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## **The Types of Lygistorrhinidae and Mycetophilidae (Diptera: Bibionomorpha) in the KwaZulu-Natal Museum, Pietermaritzburg, South Africa**

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## The types of *Lygistorrhinidae* and *Mycetophilidae* (Diptera: *Bibionomorpha*) in the KwaZulu-Natal Museum, Pietermaritzburg, South Africa

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### ABSTRACT

An annotated list of the type specimens of *Lygistorrhinidae* and *Mycetophilidae* (Diptera: *Bibionomorpha*) at the KwaZulu-Natal Museum, Pietermaritzburg, South Africa is provided. Information on 54 type specimens, three *lygistorrhinids* and 51 *mycetophilids*, with details of labels and actual preservation of the specimens is furnished. Locality data are georeferenced and habitus images of type specimens are provided.

KEY WORDS: Fungus gnats, *Lygistorrhinidae*, *Mycetophilidae*, nomenclature, taxonomy, types.

### INTRODUCTION

The *Lygistorrhinidae* (long-beaked fungus gnats) constitute a small family of *Mycetophiliformia* (*sensu* Amorim & Rindal 2007), which is widely distributed in tropical and subtropical regions. It now contains eight extant genera and about 32 or 33 species (Vockeroth 2009; Pape *et al.* 2011). The placement of some genera from Cretaceous amber in *Lygistorrhinidae* is still debatable (Blagoderov & Grimaldi 2004; Hippa *et al.* 2005), but the monophyly of the family including only the Recent species has not been questioned (Matile 1997; Grimaldi & Blagoderov 2001; Hippa & Vilkkamaa 2005).

The fungus gnat family *Mycetophilidae s.s.* is one of the largest and most diversified families of *Bibionomorpha*, which fossil record extends back to the Jurassic (Evenhuis 1994; Amorim & Silva 2002). The family now contains approximately 180 extant genera and almost 4500 species world-wide (Pape *et al.* 2011). Although the monophyly of the *Mycetophilidae* is a consensus (Søli 1997; Rindal *et al.* 2009), a robust phylogeny of this family is still to be provided.

The present paper provides a list of type specimens of *Lygistorrhinidae* and *Mycetophilidae* housed in the collection of the KwaZulu-Natal Museum (NMSA, Pietermaritzburg, South Africa), following a recommendation of the International Code of Zoological Nomenclature (ICZN 1999: 72F.4).

### MATERIAL AND METHODS

The list given below is arranged in the alphabetical order of genus and species. Label data are given in double quotation marks, with placement hierarchy (from top to bottom) of the label on the pin or slide being noted in round brackets. In case of handwriting on labels, the handwritten text is reproduced in italics; printed text on labels is reproduced in regular font. For the sake of clarity, additions to some of the original information of labels, such as abbreviated collecting dates and incomplete localities,

are given in square brackets. All specimen localities were georeferenced following the point-radius method (Wieczorek *et al.* 2004; Chapman & Wieczorek 2006), using the MaNIS Georeferencing Calculator April 2011 version (Regents of the University of California 2011).

## TYPE LIST

## Family Lygistorrhinidae Edwards, 1925

*Lygistorrhina sanctaecatharinae* Thompson, 1975

## Fig. 1

*Lygistorrhina sanctaecatharinae*: Thompson 1975: 442, figs 1–3 (head), figs 4–6 (thorax, head, antenna), figs 7–14 (♂ & ♀ terminalia). Type locality: United States, Georgia, Liberty County.

Paratypes (NMSA type no. 1866): 3♂ (first two labels are same for all three specimens) (1) printed on white paper: “USA, Georgia: | Liberty Co., St. [Saint] | Catherines Island [31.7106°N 81.2624°W, uncertainty 3.3 km] | April 24–28, 1972 [24–28.iv.1972] | Thompson & Picchi”; (2) printed on yellow paper: “PARATYPE | *Lygistorrhina* | *sanctaecatharinae* | Thompson 1973”.

Identification: (3) printed on white paper: “NMSA-Dip. 11277”; exemplar glued on a paper triangle; missing parts: none. (3) printed on white paper: “NMSA-Dip. 11308”; exemplar glued on a paper triangle; missing parts: none. (3) printed on white paper: “NMSA-Dip. 11266”; exemplar glued on a paper triangle; missing parts: none.

Distribution: United States (West Virginia, Virginia, North Carolina, Georgia).

## Family Mycetophilidae Newman, 1834

*Dinempheria enigmata* Väisänen, 1994

## Fig. 2

*Dinempheria enigmata*: Väisänen 1994: 14, figs 1–3 (head, thorax, wing); figs 4–9 (♂ terminalia). Type locality: South Africa, Mpumalanga.

Holotype (NMSA type no. 2155): ♂ (1) printed on white paper: “S. AFRICA: E. Transvaal [South Africa: Mpumalanga] | 9 Km nw. Sabie 2530BB | Bridal Veil Falls [25.0828°S 30.7249°E, uncertainty 0.75 km] | XII 3, 1976. R. Miller [3.xii.1976]”; (2) printed with handwriting on white paper: “*Dinempheria* ♂ | *enigmata* n.sp. | det. R. Väisänen 1992”; (3) printed with handwriting on red paper: “Holotypus ♂ | *Dinempheria* | *enigmata* n.sp. | Väisänen”; (4) printed on white paper: “NMSA-Dip. 11312”.

Preservation: Exemplar glued on paper triangle, terminalia retained in glycerine, left wing damaged on distal half, abdomen and one leg glued on paper triangle; missing parts: right wing, left leg I, and legs III.

