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A review of the Afrotropical genus *Mycomyiella* Matile, 1973 (Diptera, Mycetophilidae, Mycomyini), with the description of six new species

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Abstract

Systematics of the genus *Mycomyiella* are reviewed. A generic diagnosis, description and illustrations of the males are provided. Nine species are recognized, of which 6 are newly described: *M. diseta* new species (Tanzania), *M. elegans* new species (Tanzania), *M. ghanaensis* new species (Ghana), *M. kaputuensis* new species (Tanzania), *M. tannerorum* new species (Tanzania), and *M. wangi* new species (Tanzania). The phylogeny of *Mycomyiella* is outlined, placing it as the sister group of *Mycomya* Rondani, 1856. The monophyly of *Mycomyiella* is well supported, and two species groups can be recognized, one including *M. camerounensis* Matile, 1973, *M. irwini* Väisänen, 1994, *M. ghanaensis*, *M. securiculata* Matile, 1973, *M. diseta* and *M. kaputuensis*, the other including *M. elegans*, *M. tannerorum* and *M. wangi.*

Key words: Diptera, Mycetophilidae, Mycomyini, *Mycomyiella,* Afrotropical, systematics

Introduction

The genus *Mycomyiella* was erected by Matile based on *M. camerounensis* Matile, 1973 from Cameroon and *M. securiculata* Matile, 1973 from the Island of Fernando-Poó (Bioko). Väisänen later added *M. irwini* Väisänen, 1994 from Natal in South Africa. In the present paper *M. ghanaensis* new species from Ghana and *M. diseta* new species, *M. elegans* new species, *M. kaputuensis* new species, *M. tannerorum* new species and *M. wangi* new species from Tanzania are described and figured, thus raising the number of species in the genus to nine. There are according to Matile (1973) about 20 undescribed species of this genus in the collections at the Muséum National d'Histoire Naturelle in Paris. Unfortunately, these were not available for loan.

Mycomyiella is one of 11 genera in the tribe Mycomyini, a tribe common and widespread in the Afrotropical region. With the exception of *Echinopodium* Freeman, 1951 and

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Vecella Wu and Yang, 1996, the remaining 9 genera: *Dinempheria* Matile, 1979, *Moriniola* Matile, 1976, *Mycoleia* Väisänen, 1984, *Mycomya* Rondani, 1856, *Mycomyiella* Matile, 1973, *Neoempheria* Osten Sacken, 1878, *Parempheriella* Matile, 1974, *Syndocosia* Speiser, 1923 and *Viridivora* Matile, 1972, are all represented in the Afrotropical region.

The present study is based on material collected during an expedition to the Eastern Arc Mountains in Tanzania in 1990 by staff from the Zoological Museum, University of Bergen, Norway, and material collected in Ghana in 1993 and 1994 during a joint project between the Department of Zoology, University of Ghana, Legon, Ghana; Institute of Aquatic Biology, Accra, Ghana and Zoological Museum, University of Bergen, Norway between 1991 and 2000. The mycetophilids collected during these projects are now housed in the Zoological Museum, University of Oslo, Norway.

Material and methods

The material examined was mounted in Canada balsam on slides following the procedure outlined by Søli (1997). The general terminology follows Søli (1997). Measurements are given as ranges, followed by the mean when 4 or more specimens are measured; leg and wing measurements are given as mean value only. All measurements were made on slide-mounted specimens. The ratios are calculated according to Søli (1997).

All types of the new species are housed in the Zoological Museum, University of Oslo, Norway (ZMUN). Material of *M. irwini* was borrowed from the Zoological Museum, Helsinki, Finland (MZHF). Specimens of *M. camerounensis* and *M. securiculata* were not available for loan; they are kept in the Muséum National d'Histoire Naturelle, Paris, France (MNHN).

In addition to the *Mycomyiella* species, 7 genera are included in the phylogenetic analysis *Mycomya* Rondani, 1856 (Mycomyini), *Boletina* Staeger, 1840 and *Coelosia* Winnertz, 1863 (Gnoristini), and *Megalopelma* Enderlein, 1910, *Neuratelia* Rondani 1856, *Phthinia* Winnertz, 1863 and *Sciophila* Meigen, 1818 (Sciophilini). The following species were used in the study: *Boletina cincticornis* Walker, 1848, *B. erythropyga* Holmgren, 1883, *B. gripha* Dziedzicki, 1885, *B. villosa* Landrock, 1912, *Coelosia silvatica* Landrock, 1918, *Megalopelma nigroclavatum* Strobl, 1909, *Mycomya cinerascens* Macquart, 1826, *M. flavicollis* Zetterstedt, 1852, *M. nitida* Zetterstedt, 1852, *Neuratelia nigricornis* Edwards, 1941, *Phthinia humilis* Winnertz, 1863, and *Sciophila fenestella* Curtis, 1837.

Phylogenetic analysis

A total of 16 taxa were scored for 88 characters of which 65 characters were binary and 23 were multistate, Tables 1–2. The data matrix was built up using the computer program MacClade version 3.04 (Maddison and Maddison 1992). Missing and inapplicable data

were scored as "?". Of the 88 characters, characters 1–19, 21, 23–58, and 82–86 refer to general morphology, characters 20, 22, 59–62, and 65–67 refer to coloration, and characters 63, 64, 68–81, and 87–88 refer to male terminalia.

TABLE 1. Characters and states used in the phylogenetic analysis. The consistency index (ci), retention index (ri), and rescaled consistency index (rc) of the preferred tree are given in parenthesis.

1. *Head:* (0) wider than long; (1) width equal to or shorter than the length. (ci=0.33, ri=0.50, rc=0.17).
2. *Width of ocellar area:* (0) ocellar area longer than three times the length between left and right ocellus; (1) ocellar area shorter than three times the length (ci=0.50, ri=0.0 rc=0.0).
3. *Ocellar area:* (0) placed below upper margin of compound eye; (1) above upper margin of compound eye. (ci=0.25, ri=0.50, rc=0.13).
4. *Median ocellus:* (0) present; (1) absent. (ci=1.00, ri=1.00, rc=1.00).
5. *Face:* (0) arched ventromedially; (1) arched medially; (2) whole face arched; (3) flat. (ci=1.00. ri=1.00, rc=1.00).
6. *Face and clypeus:* (0) distinctly connected; (1) weekly connected; (2) entirely separated. (ci=0.67, ri=0.67, rc=0.44).
7. *Clypeus:* (0) setose laterally; (1) setose laterally and ventrally. (ci=1.00, ri=1.00, rc=1.00).
8. *Labrum:* (0) short; (1) long. (ci=0.50, ri=0.80, rc=0.40).
9. *Frons:* (0) bare; (1) evenly setose; (2) setose ventrally. (ci=1.00, ri=1.00, rc=1.00).
10. *Frontal tubercle:* (0) protruding; (1) pointed, apex strong; (2) pointed, apex weak. (ci=1.00, ri=1.00, rc=1.00).
11. *Small plate below frontal tubercle:* (0) weak or absent; (1) distinct; (2) fused with frontal tubercle. (ci=0.50, ri=0.50, rc=0.25).
12. *Cardo:* (0) present; (1) absent. (ci=1.00, ri=1.00, r =1.00).
13. *Palpomere 2*: (0) about one-third of the length of palpomere 3; (1) shorter than one-third of the length; (2) as long as palpomere 3. (ci=0.50, ri=0.60, rc=0.30).
14. *Palpomere 4:* (0) longer than palpomere 3; (1) equal to palpomere 3; (2) shorter than palpomere 3. (ci=0.50, ri=0.60, rc=0.30).
15. *Palpomere 5:* (0) longer than one and a half the length of palpomere 3; (1) shorter than one and a half the length; (2) much longer than palpomere 3. (ci=0.50, ri=0.0, rc=0.0).
16. *Sensilla of palpomere 3:* (0) situated laterally; (1) situated medially. (ci=1.00, ri=1.00, rc=1.00).
17. *Scape and pedicel:* (0) with normal setae; (1) with bristles. (ci=1.00, ri=1.00, rc=1.00).
18. *Flagellum:* (0) segments longer than wide; (1) segments approximately as long as wide. (ci=1.00, ri=0/0, rc=0/0).
19. *Flagellomere 2:* (0) of same length as flagellomere 3; (1) longer than flagellomere 3. (ci=1.00, ri=0/0, rc=0/0).
20. *Laterotergite:* (0) brightly coloured; (1) dark. (ci=0.25, ri=0.25, rc=1.00).
21. *Laterotergite:* (0) bare; (1) setose. (ci =1.00, ri=1.00, rc=1.00).
22. *Mediotergite:* (0) brightly coloured; (1) dark. (ci=1.00, ri=0/0, rc=0/0).
23. *Mediotergite:* (0) bare; (1) setose. (ci=0.50, ri=0.67, rc=0.33).
24. *Anepisternum:* (0) bare; (1) setose. (ci=1.00, ri=0/0, rc=0/0).
25. *Metepisternum:* (0) bare; (1) setose. (ci=1.00, ri=1.00, rc=1.00).

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TABLE 1 (continued)

26. *Scutum:* (0) with bare lines medially; (1) evenly setose. (ci=0.50, ri=0.50, rc=0.25).
27. *Anapleural suture:* (0) declining posteriorly; (1) double; (2) declining anteriorly. (ci=0.67, ri=0.50, rc=0.33).
28. *Anterior and posterior basalare:* (0) separate; (1) fused. (ci=1.00, ri=1.00, rc=1.00).
29. *Setae behind halter:* (0) absent; (1) 1–3 setae present. (ci=0.50, ri=0.75, r =0.38).
30. *Vestiture on wing membrane:* (0) small trichia only; (1) large and small trichia; (2) setae in addition to large and small trichia. (ci=1.00, ri=1.00, rc=1.00).
31. *M-fork:* (0) normal; (1) fading out near connection M_1/M_2. (ci=1.00, ri=0/0, rc=0/0).
32. *Vein M_1:* (0) shorter than one and a half the length of the stem of M; (1) between one and a half and two times the length; (2) longer than two times the length; (3) very much longer. (ci=0.60, ri=0.60, rc=0.36).
33. *Vein M_2:* (0) less than 1.2 times the length of the stem of M; (1) longer than 1.2 times the length; (2) much longer. (ci=0.75, ri=0.83, rc=0.63).
34. *Vein CuA_1:* (0) of about same length as the stem of CuA or shorter; (1) longer than the stem of CuA; (2) much longer. (ci=0.67, ri=0.50, rc=0.33).
35. *Vein CuA_2:* (0) less than 0.7 times the length of the stem of CuA; (1) longer than 0.7 times the stem of CuA; (2) much longer than the stem of CuA. (ci=0.40, ri=0.25, rc=0.10).
36. *Vein R_4:* (0) not at about straight angle to R_1/R_5; (1) at about straight angle to R_1/R_5. (ci=0.50, ri=0.67, rc=0.33).
37. *Vein Sc:* (0) ending in R_1; (1) ending in C. (ci=1.00, ri=1.00, rc=1.00).
38. *Vein Sc:* (0) short; (1) long. (ci=0.33, ri=0.0, rc=0.0).
39. *Vein Sc_1:* (0) with less than 10 setae: (1) with 10–12 setae; (2) with more than 12 setae. (ci=0.33, ri=0.20, rc=0.07).
40. *Vein Sc_2:* (0) present; (1) absent. (ci=0.50, ri=0.50, rc=0.25).
41. *Ventral surface of R_1:* (0) bare; (1) setose. (ci=0.50, ri=0.75, rc=0.38).
42. *Vein R_4:* (0) present; (1) absent. (ci=0.50, ri=0.67, rc=0.33).
43. *Ventral surface of R_5:* (0) bare; (1) setose. (ci=1.00, ri=1.00, rc=1.00).
44. *Costa:* (0) continues beyond R_5; (1) ends in R_5. (ci=0.50, ri=0.0, rc=0.0).
45. *Dorsal surface of subcosta:* (0) bare; (1) setose. (ci=1.00, ri=0/0, rc= 0/0).
46. *Ventral surface of subcosta:* (0) bare; (1) setose. (ci=1.00, ri=1.00, rc=1.00).
47. *Dorsal surface of crossvein tb:* (0) bare; (1) setose. (ci=0.50, ri=0.0, rc=0.0).
48. *Humerus:* (0) bare; (1) setose. (ci=0.50, ri=0.0, rc=0.0).
49. *Humerus:* (0) more or less oblique; (1) evenly curved. (ci = 1.00, ri = 1.00, rc = 1.00).
50. *Distal median plate:* (0) bare; (1) setose. (ci=1.00, ri=1.00, rc=1.00).
51. *Subcostal sclerite:* (0) bare; (1) setose. (ci=1.00, ri=1.00, rc=1.00).
52. *Tibial setae:* (0) normal; (1) basally in small furrows . (ci=1.00, ri=1.00, rc=1.00).
53. *Vestiture of tibia:* (0) with trichia and setae; (1) with setae only. (ci=1.00, ri=1.00, rc=1.00).
54. *Tibial trichia:* (0) irregular; (1) in rows. (ci=1.00, ri=1.00, rc=1.00).
55. *Tarsal trichia:* (0) irregular; (1) in rows. (ci=1.00, ri=1.00, rc=1.00).
56. *Spurs:* (0) of normal length; (1) reduced or minute. (ci=1.00, ri= 0/0, rc= 0/0).
57. *Empodium:* (0) well-developed; (1) reduced. (ci=0.50, ri=0.75, r=0.38).
58. *Abdominal sternites:* (0) without fold lines; (1) with median fold line; (2) with two submedian fold lines. (ci=1.00, ri=1.00, rc=1.00).

