

## Eight new species of the genus *Mascaromyia* Bickel (Diptera: Dolichopodidae) from Indian Ocean islands

IGOR YA. GRICHANOV

Grichanov, I. Ya. 1996. Eight new species of the genus *Mascaromyia* Bickel (Diptera: Dolichopodidae) from Indian Ocean islands *Int. J. Dipterol. Res.*, 7(2): 109—118.

Eight new and 2 known species of the genus *Mascaromyia* are described from Mauritius and Chagos Archipelago. A catalogue and a key to known species of *Mascaromyia* are given.

I.Ya. Grichanov, All-Russian Institute of Plant Protection, Poddelskogo 3, St. Petersburg-Pushkin, 189620, Russia.

**Key Words.** Diptera, Dolichopodidae, *Mascaromyia*, Chagos Archipelago, Mauritius.

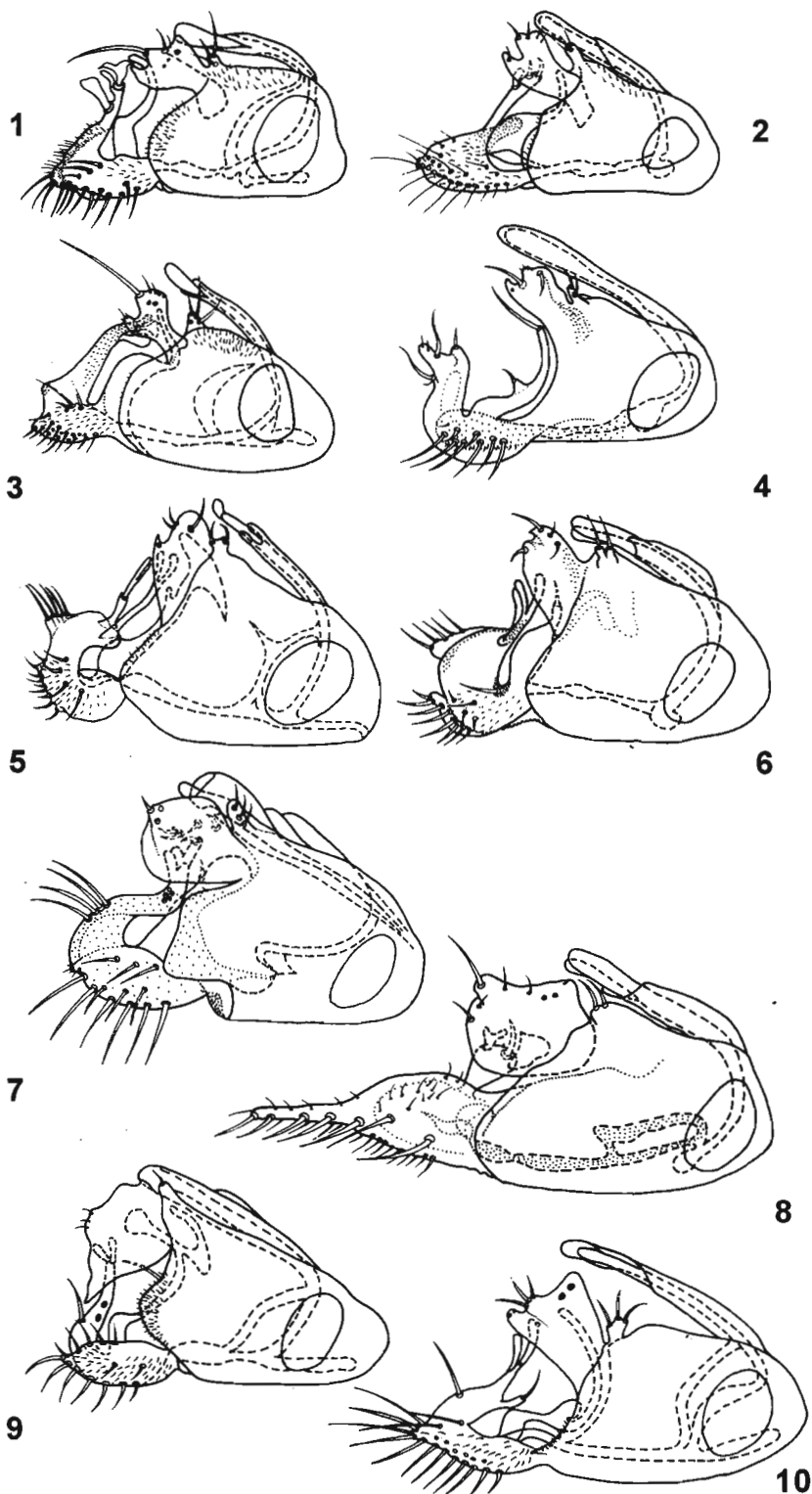
### Introduction

The genus *Mascaromyia* established by Bickel (1994) for 15 species from the western Indian Ocean Seychelles and Mascarene archipelagos, previously referred to *Sciapus* by Dyte & Smith (1980). *Psilopus parallela* Macquart and *Sciopus guerini* Parent regarded by Bickel (1994) as *Mascaromyia* should be referred to a new genus (Grichanov, in press), for their having anterior preapical seta on middle and hind femora (Parent, 1935), and some other remarkable attributes. The other listed species as well as newly described species are similar to generic diagnosis of *Mascaromyia* (Bickel, 1994) except the following corrections. Proclinate vertical setae sometimes absent in males; antennae yellow or black; 4—5 *dc* present; lateral scutellar setae microscopic or absent; cerci extremely modified, usually with two long ventral projections. Lamb (1922) noted that females of many species included now in *Mascaromyia* are so extremely close as to be almost inseparable. Most of the species described and recorded below completely lacked diagnostic specific characters, and identification of females is not possible as many species have identical locality data.

Holotypes and paratypes conserved in the Natural History Museum (London).