Paratype (NMSA type no. 2155): ♀ (1) printed with handwriting on white paper: “SOUTH AFRICA: Natal [KwaZulu-Natal] | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16–18.XII.1977 | JGH Londt”; (2) printed with handwriting on white paper: “*Dinempheria* ♀ | *enigmata* n.sp. | det. R. Väisänen”; (3) printed on yellow paper: “PARATYPE ♀”; (4) printed on white paper: “NMSA-Dip. 11301”.

Preservation: Pinned exemplar; missing parts: right legs I and II tarsi, right leg III.

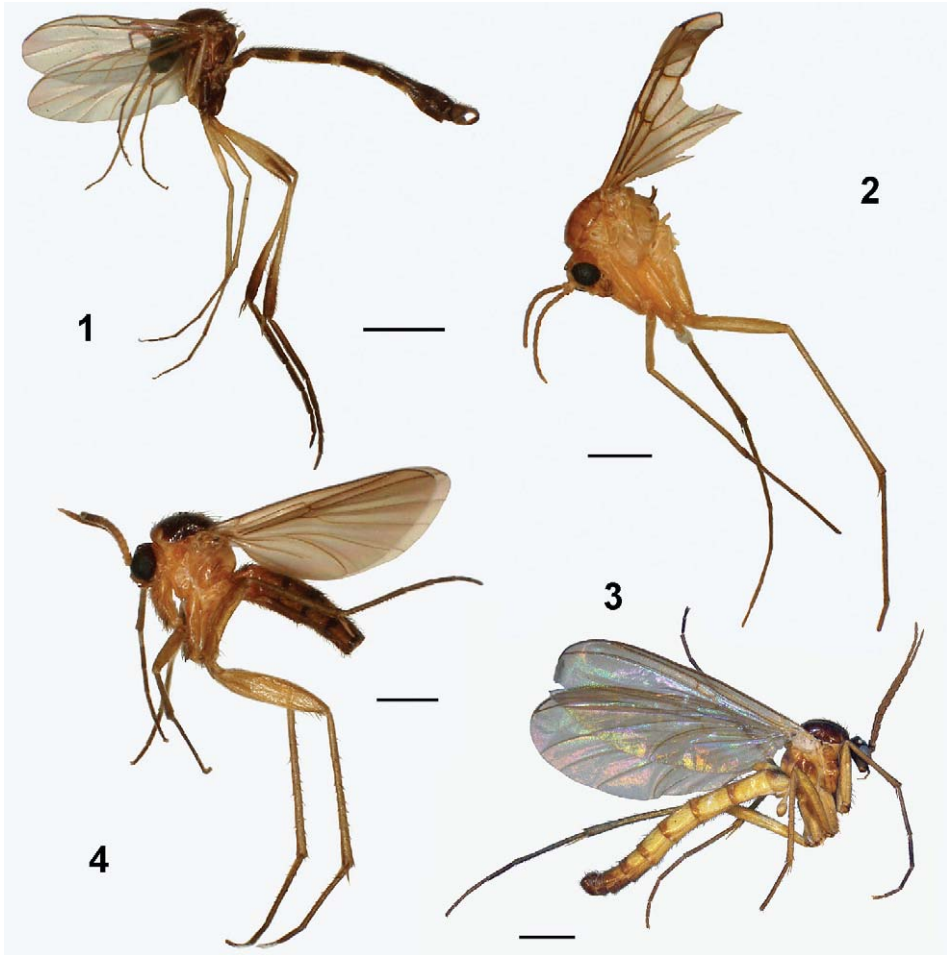
Distribution: South Africa (Mpumalanga).

*Dziedzickia peckorum* Matile, 1992

## Fig. 3

*Dziedzickia peckorum*: Matile 1992: 195, figs 9, 10 (♂ terminalia). Type locality: South Africa, KwaZulu-Natal, Karkloof range near Mount Alida.

Paratype (NMSA type no. 1952): ♂ (1) printed on blue paper: “REP AFR. SUD, NATAL | 75 KM WSW ESTCOURT | CATHEDRAL PEAKS [Cathedral Peak]”; (2) printed on blue paper: “FOR STA. [Forest



Figs 1–4. (1) *Lygistorrhina sanctaecatharinae* Thompson, paratype “NMSA-Dip. 11308”; (2) *Dinemphe-ria enigmata* Väisänen, holotype; (3) *Dziedzickia peckorum* Matile, paratype “NMSA-DIP 66399”; (4) *Dziedzickia stuckenbergorum* Matile, holotype. Scale bars = 1 mm.

Station, 29.0333°S 29.2500°E, uncertainty 0.148 km] 1760 M. | 21-31-XII-1979 [21–31.xii.1979] | S. & J. PECK”; (3) printed on red paper: “PARATYPE”; (4) printed with handwriting: “*Dziedzickia | peckorum n.sp.* | ♂ paratype | L. Matile det. 1991”; (5) printed on white paper: “NMSA-DIP 66399”.

Preservation: Pinned exemplar; missing parts: right leg III, right II tarsi, four terminal segments.

Paratype (NMSA type no. 1952): ♀ (1) printed on blue paper: “REP AFR. SUD, NATAL | 75 KM WSW ESTCOURT | CATHEDRAL PEAKS [Cathedral Peak]”; (2) printed on blue paper: “FOR STA. [Cathedral Peak Forest Station, 29.0333°S 29.2500°E, uncertainty 0.148 km] 1760 M. | 21-31-XII-1979 [21–31.xii.1979] | S. & J. PECK”; (3) printed on red paper: “PARATYPE”; (4) printed with handwriting: “*Dziedzickia | peckorum n.sp.* | ♀ paratype | L. Matile det. 1991”; (5) printed on white paper: “NMSA-DIP 66400”.

Preservation: Pinned exemplar; missing parts: legs II.