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TABLE 1 (continued)

59. *Tergite 2:* (0) brightly coloured; (1) bright with dark patches. (ci=0.50, ri=0.50, rc=0.25).
60. *Tergite 3:* (0) dark; (1) dark with bright patches. (ci=1.00, ri=0/0, rc=0/0).
61. *Tergite 4:* (0) brightly coloured; (1) bright with dark patches. (ci=1.00, ri=0/0, r =0/0).
62. *Tergite 6:* (0) dark; (1) brightly coloured with dark patches. (ci=1.00, ri=0/0, rc=0/0).
63. *Tergite 9:* (0) without two long setae; (1) with two long setae. (ci=1.00, ri=0/0, rc=0/0).
64. *Tergite 9 and gonocoxite:* (0) separated; (1) fused. (ci=0.50, ri=0.50, rc=0.25).
65. *Sternite 5:* (0) dark; (1) brightly coloured with dark patches. (ci=1.00, ri=1.00, rc=1.00).
66. *Sternite 6:* (0) dark; (1) brightly coloured with dark patches. (ci=1.00, ri=1.00, rc=1.00).
67. *Sternite 7:* (0) brightly coloured; (1) dark. (ci=0.50, ri=0.67, rc=0.33).
68. *Tergite 9:* (0) evenly tapering; (1) widest medially, or lobes spreading; (2) reduced posteriorly. (ci=0.67, ri=0.50, rc=0.33).
69. *Posterior invagination of tergite 9:* (0) shallow; (1) medium; (2) deep. (ci=1.00, ri=1.00, rc=1.00).
70. *Sternite 9:* (0) subquadrate; (1) pointed posteriorly. (ci=0.50, ri=0.0, rc=0.0).
71. *Gonocoxite:* (0) lateral parts long; (1) short; (2) short, apically thickened. (ci=0.67, ri=0.0, rc=0.0).
72. *Base of gonocoxite:* (0) arched; (1) subquadrate. (ci=0.50, ri=0.67, rc=0.33).
73. *Lateral prolongations of gonocoxite:* (0) arched; (1) subquadrate. (ci=1.00, ri=0/0, rc=0/0).
74. *Gonostylus:* (0) U-shaped; (1) V-shaped. (ci=0.33, ri=0.33, rc=0.11).
75. *Gonostylus:* (0) with 1–4 setae, or without setae; (1) with 5 or more setae. (ci=1.00, ri=0.0, rc=0.0).
76. *Gonostylus:* (0) simple; (1) shallowly furcated; (2) deeply furcated. (ci=0.40, ri=0.0, rc=0.0).
77. *Aedeagus:* (0) large; (1) small. (ci=1.00, ri=1.00, rc=1.00).
78. *Terminalia:* (0) less than one and a half times as long as wide; (1) longer. (ci=0.33, ri=0.33, rc=0.11).
79. *Lateral prolongations of gonocoxite:* (0) club-shaped; (1) subtriangular with rounded apex; (2) apparently reduced (ci=0.50, ri=0.0, rc=0.0).
80. *Gonocoxite lobes:* (0) normal; (1) prolonged. (ci=0.50, ri=0.0, rc=0.0).
81. *Gonocoxite:* (0) bare laterally; (1) setose. (ci=0.33, ri=0.0, rc=0.0).
82. *Crossvein tb:* (0) length equal to or shorter than five times the length of ta; (1) longer than five times the length of ta. (ci=0.20, ri=0.20, rc=0.04).
83. *Subcosta:* (0) bare; (1) with dorsal setae; (2) with dorsal and ventral setae. (ci=1.00, ri=1.00, rc=1.00).
84. *Palpomere 1:* (0) present; (1) reduced or absent. (ci=1.00, ri=1.00, rc=1.00).
85. *Tibial setae:* (0) normal; (1) basally in furrows. (ci=1.00, ri=1.00, rc=1.00).
86. *Spurs:* (0) spurs on mid and hind tibia about two times the length of spur on fore tibia; (1) distinctly longer than two times the length. (ci=0.50, ri=0.0, rc=0.0).
87. *Tergite 9:* (0) well-developed; (1) small or reduced. (ci=0.50, ri=0.67, rc=0.33).
88. *Tergite 9:* (0) lobes setose; (1) lobes bare. (ci=0.33, ri=0.0, rc=0.0).

TABLE 2. The character states for characters 1–88.

Character no:	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	2 0	2 1	2 2
M. camerounensis	?	?	?	1	?	?	?	?	?	?	?	0	?	?	?	?	?	?	?	?	?	?
M. diseta	0	1	1	1	0	1	0	0	0	0	1	0	1	1	0	1	1	0	0	0	0	1
M. elegans	1	1	0	1	0	1	1	1	0	0	1	0	0	2	1	1	1	1	0	0	0	1
M. irwini	1	1	1	1	0	1	0	0	0	0	1	0	1	2	0	1	1	0	0	1	0	1
M. ghanaensis	1	0	1	1	0	1	0	0	0	0	1	0	1	2	1	1	1	0	0	0	0	1
M. kaputuensis	0	1	0	1	0	1	1	0	0	0	1	0	1	1	0	1	1	0	1	0	0	1
M. securiculata	?	?	?	1	?	?	?	?	?	?	?	0	?	?	?	?	?	?	?	?	?	?
M. tannerorum	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0	1	1	0	0	1	0	1
M. wangi	1	1	0	1	0	1	1	1	0	0	1	0	0	2	0	1	1	0	0	1	0	1
Boletina	0	1	0	0	0	2	1	0	0	1	0	1	2	0	0	1	0	0	0	1	?	1
Coelosia	0	1	1	0	0	2	1	0	0	1	0	1	2	1	1	1	0	0	0	1	0	1
Megalopelma	0	1	1	0	2	2	1	1	1	0	1	1	2	0	2	0	0	0	0	1	1	1
Mycomya	0	1	1	1	0	1	1	1	0	0	1	0	1	0	0	1	1	0	0	1	0	1
Neuratelia	0	1	0	0	2	1	1	1	2	0	1	1	0	0	0	0	0	0	0	1	1	1
Phthinia	?	1	0	0	1	0	1	1	2	2	0	1	1	0	0	0	0	0	0	0	0	0

TABLE 2 (continued).

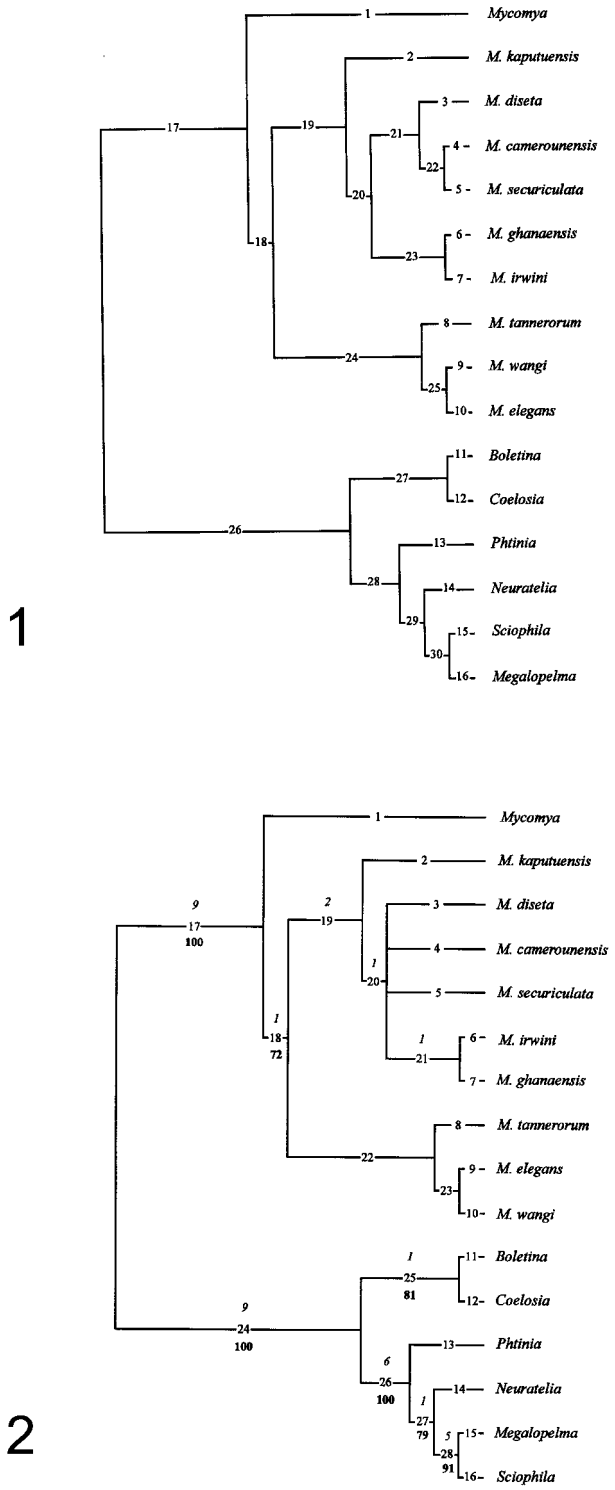
Character no:	2 3	2 4	2 5	2 6	2 7	2 8	2 9	3 0	3 1	3 2	3 3	3 4	3 5	3 6	3 7	3 8	3 9	4 0	4 1	4 2	4 3	4 4
M. camerounensis	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	?	?	?	?	0	?	0
M. diseta	0	0	0	0	2	1	1	0	0	2	1	1	1	1	0	1	1	1	0	0	0	0
M. elegans	0	0	0	0	2	1	1	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0
M. irwini	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
M. ghanaensis	0	0	0	0	2	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0
M. kaputuensis	0	0	0	0	2	1	1	0	0	1	1	1	0	1	0	1	0	1	0	0	0	0
M. securiculata	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	?	?	?	?	0	?	0
M. tannerorum	0	0	0	0	2	1	1	0	0	1	1	1	1	0	0	0	1	1	0	0	0	0
M. wangi	0	0	0	0	2	1	1	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0
Boletina	1	0	0	0	0	0	1	0	0	2	2	1	1	?	1	?	0	1	1	1	1	0
Coelosia	1	0	0	0	0	0	0	0	0	2	2	2	2	?	1	?	0	1	1	1	1	0
Megalopelma	0	0	1	1	2	0	0	2	0	3	3	2	2	?	1	?	2	0	1	0	1	1
Mycomya	0	0	0	0	2	1	1	0	0	1	1	1	1	1	1	?	2	0	0	0	0	1
Neuratelia	1	0	0	0	0	0	0	1	1	?	?	1	1	?	1	?	2	1	1	1	1	?
Phthinia	1	0	0	1	1	0	0	1	0	2	2	1	1	?	1	?	2	1	0	1	1	0
Sciophila	0	1	1	1	2	0	0	1	0	2	2	1	1	1	1	?	2	0	1	0	1	0

