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## Orthotylinae of West, Central and North-East Africa (Heteroptera, Miridae)

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Received 29 March 1990

The Orthotylinae of West, Central and NE Africa are revised. Notes on the habitats and distribution are also given. The following new taxa are described: *Acratheus ocellaris* sp. n., *Nanniella alkithoe* sp. n., *Coridromius schuhi* sp. n., *Gilo* gen. n., *Pseudoloxops niobe* sp. n., *P. thetis* sp. n., *P. nike* sp. n., *P. ninos* sp. n., *P. galatea* sp. n., *P. amfitrite* sp. n., *Mestra leucoptera* gen. et sp. n., *M. erato* sp. n., *Hekate eirene* gen. et sp. n., *Orthotylus mundricus* sp. n., *O. mentor* sp. n., *O. bobo* sp. n., *O. farcha* sp. n., *O. ife* sp. n., *O. althaia* sp. n., *O. akheloos* sp. n. (South Africa), *O. akastos* sp. n. (South Africa), *O. aineias* sp. n. (South Africa), *Orthotylus* subgenus *Ericinellus* subgen. n., (*Ericinellus*) *selene* sp. n. (South Africa), *Cyrtorhinus dimorphus* sp. n., *Mecomma khrysothemis* sp. n., *M. ruficeps* sp. n., *M. kharon* sp. n., *M. juno* sp. n., *Nycticapsus major* sp. n., *Zanchius laodameia* sp. n., *Z. prokris* sp. n., *Z. oreithya* sp. n., *Z. bidens* sp. n., *Z. ekho* sp. n., *Z. amabilis* sp. n., and *Hyalosomella nigricornis* sp. n. New synonymies: *Neomecomma* Southwood = *Pseudorthotylus* Poppius, *Pseudorthotylus sordidus* Poppius = *Orthotylus* (*Pseudorthotylus*) *bilineatus* (Fallén), *Orthotylus acaciae* Wagner = *O. priesneri* Schmidt, *Chlorosomella* Reuter = *Cyrtorhinus* Fieber, *Cyrtorhinus viridis* Linnavuori = *C. geniculatus* (Reuter), *Felisacodes dibuora* Odhiambo = *F. bryocorina* (Poppius), and *Zanchius stami* van Doesburg = *Z. breviceps* (Wagner). New status: *Orthotylus tamarindi nubaensis* Linnavuori = *O. nubaensis* Linnavuori. New combinations: *Halticus punctiger* Linnavuori = *Acratheus punctiger* (Linnavuori), *Druthmarus tibialis* Linnavuori = *Gilo tibialis* (Linnavuori), *D. congolensis* Carvalho = *Gilo congolensis* (Carvalho), *Orthotylus* (*Neomecomma*) *bilineatus* (Fallén) = *O. (Pseudorthotylus) bilineatus* (Fallén), *Chlorosomella geniculata* Reuter = *Cyrtorhinus geniculatus* (Reuter), *Cyrtorhinus rectangulus* Ghauri = *Mecomma rectangulus* (Ghauri), *Malacocoris montanus* Linnavuori = *Zanchius montanus* (Linnavuori), *Hyalosomella depressa* Linnavuori = *Zanchius depressus* (Linnavuori), and *Zanchius nigrolineatus* Schuh = *Hyalosomella nigrolineata* (Schuh). Lectotypes are designated for *Nanniella reuteri* Poppius, *Pseudorthotylus sordidus* Poppius, *Orthotylus ericinellae* Poppius, and *Cyrtorhinus geniculatus* (Reuter).

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## 1. Introduction

The first comprehensive work on the Ethiopian Orthotylinae (Miridae) was published by Poppius (1914). Very little was done on the subject until Schuh (1974) published a revision of the Orthotylinae of South Africa and Linnavuori (1975) of those of NE Africa. In the present article the previously practically unknown Orthotylinae of West and Central Africa are revised. The species of NE Africa are also included to elucidate the orthotyline fauna of tropical Africa north of the equator.

The main part of the material studied was collected during my field trips to Africa. In 1961–1963 my investigations were concentrated to the Sudan, Ethiopia and northern Somalia. In 1973 I made a similar trip to Nigeria and the Ivory Coast. During the trip, I also collected material from

southern Algeria, the Upper Volta, Niger, Chad, the Central African Republic, Cameroon, Dahomey (now Benin), Togo, and Ghana. Additional material was obtained from the late Dr. R. H. Cobben (Wageningen) and Dr. D. Gillon (Paris) from the Ivory Coast, Prof. J. T. Medler (Honolulu) from Nigeria, Mr. J. Péricart (Montereau) from Chad, Ms. S. Mascherini (Florence) and the late Prof. A. Servadei (Padua) from Somalia and Ethiopia, and Dr. R. T. Schuh (New York) and the late Dr. J. G. Theron (Stellenbosch) from South Africa. To fix the nomenclature, I examined the types of the previously described species preserved in the British Museum of Natural History, the Zoological Museum in Helsinki and the National Museum of Natural History in Paris.

## 2. Classification

### Subfamily Orthotylinae

Claws (Fig. 8a–b): Parempodia fleshy, convergent apically, recurved (lyre-shaped), and flattened laterally; pulvilli present or absent.

Male genitalia: Phallosome fixed to phallosome base. Vesica membranous, inflatable to at least a limited degree, often provided with sclerotized appendages (spiculi). Female genitalia (Fig. 1): posterior wall of bursa copulatrix varying from a simple sclerotized plate to a highly modified form with K-structures; sclerotized rings on dorsal wall ranging from nearly flat to highly involved on lateral margins.

Distribution: Cosmopolitan. Three tribes, the Halticini, Nichomachini and Orthotylini, are known from the Ethiopian Region.

### Key to tribes of the subfamily Orthotylinae

1. Ant-mimetic brown or black species. Elytra with transverse whitish fasciae. Pronotum constricted anterior to middle. Apical part of scutellum humped. Male macropterous with costal margins of elytra insinuated. Female strongly brachypterous, elytra very short, covering only base of the greatly enlarged abdomen ..... Nichomachini
- Not as above ..... 2
2. Color in African species black. Upper surface often distinctly punctate. Head usually dorsoventrally elongated (Figs. 2c, 3a, j, 5m–n) with height of gena greater than height of eye. Claws (Figs. 3l, 5s, 8a) without pulvilli (present in the South African genus *Namacapsus* Schuh). Aedeagus small, vesica membranous without spiculi. Posterior wall of bursa copulatrix (Fig. 1a–b) without K-structures ..... Halticini
- Color usually pale. Upper surface rarely punctate. Head shorter. Vesica usually with sclerotized spiculi. Posterior wall of bursa copulatrix (Fig. 1d) with K-structures ..... Orthotylini