Distribution: South Africa (KwaZulu-Natal).

*Dziedzickia stuckenbergerorum* Matile, 1992

## Fig. 4

*Dziedzickia stuckenbergerorum*: Matile 1992: 197, fig. 11 (♂ terminalia). Type locality: South Africa, KwaZulu-Natal, Karkloof range near Mount Alida.

Holotype (NMSA type no. 1951): ♂ (1) printed with handwriting on white paper: "19.XI.63 [19.xi.1963] | Geekie's Farm [Benvie Farm, 29°15'30"S 30°20'40"E, uncertainty 4 km] | 1500 m."; (2) printed on white paper: "Karkloof range | nr. Mt Alida [near Mount Alida] | Natal [KwaZulu-Natal], S. Africa [South Africa] | B. & P. Stuckenberg"; (3) printed on red paper: "HOLOTYPE"; (4) printed with handwriting on white paper: "*Dziedzickia | stuckenbergerorum | n.sp. ♂ holotype | L. Matile det. 1991*"; (5) printed on white paper: "NMSA-Dip. 11280".

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: none.

Distribution: South Africa (KwaZulu-Natal).

*Leia arsona* Hutson, 1978

## Fig. 5

*Leia arsona*: Hutson 1978: 123. Type locality: South Africa, Eastern Cape, Grahamstown.

Holotype (NMSA type no. 2149): ♂ (1) printed on white paper circle with red edges: "Holo- | type"; (2) printed with handwriting on white paper: "Grahamstown [33.2970°S 26.5474°E, uncertainty 4 km] | South Africa | 1-x-1953 [1.x.1953] | B. Stuckenberg"; (3) printed with handwriting on white paper: "HOLOTYPE ♂ | *Leia | arsona Hutson | det. A.M. Hutson, 1977.*"; (4) printed on white paper: "NMSA-Dip. 11310".

Preservation: Pinned exemplar; missing parts: right leg III.

Paratype (NMSA type no. 2149): ♂ (1) printed on white paper circle with yellow edges: "Para- | type"; (2) printed with handwriting on white paper: "Grahamstown [33.2970°S 26.5474°E, uncertainty 4 km] | South Africa | 1-x-1953 [1.x.1953] | B. Stuckenberg"; (3) printed with handwriting on white paper: "PARATYPE ♂ | *Leia | arsona Hutson | det. A.M. Hutson, 1977.*"; (4) printed on white paper: "NMSA-Dip. 11321".

Preservation: Pinned exemplar, abdomen glued on the micropin; missing parts: right leg III.

Paratype (NMSA type no. 2149): ♀ (1) printed on white paper circle with yellow edges: "Para- | type"; (2) printed with handwriting on white paper: "Grahamstown [33.2970°S 26.5474°E, uncertainty 4 km] | South Africa | 24-x-1953 [24.x.1953] | B. Stuckenberg"; (3) printed with handwriting on white paper: "PARATYPE ♀ | *Leia | arsona Hutson | det. A.M. Hutson, 1977.*"; (4) printed on white paper: "NMSA-Dip. 11311".

Preservation: Pinned exemplar; missing parts: none.

Distribution: South Africa (Eastern Cape), Kenya, Saint Helena. Widely introduced in Europe, in Mediterranean region as well as in New Zealand (Chandler & Ribeiro 1995; Chandler & Gatt 2000; Chandler 1994; Toft & Chandler 2004; Chandler & Pijnakker 2009; Väisänen 1984).