### List of known species of *Mascaromyia*

*Mascaromyia*, Bickel, 1994: 100. Type species *Psilopus pollicifer* Lamb, 1922: 375, by designation of Bickel, 1994.  
*albitarsis* Parent, 1935: 83 (*Sciopus*) — Mauritius.  
*amplicaudata* Lamb, 1922: 378 (*Psilopus*) — Seychelles.  
*babichae* sp. n. — Mauritius.  
*bickeli* sp. n. — Mauritius.  
*desjardsi* Macquart, 1842: 175 (*Psilopus*); Parent, 1932a: 874 (redescription) — Mauritius.  
*duplicata* Parent, 1932b: 230 (*Sciopus*) — Reunion.  
*dytei* sp. n. — Mauritius.  
*frolovi* sp. n. — Mauritius.  
*grandicaudata* Lamb, 1922: 378 (*Psilopus*) — Seychelles.  
*hutchinsoni* sp. n. — Mauritius.  
*indistincta* Lamb, 1922: 376 (*Psilopus*) — Seychelles.  
*kalinkini* sp. n. — Mauritius.  
*leptogaster* Thomson, 1869: 510 (*Psilopus*); Parent, 1935: 86 (redescription) — Mauritius.  
*librativertex* Lamb, 1922: 374 (*Psilopus*) — Seychelles, Mauritius (!), Chagos Archipelago (!).  
*makhotkini* sp. n. — Mauritius.



Figs 1—10. Hypopygium, lateral view.

1, *M. bickeli* sp. n.; 2, *M. makhotkini* sp. n.; 3, *M. babichae* sp. n.; 4, *M. librativertex* (Lamb); 5, *M. shabuninae* sp. n.; 6, *M. hutsoni* sp. n.; 7, *M. albitarsis* (Parent); 8, *M. dytei* sp. n.; 9, *M. kalinkini* sp. n.; 10, *M. frolovi* sp. n.

*magnicaudata* Lamb, 1922: 377 (*Psilopus*) — Seychelles.  
*mauritiensis* Parent, 1939: 270 (*Sciopus*) — Mauritius.  
*pollicifer* Lamb, 1922: 375 (*Psilopus*) — Seychelles.  
*rufiventris* Macquart, 1842: 174 (*Psilopus*); Parent, 1935: 89 (re-description) — Mauritius.  
*shabuninae* sp. n. — Mauritius.  
*vagabunda* Lamb in Bezzi & Lamb, 1925: 546 (*Psilopus*) — Rodriguez.

### Key to known species of *Mascaromyia*

#### Males

1. Fore femora with 2—5 thorns or spines beneath . . . . . 2  
 — Fore femora without long bristles . . . . . 5
2. Fore femora with 2 fine ventral thorns at the base, middle femora bare . . . . . 3  
 — Fore femora with a row of 5 conspicuous sloping black bristles beneath on the basal two-thirds . . . . . 4
3. Last tarsomere of fore legs dilated and twisted, and carries a small side process like a thumb . . . . . *M. pollicifer* Lamb  
 — Last tarsomere absolutely simple and undifferentiated . . . . . *M. indistincta* Lamb
4. Scape and pedicel dark; femora with regular bristles below; hypopygium less pedicellate . . . . . *M. magnicaudata* Lamb  
 — Scape and pedicel orange; fore femora with very irregular rows of variously sized bristly hairs; middle femora is devoid of the row of bristles; hypopygium more pedicellate . . . . . *M. grandicaudata* Lamb
5. Thorax including mesonotum and abdomen mostly yellow . . . . . 6  
 — At most pleurae partly orange . . . . . 10
6. Middle femora with 5 strong anterior bristles . . . . . *M. amplicaudata* Lamb  
 — Middle femora bare . . . . . 7
7. Vein  $M_2$  and apical part of  $M_{3+4}$  absent without fold or indication on membrane . . . . . *M. bickeli* sp. n.  
 — Wing venation undistorted . . . . . 8
8. Fore basitarsomere shorter than fore tibia . . . . . *M. babichae* sp. n.  
 — Fore basitarsomere 1 and 1/3 times as long as fore tibia . . . . . 9
9. Legs yellow; fore basitarsomere as long as second and third tarsomeres together . . . . . *M. vagabunda* Lamb  
 — Hind legs mostly brown, hind tibiae white in basal third; fore basitarsomere thrice as long as the rest . . . . . *M. makhotkini* sp. n.

10. Legs yellow, simple, middle coxae black . . . . . *M. duplicata* Parent  
 — All the coxae yellow; if middle and hind coxae brownish, then femora or tibiae partly brown or some tarsomeres modified (enlarged, shortened, thin and long, or white) . . . . . 11
11. Fore basitarsomere long and thin, more than twice as long as rest tarsomeres . . . . . 12  
 — Fore basitarsomere nearly as long as rest tarsomeres; posterior border of wing in apical half often foggy . . . . . *M. librativertex* Lamb
12. Face nearly as wide as first flagellomere . . . . . 13  
 — Eyes touching in the middle of face . . . . . 14
13. Last tarsomere of fore tarsi strongly enlarged, black . . . . . *M. shabuninae* sp. n.  
 — Last tarsomere simple, short . . . . . *M. hutsoni* sp. n.
14. Hind tarsi white . . . . . *M. albitarsis* Parent  
 — Hind tarsi dark-brown . . . . . 15
15. Antennae yellow, legs yellow, tarsi brownish . . . . . *M. dytei* sp. n.  
 — Antennae black, hind femora progressively brown towards apex, hind tibiae brown . . . . . 16
16. Fore tarsi white, first tarsomere thrice as long as the rest . . . . . *M. kalinkini* sp. n.  
 — Fore tarsi dark, first tarsomere twice as long as rest tarsomeres . . . . . *M. frolovi* sp. n.