TABLE 2 (continued)

Character no:	4 1	4 2	4 3	4 4	4 5	5 6	5 7	5 8	5 9	5 0	5 1	5 2	5 3	5 4	5 5	6 6	6 7	6 8	6 9	6 0	6 1	6 2
M. camerounensis	?	?	?	?	?	?	?	?	?	1	1	?	?	0	1	0	1	0	0	0	0	0
M. diseta	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0
M. elegans	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	1	1	1
M. irwini	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	0
M. ghanaensis	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	0
M. kaputuensis	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0	1	0	0
M. securiculata	?	?	?	?	?	?	?	?	?	1	1	?	?	0	1	0	1	0	0	0	0	0
M. tannerorum	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0	1	1	1
M. wangi	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0	1	1	1
Boletina	0	0	0	0	0	0	0	0	0	0	0	0	0	1	?	?	?	?	0	?	?	?
Coelosia	1	0	0	0	0	0	0	0	0	0	0	0	0	1	?	?	?	?	0	?	?	?
Megalopelma	1	1	0	0	1	1	1	1	1	0	0	0	0	2	?	?	?	?	0	?	?	?
Mycomya	1	0	0	0	0	0	0	0	0	1	1	0	1	0	?	?	?	?	0	?	?	?
Neuratelia	1	1	0	1	1	1	0	1	1	0	0	0	0	2	?	?	?	?	0	?	?	?
Phthinia	1	1	1	0	0	1	0	1	1	0	0	1	1	2	?	?	?	?	0	?	?	?
Sciophila	1	1	1	1	1	1	1	1	1	0	0	0	0	2	?	?	?	?	0	?	?	?

TABLE 2 (continued)**.**

Character no:	6 3	6 4	6 5	7 6	7 7	7 8	7 5	7 6	7 7	7 8	7 9	7 0	8 1	8 2	8 3	8 4	8 5	8 6	8 7	8 8	8 9	9 0
M. camerounensis	1	1	2	0	0	1	1	0	0	0	0	0	0	0	1	?	1	1	0	?	0	1
M. diseta	1	0	2	1	0	0	1	1	0	2	0	0	1	1	1	0	1	1	0	0	0	1
M. elegans	0	0	1	0	0	1	1	0	0	2	0	0	2	0	1	1	1	1	0	1	1	0
M. irwini	0	0	2	0	0	0	1	1	0	1	1	1	1	0	0	1	1	1	0	1	1	0
M. ghanaensis	1	0	2	0	1	0	1	0	0	0	1	1	0	0	1	0	1	1	0	0	1	1
M. kaputuensis	1	2	1	0	2	0	1	1	0	2	0	0	2	0	0	1	1	1	0	1	0	1
M. securiculata	1	1	2	0	0	0	1	1	0	0	0	1	0	0	1	?	1	1	0	?	0	0
M. tannerorum	0	0	0	1	0	1	1	1	1	0	0	1	0	0	0	1	1	1	0	1	1	1
M. wangi	0	1	1	0	2	1	0	0	0	1	0	0	0	1	1	0	1	1	0	1	1	1
Boletina	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	1	?	?
Coelosia	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	1	0	0	1	?	?
Megalopelma	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	1	2	0	1	1	?	?
Mycomya	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	1	1	1	0	1	?	?
Neuratelia	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	1	2	0	1	1	?	?
Phthinia	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	2	0	1	1	?	?
Sciophila	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	1	2	0	1	1	?	?



FIGURES 1–2. Parsimony analysis of the relationships between the *Mycomyiella* species. 1 The preferred tree of the three equally parsimonious trees; 2 Strict consensus tree of three equally parsimonious trees. Bootstrap (>50) values in bold; Bremer support values in italic.

Characters 38, 59–62, 64–81, and 87–88 were only scored for the *Mycomyiella* species with the remaining taxa scored as "?". These characters refer to coloration and male terminalia structures. The scores for *M. camerounensis* and *M. securiculata* are based on the original descriptions (Matile 1973), and both species were scored as "?" for characters: 1–3, 5–11, 13–36, 38–41, 43, 45–53, 56–57, 82, and 86.

In the parsimony analysis all characters were treated as unordered and unweighted. Autapomorphies were excluded from the analysis (characters 18–19, 22, 24, 31, 45, 56, 60–63, 73, 75). The data matrix was analyzed using PAUP version 3.1.1 (Swofford 1993), on a Power Macintosh 6150/66. The heuristic search option was used with 1000 replicates. In addition to consistency index and retention index (Farris 1989), bootstrap values were calculated with 1000 bootstrap replicates, each with 50 heuristic replicate searches (Felsenstein 1985). AutoDecay version 4.0.2 (Eriksson 1998) was used calculating Bremer support values with 20 heuristic searches for each clade, each with 100 replicates (Bremer 1988, Källersjö *et al.* 1992). The results are presented using TreeView version 1.5.3 (Page 1998). An additional analysis was performed, excluding *M. camerounensis* and *M. securiculata*. Further, two analyses, one excluding characters referring to coloration and one excluding characters referring to male terminalia, were performed.

The parsimony analysis yielded 3 equally parsimonious trees of 180 steps, CI=0.587, RI=0.691, and RC=0.426 (Fig. 1). One hundred replicates were run without finding more trees. Unambiguous character changes are shown in Table 3.

TABLE 3. Character changes in the preferred tree.

Branch no.	Char. no.	States	Branch no.	Char. no.	States	Branch no.	Char. no.	States	Branch no.	Char. no.	States
1	3	0 → 1		79	0 → 2		81	0 → 1		21	0 → 1
	39	0 → 2		88	1 → 0		82	1 → 0		48	0 → 1
	40	1 → 0	11	29	0 → 1		86	1 → 0		49	0 → 1
	44	0 → 1		45	1 → 0	21	32	1 → 2		82	0 → 1
2	19	0 → 1		83	1 → 0		35	0 → 1	30	3	0 → 1
	68	0 → 2	12	3	0 → 1		39	0 → 1		9	2 → 1
	71	0 → 2		14	0 → 1		64	1 → 0		23	1 → 0
	76	0 → 2		15	0 → 1	22	68	0 → 1		25	0 → 1
	79	0 → 2		34	1 → 2	23	1	0 → 1		27	0 → 2
3	61	1 → 0		35	1 → 2		14	1 → 2		40	1 → 0
	63	0 → 1	13	6	2 → 0		33	1 → 0		42	1 → 0
	70	0 → 1		10	0 → 2		34	1 → 0		51	0 → 1
	76	0 → 2		13	2 → 1		59	1 → 0			
	79	0 → 1		20	1 → 0		77	0 → 1			
	80	0 → 1		22	1 → 0		78	0 → 1			
4	72	0 → 1		27	0 → 1		87	0 → 1			

.....continued on the next page

TABLE 3 (continued)

Branch no.	Char. no.	States	Branch no.	Char. no.	States	Branch no.	Char. no.	States	Branch no.	Char. no.	States
4	74	1 → 0		41	1 → 0	24	13	1 → 0			
5	78	0 → 1		47	0 → 1		36	1 → 0			
	88	1 → 0		56	0 → 1		65	0 → 1			
6	2	1 → 0		57	0 → 1		66	0 → 1			
	15	0 → 1	14	6	2 → 1		72	0 → 1			
	71	0 → 1		13	2 → 0		87	0 → 1			
	74	1 → 0		26	1 → 0	25	1	0 → 1			
7	20	0 → 1		31	0 → 1		14	0 → 2			
	32	1 → 0	15	1	0 → 1		32	1 → 0			
	36	1 → 0		24	0 → 1		33	1 → 0			
	38	1 → 0		47	0 → 1		74	1 → 0			
	39	0 → 2	16	15	0 → 2		76	0 → 1			
	67	1 → 0		30	1 → 2		81	0 → 1			
	76	0 → 1		32	2 → 3	26	6	1 → 2			
	79	0 → 1		33	2 → 3		12	0 → 1			
	81	1 → 0		34	1 → 2		13	1 → 2			
	82	0 → 1		35	1 → 2		23	0 → 1			
	86	0 → 1		44	0 → 1		32	1 → 2			
	88	1 → 0		48	1 → 0		33	1 → 2			
8	2	1 → 0	17	4	0 → 1		41	0 → 1			
	39	0 → 1		11	0 → 1		42	0 → 1			
	69	1 → 0		17	0 → 1		43	0 → 1			
	70	0 → 1		27	0 → 2		58	0 → 1			
	75	0 → 1		28	0 → 1	27	8	1 → 0			
	78	0 → 1		29	0 → 1		10	0 → 1			
9	35	1 → 0		54	0 → 1	28	5	0 → 1			
	39	0 → 2		55	0 → 1		9	0 → 2			
	68	0 → 1		57	0 → 1		16	1 → 0			
	71	0 → 2		82	0 → 1		26	0 → 1			
	73	1 → 0		84	0 → 1		30	0 → 1			
	80	0 → 1	18	37	1 → 0		39	0 → 2			
	82	1 → 0	19	8	1→ 0		46	0 → 1			
10	15	0 → 1		14	0 → 1		50	0 → 1			
	18	0 → 1		20	1 → 0		52	0 → 1			
	20	1 → 0		35	1 → 0		53	0 → 1			
	38	0 → 1		38	0 → 1		58	1 → 2			
	59	1 → 0		67	0 → 1		83	1 → 2			
	60	0 → 1	20	3	0 → 1		85	0 → 1			
	62	0 → 1		7	1 → 0	29	5	1 → 2			
	76	1 → 2		69	1 → 2		11	0 → 1			

The strict consensus tree shows a basal polytomy with 3 clades, Fig. 2. These clades are i) *Mycomya*, ii) the remaining 6 out-group taxa, and iii) *Mycomyiella*. Hence, the analysis gives evidence for treating *Mycomyiella* as a monophyletic clade. Within *Mycomyiella* the species are arranged in two clades, one above branch 19 consisting of *M. camerounensis, M. diseta, M. irwini, M. ghanaensis, M. securiculata,* and *M. kaputuensis*, the other above branch 22 consisting of the remaining species. Branch numbers refers to the strict consensus tree.

The 3 equally parsimonious trees differ only in the arrangement of *Mycomyiella*, i.e. no differences in the out-group topology. An analysis excluding *M. camerounensis* and *M. securiculata* with settings as in the previous run, gave one most parsimonious tree of 174 steps, with CI=0.638, RI=0.701, and RC=0.447. Bootstrapping and Bremer support (decay index) were used to test the reliability of the groupings in the topology of the tree.