*Manota natalensis* Jaschhof & Mostovski, 2006

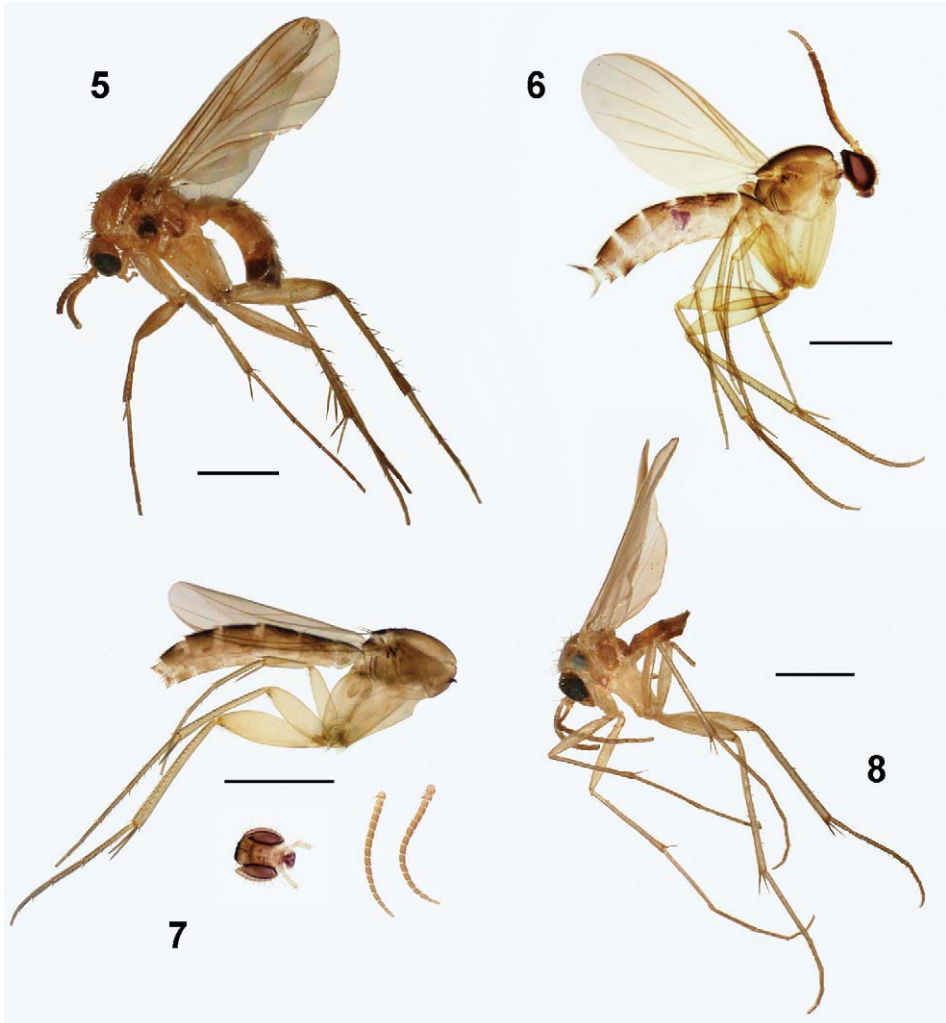
## Fig. 6

*Manota natalensis*: Jaschhof & Mostovski 2006: 238, figs 1–3 (♂ & ♀ terminalia). Type locality: South Africa, KwaZulu-Natal, Karkloof Nature Reserve.

Holotype (NMSA type no. 1953): ♂ (1) printed on white paper: "det. M. JASCHHOF | *Manota natalensis* | JASCH. & MOST., male"; (2) printed on red paper circle: "Holo- | type"; (3) printed on white paper: "RSA [South Africa]: KwaZulu-Natal: | Pietermaritzburg, Karkloof Nat. Res. [Karkloof Nature Reserve] | (29.19.1S 30.15.5E) [29°19.1'S 30°15.5'E, uncertainty 0.246 km]; | 1325m; mistbelt forest; | 24 Nov.-18 Dec. 2005 [24.xi-18.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF"; (4) printed on white paper: "NMSA-Dip. 66401".

Preservation: On one slide, with terminalia and right wing separate on the slide; missing parts: three right terminal flagellar segments.





Figs 5–8. (5) *Leia arsona* Hutson, holotype; (6) *Manota natalensis* Jaschhof & Mostovski, holotype; (7) *Manota whiteleyi* Jaschhof & Mostovski, holotype; (8) *Mycomya edra* Väisänen, holotype. Scale bars = 1 mm.

Paratypes (NMSA type no. 1953): 3♂ (1) printed on white paper: “det. M. JASCHHOF | *Manota natalensis* | JASCH. & MOST., male”; (2) printed on yellow paper circle: “Para- | type”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Pietermaritzburg, Karkloof Nat. Res. [Karkloof Nature Reserve] | (29.19.1S 30.15.5E) [29°19.1'S 30°15.5'E, uncertainty 0.246 km]; | 1325m; mistbelt forest; | 24 Nov.-18 Dec. 2005 [24.xi–18.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”.

Identification: (4) printed on white paper: “NMSA-Dip. 66402”; on one slide, with terminalia, left leg II and left wing separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66403”; on one slide, with head, antenna, all right legs, right wing and terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66404”; on one slide, with terminalia separate on the slide, distal edge of both wings damaged; missing parts: none.

Paratype (NMSA type no. 1953): ♀ (1) printed on white paper: “det. M. JASCHHOF | *Manota natalensis* | JASCH. & MOST., female”; (2) printed on yellow paper circle: “Para- | type”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Pietermaritzburg, Karkloof Nat. Res. [Karkloof Nature Reserve] | (29.19.1S 30.15.5E) [29°19.1'S 30°15.5'E, uncertainty 0.246 km]; | 1325m; mistbelt forest; | 24 Nov.-18 Dec. 2005 [24.xi-18.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”; (4) printed on white paper: “NMSA-Dip. 66405”.

Preservation: On one slide, with left leg I, left antenna, left wing and terminalia separate on the slide; missing parts: none.

Paratypes (NMSA type no. 1953): 3♂ (1) printed on white paper: “det. M. JASCHHOF | *Manota natalensis* | JASCH. & MOST., male”; (2) printed on yellow paper circle: “Para- | type”; (3) RSA [South Africa]: KwaZulu-Natal: | Northern Drakensberg, Royal Natal | Nat. [National] Park, Gudu Forest | (28.40.9S 28.55.8E) [28°40.9'S 28°55.8'E, uncertainty 0.245 km]; | 1680-1730m; | old growth indigenous forest; | 28 Nov.-13 Dec. 2005 [28.xi-13.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”.

Identification: (4) printed on white paper: “NMSA-Dip. 66406”; on one slide, with abdomen and both wings separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66407”; on one slide, with head, antennae, both wings and terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66408”; on one slide, with terminalia separate on the slide; missing parts: none.

Paratype (NMSA type no. 1953): ♂ (1) printed on white paper: “det. M. JASCHHOF | *Manota natalensis* | JASCH. & MOST., male”; (2) printed on yellow paper circle: “Para- | type”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Central Drakensberg, Cathedral | Peak Nat. Res. [Nature Reserve], Rainbow Gorge | (28.57.6S 29.13.6E) [28°57.6'S 29°13.6'E, uncertainty 0.246 km]; | 1500m; | old-growth indigenous forest; | 3-5 Dec. 2005 [3-5.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”. (4) printed on white paper: “NMSA-Dip. 66409”.

Preservation: On one slide, with terminalia separate on the slide; missing parts: none.

Distribution: South Africa (KwaZulu-Natal).

### *Manota whiteleyi* Jaschhof & Mostovski, 2006

#### Fig. 7

*Manota whiteleyi*: Jaschhof & Mostovski 2006: 240, figs 4, 5 (♂ terminalia), Type locality: South Africa, KwaZulu-Natal, Ramsgate.