#### Females

1. At least middle coxae black-brown . . . . . *M. desjardis* Macquart, *M. mauritiensis* Parent, *M. duplicata* Parent, (?) *M. frolovi* sp. n.  
 — All the coxae yellow . . . . . 2
2. Thorax including mesonotum and abdomen mostly yellow . . . . . *M. amplicaudata* Lamb, *M. vagabunda* Lamb, *M. babichae* sp. n., *M. bickeli* sp. n., *M. makhotkini* sp. n.  
 — At most pleurae orange . . . . . 3
3. Fore femora bare or only with 1—3 fine ventral setae . . . . . *M. albitarsis* Parent, *M. rufiventris* Macquart, (?) *M. kalinkini* sp. n.  
 — Fore femora with 4—5 strong ventral spines . . . . . *M. librativertex* Lamb, *M. pollicifer* Lamb, *M. indistincta* Lamb, *M. magnicaudata* Lamb, *M. grandicaudata* Lamb.

### Descriptions and new records

#### *Mascaromyia bickeli* sp. n.

(Fig. 1)

*Holotype*. Male, **Mauritius**: Macchabee Forest, 2.VI.1971 (A.M. Hutson), B.M.1971—346.

*Paratype*. Male, the same label.

**Description.** Male. Frons metallic blue-green. Small front vertical bristle bends forward, postvertical one is just at the angle of eye. Eyes joined in middle fifth of face. Face bronze-green, grey pollinose. Epistome as a small triangle with height/base ratio 1:2; clypeus as a small triangle with height/base ratio 3:7. Proboscis very short, orange-brown, covered with small hairs, palpi brown, with long black bristle and short hairs. Antennae yellow, slightly longer than height of head. Pedicel swollen, with a group of short bristles. First flagellomere somewhat darker, longer than its height at base, pubescent, subtriangle, with thin sharp apex. Arista basodorsal, scarcely haired. Length ratio of scape to pedicel to first flagellomere to arista — 4:5:6:45.

Mesonotum and pleura yellow-orange, hind part of mesonotum and scutellum brilliantly shining blue. Four dorsocentral bristles with a few hairs in front of them; acrostichals absent. Scutellum with two strong bristles.

Legs yellow. Fore coxae from the front with yellow hairs, three yellow apical bristles of various length and ending in a long thin yellow thorn. Middle coxae from the front with a few yellow apical hairs and with two fine dark bristles. Hind coxae with one long dark external bristle. Legs simple, without strong or long bristles. Middle tibia with a posterodorsal bristle. Middle and hind tibiae with a few very short apical bristles. Fore basitarsomere thin and long, with a regular ventral pectination on apical half. Second to fourth articles of fore tarsi shortened. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 2.2 : 2.7 : 3.1 : 4.3 : 0.6 : 0.6 : 0.3 : 0.3. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth) — 1.3 : 3.4 : 5.7 : 3.4 : 1.0 : 0.9 : 0.5 : 0.3. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 0.9 : 4.9 : 6.8 : 2.0 : 1.6 : 0.9 : 0.5 : 0.3.

Wings hyaline, veins brown.  $R_{4+5}$  and  $M_1$  gently curved to each other in apical fifth. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 1.7 : 0.4.  $M_1$  without any strong curvature;  $M_2$  presents as a fine fold on membrane; crossvein *m-cu* straight. Apical part of  $M_{3+4}$  reduced without indication on membrane, so forming united vein with *m-cu*. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and golden bristles. Halteres yellow.

Abdomen yellow-brown: first segment yellow, second and third — mostly yellow, fourth — mostly brown, fifth and sixth — brown with metallic green reflection; unmodified segments together thrice as long as mesonotum. 1st—6th abdominal tergites and sternites well developed. 7th segment brownish, 1.5 times as long as 6th segment and as epandrium.

Hypopygium brownish, with short hairs. Cercus yellow, dorsally densely setose, look like boomerang with crescent-shaped baso-ventral projection and long apico-ventral appendix, ending in three spatulate bristles. Surstylus tooth-shaped, with a long bristle in the middle of distal edge.

Female unknown.

Length: body 3.2 mm; body with antennae 3.9 mm; wing-length 2.4—2.6 mm; wing-width 0.7—0.8 mm.

**Distribution:** Mauritius.

**Etymology.** The species is named in honour of the Australian dipterologist Dr. Daniel J. Bickel.

**Diagnosis.** Males of *M. bickeli* can be easily separated from other species by simple legs (only fore basitarsomere thin and long, with a regular ventral pectination on apical half), mostly yellow body and modified wing venation, unusual in Chrysosomatinae.  $M_2$  presents as a fine fold on membrane; apical part of  $M_{3+4}$  reduced without indication on membrane, so forming united vein with *m-cu*.

### *Mascaromyia makhotkini* sp. n.

(Fig. 2)

**Holotype.** Male, Mauritius: Macchabee Forest, 2.VI.1971 (A.M. Hutson), B.M.1971—346.

**Description.** Male. Frons metallic blue-green, with violet reflection in the middle, slightly grey pollinose. Strong front vertical bristle bends forward, postvertical one is just at the angle of eye. Eyes joined in middle half of face. Face bronze-black, grey pollinose. Epistome as a small triangle with height/base ratio 2:1; clypeus almost invisible. Palpi and proboscis short, orange, covered with small hairs, palpi narrow, with long brown apical bristle. Antennae orange, slightly longer than height of head. Pedicel somewhat swollen. First flagellomere brown, longer than its height at base, densely pubescent, subtriangle, with thin sharp apex. Arista basodorsal, scarcely haired, arising from small mound. Length ratio of scape to pedicel to first flagellomere to arista — 5:5:8:50.

Mesonotum and pleura yellow-orange. Area between dorsocentrals, hind part of mesonotum and scutellum brilliantly shining blue-green. Four dorsocentral bristles with a few hairs in front of them; microscopic acrostichals in two rows. Scutellum with two strong bristles.