The *Mycomyiella* clade is supported with one unambiguous change (character 37) along branch 18, having a Bootstrap value of 72 and a Bremer support of 1. The Mycomyini clade, above branch 17, is supported by 11 unambiguous character changes (characters 4, 11, 17, 27–29, 54–55, 57, 82, 84). Of these characters three are unique within Mycomyini: median ocellus absent (character 4), tibial trichia arranged in lines (character 54), and tarsal trichia arranged in rows (character 55). Bootstrap and Bremer support values of the tribe are 100 and 9, respectively. This makes branch 17 the best supported branch in the entire tree. Of the unambiguous changes of branch 17 is character 82 reversed along branch 20, and then reversed again along branch 7 (*M. irwini*); character 82 is also reversed along branch 9 (*M. wangi*). The *Mycomyiella* clade above branch 19 is supported by 6 unambiguous changes (characters 8, 14, 20, 35, 38, 67). The Bootstrap value of this clade is below 50 % and the Bremer support value is 2. Characters 38 and 67 are reversed along branch 7 (*M. irwini*). The *Mycomyiella* clade above branch 24 is supported by 6 unambiguous changes (characters 13, 36, 65–66, 72, 87). None of these characters are reversed along branches 8–10, and 25. Bootstrap value for this branch is below 50 % and the Bremer support value is 1.

Inclusion of more Mycomyini genera in the phylogenetic analysis will be desirable for the analysis the leave no doubt about the monophyly of *Mycomyiella.* Its close relationship to other genera included in the tribe is confirmed by its sister-group relationship to *Mycomya*.

The use of characters dealing with coloration can be questioned, as such characters generally are assumed to be highly homoplasious at higher taxonomic levels. However, among species within *Mycomyiella* coloration varies greatly, and was believed to be of taxonomic importance. These characters were not, however, coded for genera outside *Mycomyiella*, as they were not expected to have any significant effect on the resolution at the genus level. This assumption was verified, as leaving out characters dealing with coloration did not affect the intergenetic resolution. The resolution within *Mycomyiella*, however, was less resolved, which can indicate their importance at the species level.

The 18 characters referring to male terminalia were only coded for *Mycomyiella* in the phylogenetic analysis. In general Mycetophilidae genitalia are highly complex and it is difficult to homologize structures between genera. Hence, it is difficult to determine the polarity of such characters. The out-group taxa were coded with "?" for these characters, but excluding the characters did not affect the monophyly of the genus.

The two species *M. camerounensis* and *M. securiculata* could not be scored for a majority of characters, but nevertheless fitted well into the most parsimonious resolution. An analysis excluding these taxa did not change the topology within *Mycomyiella*.

Key to Afrotropical genera of Mycomyini

1. Ocelli present, tip of wing normal 2
   Ocelli absent, tip of wing modified ..... ***Syndocosia*** Speiser
2. Long tibial setae present 3
   Long tibial setae absent ..... ***Viridivora*** Matile
3. Cu branched, scutellum with long setae, mouthparts normal or elongated 4
   Cu unbranched, scutellum without long setae, mouthparts short (proboscis shorter than first palpomere) ..... ***Moriniola*** Matile
4. R_4 present 5
   R_4 absent ..... ***Parempheriella*** Matile
5. Laterotergite bare, anal lobe normal 6
   Laterotergite with small setae, anal lobe reduced ..... ***Dinempheria*** Matile
6. Costa ends distal to apex of R_5, wings with or without markings 7
   Costa ends in apex of R_5, wings without conspicuous markings ..... ***Mycomya*** Rondani
7. Wing with subradial fold (vena spuria); Sc complete, ending in C; wing with more or less distinct markings ..... ***Neoempheria*** Osten Sacken
   Wing without subradial fold (vena spuria); Sc incomplete, ending in R; wings without distinct markings ..... ***Mycomyiella*** Matile

***Mycomyiella* Matile**

Mycomyiella Matile, 1973: 189–213.

Type species: M. camerounensis Matile, 1973, by original designation.

Other included species: M. diseta new species, *M. elegans* new species, *M. ghanaensis* new species, *M. irwini* Väisänen, 1994, *M. kaputuensis* new species, *M. securiculata* Matile, 1973, *M. tannerorum* new species, and *M. wangi* new species.

Diagnostic characters: The imagines can be separated from other mycetophilid genera

by the combination of the following characters: i) costa ending distal to apex of R_5; ii) wings without distinct markings; iii) Sc incomplete, ending in R; iv) laterotergite and mediotergite bare; v) scutellum with long setae; and vi) tibia with long setae.

Generic diagnosis

Medium sized species, total length 1.9–3.9 mm.

Coloration: Vertex generally light brown to brown. Frons, face, clypeus and mouthparts yellow to brown. Antennae yellow to brown, scape, pedicel and base of first flagellomere generally paler than rest of antennae. Scutum brown to dark brown with 3 yellow longitudinal lines medially. Scutellum brown to dark brown. Laterotergite and mediotergite yellow to brown. Coxae yellow, femura light brown to brown, tibiae and tarsi brown. Abdominal tergites and sternites variable. Terminalia yellow to brown.

Head: Subcircular in frontal view. Vertex covered with setae. Compound eyes moderately setose. Two ocelli, median ocellus lacking. Ocellar area placed above or below upper margin of compound eye. Antennae with 14 flagellomeres, inserted at middle of head, approximately of same length in males and females. Scape and pedicel moderately setose, flagellomeres densely setose. Flagellomeres longer than wide to approximately as long as wide. Frons usually with some setae in front of ocellar triangle. Frontal tubercle pointed. Face appears completely fused with clypeus or weak border discernible. Clypeus with lateral setae, occasionally also with anterior setae. Palpomere 1 reduced or fused with palpomere 2. Palpomere 3 with sensory pit subapically. Palpomere ratio (2–5) about 1.0: 3.3: 3.3: 5.7. Mouthparts elongated or reduced. Cardo present.

Thorax: Scutellum with 2 large bristles projecting posteriorly. Laterotergite and mediotergite bare. Antepronotum covered with setae. Scutum densely covered with setae, dorsomedian lines almost bare.

Wing: Membrane slightly darkened around R_4/Rs-cell. R_4 and A_1 present. Sc_1 absent. CuP weak or appears absent. CuA and M separated from wing base, branched and bell-shaped. Forking point of CuA about at level with small cell. Forking point of M approximately at basal one-third of wing. C, R_1, R_4, R_5, Sc, Rs, tb, and ta with single row of setae. In females occasionally some setae proximally on M_1 and M_2. C produced beyond R_5. Membrane without macrotrichia.

Legs: Fore coxae covered with setae proximally and laterally at apex. Mid coxae covered with setae proximally. Hind coxae covered with setae proximally and laterally at apex. Femura densely setose. Tibia with fine, long setae arranged in rows. Tibial spurs 1:2:2. Tarsi with setae arranged in rows. Tarsus 5 with tarsal claw and reduced empodium.

Abdomen: All abdominal tergites and sternites covered with setae, except anterior part of tergite 1, tergite 7, sternite 1 and anterior part of sternite 2.

Male terminalia: Tergite 8 wide, with long posterolateral setae. Tergite 9 well developed; moderately to densely setose posteriorly; with or without long posterior lobes. Gonocoxite sparsely to densely setose laterally; with long, narrow lobes; and club-shaped or subtriangular, densely setose lateral prolongation. Gonostylus simple or forked, with or

without setae. Aedeagus heavily sclerotized. Sternite 8 very large, pointed or evenly rounded posteriorly, with long posterior setae. Parameres present. Ejaculatory apodeme Y-shaped.

Female terminalia: Tergites 8 and 9 with posterior setae. Tergite 10 with setae laterally and medially. Cerci two-segmented, first segment 2.0–3.0 times the length of second segment; apex of second segment pointed or evenly rounded. Hypoproct apparently bare. Sternite 10 elongated posteriorly, bare or with few weak setae. Sternite 9 apparently completely reduced. Spermathecal ducts long, slender. Gonocoxite 8 pointed, setose. Gonocoxite 9 with few strong setae.

Key to males of *Mycomyiella* Matile

1. Gonostylus simple 2
   Gonostylus forked 5
2. Base of gonostylus thickened 3
   Gonostylus narrow, tapering, slightly curved (Figs 27–30), Tanzania ..... ***M. wangi*** new species
3. Tergite 9 with long, evenly setose lobes 4
   Lobes of tergite 9 bare apically, Cameroon ..... ***M. camerounensis*** Matile
4. Tergite 9 evenly setose, gonostylus long, Fernando Poó ..... ***M. securiculata*** Matile
   Tergite 9 with basolateral setae, gonostylus short (Figs 11–14), Ghana ..... ***M. ghanaensis*** new species
5. Gonocoxite with long lobe 6
   Lobe of gonocoxite reduced 8
6. Tergite 9 lacking lobes; with anterior and lateral setae, and with 2 very strong submedian setae projecting caudad (Figs 3–6), Tanzania ..... ***M. diseta*** new species
   Tergite 9 with lobes; with setae, but lacking very strong submedian setae projecting caudad 7
7. Lobes of tergite 9 very long, sinuous; sternite 8 with broadly rounded apical margin (Figs 7–10), Tanzania ..... ***M. elegans*** new species
   Lobes of tergite 9 moderately long, straight; sternite 8 with subtriangular base and apical one-half narrowly digitate (Figs 23–26), Tanzania ..... ***M. tannerorum*** new species
8. Tergite 9 short, lacking lobes; flagellomere 2 longer than flagellomere 3 (Figs 19–22), Tanzania ..... ***M. kaputuensis*** new species
   Tergite 9 with long lobes; Flagellomere 2 about as long as flagellomere 3 (Figs 15–18), South Africa ..... ***M. irwini*** Väisänen

Mycomyiella camerounensis Matile

Mycomyiella camerounensis Matile, 1973: 202, figs 14–16**.** Type locality: CAMEROON, South Cameroon, Mount Fébé; MNHN, male.

The species is described in detail by Matile (1973). The male groups with *M. securiculata* Matile and *M. ghanaensis* new species in having a simple gonostylus with thickened base. It can be separated from both species in that the lobes of tergite 9 are bare apically.

Distribution: The species is known from Cameroon only.

Mycomyiella diseta new species

(Figs 3–6)

Type material: Holotype male, TANZANIA, Tanga region, West Usambara Mountains, Mazumbai, 23.xi.1990, ZMB's Tanzania Expedition, (ZMUN). *Paratypes:* as for holotype, except 3 males, 7.xi.1990; 1 male, 24–26.xi.1990; 2 males, 2.xii.1990.

Etymology: From Latin *di-*, two, and *seta,* bristle; referring to two distinctive setae on tergite 9.

Diagnostic characters: The male can be separated from all other members of the genus by tergite 9 lacking lobes, and having two very strong submedian setae.

Description

Male (n=7). Total length 2.78–3.57, 3.14 mm.

Coloration: Head light brown to brown. Palpomeres and other mouthparts yellow-brown. Ocellar area dark brown. Face and posterior parts of head brown. Antennae yellow-brown; scape, pedicel and base of first flagellomere lighter than the rest of the antennae. Antepronotum yellow. Scutum light brown to brown, with 3 yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum brown. Laterotergite yellow, mediotergite yellow-brown. Coxae yellow, femura light brown, tibiae and tarsi brown. Tergite 1 brown; tergite 2 yellow with small, median, brown patches anteriorly and posteriorly; tergite 3 brown; tergite 4 yellow; tergites 5–7 brown. Sternites 1–4 yellow, sternites 5–7 brown. Terminalia light brown to brown.