Holotype (NMSA type no. 1954): ♂ (1) printed on white paper: “det. M. JASCHHOF / MOST#7 | *Manota whiteleyi* | JASCH. & MOST., male”; (2) printed on red paper circle: “Holo- | type”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Ramsgate Butterfly Sanctuary | (30.53.3S 30.20.4E) [30°53.1'S 30°20.4'E, uncertainty 0.244 km]; | 45m; | indigenous forest patch near | stream; 3-26 Feb 2005 [3-26.ii.2005]; | Malaise trap; M. MOSTOVSKI”; (4) printed on white paper: “NMSA-Dip. 66410”.

Preservation: On one slide, with left legs, head and antennae separate on the slide; missing parts: none.

Paratypes (NMSA type no. 1954): 3♂ (1) printed on white paper: “det. M. JASCHHOF / MOST#7 | *Manota whiteleyi* | JASCH. & MOST., male”; (2) printed on yellow paper circle: “Para- | type”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Ramsgate Butterfly Sanctuary | (30.53.3S 30.20.4E) [30°53.1'S 30°20.4'E, uncertainty 0.244 km]; | 45m; | indigenous forest patch near | stream; 3-26 Feb 2005 [3-26.ii.2005]; | Malaise trap; M. MOSTOVSKI”.

Identification: (4) printed on white paper: “NMSA-Dip. 66412”; on one slide, with terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66413”; on one slide, with right wing and terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66414”; on one slide, with left legs, left wing and terminalia separate on the slide; missing parts: none.

Paratype: ♀ (1) printed on white paper: “det. M. JASCHHOF / MOST#7 | *Manota whiteleyi* | JASCH. & MOST., | female”; (2) printed on yellow paper circle: “Para- | type”; (3) printed on white paper: “RSA



[South Africa]: KwaZulu-Natal: | Ramsgate Butterfly Sanctuary | (30.53.3S 30.20.4E) [30°53.1'S 30°20.4'E, uncertainty 0.244 km]; | 45m; | indigenous forest patch near | stream; 3-26 Feb 2005 [3-26.ii.2005]; | Malaise trap; M. MOSTOVSKI"; (4) printed on white paper: "NMSA-Dip. 66415".

Preservation: On one slide, with right wing separate on slide; missing parts: right leg I.

Paratype (NMSA type no. 1954): ♂ (1) printed on white paper: "det. M. JASCHHOFF / MOST#3 | *Manota whiteleyi* | JASCH. & MOST., male"; (2) printed on yellow paper circle: "Para- | type"; (3) printed on white paper: "RSA [South Africa]: KwaZulu-Natal: | Ramsgate Butterfly Sanctuary | (30.53.3S 30.20.4E) [30°53.1'S 30°20.4'E, uncertainty 0.244 km]; | 45m; | indigenous forest patch near | stream; 9 Jan-2 Feb 2005 [9.i-2.ii.2005]; | Malaise trap; M. MOSTOVSKI"; (4) printed on white paper: "NMSA-Dip. 66411".

Preservation: On one slide, with left legs, left wing and terminalia separate on the slide; missing parts: none.

Distribution: South Africa (KwaZulu-Natal).

### *Mycomya edra* Väisänen, 1994

#### Fig. 8

*Mycomya edra*: Väisänen 1994: 20, figs 28–37 (♂ & ♀ terminalia). Type locality: South Africa, KwaZulu-Natal, Cathedral Peak.

Holotype (NMSA type no. 2152): ♂ (1) printed with handwriting on white paper: "SOUTH AFRICA: Natal [KwaZulu-Natal] Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16-18.XII.1977 | JGH Londt"; (2) printed with handwriting on white paper: "Mycomya ♂ | *edra* n.sp. | det. R. Väisänen 1992"; (3) handwritten on red paper: "HOLOTYPE | *Mycomya* | *edra* | Väisänen"; (4) printed on white paper: "NMSA-Dip. 11270".

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: right leg II tibia and tarsi.

Paratypes (NMSA type no. 2152): 2♂ (1) printed with handwriting on white paper: "SOUTH AFRICA: Natal | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16-18.XII.1977 | JGH Londt"; (2) printed with handwriting on white paper: "Mycomya ♂ | *edra* n.sp. | det. R. Väisänen 1992"; (3) printed on yellow paper: "PARATYPE ♂".

Identification: (4) printed on white paper: "NMSA-Dip. 11293"; pinned exemplar, terminalia retained in glycerine; missing parts: head, right leg II and legs III. (4) printed on white paper: "NMSA-Dip. 59083"; pinned exemplar, terminalia retained in glycerine; missing parts: right III tarsi and left III.

Paratypes (NMSA type no. 2152): 6♀ (1) printed with handwriting on white paper: "SOUTH AFRICA: Natal [KwaZulu-Natal] Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16-18.XII.1977 | JGH Londt"; (2) printed with handwriting on white paper: "Mycomya ♀ | *edra* n.sp. | det. R. Väisänen 1992"; (3) printed on yellow paper: "PARATYPE ♀".

Identification: (4) printed on white paper: "NMSA-Dip. 59084"; pinned exemplar, terminalia retained in glycerine; missing parts: none. (4) printed on white paper: "NMSA-Dip. 59085"; pinned exemplar; missing parts: right I tarsi 3 to 5, left II tarsi 2 to 5 and left III tibia and tarsi. (4) printed on white paper: "NMSA-Dip. 59086"; pinned exemplar; missing parts: right flagellar segments. (4) printed on white paper: "NMSA-Dip. 59087"; pinned exemplar, terminalia retained in glycerine; missing parts: right legs I and II. (4) printed on white paper: "NMSA-Dip. 59088"; pinned exemplar, terminalia retained in glycerine; missing parts: left flagellar segments, left I and right II and left III tibia and tarsi. (4) printed on white paper: "NMSA-Dip. 59089"; pinned exemplar, terminalia retained in glycerine, abdomen glued to micropin foam; missing parts: apical right flagellar segments and all legs.

