

# Afrotropical species of the genus *Hercostomus* Loew (Diptera: Dolichopodidae)

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18 new species of the genus *Hercostomus* Loew are described: *H. blagoderovi* sp.n. and *H. yakovlevi* sp.n. from Kenya; *H. enghoffi* sp.n., *H. scharffi* sp.n. and *H. selikhovskini* sp.n. from Tanzania; *H. golubtsovi* sp.n., *H. krivosheinae* sp.n. and *H. mostovskii* sp.n. from Uganda; *H. krivokhatskii* sp.n., *H. mottusi* sp.n., *H. panteleevae* sp.n. and *H. ovchinnikovae* sp.n. from Congo (Kinshasa); *H. laanmae* sp.n. from Tanzania and Gabon; *H. wittei* sp.n. from Kenya and Congo (Kinshasa); *H. ozerovi* sp.n. from Uganda, Kenya and Ethiopia; *H. scotti* sp.n. from Yemen.; *H. tobiasi* sp.n. from Cameroon; *H. turneri* sp.n. from South Africa. *Dolichopus congoensis* Curran is transferred to *Hercostomus*. *H. par* Parent is regarded subspecies of *H. argyropus* (Loew). *H. pulchripes* Vanshuylbroeck is placed in synonymy to *H. a. par* Parent; *H. longipilus* Parent and *H. vanschuytbroeckii* Dyte et Smith to *H. congoensis* (Curran). A catalogue and key to Afrotropical species of *Hercostomus* are given.

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**Key words.** Diptera, Dolichopodidae, *Hercostomus*, Tropical Africa, new species, new synonym, new combination, keys.

## Introduction

The world fauna of the genus *Hercostomus* Loew s.l. (including *Hercostomus* s.s., *Gymnopternus* Loew, *Poecilobothrus* Mik and *Platyopsis* Parent) numbers about 360 mostly Holarctic species. At least 7 species of the subgenus *Prohercostomus* Grichanov are known from Paleogene Baltic amber (Grichanov, 1997). The Afrotropical species of *Hercostomus* are poorly known and have not previously been revised. The Afrotropical region has 41 (including new) species, of which about half occur in central part of Tropical Africa [Congo (Kinshasa), Uganda, Tanzania, Kenya]. Some of the old species are incompletely described, with no male descriptions or adequate illustrations. Therefore, 5–6 species are waiting to be transferred to another genus or be declared *Nomina Dubia* in future revisions of type material. There is no any reliable record of the genus from western Indian Ocean Islands.

The Afrotropical species of *Hercostomus* differ from the related genera of the subfamily Dolichopodinae in the complex of characters such as follows: one strong anterior subapical seta is present on the middle and hind femora; the face is narrow and narrowed towards palpi; metapleuron and posterior mesoscutum are bare; scutellum usually has two stout bristles and two marginal hairs; wing vein  $M_{1+2}$  is straight or inconspicuously sinuate in basal 1/3 of distal part, usually joining costal vein just before wing tip;  $R_{4+5}$  and  $M_{1+2}$  are weakly convergent in distal part; 1st flagellomere asymmetric, with blunt or pointed apex; arista is short pubescent. According to key to subgenera of the genus (Grichanov, 1997), all Afrotropical species belong to the subgenus *Hercostomus* s.s., although some species has parallel or inconspicuously convergent  $R_{4+5}$  and  $M_{1+2}$  wing veins, and at least two species (*H. blagoderovi* and *H. dimidiatus*) have scutellum haired dorsally.

Three species groups could be discussed for Afrotropical *Hercostomus*.

1. *argyropus argyropus* (Loew), *argyropus par* Parent, *congoensis* (Curran), *dimidiatus* Curran, *eronis* Curran, *jani* Dyte, *blagoderovi* sp.n., *golubtsovi* sp.n., *rhodesiensis* Parent, *strahleni* Vanschuytbroeck, *ultimus* Parent.

Fore tibia usually with 1 long apicoventral seta. Fore tarsus simple. Three apical segments of hind tarsus usually shortened, flattened and slightly widened; 1, 2 or 3 apical segments of the same tarsus usually silvery pilose on one side; 5th segment of middle tarsus often silvery pilose. Hypandrium fused to epandrium except apex. Surstylus bilobate. Cercus flat, broad, usually simple, with ring of marginal setae or hairs of different length.

2. *enghoffi* sp.n., *infirmus* Parent, *krivosheinae* sp.n., *mostovskii* sp.n., *nectarophagus* Curran, *oxerovi* sp.n., *patellitarsis* (Parent), *perturbus* Curran, *scotti* sp.n., *selikhovskini* sp.n., *tobiasi* sp.n., *wittei* sp.n., *yakovlevi* sp.n.

Fore tibia with short apical setae. 3rd segment of fore tarsus usually compressed and widened, with more or less elongate setulae dorsally; 1 or 2 apical segments of the same tarsus shortened or somewhat modified, often white pilose dorsally. Middle and hind tarsi simple. Hypandrium usually midventral, with short basal part and several pairs of entangled lobes. Surstylus bilobate often modified. Distal unpaired epandrial process usually widely bifurcated; with long dorsal arm projecting distally and short ventral arm projecting apicoventrally. Cercus usually narrow, with basolateral prominence, process or large basoventral lobe bearing strong setae.

3. *duviardi* Couturier, *laanmae* sp.n., *licitor* Parent, *minimixtus* Dyte et Smith, *strictilamellatus* Parent, *transitorius* Parent, *krivokhatskii* sp.n., *panteleevae* sp.n., *ovchinnikovae* sp.n.

Legs usually simple, sometimes (*H. strictilamellatus*) fore tibia and apical segments of fore tarsus slightly swollen; legs mostly yellow, hind femur blackish or brown at least in apical half; middle and hind tibiae without strong ventral setae;  $R_{4+5}$  and  $M_{1+2}$  parallel or slightly converging in distal part; male 1st flagellomere usually securiform, with basodorsal arista; arista distinctly pubescent; male cercus narrow, often ornamented with processes or bunches of long cilia. The group is likely to be separated in independent subgenus of the genus *Hercostomus*, sharing some features with the subgenera *Poecilobothrus* Mik, *Gymnopternus* Loew and *Hercostomus* s.s.

Ungrouped species: *mottusi* sp.n., *scharffi* sp.n., *turneri* sp.n.

Postocular setae black; legs simple; wing and hypopygium morphology various.

Doubtful species: *afer* (Rondani), *directus* (Walker), *disjunctus* Curran, *muscarius* Speiser, *ponderosus* Frey.

A revised catalogue and key to males of Afrotropical species of the genus are given in this paper. 18 new species of the genus *Hercostomus* Loew are described: *H. blagoderovi* sp.n. and *H. yakovlevi* sp.n. from Kenya; *H. enghoffi* sp.n., *H. scharffi* sp.n. and *H. selikhovskini* sp.n. from Tanzania; *H. golubtsovi* sp.n., *H. krivosheinae* sp.n. and *H. mostovskii* sp.n. from Uganda; *H. krivokhatskii* sp.n., *H. mottusi* sp.n., *H. panteleevae* sp.n. and *H. ovchinnikovae* sp.n. from Congo (Kinshasa); *H. laanmae* sp.n. from Tanzania and Gabon; *H. wittei* sp.n. from Kenya and Congo (Kinshasa); *H. oxerovi* sp.n. from Uganda, Kenya and Ethiopia; *H. scotti* sp.n. from Yemen.; *H. tobiasi* sp.n. from Cameroon; *H. turneri* sp.n. from South Africa. *Dolichopus congoensis* Curran is transferred to *Hercostomus*. *H. par* Parent is regarded subspecies of *H. argyropus* (Loew). *H. pulchripes* Vanschuytbroeck is placed in synonymy to *H. a. par* Parent; *H. longipilus* Parent and *H. vanschuytbroeckii* Dyte et Smith to *H. congoensis* (Curran).

Holotypes and paratypes of the new species are deposited in the Natural History Museum in London [NHML], the Royal Institute for Natural Sciences, Brussels [RINS], the Royal Museum for Central Africa, Tervuren [RMCA], the Hungarian Natural History Museum, Budapest [HNHM], and Zoological Museum in Copenhagen [ZMUC]. The other material examined is also kept in Lund University, Sweden [Lund]. Hypopygii removed from the dry specimens are placed after alkalisation into glycerol and mounted on the same pin in a cavity of polymer film covered with a piece of adhesive tape. Listing material examined, I use here slash ( / ) to separate labels on one pin and square brackets [...] to insert my personal remarks. Species diagnosis includes usually key characters and some important features that were missed in original descriptions.

## List of known species of *Hercostomus* Loew (for references see Dyte and Smith, 1980)

### Genus *Hercostomus* Loew

*Hercostomus* Loew, 1857b: 9. Type-species: *Syblstroma longicentris* Loew, 1857, by original designation.

*afer* Rondani, 1873: 291 [female] (*Dolichopus*). Ethiopia. *argyropus argyropus* Loew, 1858c: 372 [1860c: 348] (*Gymnopternus*). South Africa; Zimbabwe.

*argyropus par* Parent, 1934a: 129 (as *Hercostomus par* Parent), stat.n. Kenya; Tanzania, Congo (Kinshasa), Uganda (!), Burundi (!), Angola (!).

- =*par* Parent, 1933b:1 [Nomen nudum].
- =*pulchripes* Vanschuytbroeck, 1951c: 58, syn.n. Congo (Kinshasa).
- blagoderovi* Grichanov, sp.n. Kenya.
- congoensis* Curran, 1925a: 114 (*Dolichopus*), comb.n. Congo (Kinshasa); Burundi, Kenya (!), Uganda (!).
- =*longipilus* Parent, 1933b: 1, Nomen nudum.
- =*longipilus* Parent, 1934a: 128, syn.n. Congo (Kinshasa).
- =*bururiensis* Vanschuytbroeck [Nomen nudum] (in coll.; described as *Hercostomus fuscipennis* Vanschuytbroeck, 1964a: 136, nec Meigen, 1824), syn.n.
- =*fuscipennis* Vanschuytbroeck, 1964a: 136 nec Meigen [Junior homonym, preocc. *fuscipennis* Meigen, 1824] (holotype labelled as *Hercostomus bururiensis* Vanschuytbroeck).
- =*vanschuytbroeckii* Dyte et Smith, 1980: 451 (new name for *Hercostomus fuscipennis* Vanschuytbroeck), syn.n.
- dimidiatus* Curran, 1939d: 1. Zimbabwe.
- directus* Walker, 1849: 663 [female] (*Dolichopus*), comb.n. South Africa.
- disjunctus* Curran, 1926c: 397 [female]. South Africa; ?Tanzania.
- duciardi* Couturier, 1978: 220. Ivory Coast; Congo (Kinshasa) (!), Uganda (!).
- enghoffi* Grichanov, sp.n. Tanzania
- eronis* Curran, 1926c: 397 (female); 1939: 1 (male in key). South Africa; ?Madagascar, Tanzania, Burundi (!).
- golubtsovi* Grichanov, sp.n. Uganda.
- infirmus* Parent, 1933b: 1 [female]. Congo (Kinshasa).
- jani* Dyte, 1957: 39. Tanzania; Congo (Kinshasa) (!).
- krivokhatskii* Grichanov, sp.n. Congo (Kinshasa).
- krivosheinae* Grichanov, sp.n. Uganda.
- laanmae* Grichanov, sp.n. Tanzania, Gabon.
- lictor* Parent, 1937b: 1. Congo (Kinshasa); Nigeria (!).
- minimixtus* Dyte et Smith, 1980: 451. Congo (Kinshasa).
- =*minimus* Parent, 1937b: 2. [Junior homonym, preocc. *minimus* Zetterstedt, 1849].
- mostowskii* Grichanov, sp.n. Uganda.
- mottusi* Grichanov, sp.n. Congo (Kinshasa).
- muscarius* Speiser, 1910a: 109 [female; ?=*Tachytrechus kenyensis* Parent]. Tanzania.
- nectarophagus* Curran, 1924a: 470. South Africa; Tanzania, Uganda (!), Cameroon (!).
- occhinnikocae* Grichanov, sp.n. Congo (Kinshasa).
- oxerovi* Grichanov, sp.n. Uganda, Kenya, Ethiopia.
- panteleevae* Grichanov, sp.n. Congo (Kinshasa).
- patellitarsis* Parent, 1934a: 129 (*Hypophyllus*). Zimbabwe, Tanzania (!).
- perturbus* Curran, 1924a: 225. South Africa.
- ponderosus* Frey, 1958: 15. Cape Verde Is. [?=*Tachytrechus tessellatus* Macquart].
- rhodesiensis* Parent, 1939: 273. Zimbabwe.
- scharffi* Grichanov, sp.n. Tanzania.
- scotti* Grichanov, sp.n. Yemen.
- selikhockini* Grichanov, sp.n. Tanzania.
- straeleni* Vanschuytbroeck, 1951c: 55. Congo (Kinshasa); Uganda.
- strictilamellatus* Parent, 1937b: 2. Congo (Kinshasa).
- tobiasi* Grichanov, sp.n. Cameroon.
- transitorius* Parent, 1934b: 1 [female]. Congo (Kinshasa); ? Madagascar.
- turneri* Grichanov, sp.n. South Africa.
- ultimus* Parent, 1935a: 119. Congo (Kinshasa), Kenya (!).
- wittei* Grichanov, sp.n. Kenya, Congo (Kinshasa).
- yakovlevi* Grichanov, sp.n. Kenya.

## Descriptions, diagnoses and new records

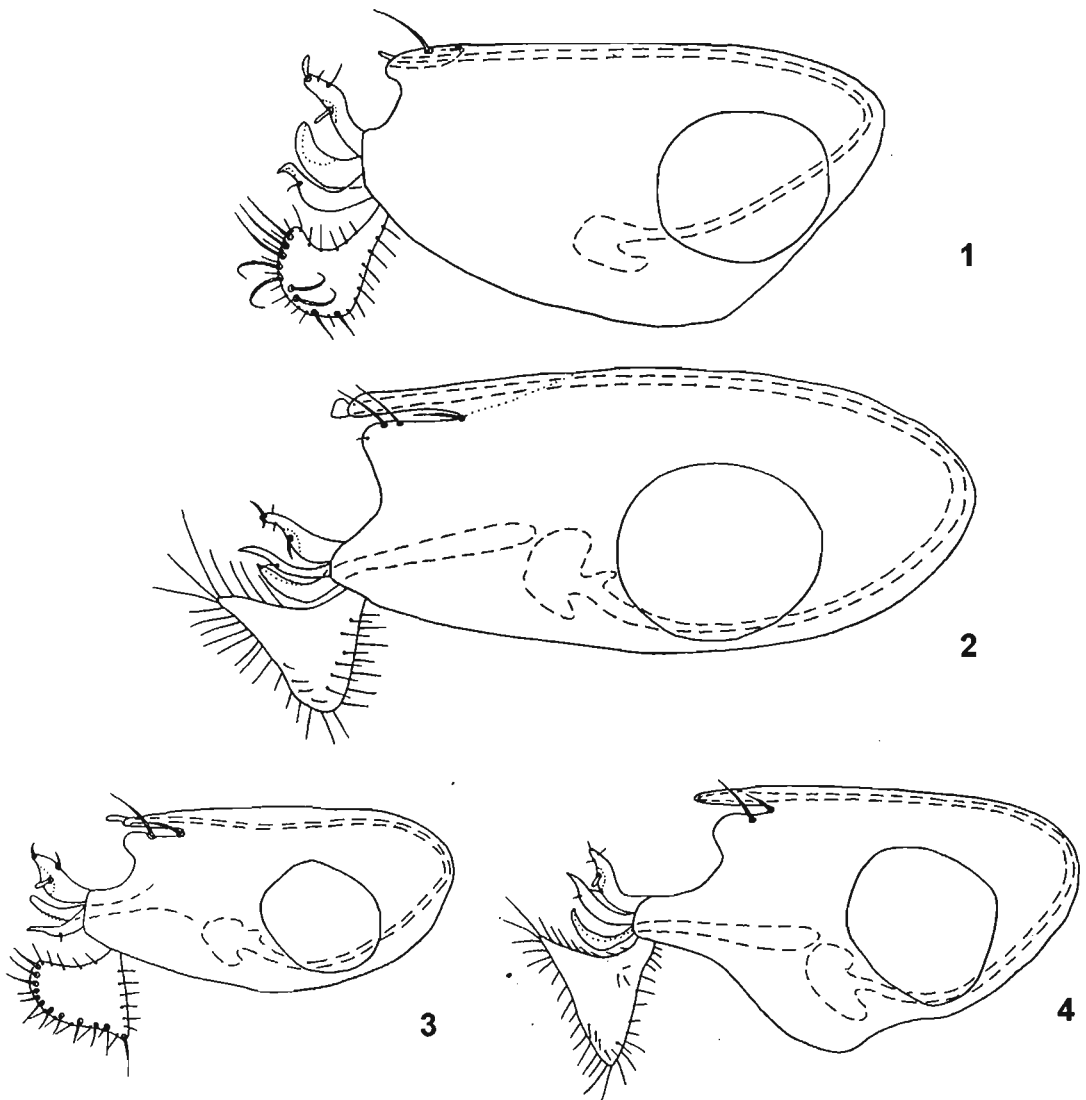
**Group I.** Included species: *argyropus argyropus* Loew, *argyropus par* Parent, *blagoderovi* sp.n., *congoensis* Curran, *dimidiatus* Curran, *eronis* Curran, *golubtsovi* sp.n., *jani* Dyte, *rhodesiensis* Parent, *straeleni* Vanschuytbroeck, *ultimus* Parent.

## *Hercostomus argyropus argyropus* (Loew) (Figs 1, 35)

**Material examined.** 2 ♂, 4 ♀, RSA: Cape Prov., Tsitsikama N.P., Stormsriver Pass, 33°59' S, 23°55' E, 750 m, 19.X.1994, loc. 26, leg. R. Danielsson [Lund]; 1 ♂, E. Cape Prov., Katberg, 4000 ft, 1—15.I.1933 / S. Africa, R.E. Turner, Brit. Mus. 1933-79; 1 ♀, E. Cape Prov., Katberg, 4000 ft, XII.1932 / S. Africa, R.E. Turner, Brit. Mus. 1933-69 [NHML].

**Diagnosis.** The following complex of characters could distinguish *H. argyropus*. Hind basitarsus without dorsal setae; 3—5th segments of hind tarsus with short setulae, slightly longer than 2nd segment, flattened and silvery pilose dorsally; middle tarsus with simple setae; 5th segment of middle tarsus silvery pilose dorsally; fore tarsus having fine brilliant pubescence posteriorly, which as long as 5th tarsomere; cercus yellow, small, with rounded distodorsal and basoventral apices and several falcate setae at distal margin.

**Remark.** Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. argyropus* (RMCA and RINS, examined) belong to *H. argyropus par* (= *H. pulchripes*) and *Pelastoneurus* sp. So, the nominotypic



Figs 1—4. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

1, *H. argyropus argyropus* (Loew); 2, *H. ultimus* Parent; 3, *H. eronis* Curran; 4, *H. blagoderoci* sp.n.

subspecies should be excluded from the fauna of Congo (Kinshasa).

*Distribution.* South Africa; Zimbabwe.

***Hercostomus argyropus par* Parent**  
(Fig. 36)

*Type material examined.* Holotype, ♂ [red label], Congo belge: P.N.A. Kitondo (pres Ganjo), 2000 m, 7 au 23.I.1935, G.F. de Witte: 1033 / Coll. Mus. Congo (ex coll. I.P.N.C.B.) / *Hercostomus pulchripes* n.sp. [RMCA]; paratypes differing in the first label as follows: 1 ♂, Congo belge: Ruanda lega (pied Volc.

Karisimbí), 2400 m, 12-III-1935, G.F. de Witte: 1314; 1 ♂ Congo belge: P.N.A. Kitondo (pres Ganjo), 2000 m, 7 au 23.I.1935, G.F. de Witte: 1033; 4 ♂, Congo belge: Kivu, Rutshuru (riv. Rodahira), 1200 m, 1.VII.1935, G.F. de Witte: 1680; ♂, paratypus [red label] / Coll. Mus. Congo, Urundi Bururi, 1949, F. Francois / *Hercostomus bururiensis* Vans. (in coll.; Nomen nudum) [my hand] / *Hercostomus pulchripes* Vans. dt. Grichanov, 1998 [RMCA].