Head: Head 0.46–0.52, 0.49 mm long; 0.52–0.56, 0.54 mm wide. First flagellomere 1.5–2.0 times as long as wide; second flagellomere as long as wide. Clypeus 0.07–0.09, 0.08 mm long; with lateral setae. Ocellar area 0.08–0.12, 0.10 mm wide; placed above upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose; setae reaching just below ocellar area. Face bare. Mouthparts short. Palpomere ratios (2–5) as: 1.00: 3.67: 3.67: 7.00.

Thorax: Total length 0.93–1.07, 1.02 mm. Scutum 0.84–0.95, 0.91 mm long; scutellum 0.08–0.13, 0.11 mm long.

Legs: Leg measurements and ratios as in Table 4 & 5.

TABLE 4. Leg measurements (mean value, in mm) of the *Mycomyiella* species.

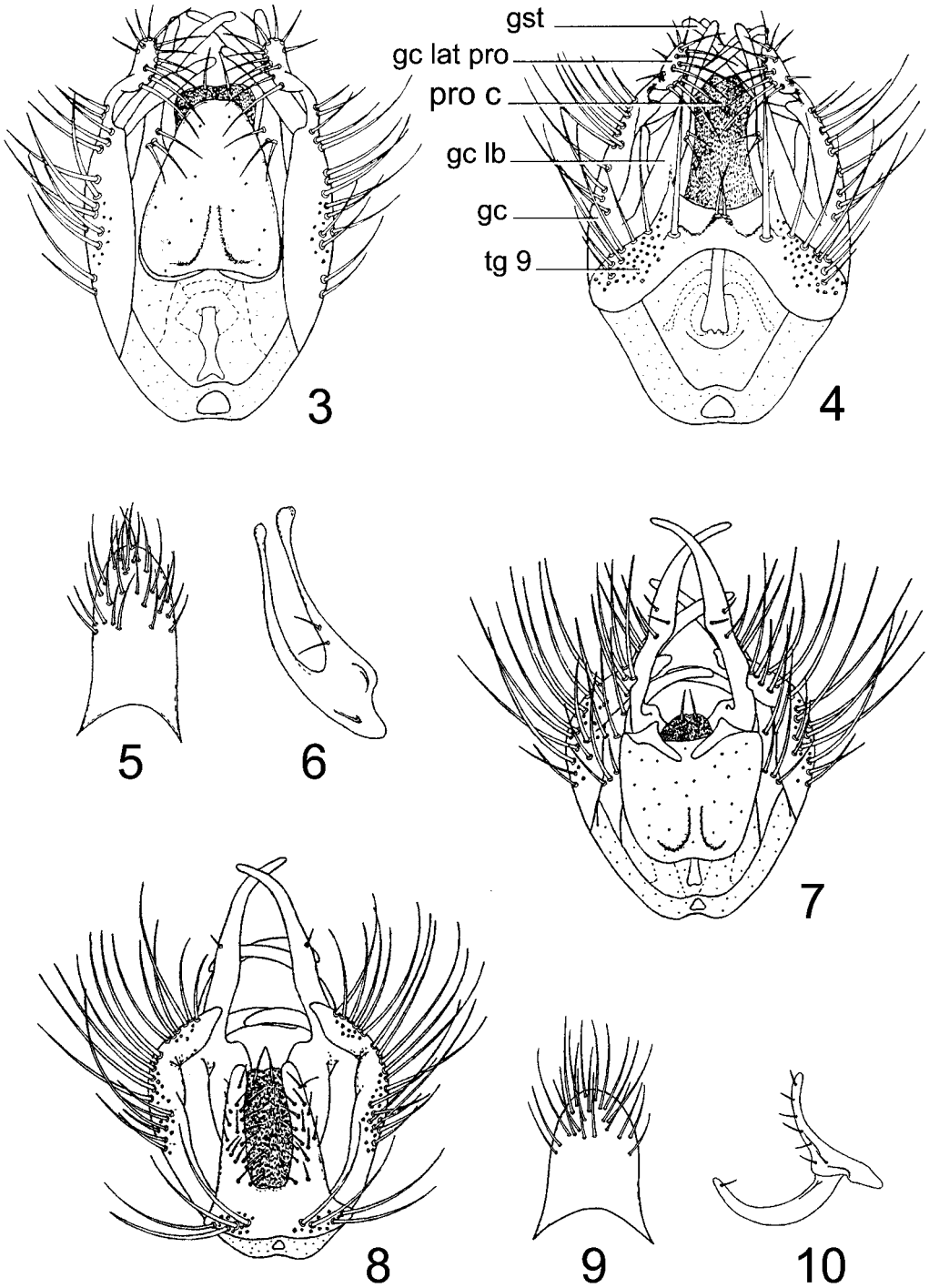
	p_1								p_2			
	cx	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	cx	fe	ti	ta_1
M. diseta	0.72	1.06	1.29	1.25	0.67	0.46	0.35	0.24	0.82	1.31	1.73	1.26
M. elegans	0.75	1.10	1.18	1.15	0.81	0.62	0.41	0.30	0.84	1.43	1.75	1.23
M. ghanaensis	0.56	0.91	1.06	1.02	0.54	0.42	0.26	0.21	0.72	1.15	1.49	1.07
M. irwini	0.56	0.91	1.06	0.97	0.54	0.40	0.24	0.21	0.68	1.11	1.53	1.02
M. kaputuensis	0.59	1.09	1.24	1.11	0.77	0.58	0.36	0.25	0.78	1.32	1.88	1.30
M. tannerorum	0.56	1.11	1.26	1.09	0.69	0.58	0.30	0.22	0.72	1.26	1.74	1.32
M. wangi	0.78	1.29	1.42	1.30	0.86	0.66	0.44	0.32	0.93	1.58	1.96	1.43

	p_2				p_3							
	ta_2	ta_3	ta_4	ta_5	cx	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5
M. diseta	0.56	0.37	0.29	0.24	0.80	1.73	2.24	1.32	0.53	0.33	0.24	0.24
M. elegans	0.67	0.48	0.35	0.26	0.79	2.32	2.22	1.37	0.60	0.45	0.29	0.25
M. ghanaensis	0.50	0.32	0.24	0.22	0.69	1.37	1.86	1.12	0.43	0.29	0.23	0.24
M. irwini	0.50	0.32	0.22	0.22	0.66	1.28	1.89	1.08	0.41	0.26	0.23	0.26
M. kaputuensis	0.60	0.47	0.28	0.28	0.86	1.66	2.39	1.48	0.45	0.40	0.28	0.26
M. tannerorum	0.67	0.48	0.24	0.28	0.80	1.79	2.20	1.34	0.43	0.45	0.23	0.26
M. wangi	0.69	0.45	0.33	0.33	0.90	1.96	2.57	1.42	0.56	0.42	0.29	0.29

TABLE 5. Leg ratios (mean value) of the *Mycomyiella* species.

	p_1				p_2				p_3			
	LR	SV	BV	TR	LR	SV	BV	TR	LR	SV	BV	TR
M. diseta	0.95	1.87	2.06	1.86	0.72	2.41	2.94	2.24	0.57	3.00	3.90	2.49
M. elegans	0.98	1.98	1.61	1.43	0.71	2.59	2.51	1.84	0.71	3.31	3.86	2.38
M. ghanaensis	0.89	2.15	2.32	1.54	0.72	2.49	2.80	1.40	0.61	2.86	3.56	2.37
M. irwini	0.92	2.03	2.12	1.80	0.67	2.59	2.90	2.04	0.57	2.94	3.66	2.63
M. kaputuensis	0.90	2.10	1.77	1.46	0.70	2.45	2.75	2.16	0.64	2.73	3.84	2.51
M. tannerorum	0.95	2.14	1.76	1.40	0.72	2.40	2.88	2.14	0.62	2.70	3.84	2.49
M. wangi	0.92	2.08	1.75	1.50	0.73	2.47	2.76	2.08	0.61	3.27	3.86	2.53

Wings: Wing 2.71–2.98, 2.88 mm long; 1.02–1.14, 1.08 mm wide. Sc ending in R_1 slightly distal to middle of small cell. Sc with 7–12, 8 macrotrichia apically. Small cell 0.09–0.17, 0.13 mm long; 1.0–2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.



FIGURES 3–6. *Mycomyiella diseta* new species. Male terminalia: 3 ventral; 4 dorsal; 5 sternite 8; 6 gonostylus. Abbreviations: gc = gonocoxite, gc lat pro = gonocoxite lateral prolongation (sternal lateral appendage), gc lb = gonocoxite lobe (sternal submedian appendage), gst = gonostylus, proc = proctiger, tg 9 = tergite 9. **FIGURES 7–10.** *Mycomyiella elegans* new species. Male terminalia: 7 ventral; 8 dorsal; 9 sternite 8; 10 gonostylus.

TABLE 6. Wing measurements (mean value, in mm) of the *Mycomyiella* species.

	R_1	R_2	Sc	Stem M	M_1	M_2	Stem CuA	CuA_1	CuA_2	ta	tb	Length cell
M. diseta	1.32	2.14	0.10	0.73	1.61	1.01	0.89	1.18	0.79	0.16	0.70	0.13
M. elegans	1.40	1.90	0.12	0.91	1.33	0.97	0.91	1.22	0.73	0.16	0.84	0.20
M. ghanaensis	1.00	1.43	0.08	0.59	0.95	0.68	0.76	0.78	0.44	0.10	0.58	0.11
M. irwini	1.86	2.74	0.17	1.26	1.95	1.39	1.37	1.97	1.09	0.25	1.18	0.29
M. kaputuensis	1.78	2.37	0.16	1.06	1.60	1.20	1.25	1.57	0.98	0.15	0.93	0.22
M. tannerorum	1.32	1.87	0.09	0.95	1.20	0.85	1.04	1.27	0.71	0.14	0.94	0.18
M. wangi	1.51	2.10	0.09	0.88	1.44	1.07	1.07	1.38	0.82	0.20	0.96	0.11

Abdomen: Abdomen 2.45–2.69, 2.58 mm long; tergite 5 0.59–0.74, 0.67 mm wide.

Male terminalia (Figs 3–6). Tergite 8 wide, with 4–6 long setae posterolaterally. Tergite 9 without lobes; with anterior and lateral setae, and 2 very strong submedian setae, projecting caudad. Gonocoxite with lateral setae; with long, weakly setose lobes; and short, rounded, strongly setose lateral prolongations. Gonostylus deeply forked, with few weak setae or apparently bare. Aedeagus prominent, covered with short setae and with long setae subapically. Sternite 8 large, evenly rounded apically, densely setose in apical one-half.

Female: Unknown.

Distribution: Known from the type locality in the West Usambara Mountains in North-East Tanzania only.

Mycomyiella elegans **new species**

(Figs 7–10)

Type material: Holotype male, TANZANIA, Tanga region, West Usambara Mountains, Mazumbai, 4–6.xi.1990, ZMB's Tanzania Expedition, (ZMUN). *Paratypes*: as for holotype except 1 male, 7–12.xi.1990; 1 male, 20–26.xi.1990; 1 male 22.xi.1990.

Etymology: From Latin *elegans*, tasteful, fine, referring to the very long and slender genital structures.

Diagnostic characters: The male groups with *M. diseta* new species and *M. tannerorum* new species in having a forked gonostylus and gonocoxite with long lobes. It can be separated from both species by having very long, sinuous lobes of tergite 9. The species appears more slender and more strongly colored than the other species in the genus.

Description

Male (n=4). Total length 3.09–3.86, 3.57 mm.