Distribution: South Africa (KwaZulu-Natal).

*Mycomya londti* Väisänen, 1994

## Fig. 9

*Mycomya londti*: Väisänen 1994: 18, figs 22–27 (♂ terminalia). Type locality: South Africa, KwaZulu-Natal, Cathedral Peak.

Holotype (NMSA type no. 2150): ♂ (1) printed with handwriting on white paper: “SOUTH AFRICA: Natal [KwaZulu-Natal] | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16–18.XII.1977 | JGH Londt”; (2) printed with handwriting on white paper: “*Mycomya* ♂ | *londti* n.sp. | det. R. Väisänen 1992”; (3) handwritten on red paper: “HOLOTYPE | *Mycomya* | *londti* | Väisänen”; (4) printed on white paper: “NMSA-Dip. 11340”.

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: legs I, all other legs have missing tarsi.

Paratype (NMSA type no. 2150): ♀ (1) printed with handwriting on white paper: “SOUTH AFRICA: Natal [KwaZulu-Natal] | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | 2829Cc 16–18.XII.1977 | JGH Londt”; (2) printed with handwriting on white paper: “*Mycomya* ♀ | *londti* n.sp. | det. R. Väisänen 1992”; (3) printed on yellow paper: “PARATYPE ♀”; (4) printed on white paper: “NMSA-Dip. 11302”.

Preservation: Pinned exemplar; missing parts: antenna, right I tibia and tarsi, and right III tarsi.

Distribution: South Africa (KwaZulu-Natal).

*Mycomya natalensis* Väisänen, 1994

## Fig. 10

*Mycomya natalensis*: Väisänen 1994: 16, figs 10–19 (♂ terminalia). Type locality: South Africa, KwaZulu-Natal, Sunwich Port.

Holotype (NMSA type no. 2151): ♂ (1) printed on white paper: “Sunwich Port [Sunwich Port, Port Shepstone, 30.6596°S 30.5083°E, uncertainty 0.8 km] | NAT. [KwaZulu-Natal] X.1951”; (2) printed on white paper: “30.35S–30.32E [30°35'S 30°32'E, uncertainty 3.44 km]”; (3) printed with handwriting on white paper: “*Mycomya* ♂ | *natalensis* n.sp. | det. R. Väisänen 1992”; (4) handwritten on red paper: “HOLOTYPE | *Mycomya* | *natalensis* | Väisänen”; (5) printed on white paper: “NMSA-Dip. 11278”.

Preservation: Pinned exemplar, terminalia retained in glycerine, left wing damaged distally; missing parts: right leg I and legs II, all remaining legs have missing tarsi 2–4.

Distribution: South Africa (KwaZulu-Natal).

*Mycomyiella irwini* Väisänen, 1994

## Fig. 11

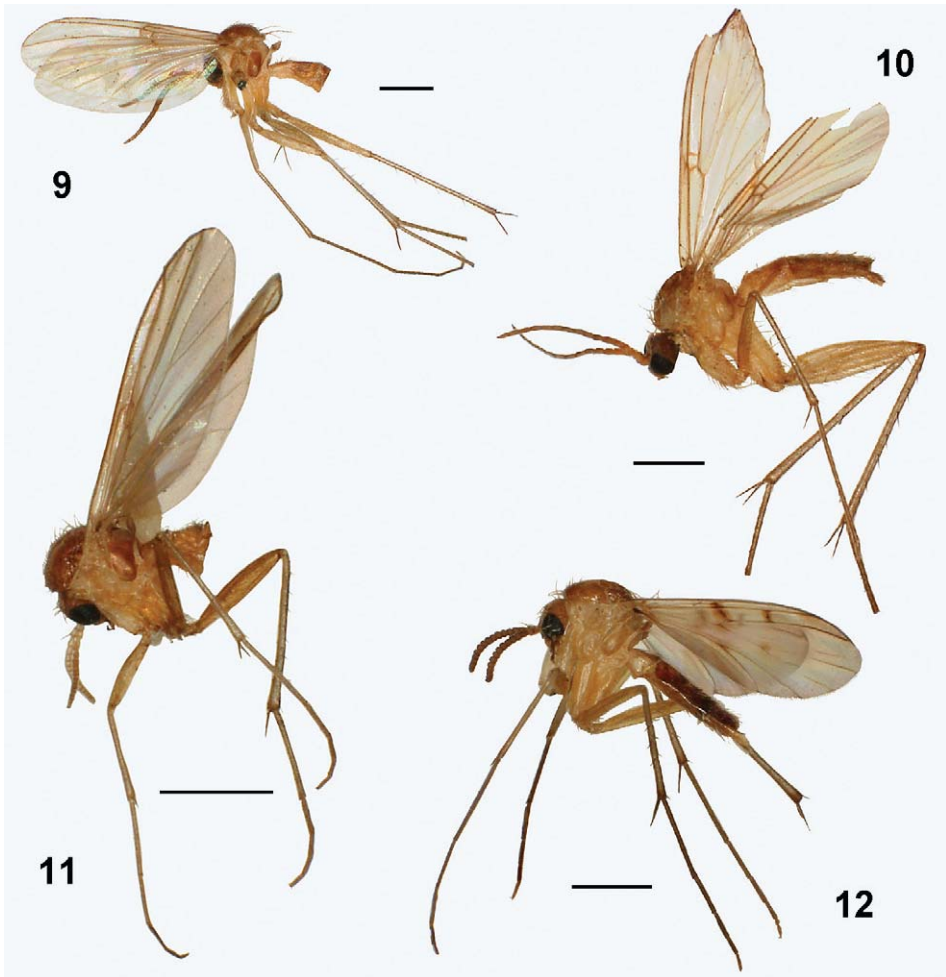
*Mycomyiella irwini*: Väisänen 1994: 21, figs 38–42 (♂ terminalia). Type locality: South Africa, KwaZulu-Natal, Pietermaritzburg.

