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Four new species of *Saccopheronta* Becker (Diptera: Dolichopodidae) from Tropical Africa with notes on the world fauna of the genus

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S. demeteri sp. n. from Ethiopia, *S. fletcheri* sp. n. from Uganda, *S. shatalkini* sp. n. from Kenya and Zaire, and *S. zicsiana* sp. n. from Kenya and Tanzania are described. New records and key to 18 known species of Afrotropical *Saccopheronta* are given. 2 Nearctic, 27 Neotropical, and 5 Oriental species of "*aberrans*" group of *Medetera* are transferred to the genus *Saccopheronta*. Four names are synonymized.

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Key words. Diptera, Dolichopodidae, *Saccopheronta*, Tropical Africa.

Introduction

Saccopheronta was established by Becker (1914) as a genus of Medeterinae. In 1923 Becker regarded it as subgenus of *Medetera* Fisher von Waldheim. Subsequently some authors considered *Saccopheronta* as separate genus (Parent, 1938; Vanschuytbroeck, 1951, 1960; Negrobov e.a., 1981), whereas others included it in *Medetera* (Dyte, Smith, 1980; Bickel, 1985). The problem is the short and incomplete Becker's description of the genus and type species, *S. nudipes* Becker. Original description of this species strongly differs from many other described species by such characters as large size (2.7 mm), presence of only 2 rather than 3 dorsocentrals on mesonotum, and absence of apical setae on all tibiae. Later, Parent (1936) added to *S. nudipes* so unusual characters as simple anterior tarsus with regularly decreasing tarsomeres, and basal part of wing vein M_{1+2} longer than the apical one, although it left unclear, did he saw the type specimen of the species. Parent (1938) redescribed the genus *Saccopheronta* and described *S. parvilamellata* with such unique for the genus characters as subtriangular first flagellomere and dorsal arista. The most part other Afrotropical species, described later under the name *Saccopheronta*, have the following features: first flagellomere rounded, with apical arista; 3 pairs of strong dorsocentral setae; middle and hind tibiae with one or two short but distinct apical setae; 2nd tarsomere of anterior tarsus shorter than 3rd, both somewhat thickened in males in comparison to the next tarsomeres, 3rd tarsomere sometimes slightly flattened; apical part of M1+2 longer than the basal one. Body of major part of the species is not longer than 2.2 mm; only *S. fletcheri* has body and wing longer than these in *S. nudipes*. Nevertheless, all species of *Saccopheronta* form a separate group, having such Becker's characters as brown-black (sometimes metallic green) and weakly pollinose body, long anterior setae on hind femora, elongate and cylindrical hypopygium with short appendages. These characters are easily recognized and usually absent in Afrotropical species of *Medetera*. Analyzing excellent reviews of New World and Oriental species of *Medetera* recently made by Bickel (1985, 1987), I noticed a close relationship of *Saccopheronta* with the "*aberrans*" group of species having strong difference from other species of *Medetera*. Cladistic analysis of major Medeterinae groups (Bickel, 1987) showed that the "*aberrans*" group together with the Oriental "*melanesiana*" group has closer similarity

to *Dolichophorus* Lichtwardt, *Thrypticus* Gerstaecker, and *Corindia* Bickel than to other groups of *Medetera*. Moreover, this group of species has specific geographical distribution, biology, ecology, and even behavior, strongly differing from other species of *Medetera* (Bickel, 1985; see also ecological labels to species described by Negrobov e.a., 1981, and in this paper). Thus, I think there is no need to keep the "*aberrans*" group in such a huge (nearly 400 species) and apparently polyphyletic assemblage as *Medetera* s.l. and to synonymize *Saccopheronta* with *Medetera*. All species of the "*aberrans*" group should be transferred to the genus *Saccopheronta*. The "*melanesiana*" group, probably, should be separated as independent genus of Medeterinae. Summarizing diagnosis of the "*aberrans*" group (Bickel, 1987) and new data on Afrotropical species of *Saccopheronta*, I can propose the more detailed diagnosis of the genus. Body colouration bright metallic green, blue-green to blue-violet, brown to black, with only thin dusting of pruinosity. Dorsal postcranium strongly concave. Face and clypeus usually with pruinosity. Proboscis relatively small, labellae of proboscis weakly sclerotized. Acrostichals well developed; dorsocentrals strong, prominent, usually 3 or 4 pairs of setae present; two strong supraalars present; lateral scutellars well developed. Male anterior leg usually with 2nd and 3rd tarsomeres enlarged and often flattened. Posterior and sometimes middle femora in both sexes with 2—5 strong anterior setae. Posterior tibia with black apico-ventral scale or tooth-like projection and subapical row of pale dorsal setae. Wing venation distinctive: *M* not strongly arched, but lies almost subparallel to R_{4+5}; basal part of M_{1+2} usually conspicuously shorter than apical part; maximum distance between R_{4+5} and M_{1+2} usually not longer than *m-cu*. Anal vein present as only weak fold of wing. Hypopygium cylindrical, elongate, more than twice as long as high. 7th segment relatively short, not forming elongate peduncle. Hypopygial foramen always dorsolateral in position with tendency to becoming median. Hypandrium arising from approximately halfway along ventral margin, not extending distally beyond the position of surstylus; hypandrial lateral lobi more or less developed, usually distinct. Aedeagus simple, tubular, without lateral appendages. Epandrial lobi separate and positioned distad on epandrium; epandrial seta closer to epandrial lobi than to base of hypandrium. Cercus often with elongate ventral projection or simple prominence, free, sometimes fused at base. Surstylus usually simple and undivided in apical half, with more or less developed projections in basal half.

Female oviscapt soft, short, with non-prominent cercus; tergum 9+10 without apical projections (acanthophorites).

The genus *Saccopheronta* is distributed mainly in New and Old World Tropics, with 18 Afrotropical, 27 Neotropical and 5 Oriental species, although 2 species occur in Nearctics (Bickel, 1985). Probably none species is known from Australia and Palearctic Region. Nearctic species are frequently swept from wet grasslands, and many Tropical species appear associated with hydrophilous herbaceous in wet forests (Negrobov e.a., 1981; Bickel, 1985) Treating unidentified material from the collections of the Natural History Museum, London [NHML], the Hungarian Natural History Museum [HNHM], and Lund University, Sweden [Lund], I found major part of known Afrotropical species. In this paper *S. demeteri* sp. n. from Ethiopia, *S. fletcheri* sp. n. from Uganda, *S. shatalkini* sp. n. from Kenya and Zaire, and *S. zicsiana* sp. n. from Kenya and Tanzania are described. New records and key to 18 known species of Afrotropical *Saccopheronta* are given.