Legs mostly whitish-yellow. Hind femora except base and hind tibia except apex and basal third brown. Fore coxae from the front with yellow hairs, three dark apical bristles of various length and ending in a long thin yellow thorn. Middle coxae from the front with a few yellow apical hairs and with two fine dark bristles. Hind coxae with one dark exter-

nal bristle. Fore, middle and hind femora with 1–2 preapical ventral hairs. Middle tibia with a posterodorsal bristle. Middle and hind tibiae with a few very short apical setae. Fore basitarsomere thin and long, without ventral pectination. Second to fourth articles of fore tarsi shortened, dark-yellow. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 1.5 : 2.9 : 3.2 : 3.8 : 0.9 : 0.5 : 0.3 : 0.3. Length ratio of middle coxa to femora to tibia to tarsus (segments first and second) — 1.5 : 3.7 : 5.3 : 4.5 : 1.3. Length ratio of hind coxa to femora to tibia to basitarsomere — 1.3 : 5.2 : 7.5 : 2.3.

Wings hyaline, veins brown.  $R_{4+5}$  and  $M_1$  slightly converged, almost parallel at apex. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.4 : 0.5.  $M_1$  slightly recurved basad, with rounded right angle bend;  $M_2$  straight; crossvein *m-cu* nearly straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 1.6 : 3.9 : 1.8. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and yellow bristles. Halteres dark-yellow.

Abdomen yellow-brown: first segment yellow, second, third and fourth — mostly yellow, fifth and sixth — black-brown with metallic green reflection; unmodified segments together 2.3 times as long as mesonotum. 1st–6th abdominal tergites and sternites well developed. 7th segment and hypopygium yellow-brown, with short hairs. Cercus dorsally densely setose, with long thin baso-ventral projection and long thin ventral appendix in the middle, ending in three spatulate bristles. Surstylus bidentate, with short setae.

Female unknown.

Length: body 3.2 mm; body with antennae 4.0 mm; wing-length 2.9 mm; wing-width 0.9 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the Russian entomologist Dr. A. G. Makhotkin.

*Diagnosis.* Male of *M. makhotkini* can be separated from other species with bare femora by the following combination of attributes: thorax including mesonotum and abdomen mostly yellow, wing venation undistorted, fore basitarsomere 1 and 1/3 times as long as fore tibia and thrice as long as the rest, hind legs mostly brown, hind tibiae white in basal third.

### *Mascaromyia babichae* sp. n.

(Fig. 3)

*Holotype.* Male, Mauritius: Trou aux Cerfs, 15.VI. 1971 (A. M. Hutson), B.M.1971–346.

*Description.* Frons metallic blue-green, with vio-

let reflection in the middle. Front vertical bristle bends forward, postvertical one is positioned as a linear continuation of the postocular setae row. Eyes joined in middle half of face. Face black, grey pollinose. Epistome and clypeus as small triangles. Palpi and proboscis very short, orange, covered with small hairs, palpi also with black bristle. Antennae orange, longer than height of head. Pedicel somewhat swollen. First flagellomere yellow-brown, as long as height at base, subtriangle, with thin sharp apex, pubescent. Arista dorsal, scarcely haired, arising from small mound. Length ratio of scape to pedicel to first flagellomere to arista — 4:5:5:50.

Mesonotum and pleura orange. Area between dorso-centrals, hind part of mesonotum and scutellum brilliantly shining blue. Four dorsocentral bristles with a few microscopic hairs in front of them; acrostichals absent. Scutellum with two strong bristles and two very short hairs from the outside.

Legs yellow. Fore coxae from the front with yellow and dark hairs, 1–3 dark apical bristles of various length and ending in a long thin yellow seta. Middle coxae from the front with a few yellow apical hairs and with two fine dark bristles. Hind coxae with one long dark external bristle. Fore and middle femora with a long fine basoventral hair. Fore legs simple. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 1.9 : 2.6 : 2.6 : 2.1 : 0.7 : 0.5 : 0.3 : 0.3. Middle tibia with one anterodorsal, one posterodorsal, three or four apical bristles. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth), 1.7 : 4.3 : 3.4 : 1.7 : 0.7 : 0.5. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.3 : 3.2 : 4.1 : 2.3 : 0.9 : 0.7 : 0.4 : 0.4. Hind tibiae with a row of a few short dorsal bristles and with a crown of a few short apical bristles. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 0.9 : 4.1 : 5.3 : 1.3 : 1.2 : 0.7 : 0.5 : 0.3.

Wings hyaline, veins brown.  $R_{4+5}$  and  $M_1$  slightly converged. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.4 : 0.4.  $M_1$  with rounded right angle bend;  $M_2$  straight; crossvein *m-cu* nearly straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 1.3 : 3.2 : 1.6. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and golden bristles. Halteres dark-yellow.

Abdomen yellow-brown: first and second segments yellow, third and fourth — mostly yellow, fifth and sixth — mostly brown with metallic green reflection; unmodified segments together twice as long as mesonotum. 7th segment and hypopygium yellow-brown, with short hairs. Cercus with long thin baso-ventral projection and long thin apico-ventral

appendix, ending in three spatulate bristles. Surstylus bidentate and mitten-like, with 1 long and few short setae.

Female unknown.

Length: body 2.9 mm; body with antennae 3.7 mm; wing-length 2.4 mm; wing-width 0.8 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the Russian zoologist Mrs. N. V. Babich.

*Diagnosis.* Male of *M. babichae* is placed within the group of species with thorax including mesonotum and abdomen mostly yellow, and can be distinguished from other species by simple legs (fore basitarsomere shorter than fore tibia) and wing venation.

