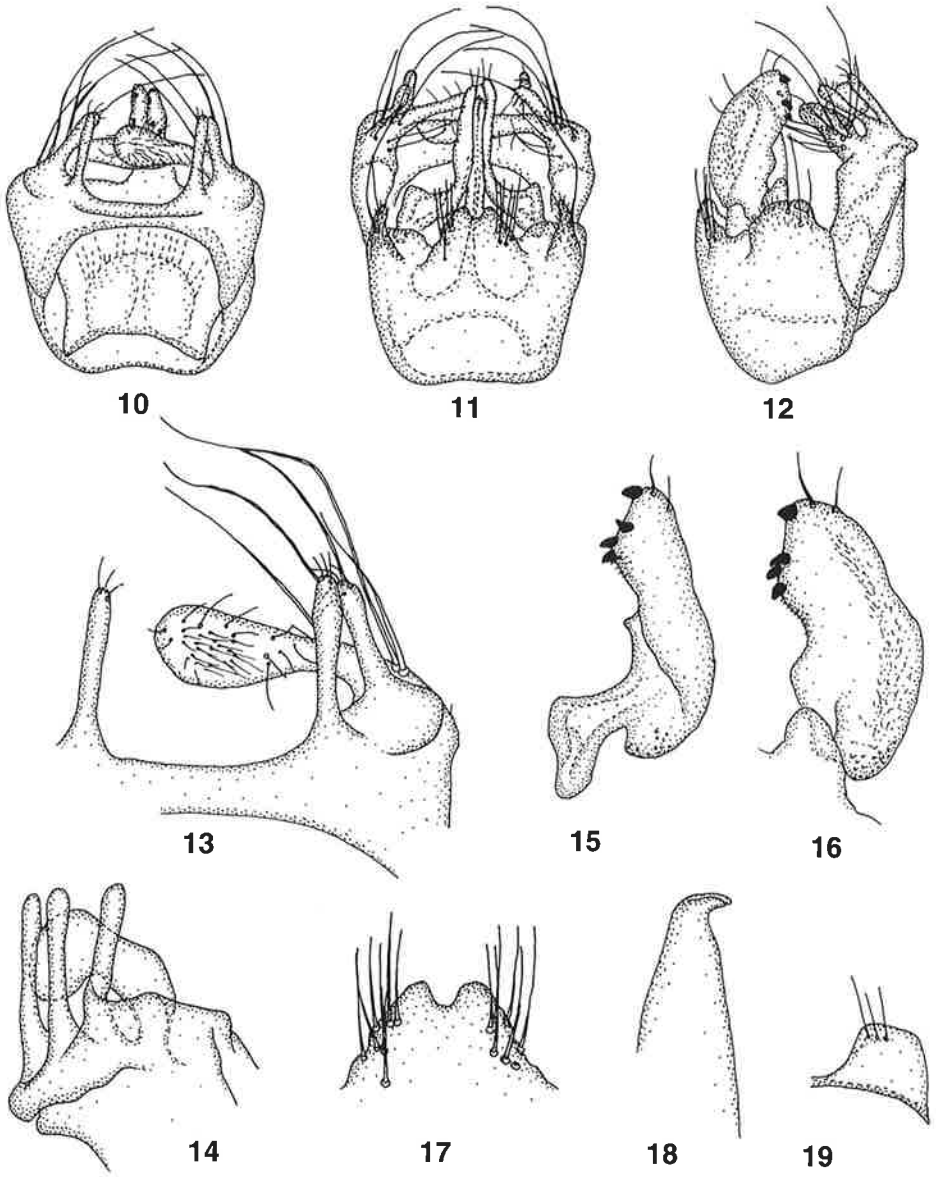
Biology: Both specimens were collected in December. The type locality belongs to the Transvaal section of the Drakensberg mountains, on the escarpment. The area has indigenous forest with a predominance of *Podocarpus*, exotic plantations (mainly pine and blue gum), numerous streams, and fairly high summer rainfall and is a 'mist-belt' region. The Cathedral Peak area is montane grassland with indigenous *Podocarpus* forest in valleys and on south-facing slopes.

Mycomya natalensis sp. n.

Figs. 10–19

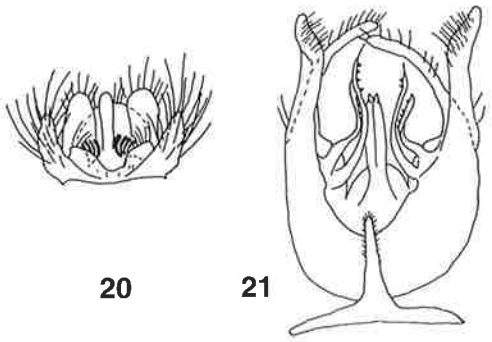
Type locality: Natal, Sunwich Port (South Africa).
Holotype: ♂, Sunwich Port NAT. X. 1951. 30.35S–30.32E (NAT, Type number 2151).