*Material examined.* ♂, Coll. Mus. Tervuren, Kivu: Butembo, IX-X.1965, Rec. P. Celis. [RMCA]; 2 ♂, Congo belge: P.N.U., Lusinga, 1760 m, 12—17.XII.1947, Miss. G.F. de Witte, 1146a / P. Vanschuytbroeck det. 19?? *Hercostomus germanus* Wied. / *Hercos-*

*stomus pulchripes* Vansch., dt. Grichanov, 1998; 2 ♂, Congo belge: Ruanda, Ruhengeri (riv. Mugara-Kigombe), 1800—1825 m, 6.II.1935, G.F. de Witte, 1066 [RINS]; 1 ♂, Tanzania, West Usambara Mts., Mazumbai, 1600 m, 01.VIII.1980, M. Stoltze & N. Scharff leg., Zool. Museum, Kobenhavn; 1 ♂, Tanzania, East Usambara Mts., Amani, 900 m, 10.VII.1980, M. Stoltze & N. Scharff leg., Zool. Museum, Kobenhavn; 2 ♂, Kenya: Nyeri, III—IV.1948, M. Steele. B.M. 1948-497; 4 ♂, Kenya: 18.XII.1970, A.E. Stubbs, B.M. 1972-211 / Kakamega Forest, 5200 feet; 2 ♂, Kenya: 15—16.XII.1970, A.E. Stubbs, B.M.1972-211 / Lake Nakuru, 5767 feet; 1 ♂, Kenya: 17.XII.1970, A.E. Stubbs, B.M.1972-211 / Kericho, 6500 feet; 3 ♂, Angola (A40): Tundavala, 8—10 mls. NW. Sa da Bandeira, 27—29.III.1972 / Southern African Exp. B.M. 1972-1; 1 ♂, [Kenya:] Van Someren, Meru, 7 / 43 / V.G.L. van Someren Collection, Brit. Mus. 1959-468; 1 ♂, Kenya (B21): S. Slope Mt. Kenya, Thiba camp, c. 6000', 9—10.VII.1974, D. Hollis / B.M. 1974-528; 1 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935. B.M. E. Afr. Exp., B.M.1935-203 / Fort Portal, 4.XII.1934, F.W. Edwards / *Hercostomus jani* Dyte, det. C.E. Dyte, 1966 [NHML]; 2♂, Kenya: Kakamega forest, Ikuywa river, 25.VI.1995, N 0°12'73'', E 34°55'42'', Leg. Earthwatch Team 4; 12♂, Urundi: Terr. Bururi, Kumuyange [Shimabara], alt. 1350-2050 m, 8.I.1948 [3.V.1948; 19.V.1948; VI.1948; 10.X.1948; 8.I.1949; 13.III.1949; 4.III.1953], F. Francois / R.I.Sc.N.B. I.G. 24452;

**Diagnosis.** *H. argyropus par* is similar to *H. a. argyropus* in almost all respects (including morphology of hypopygium), differing from nominotypic subspecies in only two apical segments of hind tarsus flattened and silvery; 3rd segment of the same tarsus not flattened, silvery white only in distal half. Sometimes only the last segment flattened, whereas 4th tarsomere simple, weakly silvery shimmering.

**Remark.** The following species are also found among the paratypes of *H. pulchripes* [RINS]: *Hercostomus congoensis* Curran, *Paraclius* sp., *Pelastoneurus* sp. See also remark under *H. fuscipennis* Meigen.

**Distribution.** Kenya; Tanzania, Congo (Kinshasa), Uganda (!), Burundi (!), Angola (!).

### *Hercostomus ultimus* Parent

(Figs 2, 34)

**Type material examined.** ♂, holotype [red label] / Musee du Congo, N. Kivu, X-1933, Kibati, plaine de lave, Dr. De Wulf / R.Det. G 2966 / *Hercostomus ultimus* n.sp. ♂, Type, O. Parent.

**Additional material.** 3 ♂, 7♀, Kenya: 18—20.XII.1970, A.E. Stubbs, B.M. 1972-211 / Kakamega Forest, 5200 feet [NHML]; 9♂, 9♀, Kenya: Kakamega forest, Isecheno stat. [path betw. Isecheno stat. & Kalunya glade; nr. Vihiga village; Buyangu Res.; Yala river],

23.VI.1995 [20.I.1995; 22—27.VI.1995], near guest-house [patrol trail; pump house trail, afternoon], N 0°14'16'', E 34°51'88'' [N 0°14'48'', E 34°51'88''; N 0°17'12'', E 34°56'33''; N 0°21'65'', E 34°51'81''; N 0°12'36'', E 34°53'61''], Leg. Earthwatch Team 2 & 4 [NMK].

**Diagnosis.** *H. ultimus* is included into the group of species having silvery-white segments of hind tarsi. Hind basitarsus with 1 or 2 remarkable dorsal setae; hind tarsus without ornamentation except silvery 5th tarsomere.  $M_{1+2}$  straight,  $M_{1+2}$  and  $R_{4+5}$  inconspicuously convergent. Hind basitarsus absent in holotype. Cercus yellow, with yellow cilia, without falcate setae. Female differs from *H. congoensis* in presence of 1 strong anteroventral and 2 short posteroventral setae on middle tibia and 1 short dorsal seta on middle basitarsus.

**Distribution.** Congo (Kinshasa); Kenya (!).

### *Hercostomus congoensis* (Curran)

(Figs 7, 32)

**Type material examined.** ♀, holotypus [red label] / Musee du Congo: Kibati; 28-V-1916, Dr. Rodhain / R. Det. P 1160 / *Dolichopus congoensis* Curran, 1924; ♂, holotypus [red label] / Coll. Mus. Congo, Urundi Bururi, 1949, F. Francois / P. Vanschuytbroeck det. 195?. *Hercostomus bururiensis* n.sp. [in coll.; Nomen nudum] / *Hercostomus congoensis* (Curran), det. Grichanov, 1998; paratype, ♂, Congo belge: Kivu, Rutshuru, riv. Kanzarue, 1200 m, 16.VII.1935, G.F. de Witte: 1660 / Paratype / P. Vanschuytbroeck det. *Hercostomus pulchripes* n.sp. [RINS].

**Additional material.** 1 ♂, I.R.S.A.C. Mus. Congo, Kivu: Butembo riv. Luhule, 8.II.1950, G. Marlier / P. Vanschuytbroeck det. 1962, *Dolichopus callosus* Loew / *Hercostomus* ? H. Ulrich [RINS]; ♂, Musee du Congo, Ituri: Blukwa, 12.XII.1928, A. Collart / R. Det. K 2414 / *Hercostomus longipilus* Par. O. Parent; ♂, Congo belge: P.N.A., Nyasheke (Vol. Nyamuragira), 1820 m, 14 au 26.VI.1935, G.F. de Witte: 1485 / O. Parent det. 1937: *Hercostomus longipilus* Par.; 3 ♂, Urundi: Bururi [Astrida], alt. 1950 m, III.1948 [21.XI.1949], F. Francois / R.I.Sc.N.B. I.G. 24452 [RINS]; 1 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Bwamba Pass, 5500-7500 ft., F.W. Edwards / *Dolichopus* ? *congoensis*, det. C.E. Dyte, 1954; 1 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935. B.M. E. Afr. Exp., B.M.1935-203 / Fort Portal, 4.XII.1934, F.W. Edwards / *Dolichopus* ? *congoensis*, det. C.E. Dyte, 1954; 7 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M.E. Afr. Exp., B.M. 1935-203 / Namwamba Valley, 6500 ft., F.W. Edwards / *Dolichopus* ? *congoensis*, det. C.E. Dyte, 1954; 1 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935. B.M. E. Afr. Exp., B.M.1935-203 / Mobuku Valley, 7300 ft., F.W. Edwards; 2 ♂, Uganda: Ruwenzori

Range, XII.1934-I.1935. B.M. E. Afr. Exp., B.M.1935-203 / Kilembe, 4500 ft., F.W. Edwards; 1 ♂, S.W. Uganda: Kigezi Province, XI.1934, B.M. E. Afr. Exp., B.M.1935-203 / Lake Mutanda, 6000 ft., J. Ford; 7 ♂, Kenya: 18.XII.1970, A.E. Stubbs, B.M. 1972-211 / Kakamega Forest, 5200 feet; 1 ♂, Kenya: 15-16.XII.1970, A.E. Stubbs, B.M.1972-211 / Lake Nakuru, 5767 feet; 3 ♂, Kenya: 17.XII.1970, A.E. Stubbs, B.M. 1972-211 / Kericho, 6500 feet [NHML].

**Diagnosis.**  $M_{1+2}$  straight;  $M_{1+2}$  and  $R_{4+5}$  inconspicuously convergent. Hind basitarsus with 1-2 fine dorsal setae, 1.5 times longer than diameter of tarsomere, in addition to shorter anterior and ventral elongate setulae. Three last segments dorsally brownish, ventrally entirely silvery white. Male cercus dirty-white or yellow with brown margin, angular apically, incised apicoventrally, as long as wide, roundly projected basoventrally, with black falcate setae on apex and simple cilia otherwise. Distal unpaired epandrial process broad, shorter than surstyli. Lobes of surstyli narrow, with short simple setae. Females have only 1 anteroventral seta on middle tibia. Size about 5 mm.

**Remark.** Female holotype of *H. congoensis* Curran is almost identical to male holotype of *H. longipilus* described by Parent (1934). See also remark under *H. fuscipennis* Meigen and *H. argyropus* par.

**Distribution.** Congo (Kinshasa); Burundi, Kenya (!), Uganda (!).

### *Hercostomus dimidiatus* Curran

**Diagnosis.** Hind tarsi simple, 3-5th segments entirely black-brown, with black setulae; 5th segment of middle tarsus yellow or silvery-white and clothed with pale hairs; fore tarsus simple; 5 mm. Description of this species by Curran (1939) is rather similar to habitus of species of the group 1.

**Distribution.** Zimbabwe.

### *Hercostomus eronis* Curran

(Figs 3, 38)

**Material examined.** 1 ♂, Urundi: Bururi, alt. 1930 m, VI.1948, F. Francois / R.I.Sc.N.B. I.G. 24.452; 1 ♂, Urundi: Terr. De Kitega, 13.I.1952, F. Francois / Colline: Kitega, alt. 1750 m, / R.I.Sc.N.B. I.G. 24.452 [RINS].

**Diagnosis.** Apical segments of middle tarsus entirely black, without long bristles. Hind basitarsus without dorsal setae. Three apical segments of hind tarsus entirely yellow-white, dorsally flattened and silvery pilose, with short setulae; 2nd segment of hind tarsus shorter than 3-5th combined; cercus

with rounded ventral apex, acute distodorsal apex and simple setae.

**Distribution.** South Africa; ?Madagascar, Tanzania, Burundi (!).

### *Hercostomus jani* Dyte

**Material examined.** 1 ♂, Congo belge: P.N.U., Lusina, 1760 m, 22.X.1948, Miss. G.F. de Witte, 1922a / P. Vanschuytbroeck det. 19?? *Hercostomus germanus* Wied. / *Hercostomus jani* Dyte, dt. Grichanov, 1998.

**Diagnosis.** 4th segment of middle tarsus with rows of numerous black bristles above and below; the dorsal ones being in length about 3 times the width of basitarsus; hind basitarsus without dorsal setae; 5th segment of middle and hind tarsi dorsally silvery pilose. A male from Uganda, determined by Dyte as *H. jani*, is apparently *H. argyropus* par.

**Distribution.** Tanzania; Congo (Kinshasa) (!).

### *Hercostomus blagoderovi* sp.n.

(Figs 4, 37)

**Holotype.** ♂, Kenya: 18.XII.1970, A.E. Stubbs, B.M. 1972-211 / Kakamega Forest, 5200 feet [NHML].

**Paratypes.** 3 ♂, the same labels.

**Description.** Male. Frons bluish-black, slightly grey pollinose; face densely silvery-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, face under antennae as wide as height of 1st flagellomere; ratio of its maximal width to minimal width to height, 10 : 5 : 35; clypeus not reaching lower margin of eyes. Antenna as long as height of head; scape and pedicel yellow, pedicel short and high, internally convex anteriad, with short distal setulae; 1st flagellomere mostly brown, yellow at base, asymmetric, elongate-oval, ovoid apicodorsally, 1.5 times longer than high, glabrous; arista positioned just before middle of dorsal side, black, pubescent, with short hairs shorter than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 8 : 6 : 16 : 45. Palpus and proboscis moderately small, yellow or reddish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly bluish-black with weak metallic reflection; mesonotum grey pollinose, pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleu-

ra with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae, 2 short lateral hairs and numerous dorsal and marginal short hairs between major setae.

Legs including fore and hind coxae yellow; middle coxa brown-black except yellow apex, hind tibia black at extreme apex. Fore coxa with short dark hairs anteriorly and several black setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 1 posterior, 2—3 apical setae and 1 long apicoventral cilia, half as long as basitarsus. 2—5th segments of fore tarsus mostly brownish, with short black dorsal setulae and ventral pad of microscopic light erect hairs. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 42 : 74 : 73 : 34 : 12 : 10 : 8 : 8. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal, 1 anteroventral and 5 apical setae. Middle tarsus black from tip of basitarsus; 1—2nd segments each with 1—2 very short apicoventral setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 96 : 113 : 61 : 29 : 25 : 16 : 12. Hind femur with one subapical anterodorsal seta. Hind tibia with 3 anterodorsal, 3 posterodorsal, 3 short fine ventral, 3—4 apical setae. Hind basitarsus black, with several short ventral and 1—2 short apical setae; 2nd tarsomere black; 3—5th segments black posteroventrally, slightly widened, flattened and silvery-white pilose anterodorsally. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 30 : 105 : 140 : 51 : 46 : 32 : 25 : 16.

Wing simple, greyish, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 29 : 12.  $R_{4+5}$  and  $M_{1+2}$  weakly convergent.  $M_{1+2}$  joining costa at wing apex. Crossvein  $m-cu$  slightly convex, forming right angles with longitudinal veins. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 21 : 22. Posterior wing margin evenly convex. Anal vein distinct; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen mostly greenish-black, whitish pollinose laterally; postabdomen black. 7th segment 4/5 the length of epandrium. 8th segment with numerous fine black cilia. Epandrium large, slightly projected distoventrally, strongly projected distodorsally, nearly twice longer than high. Hypandrium fused with epandrium except apex, simple. Aedeagus thin, concealed. Distoventral epandrial lobe undeveloped; 2 epandrial setae at base of hypandrium. Distal unpaired epandrial process as long as surstyli, nar-

row, curved ventrad, with microscopic spicules. Surstylus yellow, curved, with 2 narrow lobes; ventral lobe with 3 short apical setae, 1 thick and 1 simple middorsal setae; dorsal lobe of surstylus with 1 dorsal seta at distal 1/3. Cercus yellow, with light and dark simple cilia, subtriangular, with acute distodorsal and drawn-out basoventral apices.

Length (mm): body without antennae 3.4, antenna 0.9, wing-length 3.7, wing-width 1.1, hypopygium 1.05.

*Distribution.* Kenya.

*Etymology.* The species is named for the Russian dipterologist Dr. V. A. Blagoderov.

*Diagnosis.* The new species is related to *H. eronis*, differing in shape of cercus and mostly black apical segments of hind tarsus. Hind basitarsus without dorsal setae. Three apical segments of hind tarsus flattened and silvery white dorsally, with short setulae. 2nd segment of hind tarsus shorter than 3—5th combined. Apical segments of middle tarsus entirely black. Cercus subtriangular, acute distodorsal and drawn-out basoventral apices.

### *Hercostomus golubtsovi* sp.n.

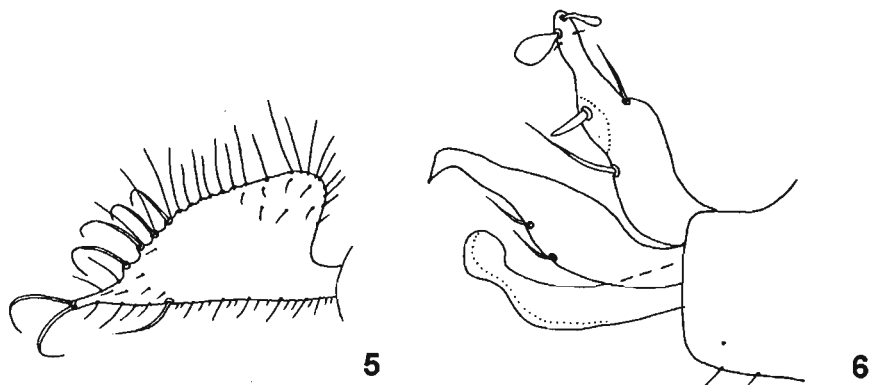
(Figs 5, 6, 33)

*Holotype.* ♂, Uganda: Kigezi dist., XI.1934, B.M. E. Afr. Exp., B.M. 1935-203 / Mt. Sabinio, 7000 ft., F.W. Edwards [NHML].

*Paratype.* ♂, the same labels.

*Description.* Male. Frons bluish-black, slightly grey pollinose; face densely silvery-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, face in middle narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna as long as height of head; scape and pedicel yellow, pedicel short and high, internally convex anteriad, with short distal setulae; 1st flagellomere mostly brown, yellow at base, asymmetric, elongate-oval, ovoid apicodorsally, 1.5 times longer than high, glabrous; arista positioned just before middle of dorsal side, black, pubescent, with short hairs shorter than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 13 : 7 : 19 : 52. Palpus and proboscis moderately small, yellow or reddish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly bluish-olive-green with weak metallic reflection, humeri brownish; mesonotum grey pollinose, pleura white pollinose. 6 strong dorso-central setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 2 fine humeral, 1 posthumeral



Figs 5—6. *Hercostomus golubtsovi* sp.n., lateral view.  
6, lobes of surstylus and distal unpaired epandrial lobe; 5, cercus.

setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 microscopic lateral hairs.

Legs including fore and hind coxae yellow; middle coxa yellow, with large brown external spot. Fore coxa with short white hairs anteriorly and several black setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2 posterior, 2—3 apical setae and 1 long apicoventral cilia, 2/3 the length of basitarsus. 3—5th segments of fore tarsus brownish dorsally, with short black dorsal setulae and ventral pad of microscopic light erect hairs. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 60 : 95 : 101 : 61 : 22 : 14 : 13 : 11. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal, 1 anteroventral and 5 apical setae. 1—2nd segments of middle tarsus yellow, each with several very short ventral setae; 3—5th segments dark-brown. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 50 : 115 : 165 : 92 : 31 : 21 : 15 : 14. Hind femur with one subapical anterodorsal seta. Hind tibia with 3 anterodorsal, 4 posterodorsal, 5 fine ventral, 3 apical setae. Hind basitarsus yellow, brownish at apex, with 2 short ventral and 1—2 short apical setae; 2nd tarsomere brown, black at apex, with elongate setulae; 3—5th segments black ventrally, slightly widened, flattened and silvery-white pilose posterodorsally. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 135 : 185 : 77 : 85 : 35 : 21 : 15.

Wing greyish, almost hyaline, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 42 : 13.  $R_{4+5}$  and  $M_{1+2}$  weakly but distinctly con-

vergent.  $M_{1+2}$  joining costa at wing apex. Cross-vein  $m-cu$  slightly convex, forming right angles with longitudinal veins. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 33 : 35. Posterior wing margin evenly convex. Anal vein distinct; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen mostly olive-green, whitish pollinose, black along sutures; 6th segment black, postabdomen brown-black. 8th segment with numerous fine black cilia. Epandrium large, strongly projected distoventrally. Hypandrium fused with epandrium except apex, simple. Aedeagus thin, concealed. Distoventral epandrial lobe fused with epandrium; 2 epandrial setae at base of hypandrium. Distal unpaired epandrial process slightly shorter than surstyli, narrow, curved ventrad, rounded at apex. Surstylus yellow, curved, with 2 lobes, which swollen at base, narrow in distal part; ventral lobe with 2 leaf-like apical setae, 1 thick dorsal seta at distal 1/3, 1 simple middorsal and 1 simple midventral strong setae; dorsal lobe of surstylus with 2 strong middorsal setae. Cercus yellow, with light hairs and black falcate setae in distal 1/2, large, twice longer than wide, with drawn-out distodorsal apex bearing 2 falcate setae and rounded basoventral apex.

Length (mm): body without antennae 4.3, antenna 1.2, wing-length 5.7, wing-width 1.6, hypopygium 1.9.

*Distribution.* Uganda.

*Etymology.* The species is named for the Russian dipterologist Dr. D. N. Golubtsov.

*Diagnosis.* Hind basitarsus without dorsal setae; 2nd segment of hind tarsus longer than 3—5th combined; 3—4th segments of hind tarsus with short setulae, 3rd segment 3 times longer than wide; usually 3 apical segments of hind tarsi dorsally silvery pilose; 3—5th segments of middle tarsus dark-brown; 4th segment of the same tarsus with simple setae;



hypopygium is rather similar to that in *H. straeleni*; cercus large, with several falcate setae at distodorsal apex; ventral lobe of surstylus with 2 leaf-like apical setae, 1 thick dorsal seta at distal 1/3, 1 simple middorsal and 1 simple midventral strong setae; dorsal lobe with 2 strong middorsal setae.

### *Hercostomus rhodesiensis* Parent

(Fig. 8)

*Material examined.* ♂, Umtali, S. Rhodesia, IV.19129, A. Cuthbertson [NHML].

*Diagnosis.* Having simple legs, the species is keyed to *H. nectarophagus*, differing in 1st flagellomere shorter than high; cercus yellow, broad, with rounded distoventral margin bearing pale short cilia. *H. rhodesiensis* is included into the group I on the base of hypopygium morphology mainly.