### *Mascaromyia librativertex* (Lamb)

(Fig. 4)

*Material examined.* 3 males, Mauritius: La Pouce, 10.VI.1971 (A. M. Hutson), B.M.1971—346; 7 males, Mauritius: Curepipe, 3.VI.1971 (A. M. Hutson), B.M.1971—346; female, Chagos Archipelago: Diego Garcia, East Point, 6.V.1971 / A. M. Hutson, B.M. 1971—346; 2 males & 7 females, Chagos Archipelago: Diego Garcia, Eclipse Point, 26.III, 1 & 19.IV.1971 / A. M. Hutson, B.M. 1971—346; 3 males & 3 females, Chagos Archipelago: Diego Garcia, Eclipse Point, 29.III.1971 / A. M. Hutson, B.M. 1971—346 / dried inland marsh; 1 female, Chagos Archipelago: Diego Garcia, Simpson's Point, 30.III. 1971 / A. M. Hutson, B.M. 1971—346; 1 female, Chagos Archipelago: Diego Garcia, Minni Minni, 14.IV.1971 / A. M. Hutson, B.M. 1971—346 / At light; 1 male & 2 females, Chagos Archipelago: Diego Garcia, Camp Marcel, 6 & 10.VI.1971 / A. M. Hutson, B.M. 1971—346 / open coconut grove / at light.

*Diagnosis.* *M. librativertex* is placed within the group of species with bare femora and dark body and can be separated by simple legs except fifth tarsomere, which is slightly enlarged on fore legs; fore basitarsomere nearly as long as rest tarsomeres; posterior border of wing in apical half usually foggy. Cercus with long thin baso-ventral projection, bearing pedunculate short seta in the middle and long seta on the apex. Apico-ventral appendix of cercus short, bidactyl, with simple bristles. Surstylus tooth-shaped, with two strong setae. Females are indistinctive from Lamb's descriptions of other species. I list them here because *M. librativertex* is the only species representative of *Mascaromyia* on Chagos Archipelago.

*Distribution.* Seychelles, Mauritius (!), Chagos Archipelago (!).

### *Mascaromyia shabuninae* sp. n.

(Fig. 5)

*Holotype.* Male, Mauritius: Le mares, 8.VI.1971 (A.M. Hutson), B.M.1971—346.

*Paratype.* Male, Mauritius: Periere Reserve, 14.VI. 1871 (A. M. Hutson), B.M.1971—346.

*Description.* Frons metallic blue-green, slightly grey pollinose. Front vertical bristle bends forward, postvertical one is positioned as a linear continuation of the postocular setae row. Face silvery-white, pollinose, very narrow, 7 times as high as wide in the middle and nearly as wide as first flagellomere. Palpi and proboscis short, black-brown, densely haired, palpi also with a small black bristle. Antennae black, shorter than height of head. First flagellomere nearly as long as height at base, triangle, with rounded apex, pubescent. Arista dorsal, microscopically haired. Length ratio of scape to pedicel to first flagellomere to arista — 4:4:6:27.

Mesonotum metallic green, with blue reflection, pleura bronze-green, grey pollinose. Five dorsocentral bristles with 3d and 4th bristles somewhat smaller, and with a few hairs in front of them; acrostichals absent. Scutellum with two strong bristles.

Legs yellow, middle and hind coxae and apical segments of tarsi partly brown. Fore coxae from the front with yellow hairs, two black apical bristles and ending in a long thin yellow thorn sharply hooked at the end. Middle coxae from the front with two long yellow hairs and with a regular dense tuft of yellow hairs at the tip, that have the appearance of a sea anemone. Hind coxae with one long black external bristle. Legs thin, without strong or long setae. Fore basitarsomere thin and long, with a regular distant ventral pectination on apical half and shallow preapical excavation; fifth tarsomere strongly enlarged and flattened, not dilated, twice as long as wide, black with silvery reflection. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 2.0 : 2.9 : 3.1 : 4.5 : 0.8 : 1.0 : 0.3 : 0.7. Middle tibia with one anterodorsal; fifth tarsomere slightly flattened. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.3 : 3.6 : 6.7 : 5.3 : 1.3 : 1.0 : 0.5 : 0.4. Hind tibiae with two very short dorsal setae. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 0.9 : 5.5 : 8.1 : 3.1 : 1.6 : 1.2 : 0.6 : 0.5.

Wings hyaline, veins brown. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.3 : 0.6.  $M_1$  with rounded right angle bend;  $M_2$  straight; crossvein *m-cu* straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 1.5 : 3.6 : 1.5. Anal vein and lobe reduced. Anal angle absent. Squamae dark-

yellow, with black edging and brown bristles. Halteres brownish.

Abdomen thin and dark, metallic blue-green, with brownish colour on tergal overlaps; unmodified segments together thrice as long as mesonotum. 7th abdominal segment and hypopygium dark-brown, with short hairs. Cercus bean-shaped, apico-dorsally setose, apicoventrally with a comb of 5 pedunculate bristles, also with long modified baso-ventral projection and with two ventral appendices, each ending in two long spatulate bristles. Surstylus broad, with shallow distal excavation and with short bristles.

Female unknown.

Length: body 3.4 mm; body with antennae 3.9 mm; wing-length 2.8 mm; wing-width 0.7 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the Russian zoologist Dr. Tanya Shabunina.

*Diagnosis.* Males of *M. shabuninae* can be separated from other species with metallic green body, bare femora and yellow legs by undilated last tarsomere of fore tarsi, which is strongly enlarged and black. Fore basitarsomere long and thin, more than twice as long as rest tarsomeres. Face nearly as wide as first flagellomere.

### *Mascaromyia hutsoni* sp. n.

(Fig. 6)

*Holotype.* Male, Mauritius: Curepipe, 3.VI.1971 (A.M. Hutson), B.M.1971—346.

*Paratypes.* Male, the same label; 3 males, Mauritius: Periere Reserve, 14.VI.1971 (A. M. Hutson), B.M.1971—346; male, Mauritius: Black River, 1.VI.1971 (A. M. Hutson), B.M.1971—346 / Top of George.