Coloration: Head light brown to brown. Palpomeres and other mouthparts brown. Ocellar area dark brown. Face yellow, posterior parts of head brown. Antennae light yel-

low to yellow; scape, pedicel and base of first flagellomere lighter than rest of antennae. Antepronotum yellow. Scutum light brown to brown, with 3 yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum light brown to brown. Laterotergite yellow, mediotergite yellow-brown. Coxae yellow, femura light brown, tibiae and tarsi brown. Tergite 1 brown; tergite 2 yellow; tergite 3 brown with median, yellow patches anteriorly and posteriorly; tergite 4 yellow with median, brown patches anteriorly and posteriorly, tergite 5 brown; tergite 6 brown with posterior, yellow band; tergite 7 yellow. Sternites 1–4 yellow; sternite 5 yellow with large, brown, lateral patches; sternites 6–7 yellow. Terminalia light brown to brown.

Head: Head 0.47–0.50, 0.48 mm long; 0.50–0.53, 0.51 mm wide. First flagellomere about 2.0 times as long as wide, second flagellomere as long as wide. Clypeus 0.11–0.14, 0.12 mm long; with lateral and apical setae. Ocellar area 0.11–0.12, 0.11 mm wide; placed below upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose, setae reaching just below ocellar area. Face bare. Mouthparts elongated. Palpomere 4 with 2–5 setae proximally, palpomere 3 with several setae in proximal two-thirds. Palpomere ratios (2–5) as: 1.00: 3.25: 3.00: 4.50.

Thorax: Total length 0.96–1.07, 1.00 mm. Scutum 0.85–0.91, 0.88 mm long; scutellum 0.11–0.13, 0.12 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

Wings: Wing 3.09–3.20, 3.12 mm long; 1.10–1.20, 1.12 mm wide. Sc ending in R_1 slightly distally to middle of small cell. Sc with 6–14, 9 macrotrichia apically. R_4/Rs-cell about 2.0 times as long as wide. Small cell 0.15–0.22, 0.20 mm long. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.

Abdomen: Abdomen 2.15–2.49, 2.38 mm long; tergite 5 0.49–0.64, 0.57 mm wide.

Male terminalia (Figs 7–10). Tergite 8 wide, with 5 setae posteriolaterally. Tergite 9 narrow, with 4–5 setae laterally, with long, heavily sclerotized, setose lobes. Gonocoxite with lateral setae; with long, curved lobes; and subtriangular, setose lateral prolongation. Gonostylus deeply forked; with slender, curved, setose forks. Aedeagus small, covered with short setae and with long setae subapically. Sternite 8 large, evenly rounded apically, densely setose in apical one-half.

Female: Unknown.

Distribution: Known from the type locality in the West Usambara Mountains in North-East Tanzania only.

Mycomyiella ghanaensis **new species**

(Figs 11–14)

Type material: Holotype male, GHANA: Eastern Region, Subri stream, North of Kibi, 6.xi.1993, NUFU-project (ZMUN). *Paratypes:* 3 males, as holotype; 1 male, Volta

Region, Agumatsa waterfalls, Wli, 4–14.iii.1993, NUFU-project (ZMUN); 3 males, Volta Region, Agumatsa waterfalls, Wli, 11–20.xi.1993, NUFU-project (ZMUN); 7 males, Central Region, Kakum, 31.x.–8.xi.1994, NUFU-project (ZMUN); 2 males, Central Region, Kakum, 8–15.xi.1994, NUFU-project (ZMUN); 2 males, Western Region, Ankasa game production Reserve, 31.iii.1993, NUFU-project (ZMUN).

Etymology: Named after the country of origin.

Diagnostic characters: The male groups with *M. camerounensis* Matile and *M. securiculata* Matile in having a simple gonostylus with thickened base. It can be separated from *M. camerounensis* in having the lobes of tergite 9 evenly setose, and from *M. securiculata* in having a comparatively short gonostylus. The species is smaller, and has a slightly darker appearance than other species in the genus.

Description

Male (n=19). Total length 1.87–2.56, 2.31 mm.

Coloration: Head light brown. Palpomeres and other mouthparts brown. Ocellar area dark brown. Face light brown to yellow, posterior parts of head brown. Antennae yellow-brown; scape, pedicel and base of first flagellomere yellow. Antepronotum yellow. Scutum brown to dark brown, with 3 brown longitudinal bands. Anepisternum and preepisternum yellow- brown. Scutellum light brown to brown. Laterotergite and mediotergite yellow-brown. Coxae light brown, femura light brown to brown, tibiae and tarsi light brown. Tergite 1 brown; tergite 2 yellow; tergite 3 brown; tergite 4 yellow with brown, median band; tergites 5–7 brown. Sternites 1–4 yellow, sternites 5–6 brown, sternite 7 light brown. Terminalia light brown to brown.

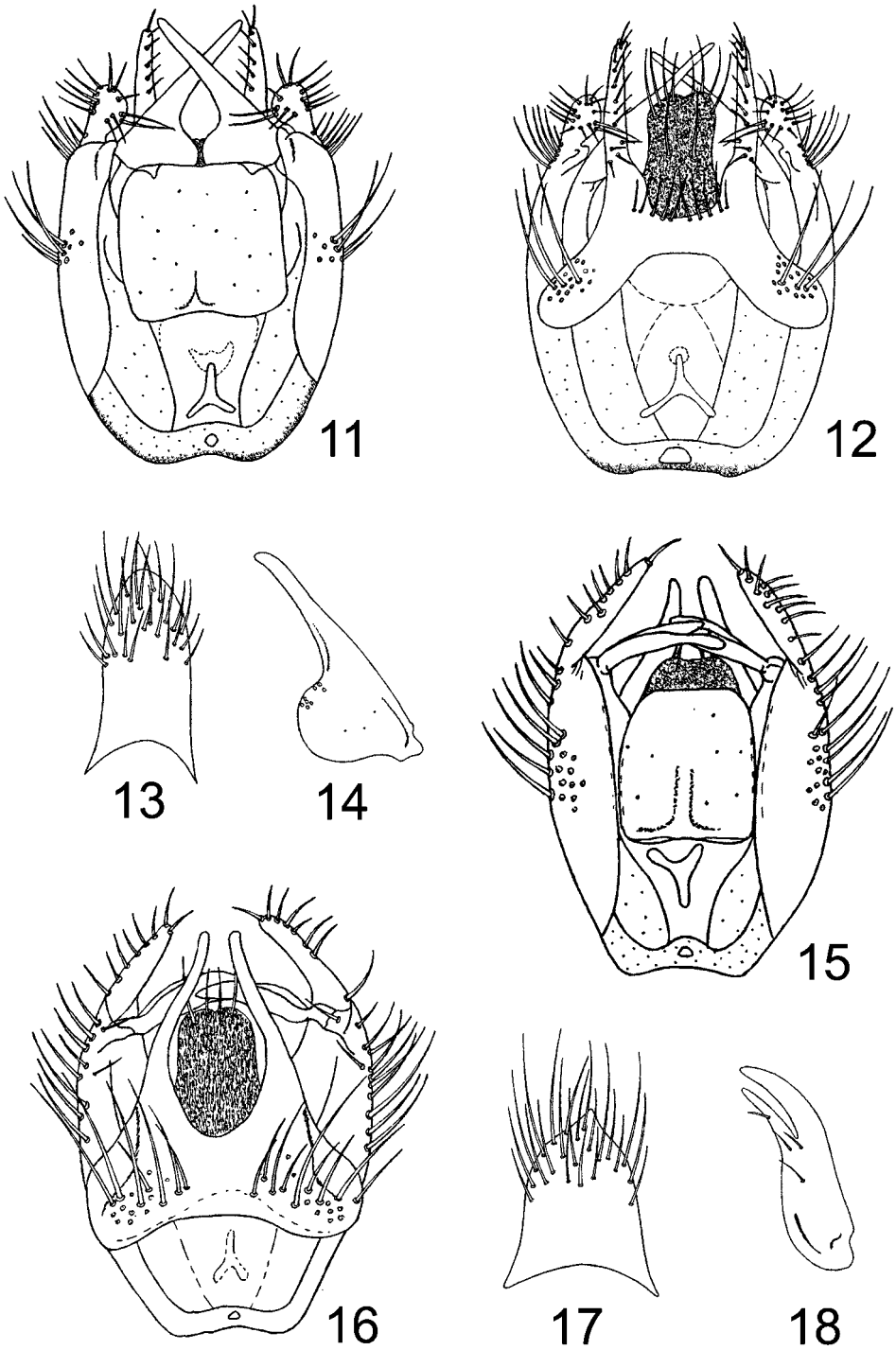
Head: Head 0.44–0.48, 0.45 mm long; 0.43–0.58, 0.47 mm wide. First flagellomere 1.5–2.0 times as long as wide; second flagellomere as long as wide. Clypeus 0.07–0.09, 0.08 mm long; with lateral setae. Ocellar area 0.08–0.09, 0.08 mm wide; placed above upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose; setae reaching just below ocellar area. Face bare. Mouthparts short. Palpomere 4 with 3–5 setae subbasally; palpomere 3 with 2–3 setae subbasally and 2–3 setae dorsomedially. Palpomere ratios (2–5) as: 1.00: 3.00: 3.00: 4.67.

Thorax: Total length 0.86–0.94, 0.90 mm. Scutum 0.77–0.86, 0.82 mm long; scutellum 0.08–0.09, 0.09 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

Wings: Wing 2.11–2.38, 2.22 mm long; 0.84–0.94, 0.88 mm wide. Sc_1 lacking. Sc ending in R_1 slightly distal to middle of small cell. Sc with 7–12, 9 macrotrichia apically. R_4/Rs-cell 1.0–2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.

Abdomen: Length of abdomen 0.97–1.54, 1.26 mm; tergite 5 0.44–0.67, 0.60 mm wide.



FIGURES 11–14. *Mycomyiella ghanaensis* new species. Male terminalia: 11 ventral; 12 dorsal; 13 sternite 8; 14 gonostylus. **FIGURES 15–18.** *Mycomyiella irwini* Väisänen, 1994. Male terminalia: 15 ventral; 16 dorsal; 17 sternite 8; 18 gonostylus.

Male terminalia (Figs 11–14). Tergite 8 wide, with 4–6, 6 setae posterolaterally. Tergite 9 with long, tapering, setose lobes; with rounded basolateral corners, with 3–6, setae; with row of short setae medially. Gonocoxite bare laterally; with reduced lobes; with short, rounded, setose lateral prolongations. Gonostylus simple, with prominent base. Aedeagus large, covered with short setae and with long setae subapically. Sternite 8 long, rounded apically, densely setose in apical one-half.

Female (n=13). Total length 2.23–2.76, 2.56 mm. As for males, except:

Coloration: Mediotergite yellow with brown patches medially. Laterotergite yellow. Tergite 3 yellow with brown bands along all margins. Tergite 7 brown. Sternite 7 yellow.

Head: Palpomere ratios (2–5) as: 1.00: 2.76: 2.89: 5.06.

Thorax: Total length 0.89–1.12,1.07 mm. Scutum 0.83–0.98, 0.92 mm long; scutellum 0.08–0.11,0.10 mm long.

Wing: Wing 2.23–2. 47, 2.41 mm long; 0.91–1.09, 0.98 mm wide.

Abdomen: Abdomen 1.11–1.58, 1.37 mm long.

Female terminalia: Cercus 2 evenly rounded apically. Sternite 10 elongated. Gonocoxite 9 small.

Distribution: Known from several localities in Ghana, West Africa.

Mycomyiella irwini **Väisänen**
(Figs 15–18)

Mycomyiella irwini Väisänen, 1994: 21, figs 38–42**.** Type locality: SOUTH AFRICA, Natal, Pietermaritzburg, Belfort; ZMH; male.

Material examined: SOUTH AFRICA, Natal, 75 km WSW Estcourt, Cathedral Peaks, 1700 m a.s.l., 26–31.xii.1979, 1 male, 1 female (paratypes), S. & J. Peck (ZMH).