Description: Head. Palp, other mouthparts and face yellow, posterior parts of head brownish to brown. 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 3–4 longer setae. Mesoscutum with 3 indistinct brownish longitudinal stripes, anterolateral corners yellow. Mesanepisternum and mesokatepisternum yellow. Scutellum yellowish, with 2 long setae. Laterotergite yellowish. Mediotergite yellowish, without setae. — Legs. Coxae yellow, femora yellowish, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 with long apically curved spur with 2 small apical teeth and a small basal lobe. Leg ratios: bt1:t1 = 1.11, bt2:t2 = ?, bt3:t3 = 0.57. — Wing. Wing length 4.1 mm. Wing hyaline. Sc ending in R1 near or slightly distally to middle of small cell, Sc1 broken. Apical part of Sc bearing no macrotrichia. Small cell about as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.70, 0.87. Cu ratios: 0.70, 1.10. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellowish. — Abdomen. Tergites 1–5 brownish with yellowish lateral margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 10–19, yellowish. Tergite 8 with large lateral lobes with 3 long setae on both, and with narrow median part. Sternite 8 wide, posteriorly rounded, with several



Figs. 10–19. *Mycomya natalensis* sp. n., male hypopygium. 10–12. tergal, sternal and lateral views; 13–14. details of tergite 9, tergal and lateral views, twice enlarged; 15–16. gonostylus, different views, twice enlarged; 17. sternal submedian appendages, twice enlarged; 18. apex of aedeagus, lateral view, twice enlarged; 19. left half of tergite 8.

apical subapical setae. Processus of tergite 9 consists of 2 pairs of widely separated cone-like appendages. Tergal lateral appendages long, slender, curving medially, apically wider and rounded, with several long basal setae laterally. Sternal submedian appendages wide, only apically separated, with several long setae. Gonostylus slighly slender, with 4 apical-subapical teeth. Apex of aedeagus long, slightly hook-like. — Female: Unknown.



Figs. 20–21. *Mycomya lightfooti* Edwards, 1925, male hypopygium, tergal and sternal views. — Redrawn from Edwards 1925.

M. natalensis belongs to the large species group *M. marginata* of subgenus *Mycomya* s. str. South African *M. lightfooti* Edwards, 1925, described from Oudebosch, Caledon Division, also belongs to this species group, but can be easily distinguished on the basis of male hypopygium (Figs. 20–21) from *M. natalensis* and the other species here described. *M. lightfooti* is dark species, with 2 scutellar bristles, basitarsus 1 slightly longer than tibia 1, coxa 2 with long, curved spur, Sc ending in C, small cell about twice as long as wide, and wing length about 4 mm (Edwards 1925).

Distribution: Natal.

Biology: The holotype was collected in October. The type locality apparently is coastal bush tending toward dune forest in which the dominant tree would be *Syzygium*. In such bush/forest areas humidity is high and the substratum is basically beach sand, sometimes consolidated and with a thin humus layer produced by rotting litter.

Mycomya londti sp. n.

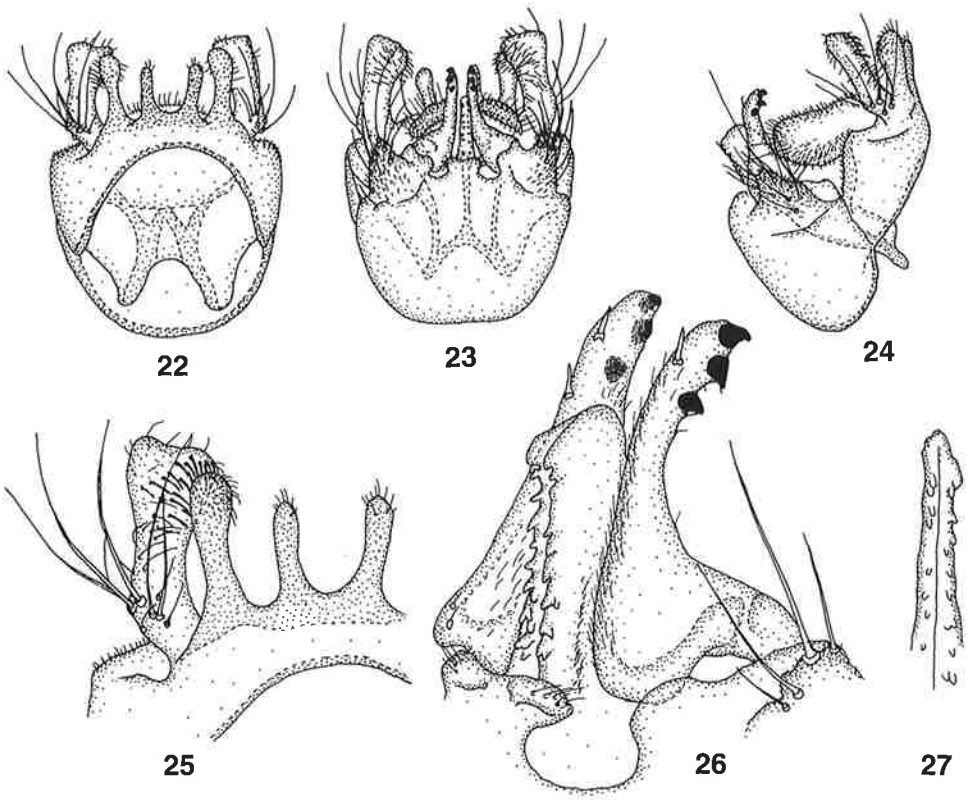
Figs. 22–27

Type locality: Natal, Cathedral Peak (South Africa).

Holotype: ♂, South Africa: Natal Cathedral Peak area 2829 Cc 16–18. XII. 1977 JGH Londt (NAT, Type number 2150).

Paratypes: South Africa, Natal Cathedral Peak area 2829 Cc 16–18. XII. 1977 JGH Londt (♀? NAT); Natal, 75 km WSW Estcourt, Cathedral Peaks For. Sta., 1500 m, 14.XII. 1979, S. & J. Peck (♂ MZH); same locality, 1700 m, 21–31. XII. 1979, S. & J. Peck (17 ♂♂ 7 ♀♀ MZH, 27 ♂♂ 7 ♀♀ CNC).