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. rhodesiensis* (RMCA, examined) belong to *H. argyropus* par. So, the species should be excluded from the fauna of Congo (Kinshasa).

*Distribution.* Zimbabwe.

### *Hercostomus straeleni* Vanschuytbroeck

(Figs 9, 31)

*Type material examined.* Holotype, ♂ [red label], Congo belge: Ruanda, Ilega (pied volc. Karisimbi), 2400 m, 24.III.1935, G.F. de Witte: 1314 / Coll. Mus. Congo, Ex coll. I.P.N.C.B. / P. Vanschuytbroeck det. 19?? *Hercostomus* ♂ *straeleni* n.sp. [RMCA]

*Additional material examined.* 1 ♂, Coll. Mus. Congo, Kivu: contr. S. Kahuzi, 2200 m, 27.III.1953, P. Basilevsky [RMCA]; 5 ♂, Uganda: Kigezi Dist., XI.1934, B.M. E. Afr. Exp., B.M. 1935-203 / Mt. Mgahinga, 8000 ft., F.W. Edwards [1 ♂ with additional date: 20.XI.1934]; 4 ♂, 1 ♀, Uganda: Kigezi Dist., XI.1934, B.M. E. Afr. Exp., B.M. 1935-203 / Kanaba, 7300 ft., F.W. Edwards; 4 ♂, Uganda: Kigezi Dist., XI.1934, B.M. E. Afr. Exp., B.M. 1935-203 / Mt. Sabinio, 8000 ft., F.W. Edwards; 1 ♂, Uganda: Ruwenzori Range, XII.1934 — I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Mobuku Valley, 7300 ft., F.W. Edwards / small swamp at 8000 [NHML; all specimens with additional label: *Hercostomus straeleni* Vansch., det. C.E. Dyte, 1954].

*Diagnosis.* Face silvery white. Antenna black. Postocular setae white. Fore coxa yellow. Femora and tibia yellow; basitarsi yellow except extreme apex. Hind basitarsus without dorsal setae. Three apical segments of hind tarsus short, flat, widened; 3rd and 4th with long dense setae; 5th segment of the same tarsus covered anteriorly with silvery-white short hairs; middle tarsus simple. Lower calypter with black

cilia. Cercus subtriangular, large, half as long as epandrium, with several falcate setae at distal apex.

*Remark.* About 240 paratypes labelled as *H. straeleni* are deposited in the collection of RINS. The different species are found among them [RINS]: 4 species of the genus *Hercostomus*, several species of *Diaphorus*, *Thinophilus* and *Sympycnus*.

*Distribution.* Congo (Kinshasa); Uganda.

**Group II.** Included species: *enghoffi* sp.n., *infirmus* Parent, *krivosheinae* sp.n., *mostovskii* sp.n., *oxerovi* sp.n., *nectarophagus* Curran, *patellitarsis* Parent, *perturbus* Curran, *scotti* sp.n., *selikhovskini* sp.n., *tobiasi* sp.n., *wittei* sp.n., *yakovlevi* sp.n.

### *Hercostomus patellitarsis* (Parent)

(Fig. 39)

*Material examined.* 4♂, Tanzania: Uzungwe Mts., Mwanihana Forest above Sanje, 1000 m., 01.VIII.1981, M. Stoltze & N. Scharff leg., Zool. Museum, Copenhagen.

*Diagnosis.* 3rd and 4th segments of fore tarsus shortened; 4th segment of fore tarsus with short dorsal lobe; 3rd segment nearly equal to 5th; cercus with large basolateral lobe bearing several short setae and long narrow apex bearing several long setae.

*Distribution.* Zimbabwe; Tanzania (!).

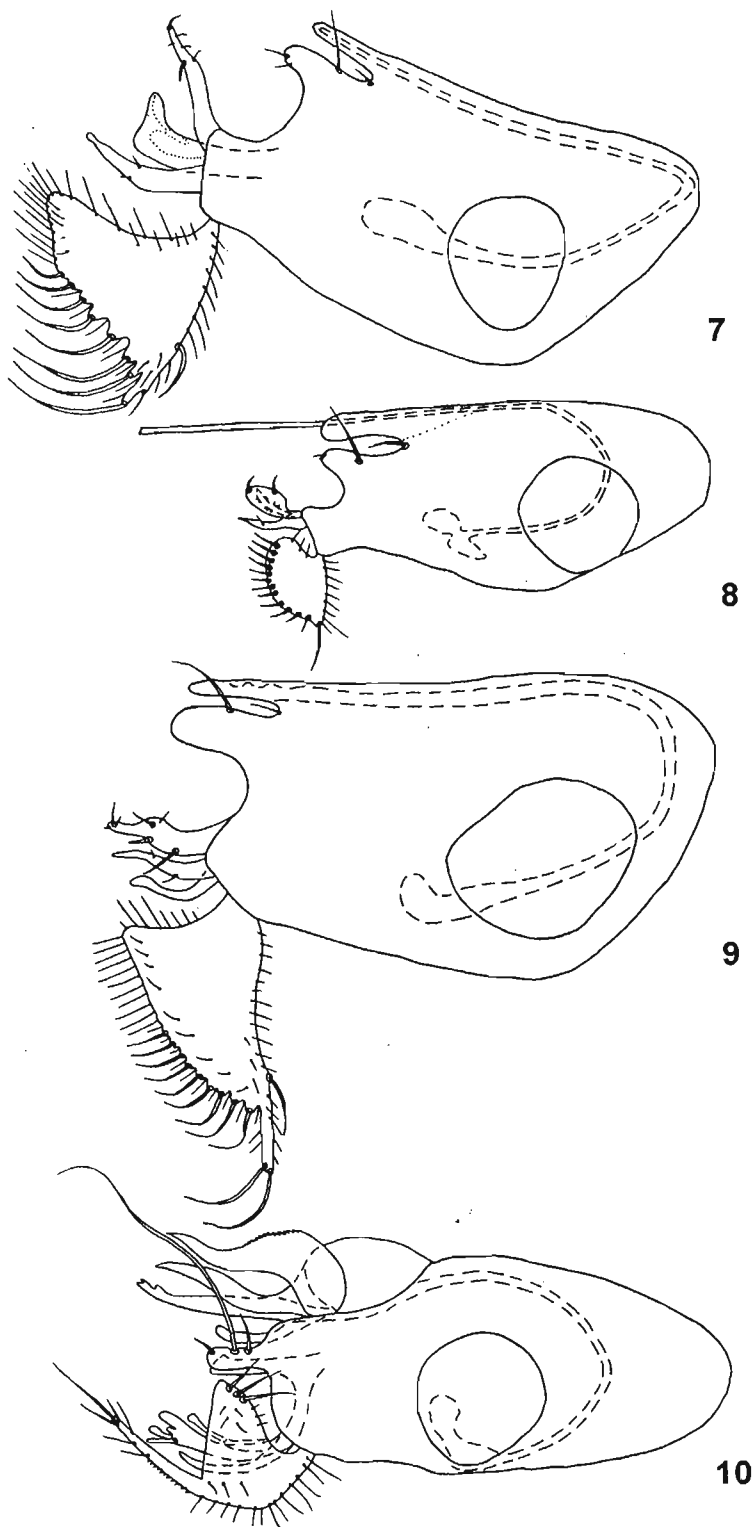
### *Hercostomus enghoffi* sp.n.

(Figs 10, 40)

*Holotype.* ♂, Tanzania: East Usambara, Amani, 1000 m, 28.I.1977 / Zool. Mus., Copenhagen, H. Enghoff, O. Lomholdt, O. Martin.

*Paratypes.* 24♂, same labels (1♂ caught on 23.I.1977).

*Description.* Male. Head depressed of shrinkage in all specimens. Frons greenish-black, densely whitish pollinose; face densely silvery-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Lower postocular setae white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna as long as height of head, entirely black; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, angular apically, as long as high, glabrous; arista middorsal, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 9 : 6 : 12 : 51. Palpus and proboscis small, black, with short black hairs; palpus with 1 short black seta.



Figs 7—10. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

7, *H. congoensis* (Curran); 8, *H. rhodesiensis* Parent; 9, *H. straeleni* Vanschuytbroeck; 10, *H. enghoffi* sp.n.

Thorax black with weak metallic greenish reflection; mesonotum brownish pollinose; pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals nearly half as long as dorsocentrals; 2 strong notopleural, 1 strong and 2 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black or sometimes light seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 lateral hairs.

Legs including fore and hind coxae yellow; middle coxa mostly brown externally, hind coxa partly brownish externally; hind femur brown at apex; fore tarsus with 1st and 3rd segments black, 2nd segment black, narrowly white at base, 4th brown, 5th white; middle and hind tarsi black from tip of basitarsus. Fore coxa with short black hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 apical short and fine setae. 2nd segment of fore tarsus with anterior row of hooked cilia, longer than diameter of tarsomere; 3rd segment flattened and widened, with dorsal fringe of black setulae; 4th shortened, with several short black setae; 5th with dorsal row of white setae, twice longer than diameter of tarsomere. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 42 : 68 : 82 : 29 : 45 : 15 : 4 : 48. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal and 3—4 apical setae. Middle tarsus simple. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 40 : 97 : 144 : 79 : 48 : 35 : 13 : 12. Hind femur with one subapical anterodorsal seta at distal 1/3. Hind tibia slightly thickened at apex, with 3 anterodorsal, 3—4 posterodorsal. 4—5 fine ventral. 3 apical setae and small posteroventral apical cicatrix. Hind tarsus simple. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 130 : 150 : 54 : 60 : 35 : 18 : 12.

Wing simple. greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 35 : 8.  $M_{1+2}$  and  $R_{4+5}$  distinctly convergent;  $M_{1+2}$  with weak flexion at proximal 1/3 of distal part, joining costa just before wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 22 : 23. Posterior wing margin almost evenly convex, shallowly concave at apex of  $CuA_1$ . Anal vein distinct, not reaching to wing margin; anal lobe narrow; anal angle obtuse. Lower calypter yellow, brown at apex, with black setae. Halteres yellow.

Abdomen black, weakly pollinose, with black hairs and marginal setae. 7th segment as long as epandrium. 8th segment with fine black cilia. Hypopygium black, brown distally. Epandrium elongate-oval, twice longer than high. Foramen midlateral. Hypandrium positioned at distal 1/3 of ventral side, swollen at base, with at least 3 pairs of narrow entangled lobes; the widest (left) lobe broad in basal half, narrow in distal half, serrate ventrally in middle. Aedeagus thin, projected. Distoventral epandrial lobe fused to epandrium, projected, with 2 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; inner (ventral) lobe short and thin, with long narrow apical process; outer (dorsal) lobe of surstylus longer and wider than ventral lobe, split at apex, with thick subapical seta. Distal unpaired epandrial process bifurcated; dorsal arm long and narrow, shorter than dorsal lobe of surstylus; ventral arm short, lying between distodorsal epandrial lobes. Cercus yellow, with short light hairs, large basolateral lobe bearing several short setae and long narrow apex bearing several long setae.

Length (mm): body without antennae 3.8, antenna 0.9, wing-length 3.9, wing-width 1.2, hypopygium 0.95.

*Distribution.* Tanzania.

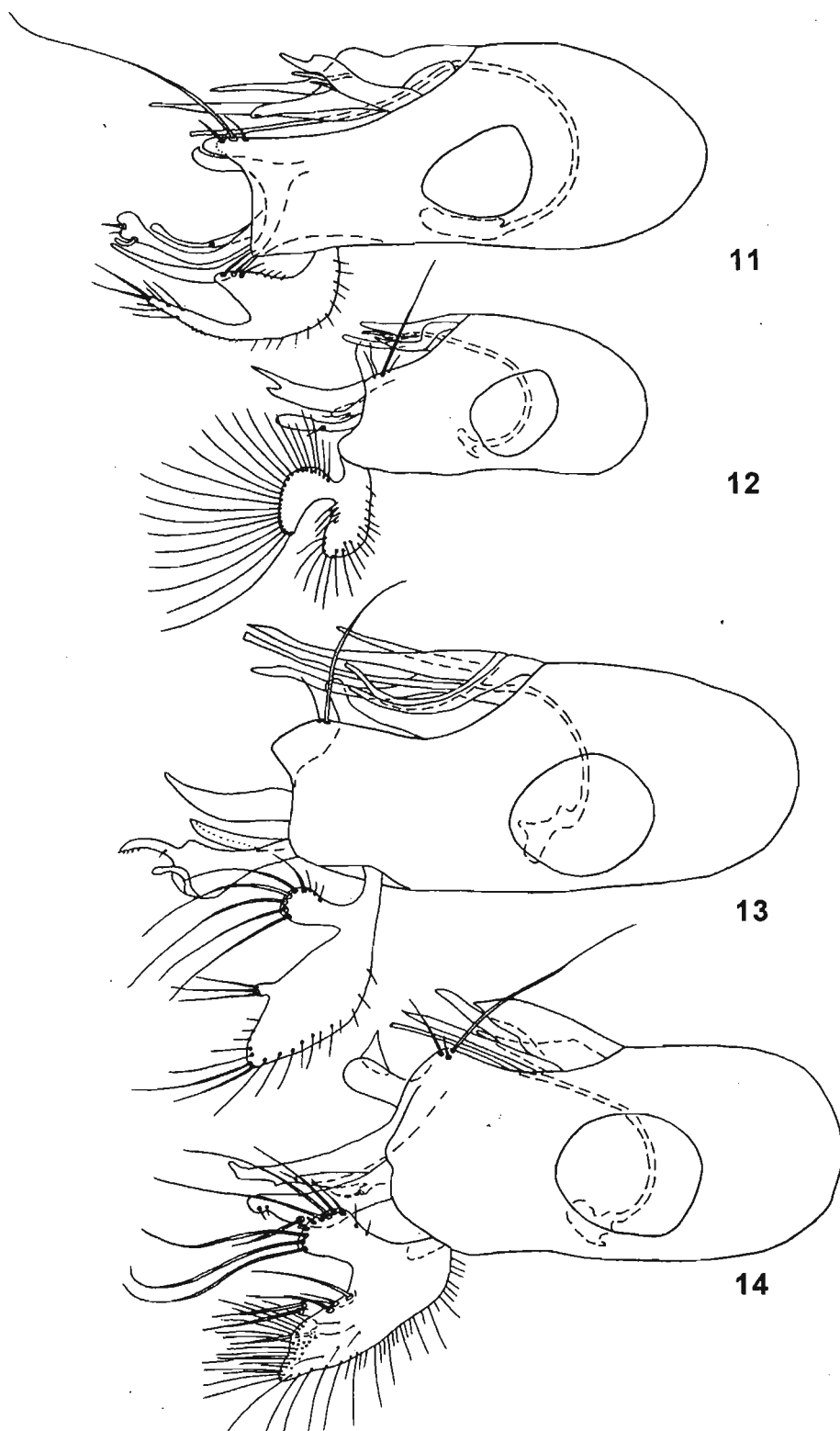
*Etymology.* The species is named for one of the collectors, Dr. H. Enghoff.

*Diagnosis.* The new species is closely related to *H. patellitarsis*, differing in morphology of fore tarsus and fine structures of hypopygium. 2nd segment of fore tarsus with row of hooked cilia; 5th segment 3 times longer than 3rd; 4th segment of fore tarsus without lobe.

*Hercostomus selikhovskini* sp.n.  
(Figs 11, 41)

*Holotype.* ♂, Tanzania: Uzungwe Mts., Mwanihana Forest above Sanje, 1000 m., 01.VIII.1981, M. Stoltze & N. Scharff leg., Zool Museum, Copenhagen.

*Description.* Male. Similar to *H. enghoffi* sp.n. in almost all respects except as noted. Legs somewhat darker, reddish-yellow; 4—5th segments of fore tarsus black, 2nd segment of the same tarsus with simple short setulae. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 78 : 85 : 48 : 55 : 17 : 4 : 27. Same ratio for middle leg, 40 : 95 : 138 : 75 : 45 : 35 : 16 : 12. Hind tibia with short posteroventral apical tooth. Hind basitarsus with 2 very short ventral spinules at extreme base. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 125 : 147 : 55 : 60 : 33 : 18 : 13.



Figs 11—14. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

11, *H. selikhockini* sp.n.; 12, *H. scotti* sp.n.; 13, *H. yakovlevi* sp.n.; 14, *H. oxerovi* sp.n.

Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 34 : 9. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 23 : 28.

Abdomen black, weakly pollinose, with black hairs and marginal setae. 7th segment nearly as long as epandrium. 8th segment with fine black cilia. Hypopygium black, brown distally. Epandrium elongate-oval, more than twice longer than high. Foramen midlateral. Hypandrium midventral, swollen at base, with 3—4 pairs of narrow entangled lobes; the widest (left) lobe without serration. Aedeagus thin, projected. Distoventral epandrial lobe fused to epandrium, projected, with 2 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; inner (ventral) lobe short and thin, with long narrow apical process; outer (dorsal) lobe of surstylus longer and wider than ventral lobe, slightly widened and rounded at apex, with 1 thick subapical and 1 strong simple apical setae. Distal unpaired epandrial process bifurcated; dorsal arm long and narrow, slightly longer than dorsal lobe of surstylus; ventral arm short, lying between distodorsal epandrial lobes. Cercus yellow, with short light hairs, large basolateral lobe bearing several short setae and long narrow apex bearing several long setae.

Length (mm): body without antennae 3.7, antenna 0.9, wing-length 3.9, wing-width 1.3, hypopygium 0.95.

*Distribution.* Tanzania.

*Etymology.* The species is named for the Russian entomologist, Dr. A. V. Selikhovkin.

*Diagnosis.* The new species is closely related to *H. enghoffi*, differing in morphology of fore tarsus and fine structures of hypopygium. 2nd segment of fore tarsus with simple setulae; 5th segment 2 times longer than 3rd; 4th segment of fore tarsus without lobe.

### *Hercostomus scotti* sp.n.

(Figs 12, 44)

*Holotype.* ♂, W. Aden Prot., Wadi Dareija, S.W. of Dhala, ca. 4500 ft., 6—9.XI.1937 / B.M. Exp. to S.W. Arabia, H. Scott & E.B. Britton, B.M. 1938-246 [NHML].

*Description.* Male. General coloration of body brownish yellow. Frons and face black, densely white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae yellow. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; ratio of its maximal width to minimal width to height, 17 : 7 : 38; clypeus not reaching lower

margin of eyes. Antenna 1/5 longer than height of head; scape and pedicel yellow; scape elongate; pedicel short, internally projected anteriad, with short distal setulae; 1st flagellomere reddish-brown, asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, 1/3 longer than high, glabrous; arista middorsal, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 16 : 6 : 16 : 57. Palpus and proboscis small, brownish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly brownish-yellow with weak metallic reflection; mesonotum in posterior 1/3, scutellum dorsally and postscutum medially black; pleura with small black spot below lower calypter. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 post-humeral setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

Legs including coxae yellow; hind femur brownish at apex; fore tarsus with 1—2nd segments yellow, 3—4th black, 5th yellow; middle and hind tarsi dark-brown from tip of basitarsus. Fore coxa with microscopic hairs anteriorly and 2—3 setae at apex; middle coxa with 1 strong external setae in addition to dark anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 apical very short setae. 3rd segment of fore tarsus flattened and widened, with short black dorsal setulae; 4th and 5th segments with dorsal fringe of white hairs; the hairs slightly longer than diameter of tarsomere. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 65 : 110 : 120 : 55 : 60 : 37 : 10 : 11. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal and 4 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 120 : 170 : 88 : 49 : 40 : 18 : 10. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 4 posterodorsal, 5 fine ventral, 3 apical setae and short posteroventral apical denticle. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 150 : 190 : 50 : 72 : 31 : 17 : 15.

Wing yellowish, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 36 : 8.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent in distal part.  $M_{1+2}$  with weak flexion at proximal 1/3 of distal part,

joining costa just before wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of *CuA*<sub>1</sub>, 28 : 36. Posterior wing margin evenly convex. Anal vein fold-like; anal lobe having shallow arcuate emargination in basal 1/2, convex posteriorly in distal 1/2; anal angle absent. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen weakly pollinose, with black hairs and marginal setae, with 1st segment entirely yellow, 2nd and 3rd narrowly black along posterior margin, 4th and 5th segments broadly black posteriorly, 6th segment mostly brown, postabdomen yellow with yellow appendages. 8th segment with numerous fine black cilia. Epandrium elongate-oval, nearly twice longer than high. Foramen positioned before middle of left lateral side. Hypandrium positioned at distal 1/3 of ventral side, swollen at base, with 3 pairs of narrow entangled lobes. Aedeagus thin, projected. Distoventral epandrial lobe undeveloped; 2 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; ventral lobe very short, with 1 apical and 1 middorsal short setae; dorsal lobe of surstylus much longer and wider than ventral lobe, rounded at apex, with 1 simple middorsal setae. Distal unpaired epandrial process bifurcated, positioned apicoventrally; dorsal arm long and broad, longer than dorsal lobe of surstylus, pointed at apex, with dorsal subapical excision; ventral arm short, projecting apicoventrally. Cercus yellow, with light cilia, practically bilobate; distal lobe densely covered with hairs as long as width of lobe, having 3 short pedunculate midventral setae; ventral lobe as large as dorsal, with fan of about 20 ventral and proximal marginal setae as long as height of epandrium.