Holotype (NMSA type no. 2153): ♂ (1) printed with handwriting on white paper: “South Africa, Natal [KwaZulu-Natal] | Pietermaritzburg | Belfort [29.5540°S 30.3823°E, uncertainty 1.1 km] 15-V-73 [15.v.1973] | ME Irwin; (2930Cb)”; (2) printed with handwriting on white paper: “*Mycomyiella* | *irwini* n.sp. | det. R. Väisänen 1992”; (3) handwritten on red paper: “HOLOTYPE | *Mycomyiella* | *irwini* | Väisänen”; (4) printed on white paper: “NMSA-Dip. 11258”.

Preservation: exemplar glued on paper triangle, terminalia retained in glycerine; missing parts: right legs.

Paratype (NMSA type no. 2153): ♂ (1) printed on white paper: “SOUTH AFRICA: NATAL | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | XII.26-27.1977 [26–27.xii.1977]. 2829CC | R.M.Miller. indigenous | for [forest]”; (2) printed with handwriting on white paper: “*Mycomyiella* ♂ | *irwini* n.sp. 1992 | det R. Väisänen”; (3) printed on yellow paper: “PARATYPE ♂”; (4) printed on white paper: “NMSA-Dip. 11262”.

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: all legs.



Figs 9–12. (9) *Mycomya londti* Väisänen, holotype; (10) *Mycomya natalensis* Väisänen, holotype; (11) *Mycomyiella irwini* Väisänen, holotype; (12) *Neoempheria transvaalensis* Väisänen, holotype. Scale bars = 1 mm.

Paratype (NMSA type no. 2153): ♂ (1) printed on white paper: “SOUTH AFRICA: NATAL [KwaZulu-Natal] | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | XII.26-27.1977 [26–27.xii.1977]. 2829CC | R.M.Miller. indigenous | for [forest]”; (2) printed with handwriting on white paper: “*Mycomyiella* ♂ | *irwini* n.sp. 1992 | det R. Väisänen”; (3) printed on yellow paper: “PARATYPE ♂”; (4) printed on white paper: “NMSA-Dip. 59209”.

Preservation: Pinned exemplar; missing parts: none.

Paratype (NMSA type no. 2153): ♂ (1) printed on white paper: “SOUTH AFRICA: NATAL [KwaZulu-Natal] | Cathedral Peak area [28°57'S 29°12'E, uncertainty 2.46 km] | XII.26-27.1977 [26–27.xii.1977]. 2829CC | R.M.Miller. indigenous | for [forest]”; (2) printed with handwriting on white paper: “*Mycomyiella* ♂ | *irwini* n.sp. 1992 | det R. Väisänen”; (3) printed on yellow paper: “PARATYPE ♂”; (4) printed on white paper: “NMSA-Dip. 59210”.

Preservation: Pinned exemplar; missing parts: none.

Distribution: South Africa (KwaZulu-Natal).

*Neoempheria transvaalensis* Väisänen, 1994

## Fig. 12

*Neoempheria transvaalensis*: Väisänen 1994: 22, figs 43–47 (♂ terminalia). Type locality: South Africa, Mpumalanga, near Barberton.

Holotype (NMSA type no. 2154): ♂ (1) printed on white paper: “STH AFRICA [South Africa]: Transvaal [Mpumalanga] | 8 Km NW Barbeton on | Badplass Rd SE 2530 DD [R38 road, 25.7408°S 30.99923°E, uncertainty 2 km] | 6–8.iv.1985 J.Londt | Bushveld long grass”; (2) printed with handwriting on white paper: “Neoempheria ♂ | *transvaalensis* n.sp. | det. R. Väisänen 1992”; (3) handwritten on red paper: “HOLOTYPE | *Neoempheria* | *transvaalensis* | Väisänen”; (4) printed on white paper: “NMSA-Dip. 11319”.

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: right III, left III tarsi 2–5.

Paratype (NMSA type no. 2154): ♂ (1) printed on white paper: “SOUTH AFRICA 2428CD | Transvaal [Limpopo] Nyl Rivier [River] | 8 Km SW of Nylstroom [Modimolle, 24.7608°S 28.3502°E, uncertainty 0.2 km] | 29–31.i.78 [29–31.i.1978] J.Londt | Bushveld near river | Malaise trap coll. ”; (2) printed with handwriting on white paper: “Neoempheria ♂ | *transvaalensis* n.sp. | det. R. Väisänen 1992”; (3) printed on yellow paper: “PARATYPE ♂”; (4) printed on white paper: “NMSA-Dip. 11330”.

Preservation: Pinned exemplar, right III and abdomen glued on card; missing parts: right I and legs III.

Distribution: South Africa (Limpopo, Mpumalanga).

*Paradoxa paradoxa* Jaschhof, 2006

## Fig. 13

*Paradoxa paradoxa*: Jaschhof 2006: 230, figs 1–9 (♂ terminalia and ♀ flagellomeres). Type locality: South Africa, KwaZulu-Natal, Northern Drakensberg, Royal Natal National Park, Gudu Forest.