*Description.* Frons metallic blue-green, with violet reflection in the middle, slightly grey pollinose. Front vertical bristle bends forward, postvertical one is positioned as a linear continuation of the postocular setae row. Face silvery-white, grey pollinose, very narrow, 10 times as high as wide in the middle and somewhat narrower than first flagellomere. Palpi and proboscis short, black-brown, densely haired, palpi also with a small black bristle. Antennae black, as long as height of head. First flagellomere as long as height at base, subtriangle, pubescent. Arista dorsal, microscopically haired. Length ratio of scape to pedicel to first flagellomere to arista —5:4:7:37.

Mesonotum metallic blue green, often with violet reflection, pleura and scutellum bronze-green, grey pollinose. Five dorsocentral bristles with 3d bristle somewhat smaller, and with a few hairs in front of them; acrostichals absent. Scutellum with two strong bristles.

Legs yellow, middle and hind coxae and apical

segments of tarsi partly darkened. Fore coxae from the front with yellow and dark hairs, and ending in a long thin yellow thorn sharply hooked at the end. Middle coxae from the front with two yellow hairs and with a regular dense tuft of pale hairs at the tip, from the outside almost bare. Hind coxae with one long black external bristle. Middle and hind femora with 1—2 preapical postero-ventral hairs. Fore basitarsomere thin and long, with a regular distant ventral pectination on apical half. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 2.6 : 3.4 : 3.8 : 6.5 : 0.7 : 0.6 : 0.4 : 0.5. Middle tibia with one anterodorsal, one posterodorsal and two or three apical bristles. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.6 : 3.9 : 7.6 : 6.2 : 1.5 : 1.4 : 0.6 : 0.4. Hind tibiae with two very short dorsal setae, with a few short apical bristles. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 1.0 : 6.0 : 9.4 : 3.7 : 2.0 : 1.3 : 0.8 : 0.4.

Wings slightly darkened, veins brown.  $R_{4+5}$  and  $M_1$  nearly parallel at apex. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.5 : 0.7.  $M_1$  with gentle arc to apex, with rounded right angle bend;  $M_2$  straight; crossvein *m-cu* straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 1.5 : 4.6 : 1.7. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with black edging and golden-brown bristles. Halteres dark-yellow.

Abdomen bronze-green, sometimes first and second segments dark-brown; unmodified segments together more than two times longer than mesonotum. 7th abdominal segment and hypopygium dark-brown, with short hairs. Cercus apico-dorsally setose, with long baso-ventral projection and with broad ventral projection, ending in apico-ventral comb of bristles and basoventral tridactyl appendix. Surstylus cut at the apex, carrying a long bristle. Epandrial lobe bidactyl.

Female unknown.

Length: body 3.0—3.2 mm; body with antennae 3.7—3.9 mm; wing-length 2.9—3.2 mm; wing-width 0.7—0.8 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the collector, Dr. A. M. Hutson.

*Diagnosis.* Male habitus of *M. hutsoni* is close to *M. shabuninae* and the first species can be distinguished by simple tarsi and other subtle characters.

### *Mascaromyia albitarsis* (Parent)

(Fig. 7)

*Material examined.* Male, Mauritius: Black River, 17.VI.1971 (A. M. Hutson), B.M.1971—346 / Up-

per mts; male, Mauritius: La Pouce, 10.VI.1971 (A.M. Hutson), B.M.1971—346.

**Diagnosis.** *M. albitarsis* is distinctive in having white hind tarsi. Cercus dorsally setose, with baso-ventral projection and with S-shaped apico-ventral appendix, bearing a basal comb of 4 setae and 3 apical spatulate bristles. Surstylus rounded, leaf-shaped, with a few short bristles.

**Distribution.** Mauritius.

### *Mascaromyia dytei* sp. n.

(Fig. 8)

**Holotype.** Male, Mauritius: Macchabee Forest, 1.VI.1971 (A. M. Hutson), B.M.1971—346.

**Description.** Frons metallic bronze-green. No front vertical bristle, postvertical one is positioned as a linear continuation of the postocular setae row. Eyes joined in middle third of face. Face silvery-white, pollinose. Epistome as a narrow triangle with height/base ratio 14:6. Clypeus as triangle with height/base ratio 13:4. Palpi and proboscis short, orange-brown, densely haired, palpi also with a strong black bristle. Antennae yellow-orange, slightly shorter than height of head. First flagellomere as long as height at base, subtriangle, with obtuse apex, slightly pubescent. Arista dorsal, dark, microscopically haired. Length ratio of scape to pedicel to first flagellomere to arista — 4:5:6:50.

Mesonotum metallic green, with golden reflection in the middle, pleura and scutellum bronze-green, metaepimeres brown, grey pollinose. Five dorsocentral bristles with 3d bristle somewhat smaller, and with a few hairs in front of them; acrostichals absent. Scutellum with two strong bristles and two hairs from the outside.

Legs yellow, apical segments of tarsi darkened. Fore coxae from the front with yellow hairs of various length, and ending in a long thin dark-yellow thorn. Middle coxae from the front with a few short yellow hairs, with two fine long bristles and with a regular dense tuft of pale hairs at the tip, from the outside almost bare. Hind coxae with one fine external seta. Fore basitarsomere thin and long, with a regular distant ventral pectination on apical third. Second to fourth articles of fore tarsi very short. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 2.3 : 3.2 : 3.6 : 7.0 : 0.15 : 0.15 : 0.15 : 0.2. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.5 : 3.9 : 6.7 : 5.7 : 1.4 : 1.0 : 0.5 : 0.4. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 1.3 : 6.4 : 8.7 : 3.7 : 1.9 : 1.1 : 0.8 : 0.4.