Description: Head. Palp and other mouthparts light brownish, anteclypeus and face yellow, posterior parts of head brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere 2.5–3 times, 2nd 1.5–2 times, as long as wide. — Thorax. Pronotum yellow, with 4 longer setae. Mesoscutum yellow, posteriorly yellowish, with 3 brown longitudinal stripes, middle stripe with narrow yellow median line. Mesanepisternum yellowish. Mesokatepisternum yellowish, ventral part usually darker. Scutellum yellowish, with 2 long setae and often with 2 shorter setae. Laterotergite brownish. Mediotergite brownish, without setae. — Legs. Coxae and femora yellow, coxa 3 sometimes with brownish lateral spot, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 with long curved spur with 2 small apical teeth. Leg ratios: bt1:t1 = 1.13–1.20, bt2:t2 = 0.75–0.83, bt3:t3 = 0.56–0.69. — Wing. Wing length 3.9–5.1 mm. Wing hyaline, small cell very slightly darkened. Sc ending in R1 distally to middle of small cell, Sc1 missing. Apical part of Sc bearing 5–20 macrotrichia. Small cell 1.0–1.5 times as long as wide. Cu fork below or proximal to M fork. M ratios: 0.53–0.67, 0.67–0.90. Cu ratios: 0.71–0.80, 1.08–1.27. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellowish, knob brownish. — Abdomen. Tergite 1 brownish with narrow yellow lateral and posterior margins, tergites 2–5 brownish with yellowish posterior margins, tergites 6–7 brownish. Sternites 1–5 yellow, 6–7 brownish. — Hypopygium. Figs. 22–27, yellowish. Tergite 8 narrow, band-like, without setae. Sternite 8 wide, apically rounded, without setae. Processus of tergite 9 consists of 2 pairs of cone-like appendages. Tergal lateral appendages relatively long, apically wider, blunt-tipped, with long basal setae laterally, and several small dark spines on inner side near apex. Sternal submedian appendages small, with some small setae. Sternal lateral appendages short, with several long setae. Gonostylus long, slender, with 3 apical-subapical teeth. Aedeagus long, apically bilobed, with small tooth-like structures along sternal margin. — Female: Wing length 4.0–6.0 mm. Head and thorax as in male. Abdominal tergites 1–5 brown with widely yellow posterior margins, tergites 6–7 brown. Sternites 1–5 yellow, 6–7 brownish with



Figs. 22–27. *Mycomya londti* sp. n., male hypopygium. — 22–24. tergal, sternal and lateral views; 25. detail of tergite 9, twice enlarged; 26. gonostyli and apex of aedeagus, laterosternal view, twice enlarged; 27. apex of aedeagus, sternal view, twice enlarged.

yellowish posterior margins. Leg ratios: bt1:t1 = 1.09–1.21, bt2:t2 = 0.77, bt3: t3 = 0.59. M ratios: 0.56–0.68, 0.68–0.81. Cu ratios: 0.60–0.61, 0.90–0.97. Terminalia yellow, apical segment of cercus oval, hypogynal valves narrow, apically tapering, with 3–4 setae apically-subapically.

M. londti belongs to species group *M. marginata* of subgenus *Mycomya* s.str. It resembles *M. natalensis* n. sp., but easily differs on the basis of details in male hypopygium.

Distribution: Natal.

Biology: All specimens were collected in December. The whole material originated in the Cathedral Peak area, which is primarily montane grassland with *Podocarpus* forest in valleys and south-facing slopes. High altitudes receive high summer rainfall.

***Mycomya* sp.**

Material examined: Natal, Eshowe Dlinza Forest Reserve, 450 m, 2831 Cd, 20–23.XI.1978, J. G. H. Londt (♀ NAT).

Description: Head. Palp and other mouthparts brownish, anteclypeus and face, 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 4 longer setae. Mesoscutum brownish, anterolateral corners yellow. Mesanepisternum and mesokatepisternum yellow. Scutellum yellowish, with 2 long setae. Laterotergite brown. Mediotergite brown, with 3 relatively long setae. — Legs. Coxae yellow, femora yellowish, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 without

spur. Leg ratios: bt1:t1 = 1.02, bt2:t2 = ?, bt3:t3 = ? — Wing. Wing length 4.2 mm. Wing hyaline. Sc ending in C near or slightly distally to middle of small cell, Sc2 ending in R1 near middle of small cell. Apical part of Sc bearing no macrotrichia. Small cell twice as long as wide. Cu fork slightly distal to M fork. M ratios: 0.46, 0.53. Cu ratios: 0.82, 1.35. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellowish, knob brownish. — Abdomen. Tergites 1–5 brown with narrow yellow lateral and posterior margins, 6–7 brownish to brown. Sternites 1–5 yellow, 6–7 brownish. — Terminalia yellow, apical segment of cercus oval, hypogynal valves wide, rounded, widely setose.

This female differs from the other South African *Mycomya* species by having setae on mediotergite of thorax. It apparently belongs to the species group *M. marginata*. It may be a female of *M. lightfooti* Edwards, 1925, but Edwards (1925) did not mention the presence or absence of setae on mediotergite.

Biology: Dlinza forest is indigenous low altitude (about 600 m) 'coastal scarp forest' of mixed plant communities and with high humidity and moderate to high summer rainfall.

Mycomya edra sp. n.

Figs. 28–37

Type locality: Natal, Cathedral Peak (South Africa).

Holotype: ♂, South Africa: Natal Cathedral Peak area 2829Cc 16–18. XII. 1977 JGH Londt (NAT, Type number 2152).