Length (mm): body without antennae 4.6, antenna 1.3, wing-length 4.5, wing-width 1.4, hypopygium 1.4.

*Distribution.* Yemen.

*Etymology.* The species is named for one of the collectors, Dr. H. Scott.

*Diagnosis.* Having cercus with large fungaceous basolateral process, the new species is close to *H. yakovlevi* and *H. oxerovi*. *H. scotti* differs in 3rd segment of fore tarsus strongly widened, about 3 times longer than wide, about 2/3 the length of 2nd; basolateral process of cercus large, with about 20 long setae. Record of an undescribed species of the genus *Hypophyllus* Loew from "Southern Arabia" by Dyte and Smith (1980) belongs probably to *H. scotti*.

### *Hercostomus yakovlevi* sp.n.

(Figs 13, 42)

*Holotype.* ♂, Kenya: Aberdare Range, X.1934, B.M.E. Afr. Exp. B.M. 1935-203 / Thompson's Falls;

7500 ft., F.W. Edwards [NHML].

*Description.* Male. Frons black, densely whitish pollinose; face densely silvery-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae yellow. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head; scape reddish; pedicel brown, short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere black, asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, 1.5 times longer than high, glabrous; arista positioned just before middle of dorsal side, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 10 : 7 : 16 : 59. Palpus and proboscis moderately small, yellow or reddish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly green-black with weak metallic reflection, humeri yellow-brownish; mesonotum anteriorly and pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 post-humeral setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

Legs including fore and hind coxae yellow; middle coxa with large brown external spot, hind femur brownish at apex; hind tibia gradually darkened towards apex, becoming brown in apical half; fore tarsus with 1—2nd segments yellow, 3—4th black, 5th white; middle tarsi brown from tip of basitarsus, hind tarsus black. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 apical very short setae. 3rd segment of fore tarsus flattened and widened, with short black dorsal setulae; 4th segment with elongate black basodorsal hairs and several white hairs in apical half; 5th segment with dorsal fringe of white hairs. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 67 : 102 : 114 : 62 : 74 : 28 : 10 : 11. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 2 anterodorsal, 3 posterodorsal and 4 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 57 : 132 : 165 : 113 : 67 : 47 : 25 : 14. Hind femur with one subapical anterodorsal seta at distal

1/4. Hind tibia with 3 anterodorsal, 3 posterodorsal, 5 fine ventral, 3 apical setae and short posterovenral apical denticle. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 43 : 160 : 220 : 65 : 84 : 49 : 27 : 19.

Wing greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 40 : 9.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent.  $M_{1+2}$  with weak flexion at proximal 1/3 of distal part, joining costa at wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of *CuA*<sub>1</sub>, 33 : 50. Posterior wing margin evenly convex. Anal vein absent; anal lobe marked by wing fold, having deep arcuate emargination in basal 1/2, broad in distal 1/2; anal angle absent. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen weakly pollinose, with 1st and 2nd segments mostly yellow, 3—4th terga widely yellow laterally, 3—4th sterna and 5—6th segments black, 7th segment brown, hypopygium dirty yellow with yellow appendages. 8th segment with numerous fine black cilia. Epandrium elongate-oval, twice longer than high. Foramen positioned before middle of left lateral side. Hypandrium midventral, with short basal part; 4—5 pairs of narrow entangled lobes of different length. Aedeagus thin, projected. Distovenral epandrial lobe as short angular prominence; 1 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; ventral lobe short, without setae; dorsal lobe of surstylus longer and wider than ventral lobe, widened in middle, narrow and pointed at apex, with microscopic subapical setulae and fine middorsal process. Distal unpaired epandrial process widely bifurcated; dorsal arm (figured ventrally of surstyli) long and broad, longer than ventral lobe of surstylus, pointed at apex; ventral arm short, projecting apicoventrally. Cercus yellow, with light cilia; cercus with mostly short hairs; several long apical cilia; 3 strong setae raising from small tubercle at distal 1/3; basovenral lobe 1/3 as long as cercus, with fan of 5—6 ventral marginal setae shorter than height of epandrium.

Length (mm): body without antennae 4.3, antenna 1.2, wing-length 5.1, wing-width 1.6, hypopygium 1.1.

*Distribution.* Kenya.

*Etymology.* The species is named for the Russian dipterologist, Dr. E. B. Yakovlev.

*Diagnosis.* Having cercus with large fungaceous basolateral process, the new species is close to *H. scottii* and *H. oxerovi*. *H. yakovlevi* differs in 3rd segment of fore tarsus strongly widened, nearly 3 times longer than wide, 1/3 or 2/5 the length of 2nd; cercus with only several long cilia in distal part;

basolateral process of cercus comparatively small, 1/3 the length of cercus, with 5—6 long setae.

### *Hercostomus oxerovi* sp.n.

(Figs 14, 46)

*Holotype.* ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Bwamba Pass: (west side), 5500—7500 ft., F.W. Edwards [NHML].

*Paratypes.* 1 ♂, same labels; 2 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Namwamba Valley, 6500 ft., F.W. Edwards; 1 ♂, Kenya: Nyeri, III-IV.1948, M. Steele. B.M. 1948-497; 1 ♂, Abyssinia: Djem-Djem Forest, circa 8000 ft., 5—10.X.1926, Dr. H. Scott / Brit. Mus. 1927-127 [NHML].

*Description.* Male. Frons and face black, densely white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae yellow. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna as long as height of head; scape and pedicel black or brown, pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere black, asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, 1.5 times longer than high, glabrous; arista positioned just before middle of dorsal side, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 10 : 7 : 18 : 42. Palpus and proboscis moderately small, yellow, with short hairs; palpus with 1 short black seta.

Thorax green-black with weak metallic reflection, humeri and metaepimeres brownish; mesonotum anteriorly and pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

Legs including coxae yellow; middle and hind coxae sometimes darkened, hind femur brownish to brown at apex; hind tibia brownish at apex or brown in apical 1/4; 5th segment of fore tarsus brownish; fore and middle tarsi brown from tip of basitarsus, hind tarsus black from tip of basitarsus or entirely black. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodor-

sal, 2—3 apical very short setae. 3rd segment of fore tarsus flattened and widened, with short black dorsal setulae; 4th and 5th segments with short black dorsal hairs; 1st segment equal to or slightly longer than 2nd. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 55 : 85 : 93 : 53 : 50 : 33 : 10 : 10. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal and 4 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 102 : 150 : 75 : 40 : 31 : 19 : 11. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 4 posterodorsal, 6 fine ventral, 3 apical setae and short posteroventral apical denticle. Hind basitarsus with small ventral tubercle at extreme base. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 123 : 163 : 46 : 55 : 29 : 22 : 15.

Wing greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 35 : 9.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent.  $M_{1+2}$  joining costa just before wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 24 : 35. Posterior wing margin evenly convex. Anal vein fold-like; anal lobe narrow, with straight posterior margin; anal angle absent. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen with black hairs and marginal setae, mostly black, with 1st, 2nd and 3rd segments broadly reddish-yellow laterally, 7th segment brown, slightly longer than epandrium; hypopygium dirty yellow with yellow appendages, weakly pollinose. 8th segment with numerous fine black cilia. Epandrium elongate-oval, twice longer than high. Foramen left midlateral. Hypandrium midventral, swollen at base; 3—4 pairs of entangled lobes of different length and width. Aedeagus thin, projected. Epandrial lobe undeveloped; 2 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; ventral lobe 2/3 the length of dorsal lobe, with 1 short apical and 1 strong middorsal setae; dorsal lobe of surstylus longer and wider than ventral lobe, narrowed in apical half, with 2 short subapical dorsal setae. Distal unpaired epandrial process widely bifurcated; dorsal arm (figured ventrally of surstyli) longer than surstylus, narrow at apex; ventral arm short and thick, projecting apicoventrally, having large right tooth. Cercus yellow, with light cilia; cercus densely covered with hairs longer than cercus width; several strong ventral setae in distal part; 2 strong setae arising from small tubercle at distal 1/3; basoventral lobe 1/2 as long as cercus, with fan of about 10 ventral marginal setae as long as height of epandrium.

Length (mm): body without antennae 3.5—4.1, antenna 1.2, wing-length 4.2, wing-width 1.2, hypopygium 0.8.

*Distribution.* Uganda, Kenya, Ethiopia.

*Etymology.* The species is named for the Russian dipterologist, Dr. A. L. Ozerov.

*Diagnosis.* Having cercus with large fungaceous basolateral process, the new species is close to *H. scotti* and *H. yakovlevi*. *H. ozerovi* differs in 3rd segment of fore tarsus weakly widened, at least 4 times longer than wide, 3/4 the length of 2nd; cercus with only several long cilia in distal part; basolateral process of cercus of moderate size, 1/2 the length of cercus, with about 10 long setae.

### *Hercostomus perturbus* Curran (Fig. 45)

*Material examined.* ♂, Musee du Congo, Afr. S.: East London, 22-2-1925, Munro, Ex coll. Curran / R.Det. 1284 / *Hercostomus perturbus* Curran, det. C.H. Curran [RMCA].

*Diagnosis.* Middle and hind tarsi simple. 3rd segment of fore tarsus strongly widened, nearly equal in length to 2nd; 4th and 5th segments of fore tarsus reduced, shorter than 3rd; dorsal fringe of white hairs on apical 1/3 of 4th and whole of 5th tarsomeres of same tarsus. 7th abdominal segment much longer than epandrium. Hypopygium yellow. Cercus subtriangular, with long cilia, narrow basoventral and apicoventral processes.

*Distribution.* South Africa.

### *Hercostomus infirmus* Parent

*Type material examined.* Paratype, ♀ holotypus [red label] / Musee du Congo, Elisabethville, R. Komitoto, XI-1928, Dr. M. Bequaert / R.Det. J 2414 / *Hercostomus infirmus* n.sp. ♀, Type, O. Parent.

*Diagnosis.* Female described by Parent (1933) resembles *H. perturbus* and could be recognised by the following characters. Antenna black; 1st flagellomere as long as high, with acute apex. Postocular setae black. Wing vein  $M_{1+2}$  straight;  $M_{1+2}$  and  $R_{4+5}$  slightly convergent. Crossvein *m-cu* approximately equal in length to distal part of  $CuA_1$ . Metapimeres and abdominal ventrum yellow. Legs mostly yellow. All coxae yellow, middle coxa with brownish external spot; hind femur with black spot dorsally above. Fore tibia with 2 fine dorsal setae. Middle tibia with 2 anterodorsal, 2 posterodorsal, 1 or 2 fine ventral setae. Hind tibia with 3 anterodorsal and 4 posterodorsal setae. Size about 3 mm.

*Distribution.* Congo (Kinshasa).



***Hercostomus wittei* sp.n.**

(Figs 15, 48)

Holotype. ♂, Kenya: Aberdare Range, X.1934, B.M.E. Afr. Exp. B.M. 1935-203 / Kilembe, 4500 ft., F.W. Edwards [NHML].

Paratypes. 5 ♂, same labels; 5 ♂, Congo belge: P.N.A., Escarpem, de Kabasha, 1500 m, 14.XII.1934, G.F. de Witte: 919 [RJNS].

*Description.* Male. Frons and face black, densely whitish pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lower postocular setae poorly visible, probably black. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, face in middle half as wide as height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna as long as height of head, black; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, elongate, ovoid apicodorsally, 1.5 times longer than high, glabrous; arista positioned just before middle of dorsal side, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 10 : 7 : 16 : 47. Palpus and proboscis moderately small, yellow or reddish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly greenish-black with weak metallic reflection, humeri and pleura mostly yellow-brownish; mesonotum anteriorly and pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

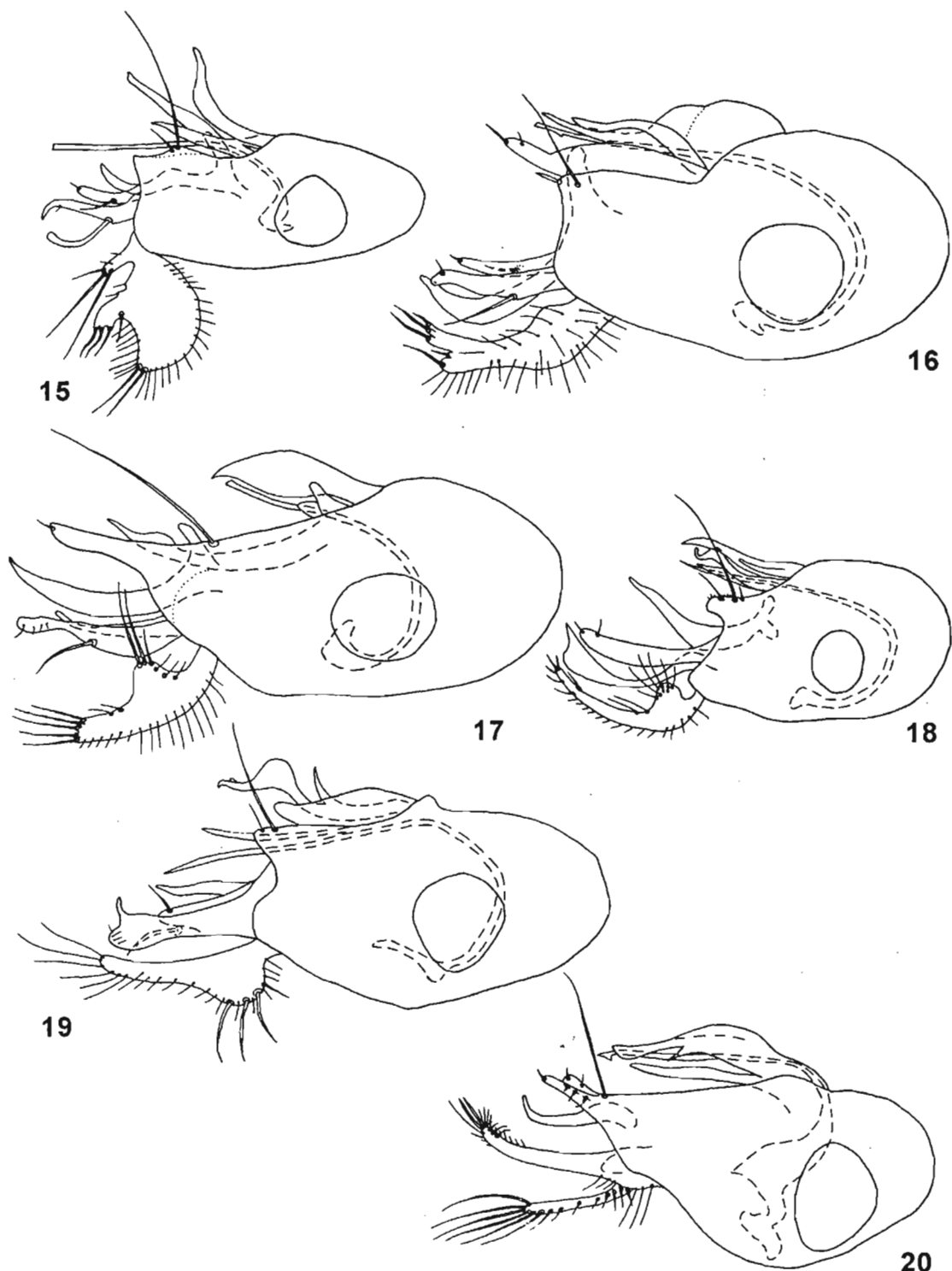
Legs including coxae yellow; sometimes middle coxa externally and hind femur at apex brownish; fore tarsus with 1st segment yellow, 2nd brownish, 3—4th black, 5th white; middle and hind tarsi brown-black from tip of basitarsus. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 apical very short setae. 3rd segment of fore tarsus flattened and widened, with short black dorsal setulae; 4th segment with elongate black basodorsal hairs and several white hairs in apical half; 5th segment with dorsal fringe of white hairs. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 56 : 80 : 80 : 40 : 40 : 22 : 7 : 8. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle

tibia with 3 anterodorsal, 2 posterodorsal and 4—5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 102 : 142 : 78 : 38 : 32 : 17 : 10. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 3 posterodorsal, 5 fine ventral, 3 apical setae and short posteroventral apical denticle. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 28 : 115 : 161 : 44 : 54 : 31 : 19 : 14.

Wing greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 30 : 9.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent.  $M_{1+2}$  joining costa just before wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 23 : 32. Posterior wing margin straight in middle half of wing. Anal vein absent; anal lobe narrow, marked by wing fold, having long arcuate emargination in basal 2/3; anal angle absent. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen with black hairs and marginal setae, with 1st, 2nd and 3rd segments mostly reddish-yellow, black along posterior margin; 4th—5th segments black; 6th—7th segment brown; hypopygium dirty yellow with yellow appendages; weakly pollinose, with black hairs and marginal setae. Some paratypes have almost entirely yellow or brown 1st and 2nd segments, widely yellow laterally 4th—5th segments. 7th segment 1/3 longer than epandrium. 8th segment with numerous fine black cilia. Epandrium elongate-oval, twice longer than high. Foramen positioned before middle of left lateral side. Hypandrium midventral, with short basal part; 3 pairs of lobes of different length. Aedeagus thin, projected. Epandrial lobe as angular prominence positioned apicoventrally; 1 short and 1 very long apicoventral epandrial setae. Surstylus bilobate; ventral lobe 2/3 the length of dorsal lobe, with 1 short apical and 1 strong middorsal setae; dorsal lobe of surstylus longer and wider than ventral lobe, narrowed in apical half, with 1 short subapical dorsal seta and 1 very long thick dorsal seta at basal 1/3. Distal unpaired epandrial process widely bifurcated; dorsal arm half as long as dorsal lobe of surstylus, pointed at apex; ventral arm short and thick, arising at base of hypandrium. Cercus broad, yellow, with light cilia; cercus densely covered with short hairs in distal part; short thin basoventral process bearing 2 long and 1 short strong apical; large midventral process bearing 3 strong short distal setae and 1 simple seta at base of the process.

Length (mm): body without antennae 3.5, antenna 0.8, wing-length 4.0, wing-width 1.3, hypopygium 0.8.



Figs 15—20. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

15, *H. wittei* sp.n.; 16, *H. kricosheinae* sp.n.; 17, *H. mostowskii* sp.n.; 18, *H. tobiasi* sp.n.; 19, *H. nectarophagus* Curran; 20, *H. strictilamellatus* Parent.

**Distribution.** Uganda.

**Etymology.** The species is named for one of the collectors, Dr. G. F. de Witte.

**Diagnosis.** Cercus with 2 lateroventral processes; 3rd segment of fore tarsus strongly widened; 7th segment of abdomen at least 1/3 longer than epandrium. *H. wittei* is closely related to *H. perturbus*, differing in 3rd segment of fore tarsus approximately half as long as 2nd; distal process of cercus positioned midventrally, wide, 2 times wider than basoventral process.

***Hercostomus krivosheinae* sp.n.**

(Figs 16, 49)

**Holotype.** ♂, **Uganda:** Budongo Forest, 7—8.II.1935, F.W. Edwards, B.M. 1935-203 [NHML].

**Paratypes.** 7 ♂, same labels.

**Description.** Male. Frons and face black, densely white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Postocular setae black. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head, entirely black; pedicel internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, nearly 2 times longer than high, glabrous; arista middorsal, black, pubescent, with hairs as long as basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 10 : 8 : 22 : 47. Palpus and proboscis moderately small, yellow, with short hairs; palpus with 1 short black seta.

Mesonotum yellow-brown anteriorly, greenish-black in posterior half; humeri yellow; pleura mostly yellow, whitish pollinose; sometimes thorax mostly blackish-brown. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural. 1 strong and 1 fine humeral, 1 posthumeral setae present. Propodeum with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

Legs including coxae yellow; sometimes middle and hind coxae brownish, hind femur infumated dorsally at apex; hind tibia slightly infumated at apex; fore tarsus with 1—2nd segments yellow, 3—4th black, 5th yellow; middle and hind tarsi brown from tip of basitarsus. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external seta in addition to anterior hairs; hind coxa with 1 strong external seta. Femora without long hairs. Fore tibia with 1 anterodor-

sal, 2 posterodorsal, 1—2 apical very short setae. 3rd segment of fore tarsus flattened and widened, with short black dorsal setulae; 4th segment with elongate black dorsal hairs and several white hairs at apex; 5th segment with dorsal fringe of white hairs. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 53 : 70 : 80 : 40 : 35 : 21 : 10 : 10. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 50 : 90 : 110 : 60 : 31 : 28 : 13 : 9. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 3 posterodorsal, 3—4 fine ventral, 3 apical setae and short posteroventral apical denticle. Hind basitarsus with small basoventral seta. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 30 : 115 : 130 : 27 : 45 : 25 : 17 : 12.

Wing simple, greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 33 : 10.  $R_{4+5}$  and  $M_{1+2}$  weakly but distinctly convergent.  $M_{1+2}$  joining costa at wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 23 : 29. Posterior wing margin evenly convex. Anal vein distinct; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, with black setae. Halteres dirty yellow.