Wings hyaline, veins brown.  $R_{4+5}$  and  $M_1$  slightly

converged. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.8 : 0.6.  $M_1$  with rounded right angle bend;  $M_2$  straight; crossvein *m-cu* nearly straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 2.2 : 4.5 : 1.6. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and white setae. Halteres yellow.

Abdomen mostly black-brown, with metallic green reflection, second segment mostly yellow, third and fourth — with yellow lateral spots; unmodified segments together more than two times longer than mesonotum. 7th abdominal segment and hypopygium black, with short hairs. Cercus brownish-yellow, dorsally densely setose, with small baso-ventral projection, with long pointed apex and with thick complicated ventral projection. Surstylus oval, with long apical bristle. Epandrial lobe reduced.

Female unknown.

Length: body 3.9 mm; body with antennae 4.7 mm; wing-length 3.2 mm; wing-width 1.0 mm.

**Distribution.** Mauritius.

**Etymology.** The species named in honour of the English dipterologist Dr. C. E. Dyte.

**Diagnosis.** Male of *M. dytei* can be separated from other species with bare femora by the following combination of attributes: eyes touching in the middle of face, antennae yellow, legs including coxae yellow, tarsi brownish, basitarsomere long and thin, ten times as long as rest tarsomeres, abdomen partly orange.

### *Mascaromyia kalinkini* sp. n.

(Fig. 9)

**Holotype.** Male, Mauritius: Macchabee Forest, 1.VI.1971 (A. M. Hutson), B.M.1971—346.

**Paratypes.** 21 males with the same label as holotype but with catching dates 1, 2 & 8.VI.1971; 1 male, Mauritius: La Pouce, 10.VI.1971 (A. M. Hutson), B.M.1971—346. 7 males, Mauritius: Curepipe, 3.VI.1971 (A. M. Hutson), B.M.1971—346. 1 male, Mauritius: Bel Ombre, 18.VI.1971 (A. M. Hutson), B.M.1971—346. 2 males, Mauritius: Black River, 17.VI.1971 (A. M. Hutson), B.M.1971—346. 1 male, Mauritius: Trou aux Cerfs, 15.VI.1971 (A. M. Hutson), B.M.1971—346.

**Description.** Frons metallic bronze-green. Small front vertical bristle bends forward, short postvertical one is positioned as a linear continuation of the postocular setae row. Eyes practically joined in the middle of face. Face silvery-white, pollinose, presents as two narrow triangles with very sharp apices. Palpi and proboscis short, orange-brown, covered with small pale hairs, palpi also with a black bristle. Antennae



black, slightly shorter than height of head. First flagellomere slightly longer than height at base, subtriangle, with sharp apex, pubescent. Arista dorsal, minutely haired. Length ratio of scape to pedicel to first flagellomere to arista — 5:4:7:45.

Mesonotum metallic green, pleura and scutellum bronze-green, grey pollinose. All bristles except 1 notopleural and 1 supraalary, greatly reduced. Five short dorsocentral bristles with a few microscopic hairs in front of them; acrostichals absent. Scutellum with two strong bristles and two microscopic hairs from the outside.

Legs mostly yellow, fore coxa, femora in basal half and tarsus whitish, fore and middle tibia except apex, hind tibia, middle femora at apex, hind femora except basal third and middle and hind tarsi brown. Fore coxae from the front with a few yellow apical hairs of various length, and ending in a long thin yellow thorn sharply hooked at the end. Middle coxae from the front with two fine yellow hairs, with a regular dense tuft of pale hairs at the tip, from the outside bare. Hind coxae with one fine dark external seta. Legs without strong or long bristles or hairs; middle and hind tibia with a few very short setae. Fore basitarsomere thin and long, with a regular distant ventral pectination on apical half. Second to fourth articles of fore tarsi shortened, white. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 1.6 : 2.5 : 2.7 : 3.3 : 0.3 : 0.3 : 0.2 : 0.3. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.1 : 2.9 : 5.2 : 4.3 : 1.1 : 1.8 : 0.3 : 0.25. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 0.8 : 4.7 : 6.3 : 2.6 : 1.5 : 1.0 : 0.6 : 0.4.

Wings slightly darkened, veins brown.  $R_{4+5}$  and  $M_1$  nearly parallel at apex. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 2.3 : 0.4.  $M_1$  with widely rounded right angle bend;  $M_2$  straight; crossvein *m-cu* straight. Ratio of crossvein *m-cu* to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 1.1 : 3.2 : 1.8. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and yellow bristles. Halteres yellow with darkened knob.

Abdomen and hypopygium black-brown, with metallic green reflection; unmodified segments together nearly thrice as long as mesonotum. Cercus yellow-brown, evenly setose, with long modified baso-ventral projection, and with long apico-ventral appendix, bearing a long basal cheta and two apical spatulate bristles. Surstylus broad, with sharp dorsal angle.

Female unknown.

Length: body 3.0–3.5 mm; body with antennae 3.9–4.3 mm; wing-length 2.6–3.0 mm; wing-width 0.5–0.7 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the Russian entomologist Dr. Victor Kalinkin.

*Diagnosis.* *M. kalinkini* together with *M. frolovi* is placed within the group of species with bare femora and dark body and can be separated from other species by the following combination of attributes: face extremely narrow, antennae black, hind femora progressively brown towards apex, hind tibiae brown, fore tarsi white, first tarsomere thrice as long as the rest, hind tarsi dark-brown.

### *Mascaromyia frolovi* sp. n.

(Fig. 10)

*Holotype.* Male, Mauritius: La Pouce, 10.VI.1971 (A. M. Hutson), B.M.1971—346.

*Paratypes.* 2 males with the same label as holotype; 1 male, Mauritius: Curepipe, 3.VI.1971 (A. M. Hutson), B.M.1971—346; 1 male, Mauritius: Maccharbee Forest, 1.VI.1971 (A. M. Hutson), B.M.1971—346.