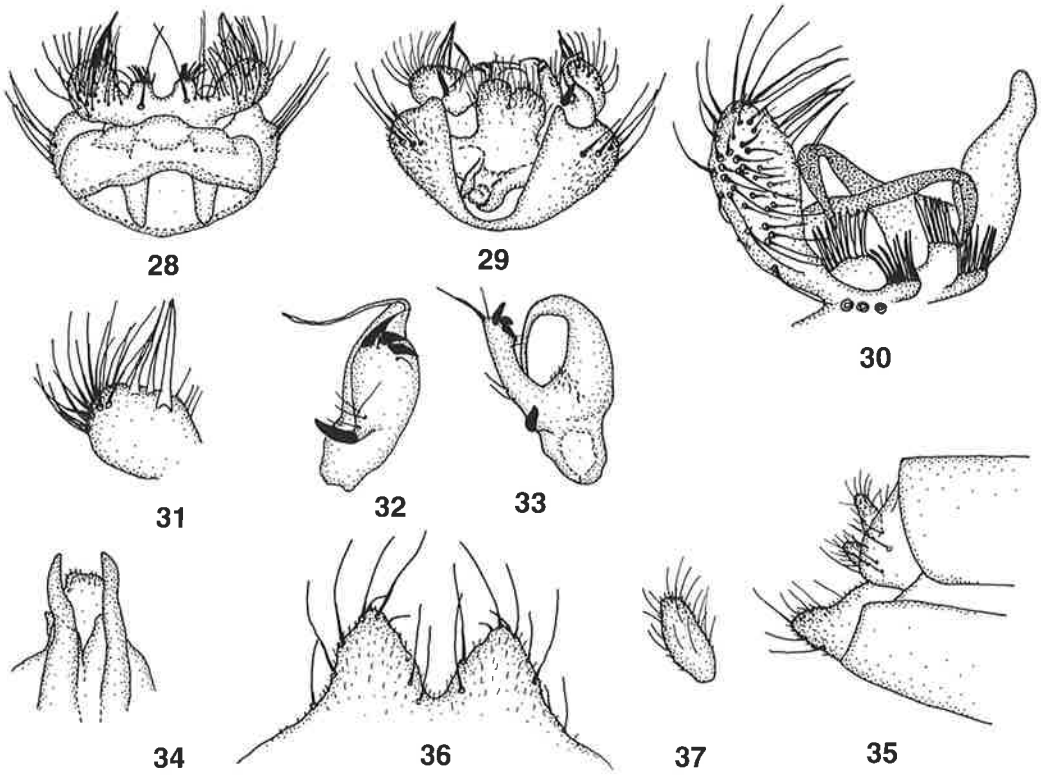
Paratypes: South Africa, Natal Cathedral Peak area 2829Cc 16–18. XII. 1977 JGH Londt (2 ♂♂ 6 ♀♀ NAT); Natal, 75 km WSW Estcourt, Cathedral Peaks For. Sta., 1760 m, 21–31. XII. 1979, S. & J. Peck (6 ♂♂ 1 ♀ CNC, 6 ♂♂ MZH).

Description: Head. Palp and other mouthparts brownish, anteclypeus and face yellow, posterior parts of head brownish to brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 4 times, 2nd 2.5 times as long as wide. — Thorax. Pronotum yellow, with 3-4 longer setae. Mesoscutum yellow, posteriorly yellowish, with 3 brownish, partially fused longitudinal stripes. Mesanepisternum yellowish to brownish. Mesokatepisternum light brownish, ventral part darker. Scutellum light brownish, with 4 long setae. Laterotergite brownish. Mediotergite brownish, without setae. — Legs. Coxae yellow, femora yellowish, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.79–0.86, bt2:t2 = 0.63–0.71, bt3:t3 = 0.57–0.58. — Wing. Wing length 3.5–4.1 mm. Wing hyaline. Sc ending in R1 slightly distally to middle of small cell, Sc1 missing or broken. Apical part of Sc bearing 3–11 macrotrichia. Small cell 1.5–2.0 times as long as wide. Cu fork distal to M fork. M ratios: 0.78–0.89, 1.06–1.20. Cu ratios: 0.93–1.00, 1.43–1.61. Macrotrichia: M petiole: 0, M1: 0–4, M2: 0. Cu petiole: 0, Cu1: 0, Cu2: 0. Haltere yellowish, knob often brownish. — Abdomen. Brownish to brown. — Hypopygium. Figs. 28–34, yellowish. Tergite 8 narrow, band-like, with several long setae along posterior margin. Sternite 8 wide, apically rounded, bare. Tergite 9 with 2 pairs of submedian combs of about 10 spines in each and 1 pair of long dark curved hooks. Tergal lateral appendages wide, apically rounded, widely setose, with 3–5 wide, flattened, curved subapical setae along inner margin. Gonostylus with 1 long apical seta, 2–3 dark subapical teeth, and middle part with long curved spur and 1 long dark spine-like tooth. Sternal submedian filaments missing. — Female: Wing length 3.9–4.2 mm. Head and thorax as in male. Abdomen yellowish, posterior margins of tergites 1–6 brownish, tergite 7 entirely brownish, sternites yellow. Leg ratios: bt1:t1 = 0.82–0.88, bt2:t2 = 0.69, bt3: t3 = 0.56–0.57. M ratios: 0.80–0.93. Cu ratios: 0.83–1.15, 1.32–2.00. Terminalia as in Figs. 35–37, yellow, apical segment of cercus relatively long, hypogynal valves apically tapering, with several long setae along posterior margin.

M. edra belongs to the species group *M. trilineata* of the subgenus *Mycomyopsis*. The shape of tergal lateral appendages slightly resembles e.g. that of Palaearctic *M. affinis* (Staeger, 1840), but differs distinctly e.g. in the structure of gonostylus. The only previously known Afrotropical species of *Mycomyopsis*, *M. malkini* Väisänen, 1983, differs distinctly from *M. edra*, e.g. in the narrow shape of tergal lateral appendages (see Väisänen 1983).