Abdomen with black hairs and marginal setae, weakly pollinose, with 1st, 2nd and 3rd segments broadly yellow laterally, 7th segment brown, hypopygium yellow-brownish with yellow appendages. Apicoventral projection of epandrium black. 8th segment with numerous fine black cilia. Epandrium elongate-oval, nearly twice longer than high, asymmetric. Foramen positioned before middle of left lateral side. Hypandrium midventral, swollen at base, with at least 2 pairs of long thin lobes of different length. Aedeagus thin, projected, with small dorsal tooth. Distoventral epandrial lobe consisting of 2 plates; dorsal plate as short angular prominence bearing 1 short and 1 very long apicoventral epandrial setae; ventral plate strongly projecting distad, with 1 short apical and 1 microscopic subapical setae; left plates coalesced; right plates distinctly split longitudinally. Surstylus bilobate; ventral lobe nearly as long as dorsal lobe, with 1 short apical and 1 strong inner setae at basal 1/3; dorsal lobe of surstylus slightly longer and twice wider than ventral lobe, weakly narrowed and rounded at apex, with 1 short subapical and 1 very long and strong dorsal seta at basal 1/3. Distal unpaired epandrial process

widely bifurcated; dorsal arm longer than dorsal lobe of surstylus, narrow at apex; ventral arm short and thick, arising apicoventrally, covered with microscopic spinules. Cercus narrow, yellow, with light hairs; cercus densely covered with short hairs along ventral and lateral sides; somewhat projected apicoventrally; with inconspicuous basoventral eminence lacking strong setae; 3 strong pedunculate apical setae; dorsal subapical tubercle bearing 1 strong seta.

Length (mm): body without antennae 3.4, antenna 0.95, wing-length 3.5, wing-width 1.15, hypopygium 0.9.

*Distribution.* Uganda.

*Etymology.* The species is named for the Russian dipterologist, Dr. N. P. Krivosheina.

*Diagnosis.* 3rd segment of fore tarsus weakly widened, 2/3 the length of 2nd; 1st segment of same tarsus longer than 2nd; epandrium strongly projected apicoventrally. *H. krivosheinae* is closely related to *H. mostovskii*, differing in cercus somewhat projected apicoventrally, with dorsal subapical tubercle and indistinct basolateral eminence.

### *Hercostomus mostovskii* sp.n.

(Figs 17, 47)

*Holotype.* ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M. E. Afr. Exp. B.M. 1935-203 / Bwamba Pass: (west side), 5500-7500 ft., F.W. Edwards [NHML].

*Paratypes.* 3 ♂, the same labels.

*Description.* Male. Frons and face black, densely whitish pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lower postocular setae white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head; scape reddish; pedicel brown, internally convex anteriorly, with short distal setulae; 1st flagellomere black, asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, 1.5 times longer than high, glabrous; arista middorsal, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 13 : 8 : 25 : 44. Palpus and proboscis small, reddish, with short hairs; palpus with 1 short black seta.

Thorax mostly brown-black with weak metallic reflection; mesonotum anteriorly and pleura anteriorly brown or yellow-brown. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above

fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 short lateral hairs.

Legs including fore and hind coxae yellow; middle coxa brownish externally; hind femur infumated dorsally at apex; fore tarsus with 1st segments yellow, 2nd brownish, 3—4th black, 5th yellow; middle and hind tarsi black from tip of basitarsus. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 very short apical setae. 3rd segment of fore tarsus slightly flattened and widened, with short black dorsal setulae; 4th segment with elongate black dorsal hairs; 5th segment with black and white hairs dorsally. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 48 : 78 : 80 : 50 : 35 : 23 : 10 : 10. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal, 1 posteroventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 90 : 123 : 67 : 33 : 25 : 15 : 10. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 3 posterodorsal, 6 fine ventral, 3 apical setae and short posteroventral apical denticle. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 110 : 130 : 38 : 50 : 35 : 17 : 13.

Wing simple, greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 39 : 9.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent.  $M_{1+2}$  joining costa just before wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 22 : 33. Posterior wing margin evenly convex. Anal vein distinct; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen weakly pollinose, with black hairs and marginal setae. Abdomen with 1st, 2nd and 3rd segments mostly yellow or reddish, black along posterior margin; 4—6th segments black; 4th tergum widely yellow laterally; 7th segment brown, hypopygium brownish yellow with yellow appendages. Length ratio of 7th segment to epandrium, 50 : 65. 8th segment with numerous fine black cilia. Apicoventral projection of epandrium black. Epandrium elongate-oval, nearly twice longer than high, asymmetric. Foramen positioned before middle of left lateral side. Hypandrium midventral, with concealed base, large and broad ventral lobe pointed at apex and 2 pairs of very short thick lobes. Aedeagus thin, projected. Distoventral epandrial lobe

strongly projecting distad, with 1 short apical and 1 very long basal setae; left lobe with additional short pointed interior basal process; right epandrial lobe (not figured) without process, shorter than left lobe. Surstylus bilobate; ventral lobe thin and long, simple; dorsal lobe of surstylus slightly longer and twice wider than ventral lobe, weakly narrowed and rounded at apex, with 1 short subapical and 1 very long and strong middorsal seta. Distal unpaired epandrial process widely bifurcated; dorsal arm longer than dorsal lobe of surstylus, narrow and pointed at apex; ventral arm short and thin, arising apicoventrally. Cercus narrow, yellow, with light hairs; cercus densely covered with short hairs along ventral side, truncated at apex, with distinct basolateral prominence bearing 2—3 strong setae; 5 strong apical setae; 2 short ventral setae between basolateral prominence and apex of cercus.

Length (mm): body without antennae 3.4, antenna 1.0, wing-length 3.9, wing-width 1.3, hypopygium 0.8.

*Distribution.* Uganda.

*Etymology.* The species is named for the Russian dipterologist, Dr. M. B. Mostovskii.

*Diagnosis.* 3rd segment of fore tarsus weakly widened, 2/3 the length of 2nd; 1st segment of same tarsus longer than 2nd; epandrium strongly projected apicoventrally. *H. mostovskii* is closely related to *H. krivosheinae*, differing in cercus truncated at apex, with distinct basolateral prominence bearing 2—3 strong setae.

### *Hercostomus tobiasi* sp.n.

(Figs 18, 43)

*Holotype.* ♂, Mt. Cameroon: Musake, 6350 ft., 13.I.1932, M. Steele, B.M. 1934-240 / by beating [NHML].

*Paratypes.* 6 ♂, 3 ♀, same 1st label with additional labels: by beating, near water.

*Description.* Male. Frons black, densely whitish pollinose; face densely silvery-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower postocular setae white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi; face in middle narrower than height of 1st flagellomere; ratio of its maximal width to minimal width to height, 18 : 11 : 36; clypeus not reaching lower margin of eyes. Antenna as long as height of head, entirely black; scape sometimes red; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, 1.5

times longer than high, glabrous; arista middorsal, black, pubescent, with hairs shorter than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 18 : 8 : 20 : 48. Palpus and proboscis moderately small, reddish yellow, with short hairs; palpus with 1 short black seta.

Thorax mostly black with weak metallic reflection, humeri and metaepimeres yellow-brownish; mesonotum anteriorly and pleura whitish pollinose. 6 strong dorsocentral setae; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and several short light hairs. Scutellum with 2 strong setae and 2 lateral hairs.

Legs including coxae yellow; middle coxa with large brown external spot, hind femur brownish at apex; fore tarsus with 1—2nd segments dirty yellow, 3rd black, 4th brown, 5th yellowish-brown; middle and hind tarsi brown from tip of basitarsus. Fore coxa with short dark hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 1 apicodorsal strong setae. 3rd segment of fore tarsus flattened and widened, with fringe of black dorsal setulae, half as long as transverse of tarsomere; 4th segment with elongate black basodorsal hairs and row of white hairs; 5th segment with dorsal fringe of white hairs, equal in length to tarsomere diameter. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 55 : 95 : 105 : 59 : 65 : 28 : 12 : 12. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal and 4 apical setae. Length ratio of middle coxa to femur to tibia to basitarsus (other segments broken), 50 : 115 : 155 : 80. Hind femur with one subapical anterodorsal seta at distal 1/4. Hind tibia with 3 anterodorsal, 3—4 posterodorsal, 5 fine ventral, 3 apical setae and short posteroventral apical denticle. Hind basitarsus with short basoventral seta. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 40 : 145 : 200 : 47 : 65 : 40 : 19 : 13.

Wing simple, greyish, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  almost straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 39 : 10.  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent.  $M_{1+2}$  with weak flexion at proximal 1/3 of distal part, joining costa at wing apex. Crossvein *m-cu* slightly convex, forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 28 : 40. Posterior wing margin evenly convex. Anal vein distinct; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen weakly pollinose, with black hairs and marginal setae. Abdomen with 1st, 2nd and 3rd segments broadly yellow laterally, 7th segment black, hypopygium yellow-brown with yellow appendages, weakly pollinose, with black hairs and marginal setae. 7th segment as long as epandrium. 8th segment with numerous fine black cilia. Epandrium rounded-oval, nearly 1.5 times longer than high. Foramen positioned before middle of left lateral side. Hypandrium positioned at distal 1/3 of ventral side, with short base, 3—4 pairs of long lobes. Aedeagus thin, projected. Distoventral epandrial lobe as broad projection, fused to epandrium, with 2 short and 1 very long setae. Surstylus bilobate; ventral lobe long, simple, with 1 apical and 1 subapical short setae; dorsal lobe of surstylus slightly longer than ventral lobe, thin in basal half and widened in distal half, with short pointed projection at apex, without setae. Distal unpaired epandrial process widely bifurcated; dorsal arm nearly as long as dorsal lobe of surstylus, narrow and pointed at apex; ventral arm short and thin, concealed. Cercus narrow, yellow, densely covered with short light hairs along ventral side; cercus with basolateral prominence bearing several strong setae and long narrow apex bearing several short apical and subapical setae; 2 long ventral setae distally of basolateral prominence.

Female similar to male except lacking male secondary sexual characters, otherwise as follows. 1st flagellomere slightly longer than high; face wider than height of 1st flagellomere.

Length (mm): body without antennae 4.6, antenna 1.2, wing-length 5.0, wing-width 1.5, hypopygium 1.4.

*Distribution.* Cameroon.

*Etymology.* The species is named for the Russian entomologist, Dr. V. I. Tobias.

*Diagnosis.* *H. tobiasi* is closely related to *H. krivosheinae* and *H. mostovskii*, differing in the following characters. 3rd segment of fore tarsus half as long as 2nd or shorter; 1st segment of same tarsus slightly shorter than 2nd; epandrium slightly projected apicoventrally; cercus with basolateral prominence bearing several strong setae and long narrow apex bearing several short apical and subapical setae.

### *Hercostomus nectarophagus* Curran (Fig. 19)

*Type material examined.* Paratype, ♂ [without abdomen; red label] / Musee du Congo, Afr. S.: East London, 29-4-1924, Munro, ex coll. Curran / R.Det. E 1341 / Paratype *Hercostomus nectarophagus* Curran [RMCA].

*Additional material.* 16 ♂, Mt. Cameroon: Musake, 6500 ft, 13.I.1932, M. Steele, B.M. 1934-240 / near water [by beating, near felled tree]; 1 ♂, Tanganyika: Mahali Peninsula, 1-10.IX.1959, 2nd Oxford U. Exped., B.M. 1960-279 / Kungwe Camp., Forest clearing, 6000 ft.; 6 ♂, Uganda: Ruwenzori Range, XII.1934-I.1935, B.M.E. Afr. Exp., B.M. 1935-203 / Namwamba Valley, 6500 ft., F.W. Edwards [NHML].

*Description.* Male. Frons greenish-black, densely whitish pollinose; face brown, densely white pollinose. One long and strong vertical, one short postvertical, a pair of long and strong ocellar setae present. Upper postocular setae black; lateral and lower ones white. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, approximately 2/3 as wide as height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head, entirely black; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, elongate, narrowed and steeply rounded apico-dorsally, nearly 2 times longer than high, glabrous; arista middorsal, black, with short pubescence. Length ratio of scape to pedicel to 1st flagellomere to arista, 11 : 7 : 16 : 45. Palpus and proboscis moderately small, yellow, with short hairs; palpus with 1 black seta.

Thorax mostly greenish-black, greyish pollinose; humeri and lower side of scutellum light brown; metapimeres brownish-yellow. 5 strong dorsocentral setae; 2 rows of acrostichals, nearly half as long as dorsocentrals; 2 strong notopleural, 1 strong humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and 2 groups of short light hairs. Scutellum with 2 strong setae and 2 lateral hairs.

Legs including coxae yellow; middle coxa brown externally; apical segments of fore and middle tarsi brownish; 4—5th segments of fore tarsus yellowish ventrally, with several elongate light dorsal hairs; sometimes 4—5th segments of fore tarsus entirely dark, with dark hairs; hind tarsus mostly brown. Fore coxa with black hairs anteriorly and several setae in apical half; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Legs simple. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 1 apicodorsal setae. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 55 : 74 : 79 : 44 : 33 : 21 : 10 : 8. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 3 anterodorsal, 2 posterodorsal, 1 posteroventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 45 : 95 : 117 : 68 : 35 : 25 : 20 : 11. Hind femur with one subapical ante-

rior seta. Hind tibia with 3 anterodorsal, 3 posterodorsal, 4—5 fine ventral, 5 apical setae. 1—2nd segments of hind tarsus with 1—2 short apical setae. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 30 : 110 : 145 : 38 : 49 : 30 : 20 : 12.

Wing simple, almost hyaline, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  and  $R_{4+5}$  weakly diverging. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 35 : 9.  $R_{4+5}$  and  $M_{1+2}$  slightly convergent in distal part;  $M_{1+2}$  joining costa before wing apex. Crossvein  $m-cu$  straight, almost perpendicular to longitudinal wing axis, forming right angle with  $M_{1+2}$  and acute angle with  $CuA_1$  longitudinal veins. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 21 : 35. Posterior wing margin almost evenly convex. Anal vein distinct, almost reaching to wing margin; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, brown anteriorly, with black setae. Halteres yellow.

Abdomen weakly pollinose, with black hairs and long marginal setae. Abdomen with 1st and 2nd segments yellow anteriorly and laterally, 3rd tergum yellow laterally and postabdomen yellow-brownish. 7th segment as long as epandrium. 8th segment large, covering more than half lateral side of epandrium, with numerous fine short dark cilia. Epandrium rounded-oval, nearly twice longer than high. Foramen positioned before middle of left lateral side. Hypandrium midventral, with short base, 3—4 pairs of long lobes of different length and width. Aedeagus thin, projected. Distoventral epandrial lobe as short rounded prominence, fused to epandrium, with 1 short and 1 long setae. Surstylus yellow, bilobate; ventral lobe broad, simple, 2/3 the length of dorsal lobe, with 1 subapical seta; dorsal lobe of surstylus widened in distal half, with short narrow process at apex, several subapical setulae and 1 strong middorsal seta. Distal unpaired epandrial process as long as ventral lobe of surstylus, narrow, pointed at apex. Cercus narrow, yellow, densely covered with short light hairs along ventral side; cercus with basolateral prominence bearing 3—4 strong setae and long narrow apex bearing several long cilia at apex apical and subapical setae; 2 long ventral setae distally of basolateral prominence.

Length (mm): body without antennae 3.5—4.4, antenna 1.1, wing-length 3.7—4.9, wing-width 1.2—1.5, hypopygium 0.9—1.2.

**Diagnosis and variability.** *H. nectarophagus* differs from other species in simple tarsi except somewhat modified fore tarsus as follows. Fore tarsus with regularly decreasing tarsomeres 1—4; 1st and 2nd segments yellow; 3rd and 4th brown; 4th and 5th slightly thickened; 4th segment yellowish, 5th segment whitish-yellow, covered with short white

dorsal hairs. Males from Cameroon have 4—5th segments of fore tarsus yellowish ventrally, with several elongate light dorsal hairs; whereas males from Uganda have 4—5th segments of fore tarsus entirely dark, with dark hairs; Postocular setae white;  $M_{1+2}$  and  $R_{4+5}$  inconspicuously convergent. Cercus with large basolateral lobe bearing several strong setae and thin distal part having several long cilia at apex. *H. nectarophagus* is included into the group II on the base of hypopygium morphology mainly.

**Remark.** Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. nectarophagus* (RMCA, examined) belong to *H. argyropus* par. So, the species should be excluded from the fauna of Congo (Kinshasa).

**Distribution.** South Africa; Tanzania, Uganda (!), Cameroon (!).

**Group III.** Included species: *duviardi* Couturier, *krivokhatskii* sp.n., *laaumae* sp.n., *lictor* Parent, *minimixtus* Dyte et Smith, *ovchinnikovae* sp.n., *panteleevae* sp.n., *strictilamellatus* Parent, *transitorius* Parent.

### *Hercostomus strictilamellatus* Parent (Fig. 20)

**Type material examined.** Holotype, ♂, Congo Belge: Eala, III.1936, J. Ghesquiere / R. Mus. Hist. Nat. Belg. I.G. 10.482 / *Hercostomus strictilamellatus* n.sp. O. Parent / Type [red label] / cf. Bull. Mus. Hist. Nat. Belg. XIII-18 (1937), p. 2, pl. 1, fig. 6, 7, 8, 9 [RINS]; paratypes, 29 ♂ and 125 ♀, same labels (III-IV.1936), with additional red label "paratype".

**Additional material.** 1 ♂, Congo Belge: Eala, 12.I.1935, J. Ghesquiere / sous ombrage tres dense/trone pourri d'un Ficus / R. Mus. Hist. Nat. Belg. I.G. 10.482

**Description.** Male paratype. General coloration of body dark, metallic greenish-blue. Frons metallic blue, whitish pollinose; face black, densely grey pollinose. One long and strong vertical at the top of head, one fine postvertical, a pair of long and strong ocellar setae present. Postocular setae black. Eyes with microscopic hairs; face glabrous. Face as elongate triangle under antennae, turning into narrow strip below middle; ratio of its maximal width to minimal width to height 11 : 1 : 25; clypeus not reaching lower margin of eyes. Antenna 1/3 longer than height of head, entirely dark-brown; scape small, with several dorsal setulae; pedicel high, internally convex anteriad, with short setulae; 1st flagellomere long and high, asymmetric, straight dorsally, convex ventrally, acute apicodorsally, 2 times longer than high, glabrous; arista positioned at basal 1/5

of dorsal side, black, pubescent, with hairs longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 6 : 6 : 20 : 45. Palpus and proboscis small, brown, with short hairs; palpus with 1 short black seta.

Thorax dark; mesonotum metallic greenish blue, brownish pollinose in anterior half; humeri light brown; pleura brown-black, with bluish reflection, grey pollinose. 5 strong dorsocentral setae decreasing in size anteriorly with several hairs in front of the 1st pair; 2 rows of short acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral setae present. Propleura with 1 strong black seta. Scutellum with 2 strong setae and 2 microscopic lateral hairs.

Legs mostly yellow; fore coxa dirty-yellow; other coxae brown; hind femur brown in distal 1/2 or 2/3, apical segments of middle and hind tarsi slightly darkened. Fore coxa with black hairs and several setae in apical half; middle coxa with 1 strong external seta in addition to anterior hairs; hind coxa with 1 external seta. Femora without long hairs. Fore tibia slightly but distinctly thickened in middle half, fusiform, with 2 posterodorsal, 1 anterodorsal fine setae, anterodorsal row of elongate setulae, 1—2 short apical setae. Fore tarsus with somewhat elongate setulae; fore basitarsus with short basoventral seta and a group of elongate ventral subapical setulae; 4—5th segments cubic, slightly swollen; 5th segment with modified claws. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 34 : 55 : 58 : 29 : 10 : 8 : 5 : 5. Middle femur with 1 subapical anterior seta. Middle tibia with 1 dorsal, 2—3 anterodorsal, 2—3 posterodorsal, 2—3 fine ventral and 5 apical setae. Middle tarsus simple. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 37 : 73 : 81 : 40 : 20 : 15 : 12 : 10. Hind femur with one subapical anterior seta. Hind tibia with 3 anterodorsal, 3 posterodorsal, 4 fine ventral, 3—4 apical setae. Hind basitarsus with 1 short basoventral seta; 2—4th segments simple. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 72 : 95 : 26 : 37 : 18 : 10 : 8.

Wing almost hyaline, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  and  $R_{4+5}$  straight, slightly diverging at apex. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 20 : 10.  $M_{1+2}$  and  $R_{4+5}$  inconspicuously convergent, almost parallel. Cross-vein *m-cu* weakly convex, almost perpendicular to longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 12 : 28. Posterior wing edge with shallow emargination at apex of  $CuA_1$ . Anal vein distinct, almost reaching to wing margin; anal lobe pronounced; anal angle obtuse. Lower calypter brown, with black setae. Halteres yellow.