*Description.* Frons metallic blue-green. No front vertical bristle, postvertical one is positioned as a linear continuation of the postocular setae row. Face silvery-white, pollinose, very narrow, slightly widened under antennae and distad, half as wide as first flagellomere; Clypeus densely haired with short pale setulae. Palpi and proboscis very short, orange-brown, covered with small hairs, palpi also with a black bristle. Antennae black, slightly longer than height of head. First flagellomere 1.5 times as long as height at base, subtriangle, with rounded apex, pubescent. Arista basodorsal, distinctly haired. Length ratio of scape to pedicel to first flagellomere to arista — 7:5:9:55.

Mesonotum metallic green, with blue reflection; pleura and scutellum bronze-green, grey pollinose. Five dorsocentral bristles with 1—2 setulae in front of them; acrostichals absent. Scutellum with two strong bristles and two hairs from the outside.

Legs mostly yellow, middle and hind coxae and apical segments of tarsi mostly brown, hind femora progressively brownish towards apex from above in apical two thirds, hind tibia and tarsus brown. Fore coxae from the front with short yellow hairs and two black apical bristles and ending in a long thin yellow thorn sharply hooked at the end. Middle coxae from the front with a few yellow hairs of various length, with a regular dense tuft of pale hairs at the tip. Hind coxae with one black external bristle, with several yellow hairs. Fore basitarsomere thin and long. Second to fourth articles of fore tarsi shortened. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth) — 2.5 : 3.7 :

4.1 : 4.7 : 0.5 : 0.4 : 0.3 : 0.3. Middle tibia with one strong anterodorsal and one posterodorsal bristles in basal third, one dorsal in the middle and several apical bristles. Length ratio of middle coxa to femora to tibia to tarsus (segments first and fifth) — 1.9 : 3.3 : 7.0 : 5.0 : 1.6 : 1.2 : 0.7 : 0.6. Hind tibia with two short dorsal setae, with a crown of a few apical bristles. Length ratio of hind coxa to femora to tibia to tarsus (segments from first to fifth) — 1.3 : 5.5 : 8.5 : 3.0 : 2.0 : 1.1 : 1.0 : 0.5.

Wings slightly darkened, veins brown.  $R_{4+5}$  and  $M_1$  converged but parallel at apex. Ratio of parts of costa between  $R_{2+3}$  and  $R_{4+5}$  to those between  $R_{4+5}$  and  $M_1$  — 3.4 : 0.4.  $M_1$  slightly recurved basad, with rounded right angle bend;  $M_2$  straight; crossvein  $m-cu$  straight. Ratio of crossvein  $m-cu$  to apical part of  $M_{1+2}$  (fork-handle) to apical part of  $M_{3+4}$  — 2.5 : 4.4 : 1.5. Anal vein and lobe reduced. Anal angle absent. Squamae yellow, with brown edging and light bristles. Halteres yellow.

Abdomen black-brown, with metallic green reflection; unmodified segments together more than two times longer than mesonotum. Hypopygium brown with short hairs. Cercus yellow-brown, dorsally setose, with sharp apex, with long thin baso-ventral projection, and with apico-ventral appendix, directed basad and bearing a long basal cheta, two apical spatulate bristles and back peduncle with a seta. Surstylus tooth-shaped, with several short bristles. Epandrial lobe prominent, with three setae.

Female unknown.

Length: body 3.9—4.3 mm; body with antennae 4.7—5.1 mm; wing-length 3.3 mm; wing-width 1.0 mm.

*Distribution.* Mauritius.

*Etymology.* The species named after the Russian entomologist Dr. Andrew Frolov.

*Diagnosis.* *M. frolovi* together with *M. kalinkini* is placed within the group of species with bare femora and dark body and is distinguished from the last one by bigger size and by the following attributes: fore tarsi dark, first tarsomere twice as long as the rest, morphology of hypopygium, chetotaxy of legs and mesonotum.

## Acknowledgements

I am sincerely grateful to Dr Brian Pitkin for his kindness in giving me the opportunity to study the collection of the Natural History Museum (London). I appreciate the help I have received from Mrs Galina Grichanova in doing the illustrations.

## References

- Bezzi, M. & C. G. Lamb.** 1925. Diptera (excluding Nematocera) from the island of Rodriguez. *Transactions of the Entomological Society of London*, 1925: 537—573.
- Bickel, D. J.** 1994. The Australian Sciapodinae (Diptera: Dolichopodidae), with a review of the Oriental and Australasian faunas, and a world conspectus of the subfamily. *Rec. Austral. Mus.*, 1994, Suppl. 21: 1—394.
- Dyde, C. E. & K. G. V. Smith.** Family Dolichopodidae. In: R.W. Crosskey (ed.). *Catalogue of the Diptera of the Afrotropical Region*. Brit. Mus. (Nat. Hist.), London: 443—463.
- Lamb, C. G.** 1922. The Percy Sladen Trust expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner, M. A. Vol. 7. N VIII. Diptera: Asilidae, Scenopinidae, Dolichopodidae, Pipunculidae, and Syrphidae. *Transactions of the Linnean Society of London* (2, Zoology), 18: 361—416.
- Parent, O.** 1932a. Etude sur quelques types de Macquart (Dipteres Dolichopodides) conserves au Museum National d'Histoire Naturelle de Paris. *Bull. Mus. Nat. Hist. Paris*, 2(4): 872—881.
- Parent, O.** 1932. Sur quelques Dipteres Dolichopodides, la plupart appartenant a la Collection Oldenberg. Notes et descriptions (Dipt.). *Stettin. Entomol. Zeit.*, 93: 220—241.
- Parent, O.** 1935. Dipteres Dolichopodides nouveaux. *Encycl. Entomol.* (B) Diptera, 8: 59—96.
- Parent, O.** 1939. Dipteres Dolichopodides de la region ethiopienne. *Rev. Zool. Bot. Afr.*, 1939, 32: 256—282.