Holotypes and paratypes of the new species are deposited in the Natural History Museum (London). Holotypes of *S. zicsiana* and *S. demeteri* are conserved in the Hungarian Natural History Museum.

List of species of *Saccopheronta*

Saccopheronta, Becker, 1914: 125 (as genus); 1923: 12 (as subgenus of *Medetera*). Type species *S. nudipes* Becker, 1914, by monotony.

Afrotropical Region

altimontana Negrobov, Vanschuytbroeck, Grichanov, 1981: 8 — Zaire, Uganda (!)

aperta Negrobov, Vanschuytbroeck, Grichanov, 1981: 7 — Zaire, Uganda (!)

arnaudi Negrobov, Vanschuytbroeck, Grichanov, 1981: 7 — Zaire, Uganda (!), Kenya (!)

=*vanschuytbroecki* Gosseries, 1988: [304] (*Medetera*), **n. comb., n. syn.**

caffra Curran, 1927: 183 (*Medetera*) — South Africa, Zaire, Kenya (!), ?Madagascar

=*turneri* Parent, 1934: 136 (*Medetera*), **n. comb., n. syn.**

=*bicolor* Parent, 1935: 127, n. syn.

=*zairensis* Dyte, Smith, 1980: [443] (*Medetera*), **n. comb., n. syn.**

demeteri sp. n. — Ethiopia

fletcheri sp. n. — Uganda

glabra Negrobov, Vanschuytbroeck, Grichanov, 1981: 6 — Zaire

hirsuticosta Parent, 1935: 128 — Zaire, Kenya (!)

nigra Vanschuytbroeck, 1960: 10 — Zaire

nigritibia Negrobov, Vanschuytbroeck, Grichanov, 1981: 9 — Zaire, Sierra Leone (!)
nudipes Becker, 1914: 126 — Kenya
parvilamellata Parent, 1938: 412 — Kenya, Zaire
pulchra Vanschuytbroeck, 1951: 87 — Zaire
quinta Parent, 1936: 16 — Zaire, Uganda (!)
shatalkini sp. n. — Kenya, Zaire
=*ulrichi* Negrobov, Vanschuytbroeck, Grichanov, 1981: 3 (part of paratypes), **n. syn.**
subquinta Negrobov, Vanschuytbroeck, Grichanov, 1981: 4 — Zaire, Kenya (!)
=*quinta* sensu Negrobov, Vanschuytbroeck, Grichanov, 1981: figs15—19 nec Parent (misidentification), **n. syn.**
ulrichi Negrobov, Vanschuytbroeck, Grichanov, 1981: 3 (holotype and part of paratypes) — Zaire, Uganda (!), Tanzania (!)
zicsiana sp. n. — Tanzania, Kenya

Nearctic Region

(for references and synonymy see Bickel, 1985)

aberrans Wheeler, 1899: 22 (*Medetera*), **n. comb.** — Canada, USA
=*lobatus* Van Duzee, 1914: 441 (*Medeterus*), **n. comb.**
=*flavicosta* Van Duzee, 1932: 11 (*Medeterus*), **n. comb.**
vockerothi Bickel, 1985: 32 (*Medetera*), **n. comb.** — Canada, USA

Neotropical Region

(for references and synonymy see Robinson, 1970; Bickel, 1985)

abrupta Van Duzee, 1919: 270 (*Medetera*), **n. comb.** — Guatemala
albitarsis Van Duzee, 1931: 184 (*Medetera*), **n. comb.** — Panama, Honduras
amplimanus Van Duzee, 1931: 182 (*Medetera*), **n. comb.** — Panama
archboldi Robinson, 1975: 28 (*Medetera*), **n. comb.** — Dominic
bella Van Duzee, 1929: 34 (*Medetera*), **n. comb.** — Panam
dilatata Becker, 1922: 131 (*Medetera*), **n. comb.** — Peru, Bolivia
excavata Becker, 1922: 132 (*Medetera*), **n. comb.** — Bolivia, Peru
flabellifera Becker, 1922: 134 (*Medetera*), **n. comb.** — Peru
flavides Negrobov, Thuneberg, 1970 (*Medetera*), **n. comb.** — Guatemala
=*flavipes* Van Duzee, 1919: 269 (*Medetera*), **n. comb.**
jamaicensis Curran, 1928: 35 (*Medetera*), **n. comb.** — Jamaica
metallica Becker, 1922: 135 (*Medetera*), **n. comb.** — Peru
minor Becker, 1922: 136 (*Medetera*), **n. comb.** — Paraguay
nigrimanus Van Duzee, 1931: 181 (*Medetera*), **n. comb.** — Panama
occidentalis Schiner, 1868: 222 (*Medetera*), **n. comb.** — Venezuela
ovata Van Duzee, 1931: 183 (*Medetera*), **n. comb.** — Panama
pallidicornis Van Duzee, 1929: 36 (*Medetera*), **n. comb.** — Guatemala
pedestris Becker, 1922: 137 (*Medetera*), **n. comb.** — Colombia, Peru, Surname
planipes Van Duzee, 1919: 269 (*Medetera*), **n. comb.** — Guatemala
pollinosa Van Duzee, 1929: 34 (*Medeterus*), **n. comb.** — Panama
scaura Van Duzee, 1929: 35 (*Medetera*), **n. comb.** — Guatemala
setosa Parent, 1931: 18 (*Medetera*), **n. comb.** — Peru
spinulata Parent, 1931: 19 (*Medetera*), **n. comb.** — Peru
steyskali Robinson, 1975: 28 (*Medetera*), **n. comb.** — Dominica
tarsata Parent, 1931: 19 (*Medetera*), **n. comb.** — Bolivia
trititarsis Parent, 1928: 158 (*Medetera*), **n. comb.** — Guatemala, Costa Rica
varipes Van Duzee, 1929: 36 (*Medetera*), **n. comb.** — Guatemala
viridiventris Van Duzee, 1933: 152 (*Medetera*), **n. comb.** — Panama
=*currani* Van Duzee, 1931: 182 (*Medetera*), **n. comb.**