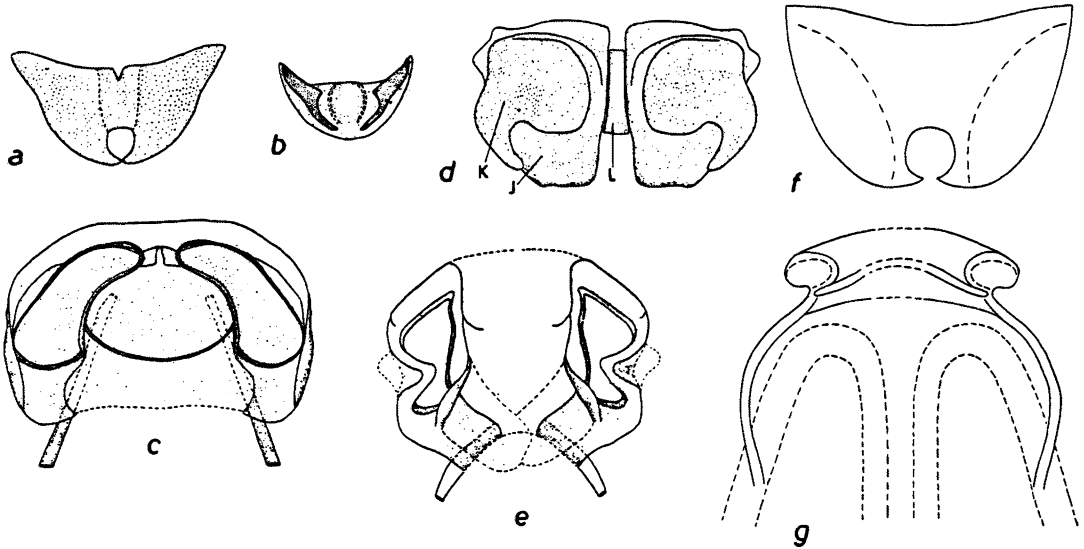


Fig. 1. *Orthocephalus mutabilis* (Fallén): a) posterior wall of bursa copulatrix. — *Halticus intermedius* Uhler: b) posterior wall of bursa copulatrix; c) sclerotized rings on dorsal wall of bursa copulatrix. — *Heterocordylus malinus* Reuter: d) posterior wall of bursa copulatrix (K = K-structure, J = J-structure, L = L-structure). — *Orthotylus modestus* Van Duzee: e) sclerotized rings. — *Nichomachus sweeti* Schuh: f) posterior wall of bursa copulatrix; g) sclerotized rings. — After Slater 1950 and Schuh 1974.

### Tribe Halticini

Usually black or dark-colored. Body robust or elongate. Hair covering on upper surface simple. Dorsal surface smooth or punctate. Head usually dorsoventrally elongated, height of gena greater than height of eye, basal margin of vertex keeled. 1st joint of rostrum usually incassate. African species always macropterous, the Palearctic ones often brachypterous. Hind femora sometimes strongly enlarged, adapted for jumping. Claws (Figs. 3l, 5s, 8a) without pulvilli (except in *Namacapsus*).

Male genitalia: Right style large, flattened and expanded apically,  $\pm$  spoon-shaped. Left style with long slender, apically hooked hypophysis. Aedeagus small; vesica membranous, without sclerified spiculi. Female genitalia (Fig. 1a–c): posterior wall of bursa copulatrix plate-like, without K-structures. Sclerified rings variable, in African species  $\pm$  reniform.

Distribution: Primarily Palearctic. The Mediterranean subregion, in particular, has a rich and diverse Halticini fauna (Wagner 1973:1–109).

Only a few genera and species are known from the other parts of the world. Four genera are known from the Ethiopian Region. *Halticus* is a cosmopolitan genus. The two species recorded from Africa have a Palearctic range. The closely related genus *Acratheus* is also Palearctic. *Nanniella* is an endemic genus which is widely distributed in tropical Africa. The fourth genus, *Namacapsus* Schuh (unknown to me), is known only from Cape Province in South Africa.

Emphasizing the importance of the elongate head, incassate 1st rostral joint and shape of the styles, Wagner (1973) regarded the group as a separate subfamily, the Halticinae. Although genera such as *Halticus* and *Acratheus* display these characters, *Nanniella*, which undoubtedly represents a separate evolutionary lineage, has the head considerably shorter and the 1st rostral segment only moderately thicker than the 2nd. On the other hand, the Orthotylini genus *Jiggiga* has a misleading external resemblance to certain representatives of the Halticini. Although the vesica in the Orthotylini usually has a complicated structure, forms with a simple vesica also exist.



Since the absence of the K-structures in the females is the only character which clearly distinguishes the Halticini from the Orthotylini, I prefer to follow Schuh (1973) and regard the group as a tribe within the Orthotylinae.

**Key to genera of the tribe Halticini**

1. Upper surface finely rugose. Hind margin of pronotum broadly rounded. Hind femora (Fig. 2j, l) greatly enlarged ..... *Halticus*
- Pronotum, scutellum and elytra distinctly punctate. Hind margin of pronotum shallowly insinuated. Hind femora (Fig. 3k) gracile ..... 2
2. Body elongately ovate (Fig. 4a). Head (Figs. 2s, 3a) vertical, in apical view only a little broader than high with lower part elongately conical in outline, in lateral view > twice as high as broad with anterior margin nearly vertical from keeled base of vertex to tip of tylus ..... *Acratheus*
- Body (Fig. 4c) narrow, nearly parallel-sided. Head (Fig. 5k, m-n) in apical view distinctly broader than high with lower part triangular in outline, in lateral view at most twice as high as broad with anterior margin broadly roundedly recurved ventrad ..... *Nanniella*

**Genus *Halticus* Hahn**

- Halticus* Hahn 1832:113. Type species: *Acanthia pallicornis* Fabricius (a synonym of *Cicada aptera* Linnaeus).  
*Eurycephala* Laporte 1832:36. Type species: *Cicada aptera* Linnaeus (Reuter 1891b:17).  
*Halticocoris* Douglas & Scott 1865:478. Type species: *Acanthia pallicornis* Fabricius (Carvalho 1958:12).  
*Misilla* Horvath 1898:154. Type species: *M. flavipes* Horvath (Carvalho 1958:12), misidentification (Wagner 1968:224–226).  
*Halticellus* Villiers 1952:154. Type species: *Halticus tibialis* Reuter (Carvalho 1958:13).  
*Microtechnites* Berg 1883:73. Type species: *M. pygmaeus* Berg (Carvalho 1958:13).

**Diagnosis:** Small shiny black species. Upper surface finely rugose. Head in dorsal view very short and broad, in apical view at least as high as broad. 4th joint of rostrum longer than 3rd. Hind femora strongly enlarged.

**Description:** Shiny black species. Head and pronotum sometimes yellowish. Body short, ovate and convex. Hair covering dark, longish, semi-decumbent. Upper surface finely rugose. Head in dorsal view very short and broad, in apical view as high as broad or higher, below eyes narrowly

triangular, in lateral view much higher than long, anterior margin from base of vertex to tip of tylus nearly vertical; lora bluntly keeled; basal margin of vertex sharply carinate; eyes small, in ♂ only slightly larger than in ♀, in dorsal view encircling anterolateral angles of pronotum. Antennal pits below middle of eyes. Antennae very long and gracile, 4th joint longer than 3rd. Rostrum: 4th joint longer than 3rd. Pronotum: lateral margins straight, basal margin broadly rounded; collar very reduced, concealed by the raised basal margin of vertex; calli very small, disk moderately convex. Base of scutellum largely concealed by pronotum. African species always macropterous with elytra about as long as abdomen; costal margins curved, cuneus small, membrane strongly declining ventrad. Propleura smooth. Fore subcoxae narrow, bases of fore coxae therefore close to head. Hind femora strongly enlarged, adapted for jumping.