Abdomen bluish-bronze-black, weakly pollinose, with black hairs and marginal setae. Postabdomen dark-brown, appendages brownish-yellow. 7th segment 4/5 the length of epandrium. 8th segment with several fine black cilia. Epandrium of moderate size, highest at middle, narrowed distad. Hypandrium positioned at basal 1/3, 2/3 as long as epandrium, bilobate; ventral lobe wider and longer than dorsal, with short lateral process at distal 1/3. Aedeagus thin, with subapical dorsal tooth. Foramen positioned in basal half of left lateral side. Epandrial lobe undeveloped; 1 long epandrial seta raising at base of surstyli. Surstylus bilobate; ventral lobe short, with 5 short setae; dorsal lobe of surstylus twice longer than ventral lobe, with 1 short apical seta. Distal unpaired epandrial process longer than surstylus, narrow, curved ventrad at apex. Cercus bilobate, with apical brush of long cilia on both lobes; ventral lobe longer than dorsal, with shorter cilia; dorsal lobe with apical cilia half as long as cercus and row of several short lateral setae.

Length (mm): body without antennae 2.3, antenna 0.9, wing-length 2.4, wing-width 0.8, hypopygium 0.7.

**Diagnosis.** *H. strictilamellatus* together with several other species form a group of closely related species differing from other species of *Hercostomus* in the following characters. Legs usually simple, sometimes (*H. strictilamellatus*) fore tibia and apical segments of fore tarsus slightly swollen; legs mostly yellow, hind femur blackish or brown at least in apical half; middle and hind tibiae without strong ventral setae;  $R_{4+5}$  and  $M_{1+2}$  parallel or slightly converging in distal part; male 1st flagellomere usually securiform, with basodorsal arista; arista distinctly pubescent; male cercus narrow, often ornamented with processes or bunches of long cilia. *H. strictilamellatus* males differ well in modified fore legs and bifurcated cercus.

**Remark.** *H. strictilamellatus* holotype is strongly damaged, though apparently conspecific with paratypes.

**Distribution.** Congo (Kinshasa).

### *Hercostomus duviardi* Couturier (Fig. 21)

**Material examined.** 1 ♂, Uganda: Bwamba, Haki-tengya, February-March 1949, W.H.L. Lumsden / From suction trap [NHML]; 4 ♂, Congo Belge: P.N.G., Miss. H. De Saeger, II/gc/8 [II/fd/9; PpK.12/d/9; Aka/2], 2.I.1952 [22.V.1952, 2.VII.1952, 10.VII.1952], H. De Saeger, 2972, 3514, 3720, 3765 [RMCA].

**Diagnosis.** The species belongs to the *H. strictilamellatus* group of species. It is closely related to



*H. lictor*, differing in simple wing and fore leg, lighter antenna and hind femur, and hypopygium morphology. Cercus with middorsal brush of fore cilia, slightly longer than cercus, and apicoventral fingerlike process bearing 2 groups of short ventral setae. 7th segment 2/3 the length of epandrium.

*Distribution.* Ivory Coast; Congo (Kinshasa) (!), Uganda (!).

***Hercostomus krivokhatskii* sp.n.**

(Fig. 22)

*Holotype.* ♂, Congo-belge: Eala, III.1936, J. Ghesquiere / R. Mus. Hist. Nat. Belg. I.G. 10.482 [RINS].

*Paratype.* ♂, same labels differing in the date: 25.IV.1936.

*Description.* Male. Similar to *H. strictilamellatus* Parent in almost all respects except as noted. Antenna slightly longer than height of head, 1st flagellomere securiform, twice longer than high. Length ratio of scape to pedicel to 1st flagellomere to arista, 6 : 6 : 20 : 35. Legs mostly yellow; fore coxa dirty-yellow; other coxae brown; hind femur except basal 1/5. Fore tibia simple. Fore tarsus simple with simple claws. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 28 : 46 : 45 : 22 : 8 : 7 : 5 : 5. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 1 dorsal, 2 anterodorsal, 2 posterodorsal, 4—5 fine ventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 57 : 67 : 33 : 20 : 16 : 10 : 6. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 72 : 95 : 26 : 37 : 18 : 10 : 8. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 19 : 9. Ratio of *m-cu* to distal part of  $CuA_1$ , 10 : 30. Posterior wing margin evenly convex.

Epandrium of moderate size, highest at middle, narrowed distad. 7th segment 3/4 the length of epandrium. Hypandrium positioned at basal 1/3, 2/3 as long as epandrium. Aedeagus thin, without tooth. Epandrial lobe undeveloped; 1 long epandrial seta raising at base of surstyli. Surstylus bilobate; ventral lobe very short; dorsal lobe of surstylus large and massive, with acute apex bearing 2 very short apical setae. Distal unpaired epandrial process shorter than surstylus, narrow, curved ventrad at apex. Cercus simple, narrowed at middle, with short basodorsal and apical cilia hardly longer than width of cercus.

Length (mm): body without antennae 2.4—2.6, antenna 0.8, wing-length 2.2, wing-width 0.8, hypopygium 0.7.

*Diagnosis.* The new species is somewhat close to *H. panteleevae* and *H. ovchinnikovae*. It is distin-

guished by cercus yellow, slim, slightly narrowed at middle, covered with sparse hairs not longer than width of cercus; surstylus large and massive, nearly reaching to apex of cercus.

*Etymology.* The species is named for the Russian entomologist, Dr. V. A. Krivokhatskii.

*Distribution.* Congo (Kinshasa).

***Hercostomus laanmae* sp.n.**

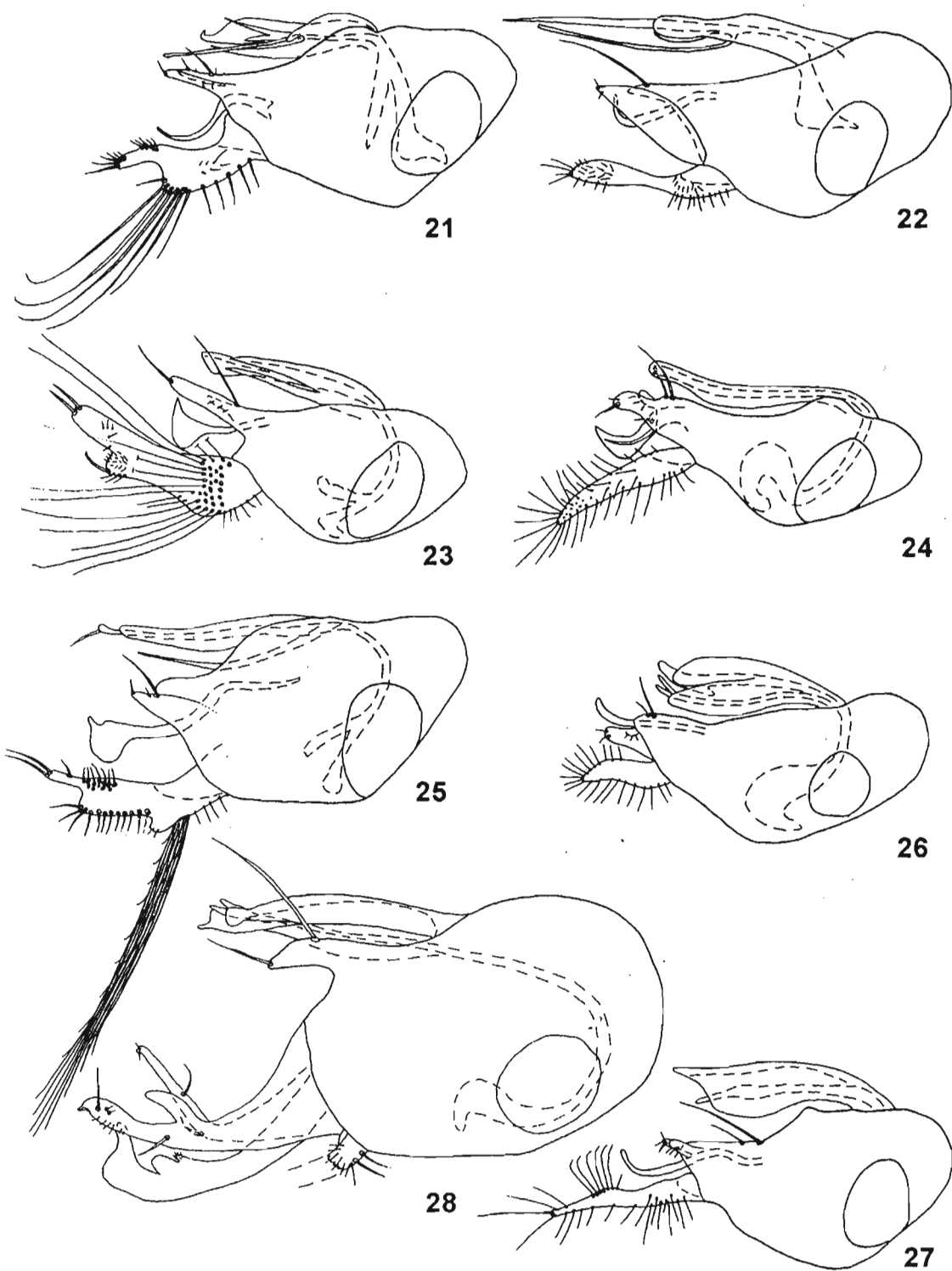
(Fig. 23)

*Holotype.* ♂, Tanzania, Kwangumi, Segoma forest / 4.II.1987, leg. Mahunka [HNHM].

*Paratypes.* 1 ♂, 1 ♀ [in alcohol], Gabon: Ntoun, X.1984, A. Pauly rec., Piege Malaise/paturage, Coll. R.I.Sc.N.B.

*Description.* Male. Similar to *H. strictilamellatus* Parent in almost all respects except as noted. Antenna 1/4 longer than height of head. Length ratio of scape to pedicel to 1st flagellomere to arista, 7 : 7 : 17 : 35. Propleura with 1 strong black seta and 2—3 microscopic hairs. Legs mostly yellow; hind femur brown in distal 4/5. Fore tibia simple, anterodorsal row of elongate setulae weakly developed. Fore tarsus without elongate setulae; 4—5th segments shortened; 5th segment slightly swollen, with enlarged claws. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 30 : 46 : 42 : 24 : 8 : 7 : 5 : 5. Middle tibia with 1 dorsal, 2—3 anterodorsal, 2—3 posterodorsal, 5 fine ventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 60 : 70 : 33 : 20 : 16 : 11 : 7. Hind tibia with 3 anterodorsal, 4—5 posterodorsal, 5—6 fine ventral, 3—4 apical setae. Hind 3—5th segments broken. Length ratio of hind coxa to femur to tibia to tarsus (segments first to second), 18 : 66 : 79 : 23 : 28. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 19 : 9. Ratio of *m-cu* to distal part of  $CuA_1$ , 10 : 32. Posterior wing edge without emargination at apex of  $CuA_1$ .

Epandrium of moderate size, highest at middle, narrowed distad. 7th segment 3/4 the length of epandrium. Hypandrium midventral, 2/3 as long as epandrium. Epandrial lobe undeveloped; 1 long epandrial seta raising at base of surstyli. Surstylus bilobate; ventral lobe short, with 3 short setulae; dorsal lobe of surstylus twice longer than ventral lobe, with 1 long apical seta. Distal unpaired epandrial process as long as surstylus, greatly swollen distally, pointed apicoventrally. Cercus elongate, with basal swelling covered with numerous lateral and dorsal cilia directed distad, longer than cercus; cercus with 2 strong apical setae and dorsal prominence



Figs 21—28. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

1, *H. duviardi* Couturier; 22, *H. kricokhatskii* sp.n.; 23, *H. laanmae* sp.n.; 24, *H. ochinnikovae* sp.n.; 25, *H. lictor* Parent; 26, *H. minimixtus* Dyte et Smith; 27, *H. panteleevae* sp.n.; 28, *H. mottusi* sp.n.

at apical 1/3 having 1 strong seta in addition to microscopic hairs.

Female similar to male except lacking male secondary sexual characters, otherwise as follows. Antenna mostly yellow-brownish; 1st flagellomere approximately as long as high; hind coxa yellow; hind femur brown in apical half.

Length (mm): body without antennae 1.9, antenna 0.8, wing-length 2.4, wing-width 0.8, hypopygium 0.7.

**Diagnosis.** The new species is related to *H. lictor* and *H. duviardi*. It differs in cercus having basal fan of dorsal and lateral cilia directed distad and other characters of hypopygium.

**Etymology.** The species is named for the Estonian entomologist, Ms. M. Laanma.

**Distribution.** Tanzania, Gabon.

### *Hercostomus ovchinnikovae* sp.n.

(Fig. 24)

**Holotype.** ♂, Congo Belge: P.N.G., Miss. H. De Saeger, II/gd/11, 28.VII.1951, Rec. H. De Saeger, 2160 [RMCA].

**Paratypes.** 38 ♂, Congo Belge: P.N.G. Miss H. De Saeger, PpK/55/d/8 [PpK/60/d/8; II/cc/9; II/dd/8; II/eb/9; II/fc/17; II/fd/5; II/fd/8; II/fd/17; II/gc/9; II/gd/8; II/gd/9; II/gd/11; II/hc/8; II/hd/8; II/id/9; II/jd/9; II/ke/8; II/ke/9; II/le/8], 25.VI.1951 [26.VI.1951, 9.VII.1951, 23.VII.1951, 28.VII.1951, 3.VIII.1951, 6.IX.1951, 17.IX.1951, 25.IX.1951, 28.IX.1951, 12.X.1951, 8.XI.1951, 19.XI.1951, 12.XII.1951, 13.XII.1951, 14.XII.1951, 18.XII.1951, 19.I.1952, 5.II.1952, 12.II.1952, 13.III.1952, 3.V.1952, 7.V.1952, 2.VII.1952, 16.VIII.1952, 25.IX.1952], H. De Saeger, 1970, 1981, 2056, 2128, 2160, 2195, 2383, 2446, 2471, 2481, 2602, 2740, 2768, 2901, 2902, 2910, 2924, 3030, 3096, 3105, 3234, 3416, 3431, 3720, 3944, 4083 [RMCA].

**Description.** Male. Similar to *H. strictilamellatus* Parent in almost all respects except as noted. Face strongly narrowed towards palpi, in lower part approximately half as wide as height of 1st flagellomere. Antenna slightly longer than height of head; 1st flagellomere straight dorsally, roundly convex apicoventrally, acute or right-angular apicodorsally, 1.5–2 times longer than high. Length ratio of scape to pedicel to 1st flagellomere to arista, 7 : 7 : 12 : 35. Legs mostly yellow; all coxae brown with yellow apices; hind femur brown except base, apical segments of middle and hind tarsi brownish. Fore tibia simple. Fore tarsus simple with simple claws. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 22 : 40 : 40 : 20 : 7 : 6 : 6 : 5. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 1 dorsal,

2–3 anterodorsal, 2–3 posterodorsal, 4 fine ventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 55 : 56 : 26 : 13 : 12 : 10 : 6. Hind tarsus simple. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 17 : 55 : 65 : 18 : 22 : 14 : 10 : 6. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 17 : 13.  $M_{1+2}$  and  $R_{4+5}$  parallel. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 11 : 27. Posterior wing margin evenly convex.

Epandrium of moderate size, elongate, highest at middle, narrowed distad, twice longer than high. 7th segment 1/2 the length of epandrium. Hypandrium basoventral, nearly as long as epandrium. Aedeagus invisible. Epandrial lobe undeveloped; 2 long epandrial setae raising at base of surstyli. Surstylus bilobate; ventral lobe short, with 3 short setae; dorsal lobe of surstylus twice longer than ventral lobe, broad, with 1 long and 1 short apical, 1 basodorsal setae. 2 distal unpaired epandrial processes: 1st one longer than surstylus, scooplike, swollen in apical part, acute at apex; 2nd process acicular, nearly as long as 1st. Cercus long and narrow, gradually narrowed distad and evenly covered with long cilia, at most 1/3 as long as cercus.

Length (mm): body without antennae 2.0, antenna 0.6, wing-length 2.1, wing-width 0.7, hypopygium 0.6.

**Diagnosis.** The new species is close to *H. panteleevae*, differing in cercus gradually narrowed distad and evenly covered with long cilia; two distal unpaired epandrial processes: 1st one longer than surstylus, scooplike, swollen in apical part, acute at apex; 2nd process acicular, nearly as long as 1st.

**Etymology.** The species is named for the Russian entomologist, Dr. O. G. Ovchinnikovae.

**Distribution.** Congo (Kinshasa).

### *Hercostomus lictor* Parent

(Fig. 25)

**Type material examined.** **Holotype**, ♂, Congo Belge: Eala, VIII.1936, J. Ghesquiere / R. Mus. Hist. Nat. Belg. I.G. 10.482 / *Hercostomus lictor* n.sp. Type, O. Parent / Type [red label]; **paratypes**, 1 ♂ (destroyed) and 16 ♀, same labels differing in collection dates, with additional red label "paratype".

**Additional material examined.** 1 ♂, Congo Belge: P.N.G., Miss. H. De Saeger, II/fd/17, 9.VII.1952, H. De Saeger, 3763 [RMCA]; 1 ♂, N. Nigeria: Zaria Prov., Dumbi Wood, 16.VII.1972, J.C. Deeming [NHML].

**Diagnosis.** The species belongs to the *H. strictilamellatus* group of species, differing in simple fore tibia; 5th segment of fore tarsus slightly swollen,

with slightly enlarged claws; posterior wing margin slightly convex at the 1st third of a distance between  $CuA_1$  and  $M_{1+2}$  and bearing several long cilia there. Cercus with basodorsal brush of glued cilia, twice longer than cercus, and apicoventral narrow process bearing 2 strong apical setae. 7th segment 2/3 the length of epandrium.

*Distribution.* Congo (Kinshasa); Nigeria (!).

***Hercostomus minimixtus* Dyte et Smith**  
(Fig. 26)

*Material examined.* ♂, Congo Belge: Eala, 9.IV. 1936, J. Ghesquiere / R. Mus. Hist. Nat. Belg. I.G. 10.482.

*Diagnosis.* The species belongs to the *H. strictilamellatus* group of species. It differs from other species in smaller size, simple wing and fore leg, and hypopygium morphology. Cercus simple, evenly covered with cilia; cercus short, at most 3 times longer than wide, slightly longer than surstylus, half as long as height of epandrium. 7th segment 1/2 the length of epandrium.

*Distribution.* Congo (Kinshasa).

***Hercostomus panteleevae* sp.n.**  
(Fig. 27)

*Holotype.* ♂ [in glycerol], Congo Belge: Kivu, Rutshuru (riv. Rutshuru), 1000 m, 3.VII.1935, G.F. de Witte, 1676 [RINS].

*Description.* Male. Similar to *H. strictilamellatus* Parent in almost all respects except as noted. Face gradually narrowed towards palpi, in lower part approximately half as wide as height of 1st flagellomere. Arista arising from small tubercle at basal 1/5 of dorsal side of 1st flagellomere (2nd segment of arista broken). Length ratio of scape to pedicel to 1st flagellomere to 1st segment of arista, 8 : 6 : 18 : 13. Legs mostly yellow; fore coxa dirty-yellow; other coxae brown; hind femur brown in distal 3/4. Fore tibia simple, with 1 short posterodorsal, 1—2 short apical setae. Fore tarsus with somewhat elongate setulae; 5th segments slightly swollen, with simple claws. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 30 : 45 : 45 : 22 : 9 : 7 : 6 : 6. Middle tibia with 1 dorsal, 2 anterodorsal, 2 posterodorsal, 4 fine ventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 62 : 67 : 35 : 20 : 14 : 12 : 7. 2—4th segments of hind tarsus broken. Length ratio of hind coxa to femur to tibia to basitarsus, 21 : 67 : 80 : 22. Wing simple. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 20 : 10.  $M_{1+2}$

and  $R_{4+5}$  parallel. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 10 : 30. Posterior wing margin evenly convex. Cercus brown.

Epandrium of moderate size, highest at middle, narrowed distad. 7th segment 3/5 the length of epandrium. Hypandrium basoventral, broad, 2/3 as long as epandrium. Aedeagus thin, without tooth. Epandrial lobe undeveloped; 1 long and 1 short epandrial setae raising at distal 1/3, 1 more seta positioned at base of surstyli. Surstylus short, bilobate; ventral lobe slightly longer than dorsal lobe, with several short seta. Distal unpaired epandrial process much longer than surstylus, narrow, curved ventrad at apex. Cercus simple, narrow, beyond middle with ventral swelling bearing group of long cilia in addition to long cilia at apex and at base of cercus.

Length (mm): body without antennae 2.4, wing-length 2.4, wing-width 0.8, hypopygium 0.7.

*Diagnosis.* The new species is close to *H. ovchinnikovae*, differing in cercus beyond middle with ventral swelling bearing group of long cilia in addition to long cilia at apex and at base of cercus; one distal unpaired epandrial process much longer than surstylus, narrow, curved ventrad at apex.

*Etymology.* The species is named for the Russian entomologist, Dr. N. Yu. Panteleeva.

*Distribution.* Congo (Kinshasa).