Oriental Region

gomwa Bickel, 1987: 210 (*Medetera*), **n. comb.** — Papua New Guinea
luzonensis Bickel, 1987: 210 (*Medetera*), **n. comb.** — Philippines
maai Bickel, 1987: 211 (*Medetera*), **n. comb.** — Malaysia
mindanensis Bickel, 1987: 210 (*Medetera*), **n. comb.** — Philippines
platychira de Meijere, 1916: 261 (*Medeterus*); Bickel, 1987: 208 (*Medetera*), **n. comb.** — Southern China, Indonesia, Malaysia, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Bangladesh, India

Descriptions and new records

Saccopheronta demeteri sp. n.
(Fig. 1)

Holotype. Male, **Etiopia**: Akaki river, Addis Abeba/ No. 55, 29.IX.1980, leg. Demeter [HNHM].

Description. Male. Frons bronze-black, slightly pollinose. A row of black postocular setae ending with postvertical seta at the top of eye present. Ocellar tubercle with one pair of strong setae and several hairs. Ventral postcranium covered with dense long white irregular hairs. Face bronze-black, slightly pollinose. Ratio of height of epistome to height of clypeus to is minimal width, 11 : 6 : 5. Scape of antenna yellow-brownish, other segments broken. Palpus brown, with sparse hairs. Proboscis short, brown. Thorax metallic blue-green, grey pollinose. Three pairs of strong dorsocentral setae, the first one half as long as the second, with a row of several hairs in front of the first seta. Two rows of acrostichals extending to the second dorsocentral seta. Propleura with a few white hairs. Scutellum with 2 strong median setae and 2 lateral setae, 1/3 to 1/2 as long as medians. Legs mostly yellow with light setulae; all coxae, femora except apical 1/3, apical tarsomeres of all tarsi brownish. Fore and middle coxae with light hairs; hind coxa with one light external seta. Fore legs without setae. Fore tarsus simple. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth), 21 : 32 : 33 : 14 : 7 : 5 : 5 : 5. Middle tibia with one fine antero-dorsal, one fine postero-dorsal, and one black apico-ventral setae. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth), 16 : 34 : 37 : 20 : 11 : 8 : 5 : 5. Hind femora with a row of anterior setae in apical half. Hind tibia with a row of fine subapical dorsal setae, one apico-ventral seta. Length ratio of hind coxa to femora to tibia to tarsus (segments first to fifth), 12 : 40 : 45 : 12 : 19 : 10 : 5 : 5. Wings hyaline, veins brown. Costa without long hairs. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_{1+2}, 17 : 3. Ratio of apical to basal part of M_{1+2}, 56 : 40. R_{4+5} and M_{1+2} nearly parallel at apex. Ratio of cross-vein *m-cu* to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1, 7 : 9 : 18. Lower calypter yellow, with brownish cilia. Halters yellow. Abdomen dark-brown, with blue-green reflection, with short dark setae; 7th segment short. Hypopygium dark-brown; epandrium ovate, slightly elongate. Foramen baso-lateral. Hypandrium thick; lateral lobi of hypandrium pointed at apex. Epandrial lobi reduced to simple setae; epandrial seta at base of hypandrium present. Cerci curved ventrad, narrowed apicad, with three narrow processes at apex. Surstylus thick, twice as long as high, with strong pedunculate mid-ventral seta, with three very long undulate apical setae.

Female unknown.

Length: body without antennae 1.4 mm, wing-length 1.7 mm, wing-width 0.5 mm.

Distribution. Ethiopia.

Etymology. The species is named for the collector, Dr. Demeter.

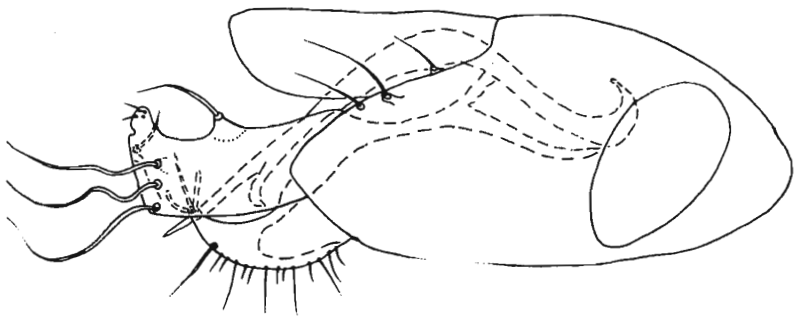
Diagnosis. *S. demeteri* sp. n. is related to *S. parvilamellata* and *S. caffra*, differing by the following complex of characters. Three dorsocentrals with the first one half as long as the second; at least the scape yellow-brownish; *m-cu* distinctly longer than maximum distance between *M* and *R*; surstylus thick, blunt, with three long undulate apical setae.

Saccopheronta zicsiana sp. n.
(Fig. 2)

Holotype. Male, **Tanzania**: Chemka, Tanga region/ 1—18.II.1987, leg. Mahunka, Zicsi [HNHM].

Paratypes. 2 males, **Kenya**: 9—13.XII.1970, A.E. Stubbs, B.M. 1972—211 / Karura For., Namibia, 5500 feet. Male, Kenya: 20.XII.1970, A.E. Stubbs, B.M. 1972—211 / Kakamega Forest, 5200 feet.