**Male genitalia:** Pygofer broadly conical. Apex of right style ovate. Left style (in African species): sensory lobe bluntly or strongly prominent, hypophysis falcate, ± horizontal.

**Distribution:** Widespread. Two species recorded from tropical Africa.

**Key to African species of the genus *Halticus***

1. Hind femur, save the very tip, and basal two-thirds of hind tibia black ..... *tibialis*
- Apex of hind femur distinctly pale. Basal third of hind tibia embrowned ..... *minutus*

***Halticus tibialis* Reuter**

Figs. 2, 8

- Halticus tibialis* Reuter 1891a:135.  
*Halticus tibialis* Poppius 1914:44, Villiers 1952:186, Carvalho 1958:18, Linnavuori 1975:49.

**Material:** Numerous exx from Ivory Coast: Adiopodoumé, IV–V.1964, R. Cobben; Foro-Foro, 25–28.IX.1973, Linnavuori. Togo: Bena, 12.IX.1973; Langabou, 12.IX.1973; near Palimé, 13–14.IX.1973, Linnavuori. Benin: Cotonou, 7.IX.1973, Linnavuori. Nigeria: W St., Idanre, 23.IX.1969; J. Medler, Ile-Ife, 3.IX–28.X.1969, J. Medler, Ondo-Ife, 6.VIII.1973; Lagos, 11–13.VII.1973, NC Zt. Kagoro forest, 29–30.VIII.1973; EC St., near Abakaliki, 29.VI.1973; SE St., Ikom-Obudu, 25.IV.1973, near Mfum, 24.VI.1973, Obudu cattle ranch, 26–27.VI.

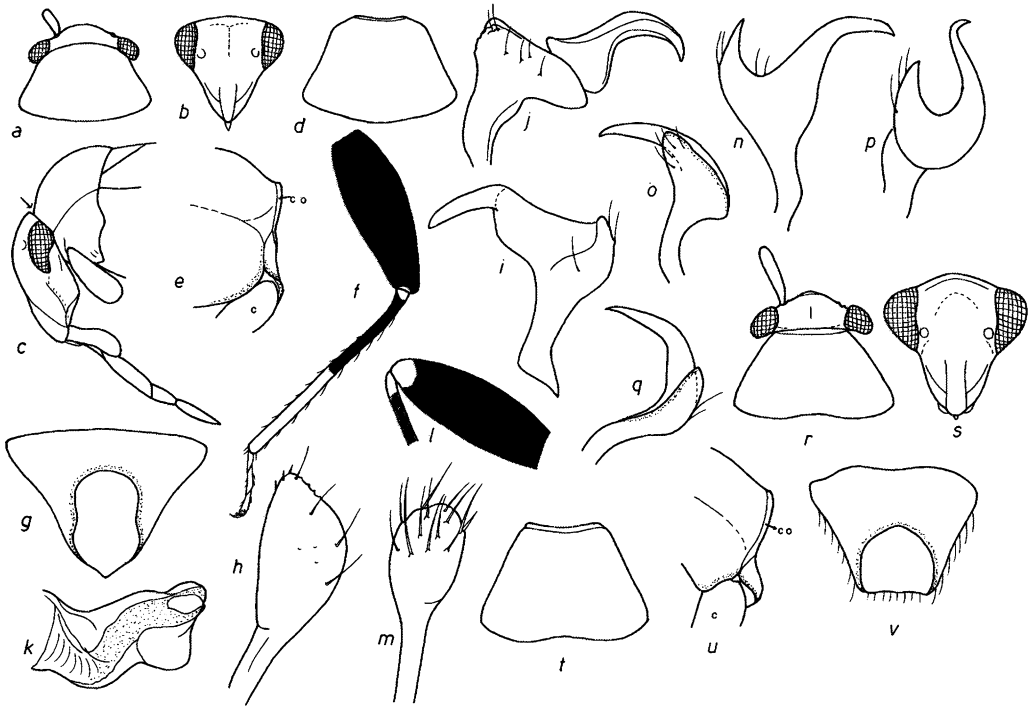


Fig. 2. *Halticus tibialis* Reuter: a) male head and pronotum, dorsal view; b) head in apical view; c) head and pronotum, lateral view; d) pronotum, dorsal view; e) anterior margin of prothorax, lateral view (co = collar, c = coxa); f) hind leg; g) pygofer, dorsal view; h) right style; i–j) left style (i in glycerine, j in slide mount, hypophysis broken); k) aedeagus, lateral view. — *H. minutus* Reuter: l) hind femur and base of tibia; m) right style; n–q) left style in different views. — *Acratheus punctiger* (Linnavuori): r) male head and pronotum, dorsal view; s) head in apical view; t) pronotum, dorsal view, u) anterior margin of prothorax, lateral view; v) pygofer, dorsal view.

1973, Opobo, 3.VII.1973, Linnavuori. Cameroon: Abong Mbang-Ayos, 13.VI.1973; Ayos-Yaoundé, 14.VI.1973; Bota, 19–20.VI.1973; Buea, 21.VI.1973; Buea-Kumba, 21.VI.1973; Dimako-Abong Mbang, 15.VI.1973; Kumba-Mamfé, 23.VI.1973, Linnavuori. Central African Republic: La Maboke, 6–9.VI.1973; M'Baiki, 6–9.VI.1973, Linnavuori. The Sudan: localities listed in Linnavuori 1975:49. Eritrea: near Ghinda, 31.V.1963, Linnavuori. Ethiopia: Gembi near Agaro, 15.VI.1963, Linnavuori.

Length 1.75–2.0 mm. Shiny black. Eyes grayish brown. Antennae pale yellow. Membranes of elytra blackish. Rostrum, excluding 1st joint, yellow-brown. Femora black, tips of fore and middle femora pale; other parts of legs pale yellow, basal two-thirds of hind tibiae black.

Very small, robust. Upper surface finely rugose, hair covering blackish. Head about  $0.8 \times$

as broad as basal width of pronotum, in apical view as broad as high, in lateral view about  $2.7 \times$  as high as long; ocular index 2.94–3.2. Proportions between antennal joints 13:63:47:56, 2nd joint about  $0.82 \times$  as long as basal width of pronotum. Rostrum extending to hind coxae, proportions between joints 15:15:6:9, 1st joint very incrassate. Elytra as long as abdomen. Hind femur about  $3.13 \times$  as long as broad, hind tibia about  $1.52 \times$  as long as femur, proportions between hind tarsomeres 9:12:12.

Male genitalia in Fig. 2g–k. Right style with blade-like apical part. Left style: sensory lobe bluntly prominent, hypophysis with short digitate apex and enlarged basal part.

On an unidentified Cucurbitaceae species in clearings in rain and savanna forests.

***Halticus minutus* Reuter**

Fig. 2

*Halticus minutus* Reuter 1884:197.

Material: Sri Lanka: Haycock Mnt., 21 miles NNE Galle, 2 exx, in coll. Linnavuori.

Like the preceding species, but apices of hind femora pale and basal third of hind tibiae embrowned.