Distribution: Natal.

Biology: The whole material was collected in the Cathedral Peak area (see *M. londti*) in December.



Figs. 28–37. *Mycomya edra* sp. n. — 28–29. male hypopygium, tergal and sternal views; 30. detail of tergite 9, twice enlarged; 31. tergal lateral appendage showing the flattened spines, sternal view, twice enlarged; 32–33. gonostylus, different views, twice enlarged; 34. apex of aedeagus, sternal view, twice enlarged; 35. female terminalia, lateral view; 36. hypogynal valves, sternal view, twice enlarged; 37. cercus, lateral view, twice enlarged.

***Mycomyiella irwini* sp. n.**

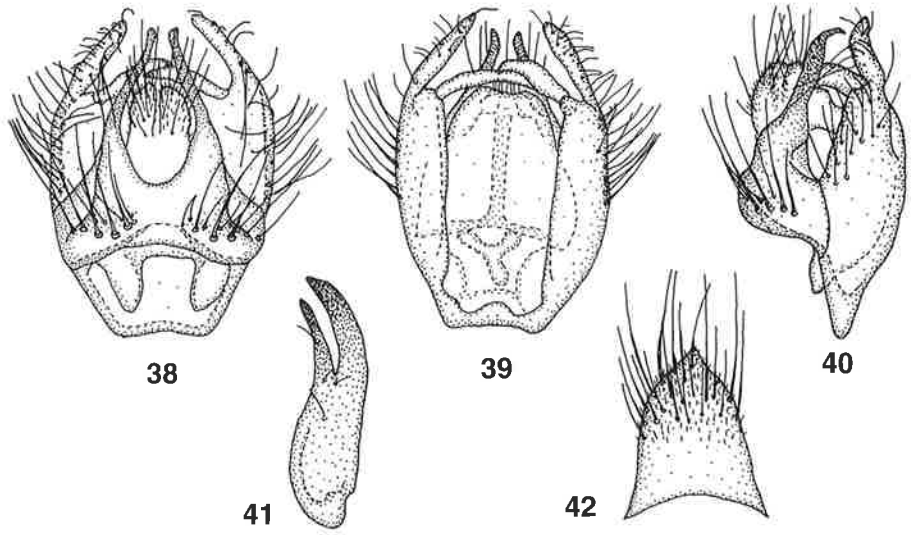
Figs. 38–42

Type locality: Natal, Pietermaritzburg (South Africa).

Holotype: ♂, South Africa, Natal Pietermaritzburg Belfort 15-V-73 ME Irwin; (2930 Cb) (NAT, Type number 2153).

Paratypes: Natal, Cathedral Peak area, indigenous forest, 2829CC, 26–27. XII. 1977, R. M. Miller (3 ♂♂ NAT); Natal, 75 km WSW Estcourt, Cathedral Peaks For. Sta., 1500 m, 14. XII. 1979, S. & J. Peck (10 ♂♂ 4 ♀♀ MZH); same locality and collectors, 1700 m, XII. 1979 (3 ♂♂ 3 ♀♀ CNC).

Description: Head. Palp and other mouthparts brown, anteclypeus and face yellow, posterior parts of head brownish, ocellar area dark brown. Antenna yellowish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 1.5 times, 2nd 1.0 times as long as wide. — Thorax. Pronotum yellow, with 5 longer setae. Mesoscutum brownish to dark brown with 3 yellow to yellowish longitudinal stripes, middle stripe with narrow brown median line. Mesanepisternum and mesokatepisternum yellow. Scutellum brownish to brown, with 2 long setae. Laterotergite brownish to brown. Mediotergite brown, without setae. — Legs. Coxae yellow, femora light brownish, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.85–0.93, bt2:t2 = 0.65–0.69, bt3:t3 = 0.55–0.59. — Wing. Wing length 3.3–4.0 mm. Wing hyaline, apical third of wing and surroundings of small cell slightly darker. Sc ending in R1 slightly distally to middle of small cell, Sc1 missing. Apical part of Sc bearing 6–10 macrotrichia. Small cell 1.0–2.0 times as long as wide. Cu fork slightly distal to



Figs. 38–42. *Mycomyiella irwini* sp. n., male hypopygium. — 38–40. tergal, sternal and lateral views; 41. gonostylus, twice enlarged; 42. sternite 8.

M fork. M ratios: 0.58–0.66, 0.70–0.95. Cu ratios: 0.71–0.77, 1.09–1.37. Macrotrichia: M petiole: 0, M1: +, M2: 0–3. Cu petiole: 0, Cu1: 0, Cu2: 0. Haltere yellowish, knob brownish. — Abdomen. Tergite 1 entirely yellow or posterior part brownish, tergite 2 yellow, 3 brown, 4 brown with large yellow lateral spot or yellow with brown dorsomedian line, tergites 5–6 brown, 7 yellow. Sternites 1–4 yellow, 5–6 brown, 7 yellow. — Hypopygium. Figs. 39–43, yellow. Tergite 8 relatively wide with 4–5 long setae along lateral parts of posterior margin. Sternite 8 very large and long, posteriorly pointed, with many long setae on posterior half. Tergal submedian appendages long and slender. Sternal lateral appendages relatively long, basally narrower. Gonostylus long, slender, apically deeply bilobed. Aedeagus large. — Female: Wing length 3.6–4.0 mm. Head and thorax as in male. Leg ratios: bt1:t1 = 0.86–0.87, bt2:t2 = 0.64–0.68, bt3: t3 = 0.54. M ratios: 0.50–0.64, 0.67–0.86. Cu ratios: 0.63–0.68, 1.06.Abdominal tergite 1 yellow with brownish posterior dorsal spot, tergite 2 yellow, tergites 3–7 brownish to brown, tergites 4 and 7 sometimes with yellowish lateral spot. Sternites 1–3 yellow, 4–6 brownish, 7 brown or yellowish with brownish lateral spot. Terminalia yellow, apical segment of cercus short, rounded, hypogynal valves wide apically rounded, with several short scattered setae and a few slightly longer apical-subapical setae.