Description. Male. Frons and face black, entirely weakly pollinose. Postocular setae light. Face widest under antennae, narrowed towards pale. Ratio of height of epistome to its maximal width to height of clypeus to its minimal width, 11 : 11 : 6 : 5 (paratype). Antenna short, black, pedicel with incomplete ring of apical setulae, first flagellomere rounded, as long as high, with short terminal hairs. Arista apical, pubescent. Length ratio of scape to pedicel to first flagellomere to arista, 2 : 3 : 4 : 45. Palpus short, black, with dark seta. Proboscis short, black, with light hairs. Thorax black-brown, with more or less distinct greenish reflection, weakly pollinose, with brownish setae. Three pairs of strong dorsocentral setae, two rows of acrostichals. Scutellum with 2 strong median setae and 2 lateral setae, 2/3 length of medians. Legs including coxae yellow, 5th tarsomere of all tarsi dark. Fore and middle coxae with white hairs; middle and hind coxae each with one yellow fine external seta. Fore legs without setae. Fore femora ventrally with several short yellow hairs. 2nd and 3rd tarsomeres somewhat thickened in comparison to 4th tarsomere. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth), 25 : 35 : 35 : 16 : 5 : 9 : 6 : 5. Middle tibia with one strong antero-dorsal, two apical setae. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth), 22 : 45 : 45 : 21 : 10 : 8 : 5 : 5. Hind femora with a row of



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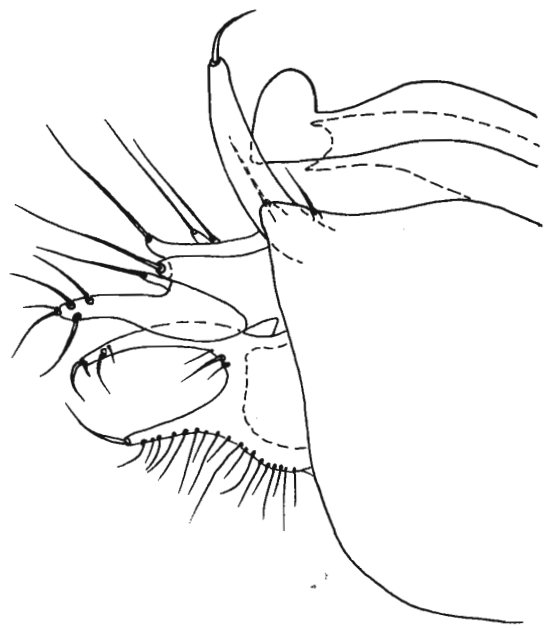

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Figs 1—2. *Saccopheronta* sp., lateral view.
1, *S. demeteri* sp. n., hypopygium; **2,** *S. zicsiana* sp. n., apex of hypopygium.

yellow dorsal setae in basal half, with several yellow anterior setae in apical half. Hind tibia with a row of short yellow subapical dorsal setae, with two short apical setae. Hind basitarsomere with small black baso-ventral scale. Length ratio of hind coxa to femora to tibia to tarsus (segments first to fifth), 17 : 50 : 55 : 12 : 18 : 11 : 7 : 6. Wings yellowish, almost hyaline, veins brown. Costa without long hairs. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_{1+2}, 16 : 4. Ratio of apical to basal part of M_{1+2}, 61 : 40. R_{4+5} and M_{1+2} weakly convergent, nearly parallel ~~at~~ apex. Ratio of cross-vein *m-cu* to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 to its basal part, 10 : 7 : 26 : 35. Lower calypter yellow, with light cilia. Halters light-yellow. Abdomen black, with short light setae; 7th segment short. Hypopygium dark-brown, oblong, cylindrical. Foramen large, with tendency to becoming median. Cerci fused at base. Cercus bifurcated, with thin apex bearing strong seta,

dorsally densely setosed; baso-ventral process very long, thin, slightly curved, with several interior setae. Surstylus short, swollen at base, thin and setosed at apex, with several pedunculate ventral setae in basal half, with short baso-lateral process bearing 2 apical setae. Epandrial lobe thin, nearly as long as surstylus, bearing strong apical seta. Two simple pedunculate setae at base of epandrial lobe present. Lateral lobi of hypandrium enlarged at apex.

Female unknown.

Length: body without antennae 1.6—2.0 mm, antenna 0.7 mm, wing-length 1.8—2.3 mm, wing-width 0.7—0.9 mm.

Distribution. Tanzania, Kenya.

Etymology. The species is named for one of the collectors, Dr. Zicsi.

Diagnosis. *S. zicsiana* sp. n. is keyed to *S. pulchra*, differing by the following characters. Costa without long hairs; lower calypter yellow with light cilia; halter yellow; cercus deeply bifurcated; surstylus nondivided, with long setae.

Saccopheronta caffra (Curran)

Material examined. 12 males & 1 female, **Kenya**: 18—19.XII.1970, A.E. Stubbs, B.M. 1972—211 / Kakamega Forest, 5200 feet; 2 males, Kenya: 15—16.XII.1970, A.E. Stubbs. B.M.1972—211 / Lake Nakuru, 5767 feet; male & female, Kenya: Kakamega Forest, Oo15'N, 34o52'E, 5100 ft, 18—22.I.1972, C.F. Huggins, B.M. 1972—468; male, **S.A.**: Natal, Zululand, I.1957, N.H.L. Krauss, B.M. 1957—78.

Diagnosis. *S. caffra* together with S. parvilamellata differs from other species of Afrotropical *Saccopheronta* by mostly black femora. The two species can be distinguished by shape of first flagellomere and position of arista. *S. caffra* is, probably, a single species in the genus, having surstylus split on apex (see figs 10—14 in Negrobov e.a., 1981).

Remark. Parent (1934) described a female of *Medetera turneri* collected in South Africa not far from the type locality of *S. caffra*. His description has no significant differences from *S. caffra* (Curran, 1927). Parent (1935) also described a female of *S. bicolor* from Zaire without significant differences from *S. caffra* and *M. turneri* as well. Examined males of *S. caffra* from South Africa, Kenya, and Zaire are identical in hypopygium morphology. Keeping in mind poor differentiation between females of related species of *Saccopheronta*, I synonymized all these species. So, *S. caffra* is the only representative of the genus in South Africa.

Distribution. South Africa, Zaire, Kenya (!), ?Madagascar.

Saccopheronta nigritibia Negrobov, Vanschuytbroeck et Grichanov

Material examined. Male, **Sierra Leone**: Charlotte Village, SE of Freetown, 13°12'W, 8°25'N, 25.XI.1993, loc. 6, swept along roadside / Lund University, Sierra Leone Expedition 1993, leg. L. Cederholm - R. Danielsson - R. Hall; male, S. Leone: Freetown, Fourah Bay College, 13°14'W, 8°28'N, 24.XI.1993, loc. 7, swept in sec. forest / Lund University, Sierra Leone Expedition 1993, leg. L. Cederholm - R. Danielsson - R. Hall.

Diagnosis. *S. nigritibia* well differs from other species by black apical 2/3 of posterior femora and mostly black tibiae. Epandrial lobe very short, simple; apex of lateral lobi of hypandrium with shallow dorsal excavation.