Male genitalia (Fig. 2m–q): apex of right style ovate. Sensory lobe of left style with strong horn-like process, hypophysis long, falcate, gradually tapering apicad.

Distribution: The Oriental Region. Recorded from Africa (Zaire) in Carvalho 1958:17.

**Genus *Acratheus* Distant**

*Acratheus* Distant 1910:16. Type species: *A. nocturnus* Distant (a synonym of *albipes* Motschulsky).

Diagnosis: Differing from *Halticus* in the densely punctate upper surface, insinuated basal margin of the pronotum and slender hind femora.

Description: Like *Halticus* but 1) body more elongate, 2) pronotum, scutellum and elytra densely and distinctly punctate, 3) eyes more prominent and transverse, 4) 4th joint of rostrum shorter than 3rd, 5) the pronotum is provided with a more distinct collar, which is at least partially visible in dorsal view; the basal margin of the pronotum is insinuated and the scutellum is therefore more broadly visible, 6) fore subcoxae somewhat broader, pleura distinctly punctate, and 7) hind femora slender.

Male genitalia as in *Halticus*. Pygofer truncate apically.

Biology: On undergrowth in rain and savanna forests.

Distribution: Paleotropical.

**Key to species of the genus *Acratheus***

1. Head small, yellow-brown. Cuneus pale. Legs whitish yellow ..... *albipes*
- Head broad, black. Cuneus black. Legs largely dark
2. 1st antennal joint black with pale base, 2nd uniformly pale yellow. Membrane blackish with contrasting large roundish whitish hyaline basal spot on lateral margin. Femora black ..... *ocellaris*

- 1st antennal joint uniformly pale, 2nd at least partially black. Membrane immaculate, dark. Femora bicolored ..... *punctiger*

***Acratheus punctiger* (Linnavuori), comb. n.**

Figs. 2, 3

*Halticus punctiger* Linnavuori 1975:48.

Type: The Sudan, Equatoria, Aloma Plateau, Yei-Iwatoka road, ♀ holotype, 12–13.IV.1963, Linnavuori, in coll. Linnavuori. Material: Many exx from Togo: Langabou, 12.X.1973, Linnavuori. Benin: Parakou, 5–6.IX.1973; Savé, 6.IX.1973, Linnavuori. Nigeria: NW St., Gummi-Anka, 24.VII.1973; NE St., Lankoviri, 24.VIII.1973, W St., Ogbomosho-Igbetti, 19.VII.1973, Olokemeji forest, 9.VII.1973, Igboho-Kishi, 19.VII.1973; B Pl St., Aliade-Oturkpo, 31.VIII.1973, Katsina Ala, 19.VIII.1973, Makurdi, 30.VIII.1973, Wamba, 7. VIII.1973; E C St., Norcap near Abakaliki, 29.VI.1973, Nsukka, 30.VI.1973, Linnavuori. Upper Volta: Bérégadougou-Orodara, 29–30.X.1973, Linnavuori.

Length 2.50–3.25 mm. Shiny black. Genae often yellowish brown. Eyes brownish or reddish gray. Antennae pale yellow, 2nd joint either totally black or darkened apically. Rostrum yellow-brown. Membrane of elytra uniformly blackish. Legs pale yellow. Anterior margins of fore and middle femora ± dark brown, hind femora blackish brown with pale base. Basal thirds or halves of tibiae black. 3rd tarsomeres dark.

Macropterous. Body elongately ovate. Hair covering on upper surface brown, dense, longish and semidecumbent. Head about 0.8 (♂) or 0.7 (♀) × as broad as basal width of pronotum, vertical, in apical view a little broader than high with lower part conical in outline, in lateral view > twice as high as broad with anterior margin from the keeled base of vertex to the tip of tylus nearly vertical; genae bluntly keeled. Eyes in ♂ considerably larger than in ♀, ocular index 1.50–1.56 (♂), 2.17–2.46 (♀). Proportions between antennal joints 21:71:55:57 (♂), 19:65:60:61 (♀), 2nd segment in ♂ more incrassate than in ♀, 1.10–1.18 (♂) or 0.91–0.98 (♀) × as long as basal width of pronotum. Rostrum extending to hind coxae, proportions between joints 27:21:12:9. Entire pronotum very densely punctate. Scutellum finely punctate. Elytra distinctly longer than abdomen, clavus very densely punctate, puncturing on corium somewhat sparser, medioapical area of



Fig. 3. *Acraethus punctiger* (Linnavuori): a) male head and pronotum in lateral view; b–d) right style; e) apex of right style from above; f–h) left style in different views; i) apex of left style from above (dry mount). — *A. ocellaris* sp. n.: j) male head and pronotum, lateral view; k) hind leg; l) claw; m–o) right style; p) apex of right style from above; q–r) left style; s) left style from above (dry mount); t) aedeagus, lateral view.

mesocorium nearly impunctate, cuneus finely punctate. Propleura densely, meso- and meta-pleura sparsely and finely punctate. Legs long and gracile. Proportions between hind tarsomeres 7:12:12.

Male genitalia in Figs. 2v, 3b–i. Middle tooth on apical margin of right style small. Apical process of hypophysis of left style relatively gracile.

Distribution: West Sudanese.

#### *Acraethus ocellaris* sp. n.

Figs. 3–4

Material: Nigeria: B Pl St., Wamba-Lafia, ♂ holotype, 30.VIII.1973, Linnavuori. Numerous paratypes from Ivory Coast: Gouméré, 19.IX.1973; Foro-Foro, 23–28.IX.1973; Touba, 23.X.1973, Linnavuori. Togo: Anié, 11–12.IX.1973;

Atakpamé-Bena, 12.IX.1973; Langabou, 12.IX.1973; Nuatja, 11.IX.1973, Linnavuori. Benin: Tschaourou, 6.IX.1973, Linnavuori. Nigeria: N C St., Kagoro forest, 29–30.VIII.1973; NE St., Serti, 20.VIII.1973; B Pl St., Gangare Kibo, 28.VIII.1973, Gudi, 7.VIII.1973, Wamba, 7.VIII.1973, Wamba-Lafia, 30.VIII.1973; SE St., Ikom-Obudu, 23.VI.1973, Obudu cattle ranch, 16–18.VI.1973; E C St., Norcap near Abakaliki, 29.VI.1973, Linnavuori. Types in coll. Linnavuori.

Length 2–3 mm. Like the preceding species, but head black, 1st antennal joint blackish with pale base, 2nd uniformly pale yellowish, joints 3 and 4 slightly embrowned. Membrane of elytra with large roundish hyaline spot on base of lateral margin, median margin with another hyaline area. Femora black.