***Hercostomus transitorius* Parent**

*Type material examined.* *Holotype.* ♀, Zinti (Mayumbe), 14.IV.1926, A. Collart/Congo Belge/R. Mus. Hist. Nat. Belg. I.G. 10.217/*Hercostomus transitorius* n.sp. ♀, Type, O. Parent det., 1934 / Type [red label]/ cf. Bul. M.R.H.N.B. T.X., n.33 (1934), pp. 1—2, fig. 1—2.

*Diagnosis.* *H. transitorius* is included into *H. strictilamellatus* group of species, being most closely related to *H. lictor* Parent, and the two species are possible synonyms. Antenna mostly yellow; 1st flagellomere dark in apical half; arista pubescent. Face half as wide as height of 1st flagellomere. Ratio of length to height of 1st flagellomere, 23 : 21. Legs mostly yellow; fore coxa dirty yellow; other coxae mostly brown-black; hind femur black except basal 1/5 or 1/6; hind basitarsus yellow. Middle tibia with 2 anterodorsal, 1 dorsal, 1 posterodorsal strong setae, 1 anterodorsal, 1 posterodorsal and 5 ventral fine setae. Hind tibia with 3 or 4 anterodorsal, 3 or 4 posterodorsal, 8 fine ventral setae; hind basitarsus with elongate ventral setulae. Length ratio of fore femur to tibia to tarsus (segments from first to fifth), 90 : 85 : 48 : 16 : 15 : 10 : 11. Same ratio for middle leg, 105 : 138 : 55 : 35 : 25 : 20 : 13. Hind tarsomeres 2—5 absent in holotype. Size 2.25 mm.

*Distribution.* Congo (Kinshasa); ?Madagascar.

**Ungrouped species.** Included species: *mottusi* sp.n., *scharffi* sp.n., *turneri* sp.n.

***Hercostomus mottusi* sp.n.**

(Fig. 28)

**Holotype.** ♂, Congo Belge: P.N.G., Miss. H. De Saeger, II/le/8, 9.IX.1952, H. De Saeger, 4040 [RMCA].

**Paratypes.** 2 ♀, same labels.

**Description.** Male. General coloration of body yellow-brown. Frons and face black, densely greyish-white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Postocular setae black. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi; ratio of its maximal width to minimal width to height, 20 : 8 : 45; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head; scape and pedicel yellow, 1st flagellomere dark-brown, yellowish at base; pedicel short and high, internally convex anteriad, with short distal setulae; 1st flagellomere asymmetric, straight dorsally, convex ventrally, acute apicodorsally, 2 times longer than high, glabrous; arista middorsal, black, pubescent, with hairs slightly longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista, 14 : 8 : 22 : 60. Palpus and proboscis small, brown, with short hairs.

Thorax mostly yellow; mesonotum with large black prescutellar spot; pleura whitish pollinose. 5 or 6 strong dorsocentral setae decreasing in size anteriorly with several hairs in front of the 1st pair; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and a group of light hairs in front of anterior spiracle. Scutellum with 2 strong setae and 2 lateral hairs (broken).

Legs including all coxae yellow; hind tibia with 4 brown spots around base of dorsal setae; apical segments of middle and hind tarsi darkened. Fore coxa with black hairs anteriorly and several setae in apical half; middle coxa with 1 strong and 1 fine external setae in addition to anterior hairs; hind coxa with 1 strong and 1 fine external setae. Legs simple. Femora without long hairs. Fore tibia with 2 posterodorsal, 1 anterodorsal fine setae, 2—3 short apical setae. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 85 : 83 : 48 : 25 : 18 : 12 : 10. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 2—3 anterodorsal, 2—3 posterodorsal, 1—2 ventral and 5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 50 : 102 : 124 : 54 : 36 :

30 : 16 : 12. Hind femur with one subapical anterior seta. Hind tibia with 3 anterodorsal, 3 posterodorsal, 5 fine ventral, 3 apical setae. Hind basitarsus with 1 very short basoventral seta. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 37 : 125 : 155 : 35 : 46 : 30 : 20 : 12.

Wing simple, almost hyaline, veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  and  $R_{4+5}$  straight, gradually diverging towards apex. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 38 : 5.  $M_{1+2}$  gently curved towards  $R_{4+5}$  behind middle of its distal part, joining costa before wing apex. Crossvein *m-cu* straight, positioned as perpendicular to longitudinal wing axis, not forming right angles with longitudinal veins. Ratio of *m-cu* to distal part of  $CuA_1$ , 23 : 45. Posterior wing margin evenly convex. Anal vein distinct, almost reaching to wing margin; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, brown anteriorly, with black setae. Halteres yellow.

Abdomen with black hairs and short marginal setae. Abdomen with 1st segment and postabdomen yellow-brownish, otherwise shining blackish-brown, whitish pollinose behind sutures laterally. 7th segment as long as epandrium. 8th segment large, covering more than half lateral side of epandrium, with numerous fine black cilia. Epandrium of moderate size, 1/3 longer than high. Hypandrium midventral, half as long as epandrium, with at least 2 lobes. Aedeagus thin, concealed. Epandrial lobe well developed, fused to epandrium, bearing long ventral and short apical setae. Surstylus bilobate, long, deflected dorsad, curved ventrad; ventral (inner) lobe narrow and simple, with 2 apical setulae, 1 long ventral hair at distal 1/3 and 1 strong dorsal seta beyond flexion; dorsal (outer) lobe of surstylus slightly longer than ventral lobe, broad at base, narrowed distad, with large ventral process at distal 1/3, 1 strong ventral subapical seta and 1 lateral seta beyond process. Distal unpaired epandrial process nearly as long as surstylus, curved at apex, with short hairy ventral process at distal 1/3 before small rounded prominence, and small apicoventral projection directed ventrad. Cercus broken, probably feeble.

Length (mm): body without antennae 4.5, antenna 1.2, wing-length 4.5, wing-width 1.6, hypopygium 0.95.

**Distribution.** Congo (Kinshasa).

**Etymology.** The species is named for the Estonian entomologist, Dr. Enno Mottus.

**Diagnosis.** The new species is keyed to *H. scharffi*, differing in wing veins  $R_{4+5}$  and  $M_{1+2}$  distinctly convergent, thorax mostly yellow, surstyli and unpaired epandrial process modified.

*Hercostomus scharffi* sp.n.

(Fig. 29)

*Holotype*. ♂, Tanzania: Uzungwe Mts., Mwanihana Forest above Sanje, 1000 m., 01.VIII.1981, M. Stoltze & N. Scharff leg., Zool. Muzeum, Copenhagen.

*Paratype*. ♂, Tanzania: Uzungwe Mts., Mwanihana Forest, Sanje river, 1400 m., 16.VIII.1982, M. Stoltze & N. Scharff leg., Zool. Muzeum, Copenhagen.

*Description*. Male. Frons greenish-black, densely grey pollinose; face densely white pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of long and strong ocellar setae present. Postocular setae black. Eyes with short hairs; face glabrous. Face gradually narrowed towards palpi, narrower than height of 1st flagellomere; clypeus not reaching lower margin of eyes. Antenna as long as height of head, entirely black; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, straight dorsally, convex apicoventrally, acute apicodorsally, nearly 2 times longer than high, glabrous; arista positioned at basal 1/3 of dorsal side, black, pubescent, with short hairs not longer than basal diameter of arista. Length ratio of scape to pedicel to 1st flagellomere to arista (1st and 2nd segments), 7 : 5 : 20 : 16 : 21. Palpus and proboscis small, brown, with short hairs; palpus with 1 short black seta.

Thorax mostly black with weak metallic reflection, metaepimeres yellow; pleura grey pollinose. 6 strong dorsocentral setae with 5th pair positioned close to acrostichal rows; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 fine humeral, 1 posthumeral setae present. Propleura with 1 strong black seta above fore coxa and several microscopic hairs in front of anterior spiracle. Scutellum with 2 strong setae and 2 microscopic lateral hairs.

Legs including fore and hind coxae yellow; middle coxa mostly brown, hind tibia brownish at apex; apical segments of fore and middle tarsi brown, hind tarsus black with basitarsus brownish at base. Fore coxa with black hairs anteriorly and several setae at apex; middle coxa with 1 strong external setae in addition to anterior hairs; hind coxa with 1 strong external setae. Legs including tarsi simple. Femora without long hairs. Fore tibia with 1 anterodorsal, 2 posterodorsal, 2—3 short apical setae. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 35 : 62 : 58 : 27 : 12 : 10 : 9 : 8. Middle femur with 1 anterior and 1 posteroventral subapical setae. Middle tibia with 2—3 anterodorsal, 2 posterodorsal, 1 anteroventral and 4 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 40 : 70 : 90 : 35 : 20 : 16 : 12 : 9. Hind femur with one

subapical anterior seta. Hind tibia with 3 anterodorsal, 3 posterodorsal, 4 fine ventral, 3 apical setae. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 90 : 105 : 22 : 33 : 20 : 14 : 11.

Wing simple, grey, veins black. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$ ,  $R_{4+5}$  and  $M_{1+2}$  straight. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 24 : 20.  $M_{1+2}$  parallel to  $R_{4+5}$ , joining costa at wing apex. Crossvein  $m-cu$  straight, forming nearly right angle with  $M_{1+2}$  and acute angle with  $CuA_1$  longitudinal veins. Ratio of  $m-cu$  to distal part of  $CuA_1$ , 17 : 32. Posterior wing margin evenly convex. Anal vein distinct, not reaching to wing margin; anal lobe narrow; anal angle obtuse. Lower calypter yellow, with black setae. Halteres yellow.

Abdomen mostly black, weakly pollinose, with black hairs and short marginal setae. Abdomen with 1st segment almost entirely yellow, 2—3rd segments laterally yellow and postabdomen blackish-brown. 7th segment 4/5 the length of epandrium. 8th segment with numerous fine black cilia.

Epandrium of moderate size, elongate-oval, nearly twice longer than high. Hypandrium positioned beyond middle of ventral side, half as long as epandrium, undivided. Aedeagus thin, concealed. Epandrial lobe long and broad, nearly as long as surstylus, with 3 strong epandrial setae. Surstylus bilobate; ventral lobe short and broad, fingerlike, with 3 short apicoventral setae; dorsal lobe of surstylus broad, longer than ventral lobe, with 2 middorsal setae. Distal unpaired epandrial process shorter than surstylus, broad at base (lateral view) and narrow at apex. Cercus yellow, simple, flat, elongate oval, with short light hairs.

Length (mm): body without antennae 2.8, antenna 0.8, wing-length 3.2, wing-width 1.1, hypopygium 0.8.

*Distribution*. Tanzania.

*Etymology*. The species is named for one of the collectors, Dr. N. Scharff.

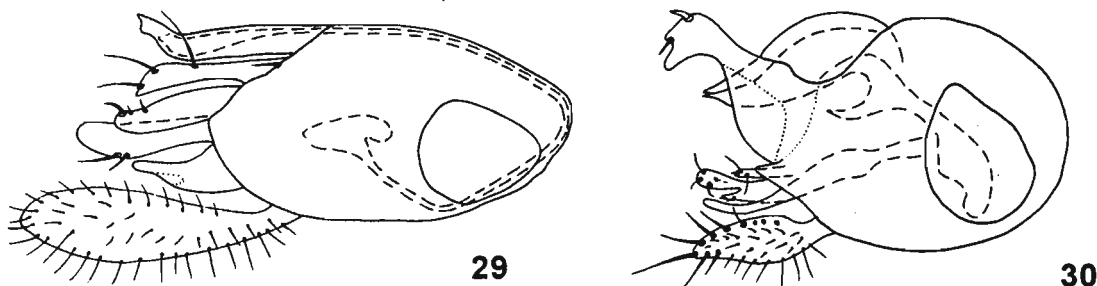
*Diagnosis*. The new species is keyed to *H. mottusi*, differing in wing veins  $R_{4+5}$  and  $M_{1+2}$  parallel, thorax mostly black, surstyli and unpaired epandrial process unmodified.

*Hercostomus turneri* sp.n.

(Fig. 30)

*Holotype*. ♂, E. Cape Prov., Katberg., 4000 ft., XII.1932 / S. Africa, R.E. Turner, Brit. Mus. 1933-69 [NHML].

*Description*. Male. General coloration of body bluish-black-brown. Head somewhat depressed from



Figs 29—30. *Hercostomus* spp., hypopygium, lateral view (cercus usually covers surstylus; ventral setae on cercus are sometimes not figured).

29, *H. scharffi* sp.n.; 30, *H. turneri* sp.n.

shrinkage. Frons metallic blue, grey pollinose; face black, narrow, densely brownish pollinose. One long and strong vertical at the top of head, one short postvertical, a pair of short hairs in addition to pair of long and strong ocellar setae present. Postocular setae black; 2—3 upper and 1 lower setae elongate. Eyes with short hairs; face glabrous; clypeus not reaching lower margin of eyes. Antenna slightly longer than height of head; scape and pedicel brownish-yellow, 1st flagellomere dark-brown, reddish at base; pedicel short and high, internally convex anteriorly, with short distal setulae; 1st flagellomere asymmetric, straight or slightly concave dorsally, convex ventrally, acute apicodorsally, 2.5 times longer than high, with microscopic hairs; arista positioned at basal 1/3, black, with short. Length ratio of scape to pedicel to 1st flagellomere to arista, 9 : 6 : 21 : 44. Palpus and proboscis moderately small, yellow, with short hairs; palpus with 1 black seta.

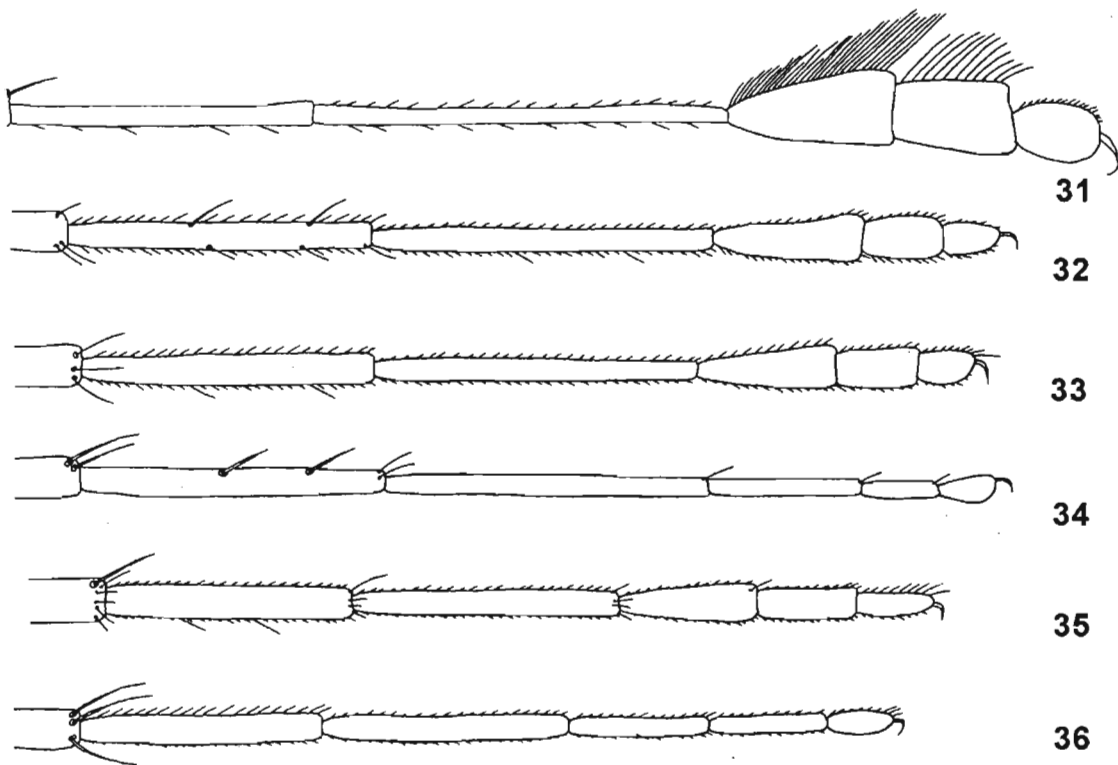
Thorax mostly black-brown; mesonotum metallic blue, slightly pollinose; pleura brown, somewhat lighter in places, grey pollinose. 5 strong dorsocentral setae with several hairs in front of the 1st pair; 2 rows of acrostichals; 2 strong notopleural, 1 strong and 1 microscopic humeral setae present. Propleura with 1 strong black seta above fore coxa. Scutellum with 2 strong setae and 2 lateral hairs.

Legs including all coxae yellow; middle coxa with brown external spot; apical segments of fore and middle tarsi darkened; hind tarsus entirely brown. Fore coxa with black hairs anteriorly and several setae in apical half; middle coxa with 1 strong external seta in addition to anterior hairs; hind coxa with 1 strong external setae. Legs including tarsi simple. Femora without long hairs. Fore tibia with 2 fine posterodorsal, 2—3 short apical setae, anterodorsal row of slightly elongate setulae in distal half. Length ratio of fore coxa to femur to tibia to tarsus (segments from first to fifth), 38 : 60 : 61 : 29 : 9 : 8 : 6 : 6. Middle femur with 1 anterior and 1 posterodorsal subapical setae. Middle tibia with 2—3 an-

terodorsal, 2 posterodorsal, 2—3 fine ventral and 4—5 apical setae. Length ratio of middle coxa to femur to tibia to tarsus (segments from first to fifth), 42 : 82 : 95 : 38 : 24 : 18 : 13 : 9. Hind femur with one subapical anterior seta. Hind tibia with 2 anterodorsal, 3 posterodorsal, 5 fine ventral, 3 apical setae, posterodorsal row of elongate setulae in distal half. Hind basitarsus with 1 very short basoventral seta. Length ratio of hind coxa to femur to tibia to tarsus (segments from first to fifth), 25 : 92 : 110 : 22 : 33 : 21 : 15 : 10.

Wing almost hyaline, with small angular brown distal projection just behind apex of  $M_{1+2}$  veins brown. Costa simple.  $R_1$  reaching to first third of wing length.  $R_{2+3}$  straight, gradually diverging towards apex. Ratio of part of costa between  $R_{2+3}$  and  $R_{4+5}$  to this between  $R_{4+5}$  and  $M_{1+2}$ , 34 : 12.  $M_{1+2}$  and  $R_{4+5}$  weakly convex anteriorly, slightly convergent in distal part. Crossvein  $m-cu$  straight, oblique, positioned as perpendicular to  $CuA_1$ . Ratio of  $m-cu$  to distal part of  $CuA_1$ , 19 : 50. Posterior wing margin evenly convex. Anal vein distinct, almost reaching to wing margin; anal lobe pronounced; anal angle obtuse. Lower calypter yellow, brown anteriorly, with black setae. Halteres yellow.

Abdomen entirely metallic greenish-black, with black hairs and marginal setae. Hypopygium small, black, sessile, with brown-black appendages. 7th segment 2/3 the length of epandrium. Epandrium rounded, slightly longer than high, asymmetric. Hypandrium broad, split at extreme apex. Aedeagus concealed. Left distoventral epandrial lobe fused with epandrium, large, strongly projected apicoventrally, swollen at base, narrowed at distal 1/3, widened at apex, with 2 short thick epandrial setae at apex; right epandrial lobe half as large as left lobe, narrow at apex, with 1—2 short apical setae and 1 long thick midventral seta half as long as left lobe. Distal unpaired epandrial process as long as surstyli, narrow, weakly curved ventrad, simple. Surstylus bilobate; ventral lobe half as long as dorsal lobe, with



Figs. 31—36. *Hercostomus* spp., hind tarsus.

31, *H. straeleni* Vanschuytbroeck; 32, *H. congoensis* (Curran); 33, *H. golubtsoci* sp.n.; 34, *H. ultimus* Parent; 35, *H. argyropus argyropus* (Loew); 36, *H. argyropus par* Parent.

1 apical and 2 subapical setae; dorsal lobe of surstylus narrowed in middle, rounded at apex, with 4 apical and subapical setae and short middorsal process directed distad and bearing 2 setulae. Cercus simple, elongate-oval, with short ventral hairs and strong simple lateral and apical setae.

Length (mm): body without antennae 2.8, antenna 0.9, wing-length 3.4, wing-width 1.2, hypopygium 0.5.

*Distribution.* South Africa.

*Etymology.* The species is named for the collector, Dr. R. E. Turner.

*Diagnosis.* The new species is keyed to *H. scharffi* and *H. mottusi*, differing in subtriangular blackish projection just behind apex of  $M_{1+2}$  wing vein and hypopygium morphology.

#### Doubtful species and records

##### *Hercostomus aerosus* (Fallén)

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. aerosus* (RMCA, examined) belong to *H. argyropus par*. So, the spe-

cies should be excluded from the fauna of Tropical Africa.

*Distribution.* Europe.

##### *Hercostomus afer* (Rondani)

*Remark.* Female described by Rondani (1873) in the genus *Dolichopus* could be associated with several species of *Hercostomus*. Wing vein  $M_{1+2}$  weakly flexed,  $M_{1+2}$  and  $R_{4+5}$  convergent; antenna entirely black with subapical arista; hind femur reddish with black spot at apex; abdomen entirely black.