Distribution. Zaire, Sierra Leone (!).

Saccopheronta quinta Parent

(Fig. 3)

Material examined. 5 males, **Uganda**: Budongo Forest, 7.II.1935, F.W. Edwards / B.M. E. Afr. Exp. B.M. 1935—203.

Diagnosis. Parent (1936) described a male without abdomen, but wing and anterior tarsus figured allow to recognize the species. Despite the description, *S. quinta* has acrostichals in two rows, 2 strong median and 2 lateral scutellar setae, 2/3 as long as medians. Only posterior femora blackish in apical half, all tibiae yellow; epandrial lobe about 2/3 as long as surstylus, enlarged at apical third.

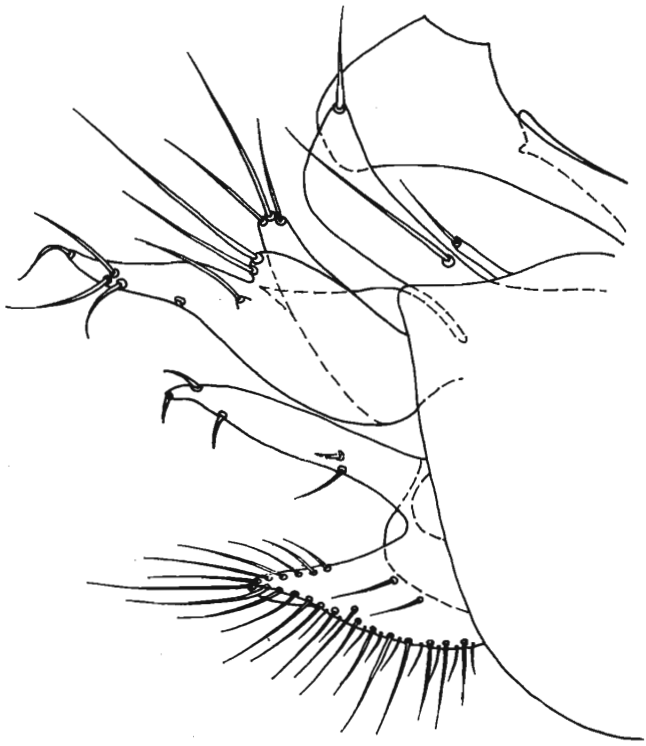
Distribution. Zaire, Uganda (!).

Saccopheronta arnaudi Negrobov, Vanschuytbroeck et Grichanov

Material examined. 1 male, **Kenya**: 19.XII.1970, A.E. Stubbs, B.M. 1972—211 / Kakamega Forest, 5200 feet; 1 male, **Uganda**: Budongo Forest, 7.II.1935, F.W. Edwards / B.M. E. Afr. Exp. B.M. 1935—203.

Diagnosis. *S. arnaudi* together with *S. aperta* differs from other species by mostly blackish middle and posterior femora. The two species can be distinguished by ratio of anterior tarsomeres and by shape of surstylus (see Negrobov et al., 1981).

Distribution. Zaire, Kenya (!), Uganda (!).



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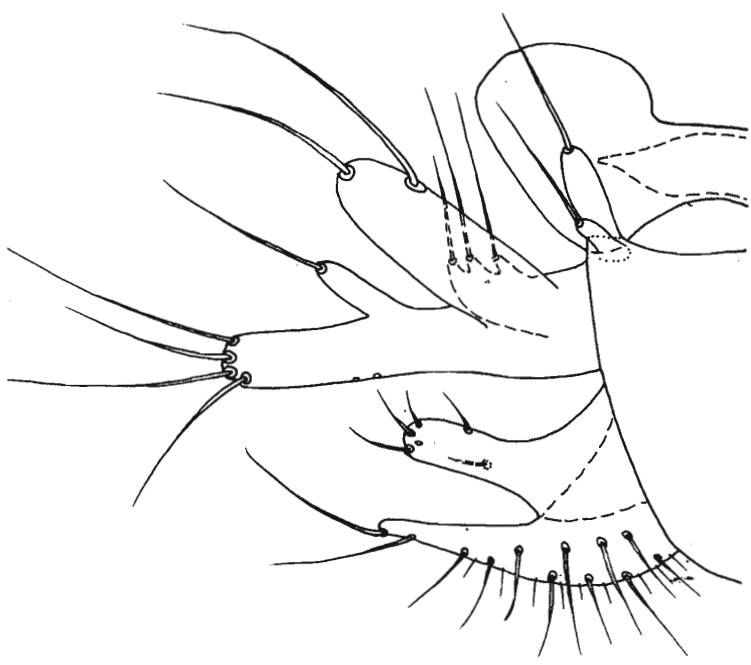

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Figs 3—4. Apex of hypopygium, lateral view.
3, *S. quinta* Parent; **4**, *S. shatalkini* sp. n.

Saccopheronta aperta Negrobov, Vanschuytbroeck, Grichanov

Material examined. Male, **Uganda**: Ruwenzori Range, Mahoma River, 6700 ft., 13—16.VIII.1952, D.S. Fleece/ Ruwenzori Exped. B.M. 1952—566.

Diagnosis. S. aperta together with *S. arnaudi* differs from other species by mostly blackish middle and posterior femora. The two species can be distinguished by ratio of anterior tarsomeres and by shape of surstylus.

Distribution. Zaire, Uganda (!).

Saccopheronta shatalkini sp. n.
(Fig. 4)

=*Saccopheronta ulrichi* Negrobov, Vanschuytbroeck, Grichanov, 1981: 3 (part of paratypes)

Holotype. Male, **Kenya**: 19.XII.1970, A.E. Stubbs, B.M. 1972—211 / Kakamega Forest, 5200 feet [NHML].

Paratypes. 2 males, same labels with collecting date 18.XII.1970.