Holotype (NMSA type no. 1955): ♂ (1) printed on white paper: “det. M. JASCHHOF | *Paradoxa paradoxa* | JASCHHOF, male”; (2) printed on red paper circle: “Holotype”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Northern Drakensberg; Royal Natal | Nat. [National] Park, Gudu Forest | (28.40.9S 28.55.8E) [28°40.9'S 28°55.8'E, uncertainty 0.245 km]; 1680-1730m; | old growth indigenous forest; | 28 Nov.-13 Dec. 2005 [28.xi–13.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”; (4) printed on white paper: “NMSA-Dip. 66416”.

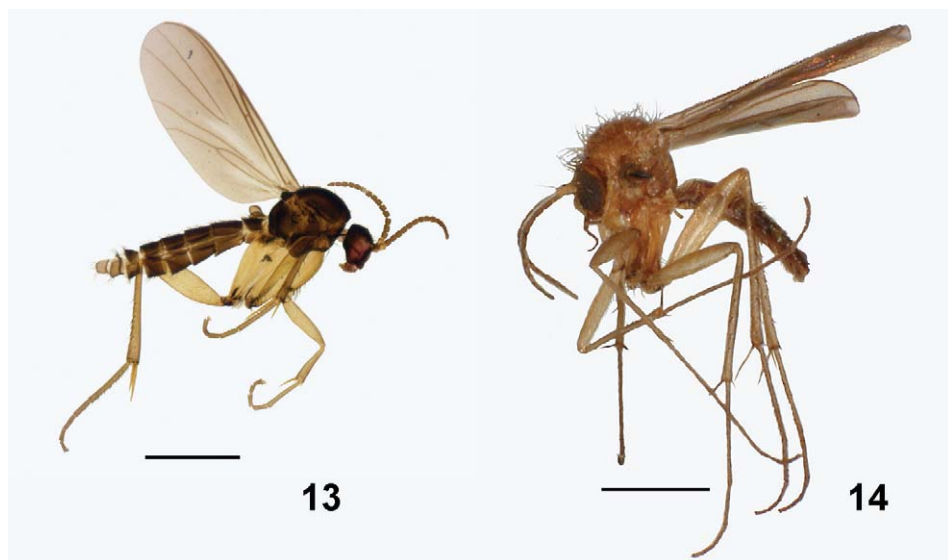
Preservation: On one slide, with left legs, left wing and terminalia separate on the slide; missing parts: none.

Paratypes (NMSA type no. 1955): 3♂ (1) printed on white paper: “det. M. JASCHHOF | *Paradoxa paradoxa* | JASCHHOF, male”; (2) printed on yellow paper circle: “Paratype”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Northern Drakensberg; Royal Natal | Nat. [National] Park, Gudu Forest | (28.40.9S 28.55.8E) [28°40.9'S 28°55.8'E, uncertainty 0.245 km]; 1680-1730m; | old growth indigenous forest; | 28 Nov.-13 Dec. 2005 [28.xi–13.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”.

Identification: (4) printed on white paper: “NMSA-Dip. 66417”; on one slide, with terminalia, left leg I, both legs II and wings separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66418”; on one slide, with head and terminalia separate on the slide; missing parts: left leg II. (4) printed on white paper: “NMSA-Dip. 66419”; on one slide, with left antenna, left wing and terminalia separate on the slide; missing parts: none.

Paratypes (NMSA type no. 1955): 5♀ (1) printed on white paper: “det. M. JASCHHOF | *Paradoxa paradoxa* | JASCHHOF, male”; (2) printed on yellow paper circle: “Paratype”; (3) printed on white paper: “RSA [South Africa]: KwaZulu-Natal: | Northern Drakensberg; Royal Natal | Nat. [National] Park, Gudu Forest | (28.40.9S 28.55.8E) [28°40.9'S 28°55.8'E, uncertainty 0.245 km]; 1680-1730m; | old growth indigenous forest; | 28 Nov.-13 Dec. 2005 [28.xi–13.xii.2005]; Malaise trap; | M. MOSTOVSKI, M. & C. JASCHHOF”.

Identification: (4) printed on white paper: “NMSA-Dip. 66420”; on one slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66421”; on one slide, with ter-



Figs 13, 14. (13) *Paradoxa paradoxa* Jaschhof, holotype; (14) *Sciophila atrigaster* Matile, paratype. Scale bars = 1 mm.

minalia separate on the slide; missing parts: right leg III. (4) printed on white paper: “NMSA-Dip. 66422”; on one slide, with left legs, left wing and terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66423”; on one slide, with right legs, right wing, head and terminalia separate on the slide; missing parts: none. (4) printed on white paper: “NMSA-Dip. 66424”; on one slide, with abdomen, head, terminalia and both wings separate on the slide; missing parts: distal part of right wing missing.

Distribution: South Africa (KwaZulu-Natal).

#### *Sciophila atrigaster* Matile, 1979

##### Fig. 14

*Sciophila atrigaster*: Matile 1979: 269, figs 31, 32 (♂ terminalia). Type locality: Comoro Islands.

Paratype (NMSA type no. 2129): ♂ (1) printed on white paper: “Madagascar Nord | Montagne d’Ambre [Amber Mountain National Park, 12.5894°S 49.1652°E, uncertainty 14.8 km] 1000 m | dct Diégo-Suárez | 23.XI–4.XII.57 [23.xi–4.xii.1957] B. Stuckenberg”; (2) printed with handwriting on white paper: “*Sciophila* | *atrigaster* n.sp. | ♂ paratype | L. Matile det. 1976”; (3) printed on red paper: “PARATYPE”; (4) printed on white paper: “NMSA-Dip. 11261”.

Preservation: Pinned exemplar, terminalia retained in glycerine; missing parts: none.

Distribution: Comoro Islands, Madagascar.

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