Head about 0.71 × as broad as basal width of pronotum, in apical view as broad as high. Eyes small, in ♂ only slightly larger than in ♀, ocular

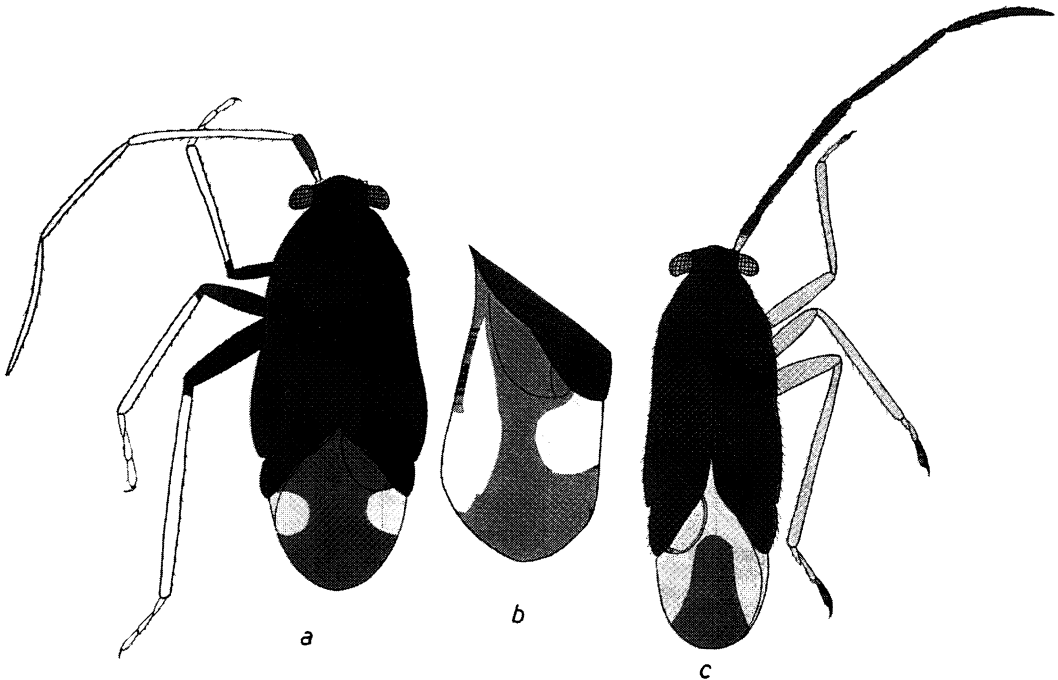


Fig. 4. *Acratheus ocellaris* sp. n.: a) dorsal view; b) apex of elytron. — *Nanniella chalybea* Reuter: c) dorsal view.

index 2.19–2.42 (♂), 2.6–2.7 (♀). Antennae long and gracile, proportions between joints 22:85:62:65 (♂), 22:70:65:70 (♀), 2nd joint 1.24–1.40 (♂), 1.04–1.08 (♀) × as long as basal width of pronotum. Pleura very densely punctate.

Male genitalia in Fig. 3m–t. Middle tooth on apical margin of right style large. Apical part of hypophysis of left style thicker.

Biology: Like the preceding species on undergrowth in rain and savanna forests.

***Acratheus albipes* (Motschulsky)**

Fig. 5

*Capsus albipes* Motschulsky 1863:82.

*Acratheus albipes* Bergroth 1917:107.

*A. nocturnus* Distant 1910:16 (Bergroth 1917:107).

Material: India: Calcutta, 1 ex. coll. Distant. Nepal: Wat Ling, 3 exx, 2.X.1965, in the British Museum.

Easily distinguished from the African species by the small yellow-brown head, pale cuneus and whitish yellow legs.

Male genitalia in Fig. 5a–g. Pygofer truncate apically.

Distribution: The Oriental Region.

**Genus *Nanniella* Reuter**

*Nanniella* Reuter 1904:6. Type species: *N. chalybea* Reuter.

*Nanniella* Poppius 1914:82–83, Linnavuori 1975:48.

*Falconia* Distant 1884:298. Type species: *F. poetica* Distant in Carvalho 1952:76, 1958:61, misidentification.

Diagnosis: Color black. Body elongate, coarsely punctate. Head in apical view distinctly broader than high. Legs long and gracile. Hypophysis on left style gracile, hook-like, strongly recurved upward.

Description: Color black with strong metallic luster. Body elongate. Hair covering dense, pale gray, semidecumbent. Head in dorsal view short and broad, eyes not touching anterolateral corners of pronotum, in apical view distinctly broader than high with lower part triangular in outline, in lateral view about 1.5–2.0 × as high as long with

anterior margin broadly roundedly recurved ventrad from the keeled basal margin of vertex to the tip of tylus, lora obtusely keeled; vertex with faint median sulcus. Antennal pits below middle of median margins of eyes. Antennae long and gracile, hair covering short. 4th joint of rostrum a little shorter than 3rd. Pronotum, scutellum and elytra densely and coarsely punctate. Pronotum: collar narrow but distinct, finely punctate; lateral margins long, straight or insinuated, basal margin insinuated; calli faint, disk convex. Elytra much longer than abdomen, costal margins parallel or roundedly expanded at the level of apex of clavus, corium distinctly declining ventrad laterally. Subcoxae of prothorax punctate, broad, bases of fore coxae therefore relatively far from head. Pleura densely punctate. Legs long and gracile. 2nd and 3rd hind tarsomeres of equal length.

Male genitalia: Apex of pygofer truncate. Apex of right style elongately expanded, apical margin often with tooth-like processes. Left style distinctive: hypophysis gracile, hook-like, strongly recurved upward, sensory lobe rounded.

Biology: On undergrowth in rain and savanna forests.

Distribution: The Ethiopian Region.

#### Key to species of the genus *Nanniella*

1. Body gracile, nearly 4 × as long as broad at base of pronotum. Pronotum narrow, about 1.4 × as broad as long (total length) with distinctly insinuated lateral margins ..... 2
- Body robust, 3.0–3.5 × as long as broad at base of pronotum. Pronotum about 1.6 × as broad as long, lateral margins (save in *reuteri*) straight ..... 3
2. Large, length 3.5–3.75 mm. Lateral margins of pronotum shallowly insinuated. Head black. Tibiae at least partially black ..... *gracilis*
- Small, length 3.25 mm. Lateral margins of pronotum strongly insinuated. Head yellow-brown. Tibiae yellow-brown with only extreme tips dark .... *pallidiceps*
3. Large species, length 4 mm. Head golden yellow. Antennae very long, 2nd joint 1.2 × as long as basal width of pronotum ..... *alkithoe*
- Smaller species. Head black. 2nd antennal joint shorter than basal width of pronotum ..... 4
4. Antennae black with 1st joint totally or basally pale yellow ..... *chalybea*
- Antennae pale yellow with minor fuscous markings 5
5. 2nd antennal joint apically infusate. Cuneus blackish ..... *reuteri*
- 2nd antennal joint uniformly pale yellow. Apex of cuneus broadly pale ..... *palustris*

#### *Nanniella alkithoe* sp. n.

Fig. 10

Material: Nigeria: B Pl St., Katsina Ala, 1♀, holotype, 19.VIII.1973, Linnavuori, in coll. Linnavuori.

Length 4 mm. Shiny. Black. Head golden yellow; eyes reddish gray. Antennae pale yellow, apex of 2nd joint black. Apex of cuneus broadly pale yellow; membrane dark brown, base of lateral margin with large roundish hyaline spot, median margin also pale. Rostrum and legs whitish yellow, 3rd tarsomeres black.