Description. Male. Frons black, entirely weakly pollinose. Postocular setae light. Face widest under antennae, narrowed towards pale. Ratio of height of epistome to its maximal width to height of clypeus to its minimal width, 11 : 11 : 6 : 4. Antenna short, black, pedicel with incomplete ring of apical setae, first flagellomere rounded, as long as high, with short terminal hairs. Arista apical, finely pubescent. Length ratio of scape to pedicel to first flagellomere to arista, 2 : 3 : 4 : 45. Palpus short, black, with black seta. Proboscis short, black, with black hairs. Thorax metallic, dark blue-green, weakly pollinose. Three pairs of strong dorsocentral bristles, acrostichals in two rows. Scutellum with 4 strong black setae. Legs mostly yellow, apical segments of middle and hind tarsi dark, fore tibia in apical 2/3 and fore tarsus blackish. Fore coxa yellow, with yellow hairs. Middle and hind coxae brown except apex. Fore legs without setae. 2nd and 3rd tarsomeres somewhat thickened in comparison to 4th tarsomere. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth), 23 : 40 : 37 : 16 : 6 : 10 : 6 : 5. Middle tibia with one strong antero-dorsal, one or two apical setae. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth), 19 : 47 : 45 : 21 : 11 : 8 : 6 : 5. Hind femora with a row of light dorsal setae in basal half, with several anterior setae in apical half. Hind tibia with a row of short light subapical dorsal setae, with two apical setae. Hind basitarsomere with small black baso-ventral scale. Length ratio of hind coxa to femora to tibia to tarsus (segments first to fifth), 14 : 48 : 59 : 13 : 19 : 12 : 7 : 5. Wings mostly hyaline, distinctly darkened between costa and R_{2+3}, veins brown. Costa without long hairs. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_{1+2}, 22 : 4. Ratio of apical to basal part of M_{1+2}, 81 : 50. R_{4+5} and M_{1+2} weakly convergent, nearly parallel at apex. Ratio of cross-vein *m-cu* to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 to its basal part, 12 : 9 : 31 : 45. Lower calypter brownish, with black cilia. Halters light-yellow. Abdomen bronze-black, with short dark setae; 7th segment short. Hypopygium dark-brown, oblong, cylindrical. Foramen large, with tendency to becoming median. Cerci fused at base. Cercus short, densely setosed at base and sparsely setosed at apex, with thick basoventral process bearing several apical and subapical setae. Surstylus bifurcated, with 3 strong pedunculate setae at base; ventro-lateral lobe with strong apical and subapical setae; dorsal lobe with 4 apical setae and one median pedunculate seta. Two narrow epandrial lobes of various length present at disto-ventral angle of epandrium, each bearing apical seta. Lateral lobi of hypandrium strongly enlarged, almost round at apex.

Female unknown.

Length: body without antennae 1.9 mm, wing-length 2.0 mm, wing-width 0.8 mm.

Distribution. Kenya, Zaire.

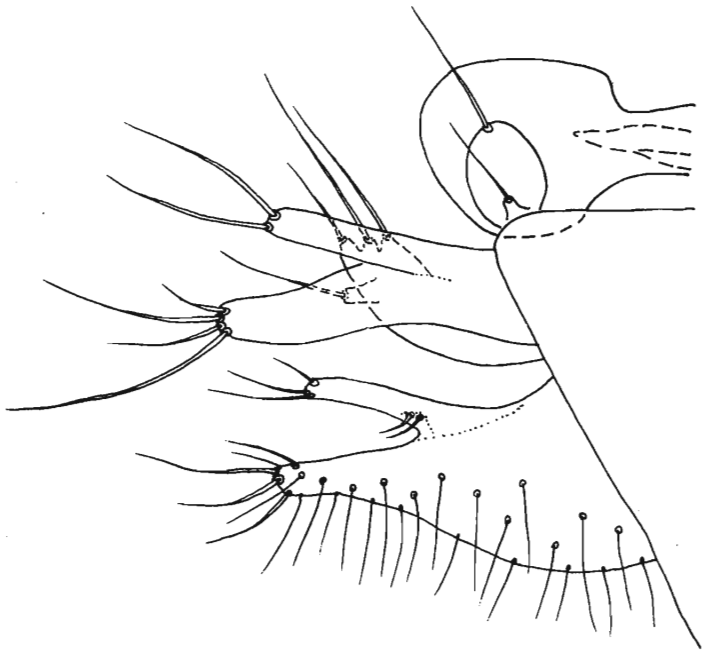
Etymology. The species is named for Russian dipterologist Dr. A. Shatalkin.

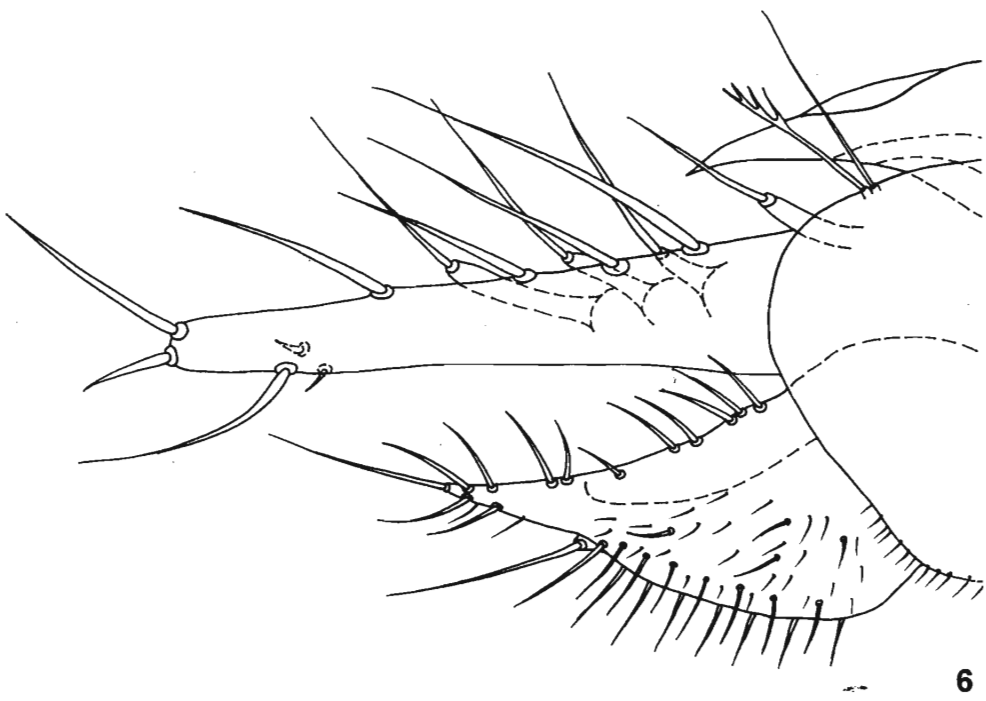
Diagnosis. S. shatalkini sp. n. is closely related to *S. ulrichi*, differing by blackish anterior tibia and tarsus, bluish reflection of body, dark anterior part of wing, weak but distinct differences in hypopygium morphology.