Diagnostic characters: The male groups with *M. kaputuensis* new species in having a forked gonostylus and in having the lobe of the gonocoxite reduced. It can be separated from *M. kaputuensis* in having a short tergite 9 without lobes.

Description

Male (n=1). Total length 3.18 mm.

Coloration: Head, palpomeres, and other mouthparts brown. Ocellar area dark brown. Face yellow, posterior parts of head brown. Antennae yellow-brown; scape, pedicel and first flagellomere yellow. Antepronotum yellow. Scutum brown to dark brown, with 3 yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum light brown to brown. Laterotergite light brown to brown, mediotergite brown. Coxae yellow, femura, tibiae and tarsi light brown. Tergite 1 pale yellow, tergite 2 yellow, tergite 3 brown, tergite 4 brown with 2 large yellow lateral patches, tergites 5–6 brown, tergite 7 yellow. Sternites 1–4 yellow, sternites 5–6 brown, sternites 7 yellow. Terminalia light brown.

Head: Head 0.46 mm long; 0.47 mm wide. First flagellomere about 1.5 times as long

as wide; second flagellomere as long as wide. Clypeus 0.14 mm long, with lateral setae. Ocellar area 0.14 mm wide, placed above upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose, setae reaching below ocellar area. Face bare. Mouthparts moderately long. Palpomere 4 with few setae subbasally, palpomere 3 with several setae in basal two-thirds. Palpomere ratios (2–5) as: 1.00: 3.07: 2.89: 4.98.

Thorax: Total length 0.81 mm. Scutum 0.63 mm long, scutellum 0.18 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

Wing: Wing 3.18 mm long, 1.10 mm wide. Sc_1 missing. Sc ending in R_1 slightly distal to middle of small cell. Sc with 8 macrotrichia apically. R_4/Rs-cell 1.0–2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in table 6.

Abdomen: Abdomen 2.54 mm long. Tergite 5 2.67 mm wide.

Male terminalia (Figs 11–18). Tergite 8 wide, with several long setae posterolaterally. Tergite 9 well developed, with long, bare lobes. Tergite 9 setose anterolaterally, bare medially. Gonocoxite setose laterally. Gonocoxite lobes reduced, with few setae. Gonocoxite lateral prolongation well developed and very prolonged (longer than lobes of tergite 9). Gonostylus slightly forked, with 4–5 setae. Aedeagus large, with long seta on posterior part, small setae present and evenly distributed. Sternite 8 pointed posteriorly.

Female (n=1). Total length 3.24 mm. As for males except:

Coloration: Tergite 4 brown to brownish. Tergite 7 yellow-brown with light brown lateral patches. Sternite 4 light brown. Sternite 7 yellow-brown with light brown lateral patch.

Head: Palpomere ratios (2–5) as: 1.00: 2.88: 2.76: 5.11.

Thorax: Total length 0.93 mm. Scutum 0.76 mm long, scutellum 0.16 mm long.

Wings: Wing 3.63 mm long, 1.13 mm wide.

Abdomen: Length of abdomen 2.67 mm. Tergite 5 2.49 mm wide.

Female terminalia: Cercus 2 elongated and pointed. Tergite 9 pointed on posterolateral corners. Gonocoxite 9 well developed. Sternite 10 normal or somewhat reduced.

Distribution: Known from Natal, South Africa only.

Mycomyiella kaputuensis **new species**

(Figs 19–22)

Type material: Holotype male, TANZANIA, Tanga region, West Usambara Mountains, Mazumbai, Kaputu stream, 26.xi.1990, ZMB's Tanzania Expedition, (ZMUN). *Paratypes:* as for holotype except 3 males, 27.xi.1990; 1 male 20–26.xi.1990.

Etymology: Named after the type locality, Kaputu stream in the West Usambara Mountains, Tanzania.

Diagnostic characters: The male groups with *M. irwini* Väisänen in having a forked gonostylus and in having the lobe of the gonocoxite reduced. It can be separated from *M. irwini* by tergite 9 bearing long lobes.

Description

Male (n=18). Total length 2.98–3.71, 3.45 mm.

Coloration: Head light brown to brown. Palpomeres and other mouthparts light brown to yellow. Ocellar area dark brown. Face light yellow-brown, posterior parts of head brown. Antennae yellow-brown; scape, pedicel and base of first flagellomere yellow. Antepronotum yellow. Scutum brown to dark brown with 3 yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum light brown to brown. Laterotergite light brown to brown, mediotergite brown. Coxa yellow; femur, tibiae and tarsi light brown. Tergite 1 light brown; tergite 2 yellow with posterior, light brown band; tergite 3 brown; tergite 4 yellow with narrow brown median line; tergites 5–6 brown; tergite 7 yellow. Sternites 1–4 yellow, sternites 5–6 yellow with brown lateral patches, sternite 7 yellow-brown. Terminalia light brown to brown.

Head: Head 0.47–0.53, 0.51 mm long; 0.50–0.55, 0.51 mm wide. First flagellomere about 1.5 times as long as wide, second flagellomere as long as wide. Ocellar area 0.10–0.13, 0.11 mm wide; placed below upper margin of compound eye. Clypeus 0.10–0.13, 0.12 mm long; with lateral and apical setae. Some setae in front of ocellar area. Posterolateral portion of frons densely setose, setae reaching just below ocellar area. Face bare. Mouthparts elongated. Palpomere 4 with 2–5 setae subbasally, palpomere 3 with several setae in basal two-thirds. Palpomere ratios (2–5) as: 1.00: 3.25: 3.00: 5.25.

Thorax: Total length 0.75–0.85, 0.80 mm. Scutum 0.64–0.72, 0.68 mm long; scutellum 0.13–0.18, 0.17 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

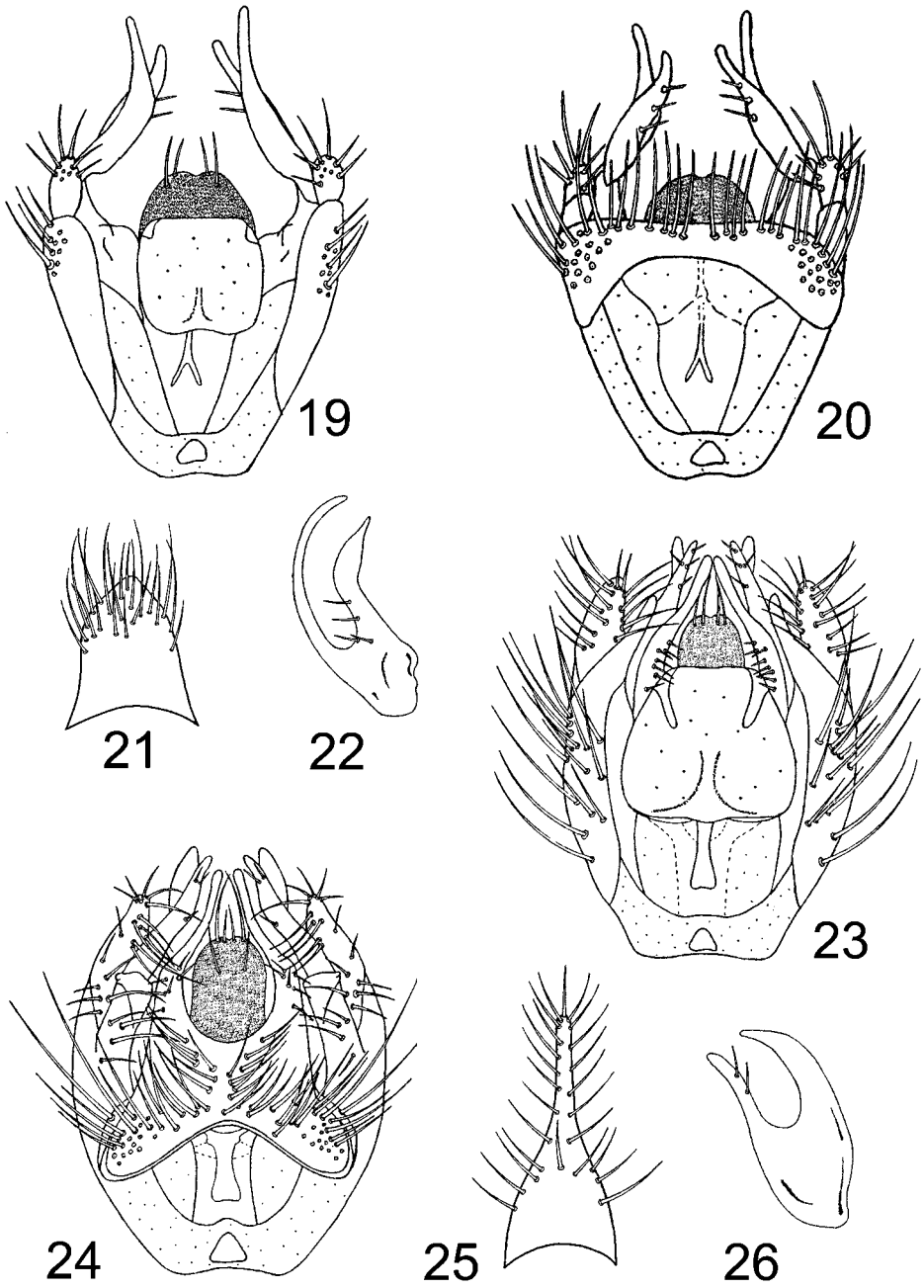
Wing: Wing 3.00–3.32, 3.22 mm long; 1.09–1.13, 1.12 mm wide. Sc_1 lacking. Sc ending in R_1 slightly distal to middle of small cell. Sc with 7–12, 9 macrotrichia apically. R_4/Rs-cell 1.0–2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.

Abdomen: Length of abdomen 2.56–2.72, 2.68 mm; tergite 5 0.63–0.82, 0.73 mm wide.

Male terminalia (Figs 19–22). Tergite 8 wide; with 5–7 long posterolateral setae. Tergite 9 short, setose; lobe reduced. Gonocoxite bare; lobe reduced; lateral prolongation small, rounded, with few setae. Gonostylus forked in apical two-thirds, with few setae, occasionally bare. Aedeagus of medium size, covered with short setae, with stronger setae subapically. Sternite 8 long, bluntly pointed apically, densely setose in apical half.

Female: Unknown.

Distribution: Known from the type locality in the West Usambara Mountains in North-East Tanzania only.



FIGURES 19–22. *Mycomyiella kaputuensis* new species. Male terminalia: 19 ventral; 20 dorsal; 21 sternite 8; 22 gonostylus. **FIGURES 23–26.** *Mycomyiella tannerorum* new species. Male terminalia: 23 ventral; 24 dorsal; 25 sternite 8; 26 gonostylus.

***Mycomyiella securiculata* Matile**

Mycomyiella securiculata Matile, 1973: 202, figs 17–19. Type locality: EQUATORIAL GUINEA: Fernando Poó, Bioko, Moka forest; MNHN; male.

The species is described in detail by Matile (1973). The male groups with *M. camerounensis* Matile and *M. ghanaensis* new species in having a simple gonostylus with thickened base. It can be separated from *M. camerounensis* in having the lobes of tergite 9 evenly setose, and from *M. ghanaensis* in having a comparatively long gonostylus.

Distribution: The species is only known from the island of Fernando Poó, Equatorial Guinea.

***Mycomyiella tannerorum* new species**
(Figs 23–26)

Type material: Holotype male, TANZANIA, Tanga region, West Usambara Mountains, Mazumbai, 20–26.xi.1990, ZMB's Tanzania Expedition, (ZMUN). *Paratypes:* as for holotype except 1 male, 27.x.1990; 1 male, 31.x.1990; 1 male, 2–3.xi.1990; 1 male, 4.xi.1990; 1 male, 4–6.xi.1990; 1 male, 7–12.xi.1990; 1 male, 21–26.xi.1990; 2 males, 23.xi.1990; 5 males, 26–29.xi.1990; 3 males, 29.xi.–3.xii.1990.