Diagnosis: *M. irwini* differs from *M. camerounensis* Matile, 1973, and *M. sericulata* Matile, 1973, on the basis of the male hypopygium (see Matile 1973).

Distribution: Natal.

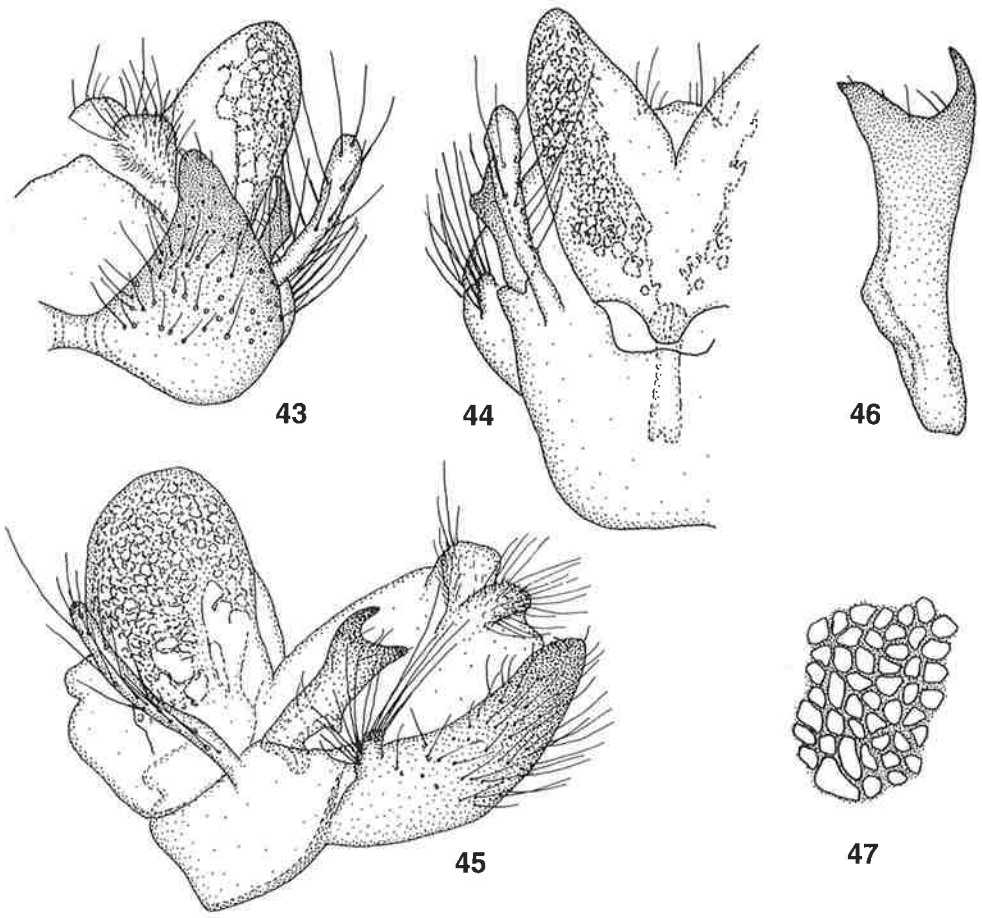
Biology: The specimens were collected in May and December. The type locality is situated in the outskirts of the city of Pietermaritzburg, on a ridge of about 1000 m. This is an old run-down farm with mixed (indigenous and exotic) bushy vegetation surrounded by plantations (mostly black wattle). This is a 'mist-belt' area with a fairly high amount of (mostly summer) rainfall. The other material was collected in the indigenous *Podocarpus* forests (see *M. londti*).

Neoempheria transvaalensis sp. n.

Figs. 43–47

Type locality: Transvaal, near Barberton (South Africa).

Holotype: ♂, South Africa: Transvaal 8 km NW Barberton on Badplass Rd SE 2530 DD 6–8.iv.1985 J. Londt. Bushveld long grass (NAT, Type number 2154).



Figs. 43–47. *Neoempheria transvaalensis* sp. n., male hypopygium. — 43–45. tergal, sternal and lateral views; 46. gonostylus, twice enlarged; 47. detail of the net-like structure of membranous aedeagal lobe, twice enlarged.

Paratype: Transvaal, Nyl Rivier, 8 km SW of Nylstroom, bushveld near river, Malaise trap coll., 29–31.I.1978, J. Londt (1 ♂ NAT).

Description: Head. Palp and other mouthparts brown, face yellowish, posterior parts of head yellow, ocellar area dark brown. Antenna brownish, scape, pedicel and base of 1st flagellomere yellowish. 1st flagellomere about 1.5 times, 2nd as long as wide. — Thorax. Pronotum yellow, with 5 longer setae. Mesoscutum yellowish with brownish median stripes. Mesanepisternum and mesokatepisternum yellow. Scutellum light brownish, with 2–3 long setae. Laterotergite yellow, with small setae. Mediotergite yellow, dorsal part brownish, without setae. — Legs. Coxae and femora yellow, setae thin and yellow, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.92, bt2:t2 = 0.76–0.91, bt3:t3 = 0.61–0.75. — Wing. Wing length 3.8–4.6 mm. Wing hyaline, wing apex slightly darkened, surroundings of Sc2, both ends of small cell, both ends of M petiole and distal end of Cu petiole distinctly darkened. Sc ending in C proximally to middle of small cell, Sc2 ending in R1 near proximal end of small cell. Apical part of Sc bearing no macrotrichia. Small cell 4–5 times as long as wide. Cu fork below M fork. M ratios: 0.49–0.52, 0.60–0.63.