Body large and broad, 3 × as long as broad at base of pronotum. Hair covering dense, gray. Head 0.75 × as broad as basal width of pronotum, in apical view 1.22 × as broad as long, in lateral view twice as high as long. Ocular index 2.31. Antennae very long; proportions between joints 30:90:77:100, 1st joint 0.54 × as long as diatone, 2nd 1.6 × as long as diatone, 1.2 × as long as basal width of pronotum, 4th joint 1.3 × as long as 3rd. Rostrum extending to hind coxae. Pronotum 1.67 × as broad as long (total length), lateral margins straight, distinctly diverging caudad, collar distinct, disk relatively flattish, densely and rather finely punctate. Scutellum finely wrinkled and punctate. Elytra distinctly expanded in apical third, puncturing dense and relatively fine. Legs long and gracile.

Biology: At lamp in a savanna forest.

Etymology: Greek mythology, Alkithoe, daughter of Minyas, a mythic Mycenaean king.

#### *Nanniella pallidiceps* Linnavuori

Figs. 5, 8

*Nanniella pallidiceps* Linnavuori 1973:83.

Type: Zaire, Lubumbashi, ♂ holotype, 12–19.IV.1971, A. B. Stam, in coll. Linnavuori.

Length 3.25 mm. Shiny black. Head dark yellowish brown; eyes dark brown. 1st antennal joint (others absent) yellow. Cuneus, save basal margin, pale. Membrane brownish smoky, laterally pale. Legs yellow-brown. Hind femora with a longitudinal dark brown stripe on inner surface. Tibiae apically and 3rd tarsomeres black.

Body very gracile, nearly 4 × as long as broad at base of pronotum. Hair covering dense, longish, semierect, pale gray. Head 0.74 × as broad as

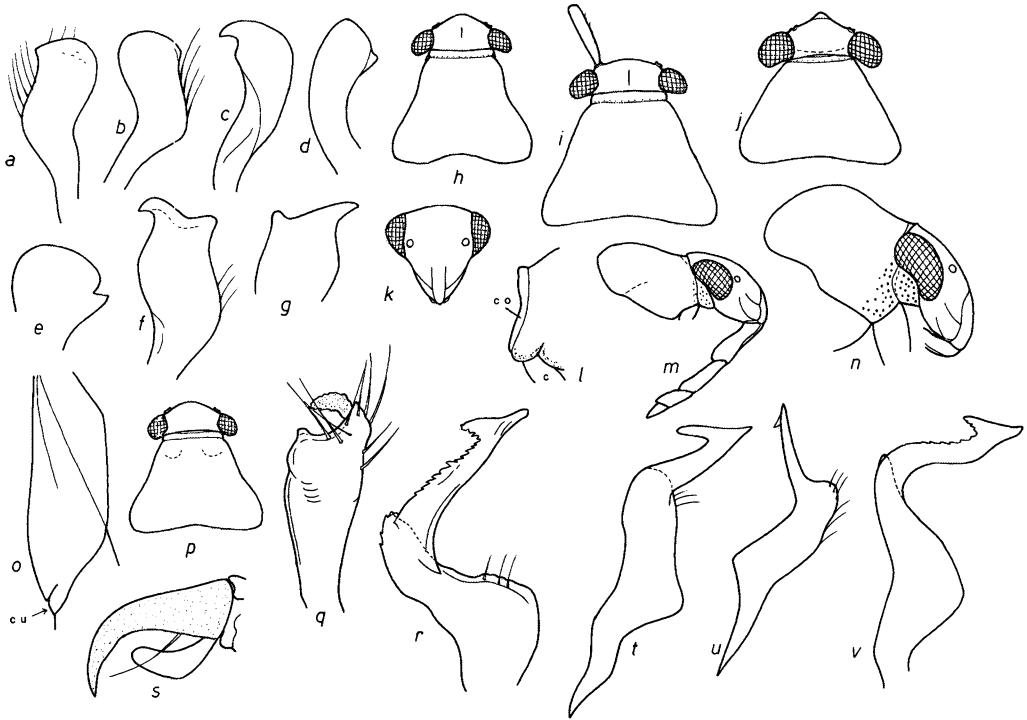


Fig. 5. *Acraetheus albipes* (Motschulsky) (ex from Calcutta): a–d) right style; e) apex of right style from above; f–g) left style. — *Nanniella pallidiceps* Linnavuori: h) male head and pronotum, dorsal view. — *N. gracilis* Linnavuori: i) male head and pronotum, dorsal view; q) right style; r) left style. — *N. chalybea* Reuter: j) male head and pronotum, dorsal view; k) female head, apical view; l) apex of prothorax in lateral view (co = collar, c = coxa); s) claw; t–v) left style. — *N. reuteri* Poppius: o) elytron (cu = cuneus); p) female head and pronotum, dorsal view. — *N. palustris* Linnavuori: m–n) female and male head in lateral view.

basal width of pronotum, in apical view  $1.14 \times$  as broad as high; eyes small, ocular index 2.0. Rostrum extending to hind coxae. Pronotum remarkably elongate,  $1.43 \times$  as broad as long (total length), lateral margins distinctly insinuated; collar broadish, disk convex, coarsely punctate. Puncturing on scutellum and elytra also dense and coarse, mesocorium with impunctate apical patch, cuneus apically impunctate.

Male genitalia in Fig. 8d–e.

Distribution: Zaire (Katanga).

***Nanniella gracilis* Linnavuori**

Fig. 5

*Nanniella gracilis* Linnavuori 1975:49.

Types: The Sudan, Equatoria, near Gilo, ♂ holotype and some paratypes, 18–24.III.1963, Linnavuori, in coll. Linnavuori.

Material: Cameroon: Dimako, 5 exx, 12–13.VI.1973, Linnavuori.

Length 3.5–3.75 mm. Shiny black. Eyes brownish. Antennae with 1st and 2nd joints and base of 3rd narrowly yellowish, other parts black. Cuneus apically broadly pale; membrane dark with paler spots. Femora yellow-brown, on anterior surface somewhat infumed. Tibiae black, sometimes ornamented with pale subapical rings. Tarsi bicolored, 1st and 2nd joints yellowish, 3rd joints contrastingly black.

Body large and gracile, about  $3.8 \times$  as long as broad at base of pronotum. Hair covering grayish. Ocular index 2.1–2.2. Antennae long and gracile, nearly as long as body; proportions between joints 10:34:22:20 (♂), 23:70:58:58 (♀), 2nd joint 1.5 (♂) or 1.2 (♀)  $\times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum narrow,  $1.4 \times$  as broad as long (total

length), lateral margins shallowly insinuated, collar distinct, disk rather coarsely punctate. Scutellum and elytra distinctly punctate. Legs remarkably long.

Male genitalia in Fig. 5q–r. Right style with strong irregularly crenulate outer apical process, inner apical angle with blunt tooth. Left style: stem of hypophysis coarsely dentate.

Biology: In mountain meadows.

Distribution: Previously known from the Imatong Mountains in the Sudan.

### *Nanniella chalybea* Reuter

Figs. 4, 5, 11

*Nanniella chalybea* Reuter 1904:6.

*N. chalybea* Poppius 1914:83, Linnavuori 1975:48.

Type: Zaire, Kinchassa, ♂ lectotype (selected in Linnavuori 1975:48), 19.III.1899, Waelbrock, in Mus. Helsinki.