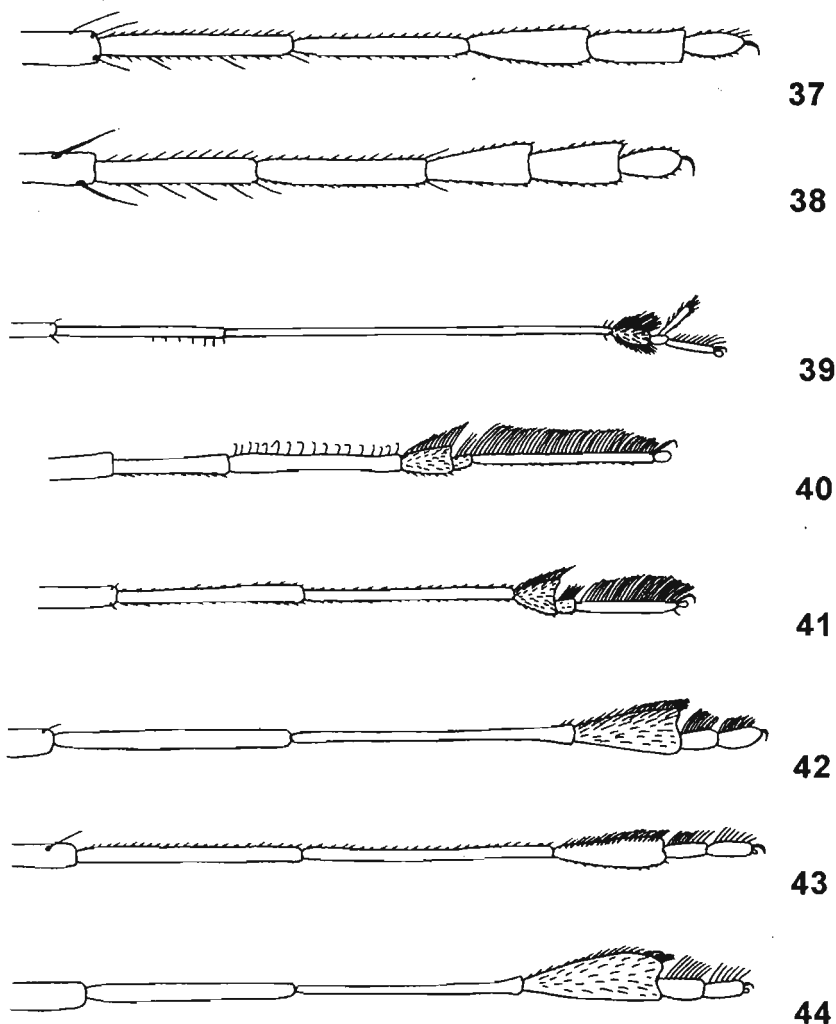
*Distribution.* Ethiopia.

##### *Hercostomus directus* (Walker)

*Remark.* Female described by Walker (1849) in the genus *Dolichopus* could be associated with several species of the group I of *Hercostomus*. Antenna tawny; 1st flagellomere black. Postocular setae white. Wing vein  $M_{1+2}$  straight. Legs mostly yellow. Middle coxa partly grey; hind coxa and femur yellow. Size 5.6 mm.

*Distribution.* South Africa.



Figs. 37—44. *Hercostomus* spp.

37—38, hind tarsus: 37, *H. blagoderovi* sp.n.; 38, *H. eronis* Curran. 39—44, fore tarsus: 39, *H. patellitarsis* (Parent); 40, *H. enghoffi* sp.n.; 41, *H. selikhockini* sp.n.; 42, *H. yakovlevi* sp.n.; 43, *H. tobiassi* sp.n.; 44, *H. scotti* sp.n.

### *Hercostomus disjunctus* Curran

**Remark.** Female described by Curran (1926) is probably unrecognisable. Scape and pedicel reddish; middle and hind coxae blackish; hind femora slightly darkened at apex above; abdomen bronze-green. Size 4 mm.

**Distribution.** South Africa; ?Tanzania.

### *Hercostomus fuscipennis* (Meigen)

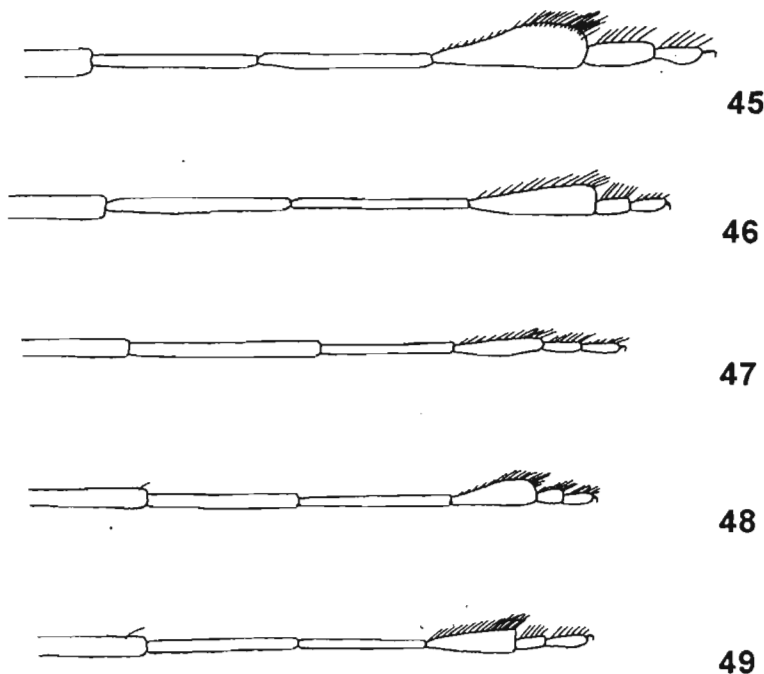
**Remark.** In the Afrotropical Catalogue Dyte and Smith renamed *Hercostomus fuscipennis* Vanshuytbroeck, 1964a: 136, nec Meigen, into *Hercostomus*

*vanshuytbroeckii* Dyte et Smith, 1980: 451. I was lucky studying the collection of the Royal Museum for Central Africa (RMCA). In RMCA (drawer no. 29) I found the following material concerning this species:

— ♂, **Congo belge**: Kivu, Rutshuru (riv. Rodahira), 1285 m, 2.VII.1935, G.F. de Witte: 1675 / P. Vanshuytbroeck det. 1950, *Hercostomus fuscipennis* Meigen / *Hercostomus* sp. indeterminable [*blagoderovi*], dt. Grichanov, 1998.

— 2 ♀ with the same labels.

— ♂, **Congo belge**: Kivu, Rutshuru (riv. Rutshuru), 1000 m, 3.VII.1935, G.F. de Witte: 1676 / P. Vanshuytbroeck det. 1950, *Hercostomus fuscipennis* Meigen / *Pelastoneurus* sp. dt. Grichanov, 1998.



Figs 45—49. *Hercostomus* spp., fore tarsus.

45, *H. perturbus* Curran; 46, *H. ozerovi* sp.n.; 47, *H. mostowskii* sp.n.; 48, *H. wittei* sp.n.; 49, *H. kricosheinae* sp.n.

The same drawer no. 29 comprise 2 males under unpublished name *Hercostomus bururiensis* Vanschuytbroeck (in coll., *Nomen nudum*):

- ♂, holotypus [red label] / Coll. Mus. Congo, Urundi Bururi, 1949, F. Francois / P. Vanschuytbroeck det. 195?. *Hercostomus bururiensis* n.sp. / *Hercostomus congoensis* (Curran), det. Grichanov, 1998.
- ♂, paratypus [red label] / Coll. Mus. Congo, Urundi Bururi, 1949, F. Francois / *Hercostomus bururiensis* Vans. (in coll.) [my hand] / *Hercostomus pulchripes* Vans. dt. Grichanov, 1998.

There is no other material with these two names in the RMCA. The geographical label published by P. Vanschuytbroeck (1964) under the description of *Hercostomus fuscipennis* sp.n. is the same as under specimens of *Hercostomus bururiensis*. He evidently described *Hercostomus bururiensis* (in coll.) under the name *Hercostomus fuscipennis* sp.n. The description and figure of the latter species are very bad; they do not correspond to collection material deposited in the RMCA and named *Hercostomus fuscipennis* and *Hercostomus bururiensis* or to other species named in his paper and this paragraph (*Hercostomus fuscipennis* (Meigen), *Hercostomus congoensis* (Curran), *Hercostomus pulchripes* Vanschuytbroeck and *Pelastoneurus* sp.). It would be better to consider the name *Hercostomus fuscipennis* Vanschuyt-

broeck as *Nomen nudum*. However, I think this name, as well as *Hercostomus vanschuytbroeckii* Dyte et Smith, should be placed in synonymy to *H. congoensis* (Curran). *Hercostomus fuscipennis* (Meigen) should be excluded from the fauna of tropical Africa.

Distribution. Austria; Europe.

### *Hercostomus germanus* (Wiedemann)

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. germanus* (RMCA, examined) belong to *H. argyropus par* (2 ♂), *H. javi* (1 ♂) and *Hercostomus* sp. indeterminable (3 ♀). So, the species should be excluded from the fauna of Africa.

Distribution. Germany; Europe.

### *Hercostomus insularum* Becker

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. insularum* (RMCA, examined) belong to *H. argyropus par* (23 ♂) and *Hercostomus* spp. indeterminable (6 ♂ and many ♀). So, the species should be excluded from the fauna of Tropical Africa.

Distribution. Canary Is.

***Hercostomus laufferi* (Strobl)**

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. laufferi* (RMCA, examined) belong to *H. argyropus par* (23 ♂), *H. congoensis* (18 ♂), *H. ultimus* (2 ♂), *H. straeleni* (1 ♂), and *Pelastoneurus* sp. (2 ♂). So, the species should be excluded from the fauna of Africa.

*Distribution.* Spain; France.

***Hercostomus melanolepis* Bezzi**

*Hercostomus melanolepis* Bezzi (1906) is transferred to *Tachytrechus* (Grichanov in litt.).

***Hercostomus muscarius* Speiser**

*Remark.* Description of female by Speiser (1910) is similar to habitus of *Tachytrechus kenyensis* Parent. Face somewhat widened below; postocular setae yellow. Thorax and abdomen black. Wing greyish, infumated at *m-cu*. All coxae black. Fore femur black in basal 2/3, other femora black in basal 1/3, fore tibia black in apical half, other tibia black at apex, basitarsi yellow in basal 2/3. Study of the type material is necessary for defining taxonomic status of the species.

*Distribution.* Tanzania.

***Hercostomus pilifer* (Loew)**

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. pilifer* (RMCA, examined) have nothing to do with this species. So, the species should be excluded from the fauna of Tropical Africa.

*Distribution.* Algeria, Egypt.

***Hercostomus ponderosus* Frey**

*Diagnosis.* Lower postocular setae white. Face brown-yellow; lower part of face wider than 1st flagellomere. Scape reddish yellow; 1st flagellomere black, hardly longer than wide; arista glabrous, slightly thickened at base. Thorax and abdomen dark metallic green. Hypopygium large; cercus small, rounded, black, with large and long marginal hairs. Surstylus long and narrow, with yellow apex and small subapical thickening. All coxae black. Femora and tibia reddish-yellow; hind tibia black in apical 1/4 or 1/2; fore tarsus reddish-yellow ventrally, slightly shorter and wider than other tarsi; fore basitarsus 3 times

longer than 2nd. All tibia with strong setae; hind basitarsus without setae. Wing greyish, shaded along anterior margin and on *m-cu*. Costa with long weak thickening before *R*<sub>1</sub>. *R*<sub>4+5</sub> and *M*<sub>1+2</sub> strongly convergent in apical part. Anal lobe weakly developed. Lower calypter yellow with black cilia. Size 5.5–6.0 mm. (From Frey, 1958).

*Remark.* Description of the species by Frey is almost identical to habitus of *Tachytrechus tessellatus* Macquart except indication of only one subapical seta on hind femur.

*Distribution.* Cape Verde Is.

***Hercostomus stroblianus* Becker**

*Remark.* Specimens from Congo (Kinshasa) determined by P. Vanschuytbroeck as *H. stroblianus* belong to *H. argyropus par* (RMCA, 2 ♂ examined) and *Thinophilus splendidus* Vanschuytbroeck (RINS, 1 ♂ examined). So, the species should be excluded from the fauna of Africa.

*Distribution.* Hungary.

### Key to Afrotropical species of *Hercostomus* Loew (males)

1. Some apical segments of hind tarsus ornamented with remarkable cilia, or flattened, widened and shortened, or silvery-white pilose; fore tibia usually with long fine apicoventral seta ..... 2
  - Hind tarsi simple, 3–5th segments entirely black-brown, with black setulae; fore tibia usually with short apical setae ..... 9
2. Hind basitarsus with 1 or 2 dorsal setae ..... 3
  - Hind basitarsus without dorsal setae ..... 4
3. Three apical segments of hind tarsus silvery white; cercus with several strong falcate setae ..... *congoensis*
  - Only 5th apical segment of hind tarsus silvery white; cercus with simple cilia only ..... *ultimus*
4. 3–4th segments of hind tarsus short, flat, strongly widened, plumose, each approximately 2 times longer than wide; cercus subtriangular, large, half as long as epandrium, with several falcate setae at distal apex ..... *straeleni*
  - 3–4th segments of hind tarsus with short setulae, each at least 3 times longer than wide; cercus usually small, rarely with falcate setae ..... 5
5. 4th segment of middle tarsus with rows of numerous black bristles above and below; the dorsal ones being in length about 3 times the width

- of basitarsus; 5th segment of middle and hind tarsi dorsally silvery pilose ..... *jani*
- 4th segment of middle tarsus with simple setae; usually 3 apical segments of hind tarsi dorsally silvery pilose ..... 6
6. 2nd segment of hind tarsus longer than 3—5th combined; cercus large, with several falcate setae at distodorsal apex ..... *golubtsovi*
- 2nd segment of hind tarsus shorter than 3—5th combined; cercus without falcate setae at distodorsal apex ..... 7
7. 5th segment of middle tarsus silvery pilose dorsally; cercus with rounded distodorsal and basoventral apices and several falcate setae at distal margin ..... 7a
- Apical segments of middle tarsus entirely black; cercus with acute distodorsal apex and simple setae ..... 8
- 7a. Two apical segments of hind tarsus flattened and silvery; 3rd segment of the same tarsus not flattened, silvery white only in distal half ..... *argyropus par*
- Three apical segments of hind tarsus flattened and silvery ..... *argyropus argyropus*
8. Three apical segments of hind tarsus entirely yellow-white; cercus with rounded ventral apex ..... *eronis*
- Three apical segments of hind tarsus black ventrally and silvery-white pilose dorsally; cercus with pointed ventral apex ..... *blagoderovi*
9. 3rd segment of fore tarsus compressed and widened ..... 10
- 3rd segment of fore tarsus neither flattened nor widened ..... 20
10. 3rd and 4th segments of fore tarsus shortened; 3rd segment shorter than 5th; cercus with large basolateral lobe bearing several short setae; cercus with long narrow apex bearing several long setae ..... 11
- 4th and 5th segments of fore tarsus shortened; 3rd segment longer than 5th; cercus various, rarely with drawn-out apex ..... 13
11. 4th segment of the fore tarsus with short dorsal lobe; 3rd segment nearly equal to 5th ..... *patellitarsis*
- 4th segment of fore tarsus without lobe; 5th segment at least twice longer than 3rd ..... 12
12. 2nd segment of fore tarsus with row of hooked cilia; 5th segment 3 times longer than 3rd ..... *enghoffi*
- 2nd segment of fore tarsus with simple setulae; 5th segment 2 times longer than 3rd ..... *selikhovskini*
13. Cercus with large fungaceous basolateral process bearing fan of at least 5 long strong setae; the setae at least as long as cercus ..... 14
- Cercus with short narrow process or low prominence at base, bearing at most 3 strong setae ..... 16
14. 3rd segment of fore tarsus 1/3 or 2/5 the length of 2nd; cercus with only several long cilia in distal part; basolateral process of cercus comparatively small, 1/3 the length of cercus, with 5—6 long setae ..... *yakovlevi*
- 3rd segment of fore tarsus 3/5 to 3/4 the length of 2nd; cercus densely covered with long hairs in distal part; basolateral process of cercus large, with at least 10 long setae ..... 15
15. 3rd segment of fore tarsus strongly widened, about 3 times longer than wide; basolateral process of cercus with about 20 long setae ..... *scotti*
- 3rd segment of fore tarsus weakly widened, at least 4 times longer than wide; basolateral process of cercus with about 10 long setae ..... *oxerovi*
16. Cercus with 2 lateroventral processes; 3rd segment of fore tarsus strongly widened; 7th segment of abdomen at least 1/3 longer than epandrium ..... 17
- Cercus with one basolateral prominence; 3rd segment of fore tarsus weakly widened; 7th segment of abdomen equal to or shorter than epandrium ..... 18
17. 3rd segment of fore tarsus nearly equal in length to 2nd; distoventral process of cercus narrow, as wide as basoventral process .... *perturbus*
- 3rd segment of fore tarsus approximately half as long as 2nd; midventral process of cercus wide, 2 times wider than basoventral process ..... *wittei*
18. 3rd segment of fore tarsus half as long as 2nd or shorter; 1st segment of same tarsus slightly shorter than 2nd; epandrium slightly projected apicoventrally; cercus with long and narrow distal part ..... *tobiasi*
- 3rd segment of fore tarsus 2/3 the length of 2nd; 1st segment of same tarsus longer than 2nd; epandrium strongly projected apicoventrally; cercus relatively broad ..... 19
19. Cercus truncated at apex, with distinct basolateral prominence bearing 2—3 strong setae ..... *mostovskii*
- Cercus somewhat projected apicoventrally, with dorsal subapical tubercle and indistinct basolateral prominence ..... *krivosheinae*
20. 5th segment of middle tarsus yellow or silvery-white and clothed with pale hairs; fore tarsus simple; 5.0 mm ..... *dimidiatus*
- Middle and fore tarsus simple, rarely apical

- segments of fore tarsus shortened and 4—5th segments of the same tarsus slightly thickened ..... 21
21. Legs mostly yellow, hind femur blackish or brown in at least apical half; 1st flagellomere with basodorsal arista; arista distinctly pubescent; male cercus narrow, often ornamented with processes or bunches of long cilia ..... 22
- Femora entirely yellow; 1st flagellomere usually with middorsal arista, which microscopically pubescent ..... 29
22. Cercus with brush or fan of long cilia, longer than cercus ..... 23
- Cercus with cilia, at most half as long as cercus ..... 25
23. Cercus with basal fan of dorsal and lateral cilia directed distad ..... *laanmae*
- Cercus with dorsal brush of cilia directed dorsad ..... 24
24. Cercus with basodorsal brush of glued cilia, twice longer than cercus ..... *licitor*
- Cercus with middorsal brush of fore cilia, slightly longer than cercus ..... *duviardi*
25. Cercus bilobate, with apical brush of long cilia on both lobes; fore tibia slightly thickened ..... *strictilamellatus*
- Cercus simple, more or less evenly covered with cilia; fore tibia simple ..... 26
26. Cercus short, at most 3 times longer than wide, slightly longer than surstylus, half as long as height of epandrium ..... *minimixtus*
- Cercus at least 5 times longer than wide, approximately equal in length to height of epandrium ..... 27
27. Cercus yellow, slightly narrowed at middle, covered with hairs not longer than width of cercus; surstylus large and massive, nearly reaching to apex of cercus ..... *krivokhatskii*
- Cercus brown, densely covered with long hairs; surstylus greatly reduced ..... 28
28. Cercus beyond middle with ventral swelling bearing group of long cilia in addition to long cilia at apex and at base of cercus ..... *panteleevae*
- Cercus gradually narrowed distad and evenly covered with long cilia ..... *ovchinnikovae*
29. Postocular setae black ..... 30
- Postocular setae white ..... 32
30. Wing with subtriangular blackish projection just behind apex of  $M_{1+2}$  ..... *turneri*
- Wing simple ..... 31
31.  $R_{4+5}$  and  $M_{1+2}$  parallel; thorax mostly black ..... *scharffi*
- $R_{4+5}$  and  $M_{1+2}$  distinctly convergent; thorax mostly yellow ..... *mottusi*
32. All coxae black; fore basitarsus thrice longer than 2nd; 2nd to 5th shortened, slightly widened (wider than middle and hind tarsomeres); 1st flagellomere slightly longer than high; cercus small, black, with dense long hairs; 5.5—6.0 mm ..... *ponderosus*
- Fore and hind coxa yellow; cercus yellow; smaller species, 3.0—4.5 mm ..... 33
33. 1st flagellomere shorter than high; cercus yellow, large, semilunular, with rounded distal margin having pale short cilia; 3.0 mm ..... *rhodesiensis*
- 1st flagellomere 1.5 times longer than high; cercus with large basolateral lobe bearing several strong setae and narrow distal part having several long cilia at apex; 3.0—4.5 mm ..... *nectarophagus*

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