Etymology. Named after Mrs. and Mr. Tanner, who initiated the establishment of the Mazumbai Forest Reserve.

Diagnostic characters. The male groups with *M. diseta* new species and *M. elegans* new species in having a forked gonostylus and gonocoxite with long lobes. It can be separated from both species by having moderately long, straight lobes of tergite 9.

Description

Male (n=18). Total length 2.98–3.71, 3.45 mm.

Coloration: Head light brown to brown. Palpomeres and other mouthparts light brown to yellow. Ocellar area dark brown. Face yellow-brown, posterior parts of head light brown. Antennae yellow-brown; scape, pedicel and base of first flagellomere yellow. Antepronotum yellow. Scutum brown to dark brown, with 3 light yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum light brown to brown. Laterotergite light brown to brown, mediotergite brown. Coxae yellow; femura, tibiae and tarsi light brown. Tergite 1 light brown; tergite 2 yellow with posterior, light brown band; tergite 3 brown; tergite 4 yellow with narrow brown median line; tergites 5–6 brown; tergite 7 yellow. Sternites 1–4 yellow; sternites 5–6 yellow with brown, lateral patches; sternite 7 yellow-brown. Terminalia light brown to brown.

Head: Head 0.47–0.53, 0.51 mm long; 0.50–0.55, 0.51 mm wide. First flagellomere about 1.5 times as long as wide; second flagellomere as long as wide. Clypeus 0.10–0.13, 0.12 mm long; with lateral and apical setae. Ocellar area 0.10–0.13, 0.11 mm wide; placed

below upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose, setae reaching just below ocellar area. Face bare. Mouthparts elongated. Palpomere 4 with 2–5 setae subbasally, palpomere 3 with several setae in basal two-thirds. Palpomere ratios (2–5) as: 1.00: 3.25: 3.00: 5.25.

Thorax: Total length 0.75–0.85, 0.80 mm. Scutum 0.64–0.72, 0.68 mm long; scutellum 0.13–0.18, 0.17 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

Wings: Wing 3.00–3.32, 3.22 mm long; 1.09–1.13, 1.12 mm wide. Sc_1 lacking. Sc ending in R_1 slightly distal to middle of small cell. Sc bearing 7–12, 9 macrotrichia apically. R_4/Rs-cell 1.0–2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.

Abdomen: Abdomen 2.56–2.72, 2.68 mm long; tergite 5 0.63–0.82, 0.73 mm wide.

Male terminalia (Figs 23–26). Tergite 8 wide, with several long posterolateral setae. Tergite 9 prominent, strongly setose; with long, narrow, sigmoid lobes, with setae medially. Gonocoxite with few lateral setae, or entirely bare; lobes long, with 2–4 setae; lateral prolongation large, club-shaped, setose. Gonostylus furcated in apical half, with 2–5 setae. Aedeagus prominent, covered with short setae and with long setae subapically. Sternite 8 subtriangular basally, apical one-half narrowly digitate, setose.

Female (n = 19). Total length 2.87–3.88, 3.59 mm. As for males, except:

Coloration: Tergite 2 yellow; tergite 4 brown; tergite 7 yellow-brown. Sternites 4–6 brown; sternite 7 yellow.

Head: Palpomere ratios (2–5) as: 1.00: 3.15: 3.15: 5.37.

Thorax: Total length 0.78–0.93, 0.86 mm. Scutum 0.63–0.83, 0.77 mm long; scutellum 0.14–0.15, 0.14 mm long.

Wing: Wing 2.88–3.41, 3.21 mm long; 0.99–1.21, 1.10 mm wide.

Abdomen: Abdomen 2.47–2.69, 2.49 mm long.

Female terminalia: Cercus 2 normal, pointed apically. Tergite 9 strongly pointed posterolaterally. Gonocoxite 9 prominent. Sternite 10 reduced.

Distribution: Known from the type locality in the West Usambara Mountains in North-East Tanzania only.

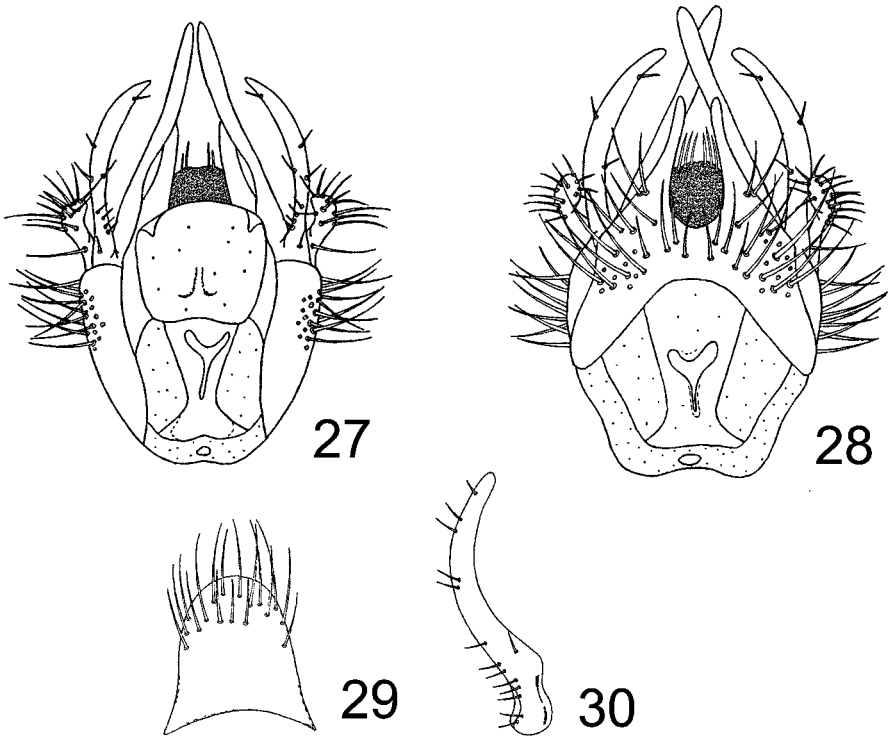
Mycomyiella wangi **new species**

(Figs 27–30)

Type material: Holotype male, TANZANIA, Tanga region, West Usambara Mountains, Mazumbai, 26.xi.–4.xii.1990, ZMB's Tanzania Expedition, (ZMUN). *Paratypes:* as for holotype except 1 male, 31.x.1990; 1 male, 31.x.–2.xi.1990; 1 male, 4.11.1990; 1 male, 12–20.xi.1990; 2 males, 29.xi.1990.

Etymology: Named after Gunnar Wang for all help and support during the present study.

Diagnostic characters: The male can be separated from all other species in the genus in having a simple, narrow, slightly curved gonostylus.



FIGURES 27–30. *Mycomyiella wangi* new species. Male terminalia: 27 ventral; 28 dorsal; 29 sternite 8; 30 gonostylus.

Description

Male (n=7). Total length 2.87–3.69, 3.33 mm.

Coloration: Head light brown to brown. Palpomeres and other mouthparts brown. Ocellar area dark brown. Face light yellow-brown, posterior parts of head light brown. Antennae light yellow; scape, pedicel and base of first flagellomere yellow. Antepronotum yellow. Scutum light brown to brown with 3 yellow longitudinal bands. Anepisternum and preepisternum yellow. Scutellum light brown to brown. Laterotergite light brown to brown. Mediotergite brown. Coxae yellow, femura tibiae and tarsi light brown. Tergite 1 light brown, tergite 2 yellow, with narrow brown median line and posterior brown band, tergite 3 brown, tergite 4 yellow with broad brown median line, tergite 5–6 brown, tergite 7 yellow. Sternite 1–4 yellow, sternite 5–6 yellow, with brown lateral patches, sternite 7 yellow. Terminalia light brown to brown.

Head: Head 0.50–0.55, 0.53 mm long; 0.54–0.60, 0.59 mm wide. First flagellomere about 1.5 times as long as wide; second flagellomere as long as wide. Clypeus 0.12–0.15, 0.13 mm long; with lateral and apical setae. Ocellar area 0.12–0.13, 0.13 mm wide; placed below upper margin of compound eye. Some setae in front of ocellar area. Posterolateral portion of frons densely setose; setae reaching just below ocellar area. Face bare. Mouthparts elongated. Palpomere 4 with 2–5 setae subbasally, palpomere 3 with several setae in basal two-thirds. Palpomere ratios (2–5) as: 1.00: 2.80: 3.00: 4.40.

Thorax: Total length 1.17–1.24, 1.20 mm. Scutum 0.97–1.04, 1.01 mm long; scutellum 0.13–0.18, 0.16 mm long.

Legs: Leg measurements and ratios as in Tables 4 & 5.

Wings: Wing 2,65–2.88, 2.77 mm long; 0.98–1.10, 1.04 mm wide. Sc_1 missing. Sc ending in R_1 slightly distally to middle of small cell. Apical part of Sc bearing 7–12, 9 macrotrichia. R_4/Rs-cell 1.0 to 2.0 times as long as wide. CuA fork slightly distal to M fork. Wing measurements are given in Table 6.

Abdomen: Length of abdomen 2.53–2.78, 2.71 mm; tergite 5 0.66–0.86, 0.75 mm wide.

Male terminalia (Figs 27–30). Tergite 8 wide, with several posterolateral setae. Tergite 9 with short, bare lobes; setose medially. Gonocoxite with lateral setae; with long, narrow, bare lobes; with club-shaped, sparsely to strongly setose prolongations. Gonostylus simple, weakly curved, setose. Aedeagus of median size, covered with short setae, with strong setae subapically. Sternite 8 large, broadly rounded apically, densely setose in apical half.

Female: Unknown.

Distribution: Known from the type locality in the West Usambara Mountains in North-East Tanzania only.

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References

Bremer, K. (1988) The limits of amino acid sequence data in angiosperm phylogenetic reconstruction. *Evolution*, 2, 795–803.

Eriksson, T. (1998) *AutoDecay version 4.0.2*. Department of Botany, University of Stockholm, Stockholm. [Computer software].

Farris, J.S. (1989) The retention index and the rescaled consistency index. *Cladistics*, 5, 417–419.

Felsenstein, J. (1985) Confidence limits on phylogeny: an approach using the bootstrap. *Evolution*, 39, 783–791.

Källersjö, M., Farris, J.S., Kluge, A.G. & Bult, C. (1992) Skewness and permutation. *Cladistics*, 8, 275–287.

Maddison, W.P. & Maddison, D.R. (1992) *MacClade version 3.04.* Sinauer Associates, Massachusetts. [Computer software].

Matile, L. (1973) Diptéres Mycetophilidae de Fernando-Poó. *Bulletin de Muséum national dHistoire naturelle, 3 Série,* 111 (*Zoologique* 85), 189–213.

Page, R.D.M. (1998) *TreeView version 1.5.3*. Illinois Natural History Survey, Champaign, Illinois. [Computer software].

Swofford, D.L. (1993) *PAUP Phylogenetic Analysis Using Parsimony, version 3.1.1*. University of Glasgow, Glasgow. [Computer software].

Søli, G.E.E. (1997) On the morphology and phylogeny of Mycetophilidae, with a revision of *Coelosia* Winnertz (Diptera: Sciaroidea). *Entomologica scandinavica, Supplement*, 50, 11–39.

Väisänen, R. (1994) New Mycomyinae from South Africa (Diptera: Sciaroidea). *Entomologica Fennica*, 5, 13–26.