Material: Several exx from: Ivory Coast: Férkéssédougou, 25.X.1973, Linnavuori. Nigeria: NW St., Badeggi, 8–9.VIII.1973; NE St., Gembu, 21–22.VII.1973, Gembu-Yelwa, 22.VII.1973; W St., Ife, 7–8.VII.1973; R St., Ebubu near Bori, 2.VII.1973, Mbiama, 4–5.VII.1973; B Pl St., Katsina Ala, 19.VIII.1973; SE St., Obudu cattle ranch, 16–18.VII.1973, Linnavuori. Cameroon: Bota, 19–20.VI.1973; Dimako, 12–13.VI.1973, Linnavuori. Central African Republic: La Maboke, 6–9.VI.1973, Linnavuori. The Sudan: localities listed in Linnavuori 1974:48. Ethiopia: Belleta forest, 13–14.VI.1963; Mt. Maigudo, 16–17.VI.1963, Linnavuori. Zaire: Katanga, Kipopo, 15.IX.1970; Lubumbashi, 2–3.III.1971, A.B. Stam. Angola: Carmona; Quedas Duque de Bragança, J.A.Quartau.

Length 2.5–3.0 mm. Black with metallic luster, shiny. Eyes grayish brown. Antennae black, 1st joint totally or only basally yellow-brown. Cuneus apically yellow-brown, sometimes nearly uniformly black; membrane brownish hyaline, with ± distinct fuscous median band. Rostrum and legs yellow-brown. Legs sometimes with slight infuscations; 3rd tarsomeres embrowned.

Male parallel-sided, female elongately ovate, body 3.5 (♂) or 3.0 (♀) × as long as broad at base of pronotum. Hair covering very dense, pale gray. Eyes prominent, ocular index 1.3–1.8 (♂), 2.25 (♀). Total length of antennae about 0.8 × as long as body; proportions between joints 6:23:15:15, 2nd joint 1.02–1.12 (♂) or 0.73–0.82 (♀) × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum 1.6–1.7 × as broad as

long (total length), lateral margins straight, strongly diverging caudad. Puncturing on upper surface distinct.

Male genitalia in Figs. 5t–v, 11a–c. Right style with blunt tooth in inner apical angle and a short process in outer angle. Stem of hypophysis of left style finely dentate.

Biology: In mountain meadows and clearings in rain and savanna forests.

Distribution: Widely distributed in Africa.

### *Nanniella reuteri* Poppius

Fig. 5

*Nanniella reuteri* Poppius 1914:83.

*N. reuteri* Linnavuori 1975:49.

Types: East Africa, Langenburg, 3♂ syntypes, one of them designated here as the lectotype, Fülleborn, in Mus. Helsinki.

Length 3 mm. Shiny black. Eyes reddish gray. Vertex with faint submarginal yellow-brown band between eyes. Antennae pale yellow-brown, 1st joint slightly embrowned, apex of 2nd infuscate. Membrane of elytra brownish smoky, lateral margin with large whitish hyaline area. Legs pale yellow-brown, extreme tips of tibiae and 3rd tarsomeres infuscate.

Body about 3 × as long as broad at base of pronotum. Hair covering gray, dense. Head 0.67 × as broad as basal width of pronotum, in apical view 1.14 × as broad as high; ocular index 2.0–2.57. Proportions between antennal joints 17:50:30:30, 2nd joint 0.83 × as long as basal width of pronotum. Rostrum extending to middle coxae. pronotum 1.5 × as broad as long (total length), lateral margins distinctly insinuated, collar distinct, disk densely and coarsely punctate. Puncturing on scutellum, clavus and corium dense, medioapical area of corium impunctate, cuneus very short, strap-like; membrane extending far beyond tip of abdomen.

Distribution: East African.

### *Nanniella palustris* Linnavuori

Figs. 5, 11

*Nanniella palustris* Linnavuori 1975:48–49.

Types: The Sudan, Equatoria, Loka forest, ♂ holotype and 1♀ paratype, 8–10.IV.1963, Linnavuori, in coll. Linnavuori.



Material: Many exx from Ivory Coast: Adiopodoumé, IV–V.1964, R.Cobben, 29.IX–7.X.1973; Foro-Foro, 25–28.IX.1973; Lamto, 6–9.X.1973, Linnavuori. Togo: Anié, 11–12.IX.1973; Agbaudi, 12.X.1973, Linnavuori. Benin: Kokoro, 6.IX.1973; Parakou, 5–6.IX.1973; Savé, 6.IX.1973, Linnavuori. Nigeria: NW St, Bida, 1.IX.1970, J. Medler; Ne St., Serti, 20.VIII.1973; W St., Ijebu Ode-Ore, 14.VII.1973, Linnavuori, Ile-Ife, 5.VIII.1969, J. Medler, Olokemeji forest, 9.VII.1973; B Pl St., Katsina Ala, 19.VIII.1973, Makurdi, 30.VIII.1973; R St., Mbiama, 4–5.VII.1973, Linnavuori. Upper Volta: Bobo Dioulasso, 1–2.XI.1973, Linnavuori. Zaire: Katanga, Lubumbashi, 17–18.IV.1971, A.B.Stam.

Length 2.5–2.75 mm. Shiny black with bluish tinge. Eyes reddish gray. 1st and 2nd antennal joints pale yellow, 3rd and 4th embrowned. Apex of cuneus broadly pale yellow; membrane brownish smoky, lateral margin with a small hyaline spot at apex of cuneus, another large hyaline spot in middle of membrane. Legs pale yellow-brown, tips of tibiae and 3rd tarsomeres, sometimes also apices of hind femora and bases of hind tibiae embrowned.

Body small, robuster than in the other species, > 3 × as long as broad at base of pronotum. Hair covering brownish gray. Puncturing very dense and coarse. Eyes small, ocular index about 2.29 (♂), 2.67–3.0 (♀). Proportions between antennal joints 15:46:42:37 (♂), 13:41:43:40 (♀), 2nd joint in ♀ shorter than 3rd, about 0.87 (♂) or 0.67–0.69 (♀) × as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum 1.6–1.8 × as broad as long (total length), convex, lateral margins straight or very indistinctly insinuated. Cuneus well developed.

Male genitalia in Fig. 11d–e. Left style distinctive: subapical process of hypophysis very long, extending to the level of the sensory lobe.

Biology: In swampy meadows and moist clearings in savanna and rain forests.

Distribution: Holosudanese, very common in West Africa.

### Tribe Nichomachini

The thorough original description in Schuh (1973:275–276) is not repeated.

The principal characters: Body strongly antimimetic. Elytra ornamented by whitish transverse fasciae. Pronotum constricted anterior to

middle. Apical part of scutellum humped (Fig. 21q–r). Males macropterous with costal margins of elytra insinuated. Females brachypterous, elytra very short covering only base of abdomen. Abdomen broad, strongly constricted basally. Claws with minute pulvilli.

Male genitalia (Fig. 8j–h): Right style very small. Left style with spine-like group of stiff hairs on basal lobe, hypophysis slender, apically hooked. Vesica membranous or provided with sclerotized bands. Female genitalia: Posterior wall of bursa copulatrix (Fig. 1j) without K-structures. Sclerotized rings (Fig. 1g) very small, contorted.