Remark. Negrobov et al. (1981) noted several specimens of *S. ulrichi* differing from the holotype by above mentioned characters. Detailed study of hypopygium of *S. ulrichi* from the collection of NHML showed the necessity of separating the new species having this habits.

Saccopheronta ulrichi Negrobov, Vanschuytbroeck et Grichanov
(Fig. 5)

Material examined. 2 males, **Uganda**: Budongo Forest, 7.II.1935, F.W. Edwards / B.M. E. Afr. Exp. B.M. 1935—203; male, Uganda: Budongo Forest, 7—8.II.1935, F.W. Edwards, B.M. 1935—203; male. Uganda: Ruwenzori Range, XII.1934—I.1935. B.M. E. Afr. Exp. B.M. 1935—203 / Fort Portal, 4.XII.1934, F.W. Edwards; male, **Tanzania**: Chemka, Tanga region / 1—18.II.1987, leg. Mahunka, Zicsi [HNHM].





Figs 5—6. Apex of hypopygium, lateral view.
5, *S. ulrichi* Negrobov et al.; **6**, *S. fletcheri* sp. n.

Diagnosis. *S. ulrichi* differs from other species by yellow legs, metallic green body, bifurcated surstylus, and enlarged lateral lobi of hypandrium. See remark under *S. shatalkini*.

Distribution. Zaire, Uganda (!), Tanzania (!).

Saccopheronta hirsuticosta Parent

Material examined. Male, **Kenya**: 9—13.XII.1970, A.E. Stubbs, B.M. 1972—211 / Karura For., Namibia, 5500 feet; 2 males, Kenya: 15—16.XII.1970, A.E. Stubbs, B.M. 1972—211 / Lake Nakuru, 5767 feet.

Diagnosis. *S. hirsuticosta* differs from other species by yellow legs, brown-black body, and leaf-shaped surstylus. It is closely related to *S. subquinta*, differing by the following features: the second tarsomere of fore tarsus nearly equal to the third; middle tibia with antero-ventral row of short black spinules; surstylus with very long lateral seta in the middle and several long pedunculate setae in basal half. Costa with somewhat elongated ventral setulae in basal third, although they are not so remarkable as figured by Parent (1935).

Distribution. Zaire, Kenya (!).

Saccopheronta subquinta Negrobov, Vanschuytbroeck et Grichanov

Material examined. 5 males, **Kenya**: 15—16.XII.1970, A.E. Stubbs, B.M. 1972—211 / Lake Nakuru, 5767 feet; 3 males, Kenya: 16—17.XII.1970, A.E. Stubbs, B.M. 1972—211 / Kericho, 6500 feet.

Diagnosis. *S. subquinta* differs from other species by yellow legs, brown-black body, and leaf-shaped surstylus. It is closely related to S. hirsuticosta (see remark under this species). Figs 15—19 in Negrobov e.a. (1981) should be referred to S. subquinta rather than S. quinta. Fig. 19 in the same paper shows surstylus ventrally.

Distribution. Zaire, Kenya (!).

Saccopheronta altimontana Negrobov, Vanschuytbroeck et Grichanov

Material examined. 2 males, **Uganda**: Ruwenzori Range, XII.1934 —I.1935, B.M. E. Afr. Exp. B.M. 1935—203 / Mobuku Valley, 7300 ft., F.W. Edwards; male, Uganda: Ruwenzori Range, XII.1934—I.1935. B.M. E. Afr. Exp. B.M. 1935—203 / Namwamba Valley, 6500 ft., F.W. Edwards.

Diagnosis. *S. altimontana* differs from other species by yellow legs, brown-black body, and stick-shaped surstylus with a row of strong ventral setae in apical half. Cercus with well developed ventral process.

Distribution. Zaire, Uganda (!).

Saccopheronta fletcheri sp. n.

(Fig. 6)

Holotype. Male, **Uganda**: Ruwenzori Range, XII. 1934—I.1935. B.M. E. Afr. Exp. B.M. 1935—203 / Namwamba Valley, 8300 ft., F.W. Edwards.

Paratypes. Female, same labels; male & female, **Uganda**: Ruwenzori Range, Mahome River, 6700 ft., 13—16. VIII.1952, D.S. Fleece / Ruwenzori Exped. B.M. 1952—566.

Description. Male. Frons and face black, entirely weakly pollinose. A row of fine black postocular setae ending with strong postvertical seta at the top of eye present. One short hair-like vertical cilia laterally on frons. Ocellar tubercle with one pair of strong setae and one pair of short hairs. Ventral postcranium with a row of light postocular setae, with sparse irregular setae. Face widest under antennae, narrowed towards pale. Ratio of height of epistome to its maximal width to height of clypeus to its minimal width, 15 : 15 : 10 : 5. Antenna short, black, pedicel with incomplete ring of apical setae, first flagellomere rounded, as long as high, with short terminal hairs. Arista apical, pubescent. Length ratio of scape to pedicel to first flagellomere to arista, 4 : 4 : 5 : 58. Palpus short, black, with dark seta. Proboscis short, brown, with light hairs. Thorax black-brown, weakly pollinose. Three pairs of strong dorsocentral bristles of equal length, two rows of acrostichals, extending to mesonotal flattening. Propleura with one light seta. Scutellum with 2 strong black median setae and 2 lateral setae, nearly half as long as medians. Legs mostly yellow, tarsi brown except base of middle tarsus. Coxae brown-black; fore and middle coxae with long white hairs; middle and hind coxae each with one fine external seta. Fore legs without setae. 2nd and 3rd tarsomeres somewhat thickened, 3rd tarsomere flattened. Length ratio of fore coxa to femora to tibia to tarsus (segments from first to fifth), 40 : 58 : 52 : 29 : 13 : 15 : 6 : 8. Middle tibia with one strong antero-dorsal, two apical setae. Length ratio of middle coxa to femora to tibia to tarsus (segments from first to fifth), 30 : 70 : 75 : 39 : 17 : 15 : 8 : 7. Hind femora with a row of dark dorsal setae in basal half, with several dark anterior setae in apical half. Hind tibia with a row of short light subapical dorsal setae, with two short apical setae. Hind basitarsomere with small black baso-ventral scale. Length ratio of hind coxa to femora to tibia to tarsus (segments first to fifth), 27 : 75 : 91 : 22 : 33 : 19 : 10 : 9. Wings yellowish,