Cu ratios: 0.73–0.89, 1.35–1.50. Macrotrichia: M petiole: 0, M1: + (apically), M2: 0. Cu petiole: +, Cu1: 0, Cu2: +. Haltere yellowish, knob brownish. — Abdomen. Yellow, tergites 1–2 and 4 with small brown dorsal spot near posterior edge, tergites 3 and 5 with brown dorsal line and posterior edges, tergites 6–7 yellow. Sternites yellow. — Hypopygium. Figs. 43–47, yellow, with dark brown apical parts of wide apically tapering tergal submedian appendages. Tergite 8 wide, band-like, with about 10 long setae along posterior margin. Sternite 8 triangular, with very small apical-subapical setae. Sternal lateral appendages very narrow, setose. Gonostylus relatively slender, apically slightly bilobed. Aedeagus with wide lobes with unique net-like pattern. — Female: Unknown.

Diagnosis: *N. transvaalensis* differs from the other *Neoempheria* species on the basis of the male hypopygium and the colouration of wing, thorax and abdomen (see Matile 1972, 1973, Delobel & Matile 1975).

Distribution: Transvaal.

Biology: The specimens were collected in January and April, the holotype with a Malaise trap. The type locality is thick *Acacia* thornveld (*Acacia* woodland), with long grass between bushes and trees. The area has high summer humidity and moderate to high summer rainfall. Nyl River has grass, thick bushes and *Acacia* trees along fairly rocky banks of the stream.

Neoempheria sp. 1

Material examined: Natal, 75 km WSW Estcourt, Cathedral Peaks For. Stn., 1500 m, 14. XII. 1979, S. & J. Peck (♀ CNC).

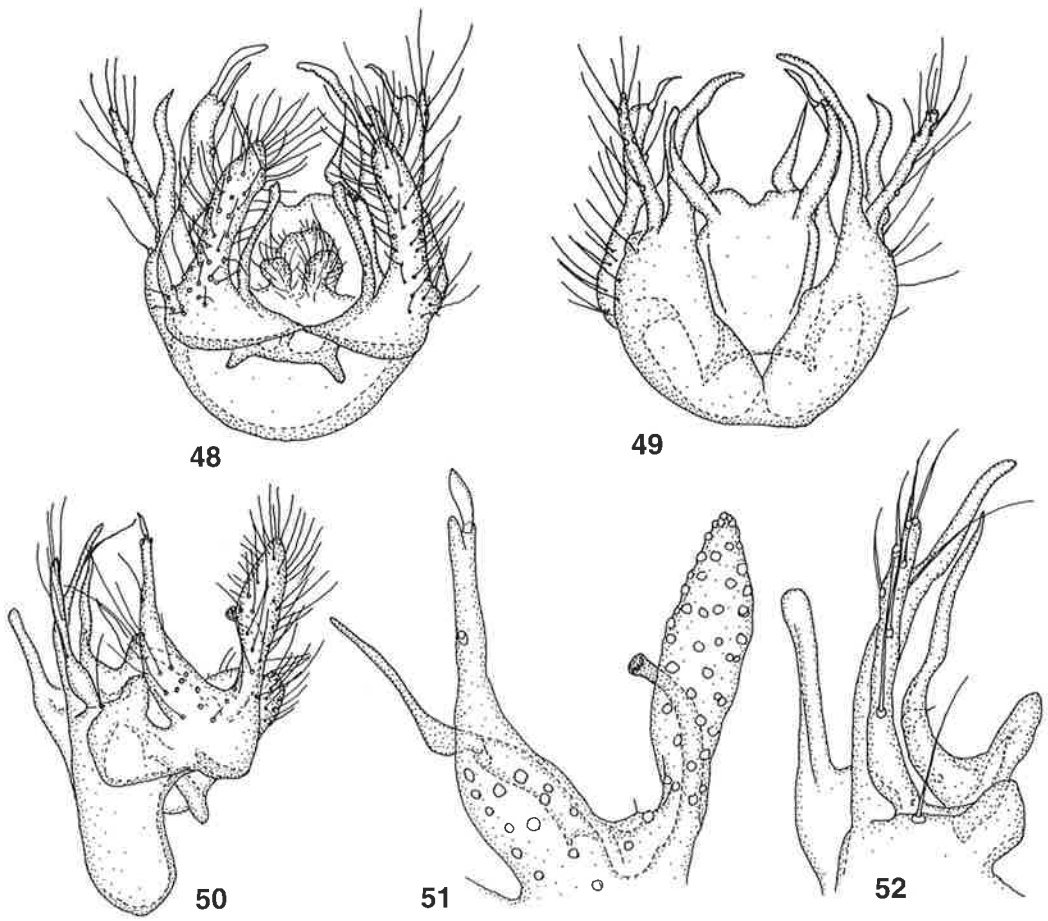
Description: Head. Palp and other mouthparts brownish, anteclypeus and face yellowish, posterior parts of head light brownish, ocellar area dark brown. Antenna yellowish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 1.5 times, 2nd as long as wide. — Thorax. Pronotum yellow, with about 6 longer setae. Mesoscutum yellowish with 3 brownish fused longitudinal stripes. Mesanepisternum and mesokatepisternum yellow. Scutellum yellowish, with 2 long setae. Laterotergite yellow, bare. Mediotergite brown, without setae. — Legs. Coxae and femora yellow, tibiae and tarsi brownish. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.97, bt2:t2 = 0.66, bt3:t3 = ? — Wing. Wing length 5.5 mm. Wing hyaline, apical fourth of wing distinctly darkened, middle part of wing with wide dark band from C above small cell to surroundings of Cu2, middle part of band narrower. Sc ending in C distally to middle of small cell, Sc2 ending in R1 slightly distally to middle of small cell. Apical part of Sc bearing about 25 macrotrichia. Small cell twice as long as wide. Cu fork slightly proximal to M fork. M ratios: 0.41, 0.52. Cu ratios: 0.70, 1.15. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellow. — Abdomen. Tergite 1 yellow, 2 with small dorsal spot beyond middle of tergite, tergites 3 brown with anterior and lateral margins yellow, tergite 4 brown with narrow yellow lateral margins, tergites 5–6 brown, 7 yellow with wide brown lateral margins. Sternites yellow. — Terminalia yellow, apical segment of cercus oval, hypogynal valves wide, rounded, widely setose, setae relatively thin.

This female does not belong to the species described above, but apparently represents another undescribed species. However, since only one female is known, the species is not named here.

Neoempheria sp. 2

Material examined: N. Transvaal, Entabeni For. Station, Zoutpansberg Range, grassland, 2230 CC, I. 1975, Stuckenberg (♀ NAT).

Description: Head. Palp and other mouthparts brownish, anteclypeus and face yellowish, posterior parts of head light brownish, ocellar area dark brown. Antenna yellowish, scape, pedicel and base of 1st flagellomere yellow. 1st flagellomere about 1.5 times, 2nd as long as wide. — Thorax. Pronotum yellow, with about 6 longer setae. Mesoscutum brownish with 3 yellow longitudinal stripes, anterolateral corners yellow. Mesanepisternum and mesokatepisternum yellow. Scutellum brownish, with 2 long setae. Laterotergite brownish, bare. Mediotergite yellow, dorsal part brownish, without setae. — Legs. Coxae and femora yellow, tibiae and tarsi



Figs. 48–52. *Parempheriella australis* sp. n., male hypopygium. — 48–50. tergal, sternal and lateral views; 51. detail of tergite 9, lateral view, twice enlarged; 52. gonostylus and details of sternal synsclerite, sternal view, twice enlarged.

brownish. Coxa 1 without special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = 0.93, bt2:t2 = 0.68, bt3:t3 = 0.67. — Wing. Wing length 4.1 mm. Wing colour pattern as in sp. 1. Sc ending in C proximally to middle of small cell, Sc2 ending in R1 proximally to middle of small cell. Apical part of Sc bearing about 10 macrotrichia. Small cell twice as long as wide. Cu fork below M fork. M ratios: 0.39, 0.45. Cu ratios: 0.84, 1.30. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellow. — Abdomen. Tergites 1–2 yellow with brown posterior dorsal spot, tergite 3 yellow with brown dorsal line and posterior margins, tergite 4 yellow with brown posterior margin, tergite 5 brown, tergite 6 brown with small yellow anterolateral spot, tergite 7 brown with anterior yellow dorsal spot. Sternites yellow. — Terminalia yellow, apical segment of cercus oval, hypogynal valves wide, rounded, widely setose, setae relatively thin.

This female resembles the previous species in several respects, but apparently represents another species. However, since only a female is known, it is not named.

***Parempheriella australis* sp. n.**
Figs. 48–52

Type locality: Natal, Cathedral Peak (South Africa).
Holotype: ♂, RSA, Natal, 75 km WSW Estcourt, Cathedral Peaks For. Sta., 1700 m, 21–31. XII. 1979 S. & J. Peck (MZH).

Description: Head. Yellow, posterior parts of head slightly darker, ocellar area dark brown. Antenna yellow. 1st flagellomere about twice, 2nd 1.5 times as long as wide. — Thorax. Pronotum yellow, with 4–5 longer setae. Mesoscutum yellow with 3 brownish posteriorly fused longitudinal stripes, middle stripe with narrow yellow median line. Mesanepisternum and mesokatepisternum yellow. Scutellum yellow, with 2 long setae. Laterotergite yellow, bare. Mediotergite yellow, bare. — Legs. Coxae and femora yellow, tibiae and tarsi brownish. Coxa 1 with special setae. Coxa 2 without spur. Leg ratios: bt1:t1 = ?, bt2:t2 = 0.67, bt3:t3= ? — Wing. Wing length 3.9 mm. Wing hyaline. Sc ending in R1. Apical part of Sc bearing 10–11 macrotrichia. Cu fork slightly proximal to M fork. M ratios: 0.62, 0.86. Cu ratios: 0.77, 1.15. Macrotrichia: M petiole: 0, M1: +, M2: +. Cu petiole: +, Cu1: +, Cu2: +. Haltere yellowish. — Abdomen. Yellow, dorsally slightly darker. — Hypopygium. Figs. 48–52, yellow. Tergite 8 narrow, band-like, with wide lateral parts, each bearing 3–4 setae along posterior margin. Sternite 8 wide, apically rounded, with indistinct row of setae in middle part. Tergite 9 with long slender internal tergal apophysis and long, relatively slender, setose tergal apical processus. External sternal stylus long, slender, with several setae, sternal apical processus long and curved. — Female: Unknown.

P. australis can apparently be placed in the species group *P. isoseta*. It resembles e.g. *P. flava* (Matile, 1973) known from Cameroun, Central Africa and Fernando-Po, but differs in details of hypopygium.

Distribution: Natal.

Biology: The holotype was collected from a montane area (see *M. londti*) in December.

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