almost hyaline, veins brown. Costa without long hairs. Ratio of parts of costa between R_{2+3} and R_{4+5} to those between R_{4+5} and M_{1+2}, 45 : 8. Ratio of apical to basal part of M_{1+2}, 129 : 111. R_{4+5} and M_{1+2} weakly convergent, nearly parallel at apex. Ratio of cross-vein *m-cu* to maximal distance between R_{4+5} and M_{1+2} to apical part of CuA_1 to its basal part, 22 : 21 : 52 : 99. Lower calypter yellow with brown margin, with black cilia. Halters yellow. Abdomen black, with dark setae, which longer along posterior margin of terga; 7th segment short. Hypopygium dark-brown, oblong, cylindrical. Foramen large, with tendency to becoming median. Cerci fused except apex. Cercus subtriangular with thin apex, densely setosed. Surstylus long, stick-shaped, with rounded apex, with 4 strong dorsal setae in basal 2/3, 3 interior pedunculate setae in basal 1/3, 2 apical and 1 ventral subapical setae. Epandrial lobe bears strong apical seta. One simple and one branched seta at base of epandrial lobe present. Lateral lobi of hypandrium pointed on apex.

Female. Similar to male except lacking male secondary sexual characters. Anterior tarsus simple. Last segments of abdomen and oviscapt densely haired.

Length: body without antennae 2.8 mm, antenna 0.9 mm, wing-length 3.7 mm, wing-width 1.1 mm.

Distribution. Uganda.

Etymology. The species is named for one of the collectors, Dr. D. S. Fleece.

Diagnosis. *S. fletcheri* sp. n. is closely related to *S. aperta*, differing by brown anterior coxa, ratio of anterior tarsomere, larger size, and details in hypopygium morphology. *S. fletcheri* is closest in size to the type-species of the genus *Saccopheronta*, although it differs from *S. nudipes* by dark anterior coxa, yellow halters, only one propleural seta etc.

Key to Afrotropical species of *Saccopheronta*

1. Two pairs of strong dorsocentrals; legs yellow 2
— Three pairs of strong dorsocentrals 3
2. Antenna black; fore coxa yellow; basal part of M_{1+2} longer than apical; lower calypter whitish with white cilia . . . . . ***nudipes***
— Antenna reddish brown; all coxae yellow; apical part of M_{1+2} longer than basal; lower calypter black with black cilia . . . . . ***nigra***
3. All coxae yellow, legs yellow 4
— At least middle and hind coxae mostly dark 5
4. Surstylus bifurcated; cercus simple; lower calypter black with black cilia; halter dark . . . ***pulchra***
— Surstylus non-bifurcated, with pedunculate setae in basal half; cercus bifurcated, with strong apical setae; lower calypter yellow with light cilia; halter yellow . . . . . ***zicsiana***
5. Posterior femora at least half black or brown 6
— All femora yellow 12
6. All femora black-brown in basal half 7
— Anterior femora yellow 9
7. Three dorsocentrals with the first one half as long as the second; at least the scape yellow-brownish; surstylus thick, blunt, with three long undulate apical setae . . . . . ***demeteri***
— Three strong dorsocentrals of equal length; antenna black 8
8. Arista dorsal or subapical; first flagellomere triangular . . . . . ***parvilamellata***
— Arista apical; first flagellomere rounded; surstylus split on apex . . . . . ***caffra***
9. Middle femora yellow; posterior femora black in apical 2/3 10
— Middle and posterior femora brown-black except apical 1/3 11
10. All tibiae black except base; epandrial lobe very short, simple . . . . . ***nigritibia***
— All tibiae yellow; epandrial lobe about 2/3 as long as surstylus, enlarged at apical third . . . . . ***quinta***
11. Second tarsomere of fore tarsus nearly as long as the third; surstylus swollen at base, thin in apical half . . . . . ***arnaudi***
— Second tarsomere of fore tarsus approximately half as long as the third; surstylus stick-shaped . . . . . ***aperta***
12. Anterior tibia mostly dark; anterior tarsus entirely black 13
— All tibiae yellow; tarsi mostly yellow 14
13. All tibiae mostly black; wing hyaline; apex of lateral lobi of hypandrium with shallow dorsal excavation . . . . . ***nigritibia***
— Only anterior tibia mostly black; wing darkened along costa; apex of lateral lobi of hypandrium rounded . . . . . ***shatalkini***
14. Body metallic green; surstylus bifurcated; epandrial lobe strongly enlarged . . . . ***ulrichi***
— Body brown or black; surstylus and epandrial lobi simple 15
15. Surstylus plane, broad, leaf-shaped in dorsal view 16
— Surstylus stick-shaped rather than leaf-shaped 17
16. Second tarsomere of fore tarsus nearly as long as the third; middle tibia with antero-ventral row of short black spinules; surstylus with very long lateral seta in the middle and several long pedunculate setae in basal half . . . . . .

. . . . . ***hirsuticosta***

— Second tarsomere of fore tarsus approximately half as long as the third; middle tibia with simple yellow-brownish setulae; surstylus with at most one long apical seta, without basal setae . . . . . ***subquinta***

17. Cercus with well developed ventral process 18

— Cercus with small ventral prominence 19

18. Surstylus with a row of strong ventral setae in apical half . . . . . ***altimontana***

— Surstylus with long apical setae, without ventral row of strong setae . . . . . ***glabra***

19. Second tarsomere of fore tarsus nearly as long as the third; fore coxa brown; surstylus with 4 long dorsal setae in basal 2/3 and 3 pedunculate setae in basal 1/3 . . . . . ***fletcheri***

— Second tarsomere of fore tarsus half as long as the third; fore coxa yellow; surstylus without long or pedunculate setae in basal two thirds . . . . . ***aperta***

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