Distribution: The genus *Laurinia* Reuter (= *Pseudonichomachus* Schuh) has a discontinuous range in the Mediterranean subregion, West Africa (two species: *L. bathyllus* Linnavuori in Nigeria and *L. herondas* Linnavuori (manuscript name) in the Ivory Coast) and South Africa. The other genus, *Nichomachus* Distant, is known from South Africa. Two genera from Madagascar, *EucompSELLA* Poppius and *Kuomocoris* Odhiambo, apparently also belong to the tribe.

The West African species will be treated by me elsewhere.

### Tribe Orthotylini

Color variable, often green or yellowish, rarely black. Sometimes ant-mimetic. Hair covering on upper surface simple or double, consisting of semidecumbent or erect hairs and adpressed pale ± scale-like pubescence, upper surface seldom punctate. Shape of head variable, 1st rostral segment only moderately thicker than 2nd. Macropterous, females in some genera brachypterous. Claws (Fig. 8b) with pulvilli (except in *Lasiomimus*).

Male genitalia: Shape of styles variable. Vesica usually with sclerified falcate or ramose appendages. Female genitalia (Fig. 1d–e): Posterior wall of bursa copulatrix with K-structures. Sclerotized rings usually strongly infolded.

Distribution: Cosmopolitan. In tropical Africa the Sudanese subregion is rich in species, apparently owing to the fact that many species of the largest genus, *Orthotylus*, are connected with Leguminosae, which are abundant in savanna

habitats. Eleven of the known genera are endemic. One of them, *Felisacodes*, also occurs in Madagascar. *Coridromius* has an interesting distributional pattern: the main range lies in Australia and Oceania, but a new species was found by me in West Africa. *Pseudoloxops* and *Zanchius* are Palearctic, with an extension into the adjacent parts of the Palearctic Region. *Orthotylus*, *Cyrtorhinus* and *Mecomma* (in Africa only in mountain areas) are widely distributed in the Holarctic and Palearctic Regions.

Most of the genera are closely related and belong to the *Orthotylus* group, as mentioned by Schuh (1974:278). I also prefer to include the genera *Zanchius*, *Hyalosomella* and *Felisacodes* in it, although Schuh regarded them as forming a separate group, the *Zanchius* group. Despite the gracile body structure, they closely resemble other representatives of the *Orthotylus* group. The male genital structure of these genera is also similar (presence of sclerified vesical appendages).

*Jiggiga* is distinguished by the Halticini-like general structure. The male genital structure, however, clearly proves it to belong to the Orthotylini.

*Coridromius* differs distinctly from the other genera. Unique characters are the small very compact body, the strongly enlarged somewhat *Halticus*-like hind femora and the male genital structure. It is probably related to *Coridromoides* Carvalho (Micronesia) and possibly to *Nesidorchestes* Kirkaldy (Hawaii). The group, which undoubtedly originated in Oceania, possibly represents a tribe of its own.

*Ueleana* is a distinctive genus, which was included in the Orthotylini by Carvalho (1951: 102–103). Its position ought to be checked. Unfortunately, no material was available for study.

*Lasiomimus*. Unfortunately, only the strongly ant-mimetic, somewhat Halodapini-like female is known. The single specimen in my collection was not dissected. Since the male genital structure is unknown too, its tribal status must be left open.

#### Key to genera of the tribe Orthotylini

1. Hind femora very thick (Fig. 6b, g), ornamented with transverse alternating blackish and whitish bands ..... *Coridromius*

- Hind femora gracile ..... 2
2. 1st antennal segment long and very thick. Body (Fig. 40f) gracile; lateral margins of elytra with shallow subapical insinuation ..... *Ueleana*
- Not as above ..... 3
3. Color black; eyes touching anterolateral corners of pronotum ..... 4
- Color pale, if black (in brachypterous females of *Mecomma*) then eyes clearly separate from anterolateral angles of pronotum ..... 7
4. 2nd antennal joint strongly laminate ..... *Gilo*
- 2nd antennal joint gracile, cylindrical ..... 5
5. Strongly ant-mimetic, brachypterous (♀). Pronotum narrow, cylindrical, strongly constricted in middle. Base of elytra with transverse band of adpressed white scale-like hairs ..... *Lasiomimus*
- Not as above ..... 6
6. Totally black species. Rostrum short, extending to near middle coxae, 1st joint very incrassate. Head (Fig. 11f) in lateral view subvertical, strongly declining ventrad right from base; eyes relatively small ..... *Jiggiga*
- Extremities pale. Rostrum gracile, extending to hind coxae. Head (Fig. 11i) in lateral view roundedly declining ventrad; eyes large, extending to near ventral margin of head ..... *Grewiocoris*
7. 2nd antennal joint much longer than the combined lengths of joints 3 and 4 ..... 8
- 2nd antennal joint distinctly shorter than the combined lengths of joints 3 and 4 ..... 9
8. Species with abundant red markings. Body relatively robust. 2nd antennal joint < twice as long as the combined lengths of joints 3 and 4 ..... *Pseudoloxops*
- Color whitish, without red pigment. Body very gracile. 2nd antennal joint > twice as long as the combined lengths of joints 3 and 4 ..... *Mestra*
9. Eyes touching or nearly touching anterolateral corners of pronotum. Lateral margins of pronotum curvate
10. — Eyes distinctly separate from anterolateral corners of pronotum. Lateral margins of pronotum at least shallowly insinuated ..... 11
10. Upper surface with longitudinal red stripes ..... *Erythrocorista*
- Upper surface without red stripes ..... *Orthotylus*
11. Head (Figs. 32a, c, 41i, 43j) very short, anterior margin in lateral view abruptly vertical ..... 12
- Head longer, anterior margin in lateral view roundedly recurved ventrad (Fig. 39l–m) ..... 15
12. Body *Orthotylus*-like, relatively robust, ornamented with intense red pattern ..... *Hekate*
- Body very gracile. At most apex of scutellum and one or two spots on elytra pink ..... 13
13. Clavus with a row of punctures parallel to claval suture ..... *Felisacodes*
- Not as above ..... 14
14. Lateral and basal margins of pronotum insinuated. Right style small, edentate ..... *Zanchius*
- Pronotum trapezoidal with straight lateral and basal margins. Right style incrassate with one or two prominent processes on inner surface ..... *Hyalosomella*

15. Body (Fig. 49a) small and gracile. Vertex and frons distinctly convex (Fig. 39m). Right style spoon-shaped ..... *Nycticapsus*  
 — Body robust. Head (Fig. 39l) more elongate, vertex and frons much flatter. Right style different ..... 16
16. Color green or yellowish, usually with dark pattern. Females macropterous (save in *dimorphus*). Right style (Fig. 33v) in African species bifid owing to a parabolic subapical process, which is directed dorsad. Vesica with one sclerified spiculum ..... *Cyrtorhinus*  
 — Color dark, without green pigment. Females nearly always brachypterous. Right style (Fig. 34d–k) with a transverse ridge of teeth near upper margin of the expanded apical part and with a  $\pm$  triangular subapical expansion. Vesica with two appendages ... *Mecomma*

### Genus *Coridromius* Signoret

*Ocypus* Montrouzier 1861:67. Type species: *O. variegatus* Montrouzier.

*Coridromius* Signoret 1862:5 (new name for *Ocypus* Montrouzier 1861, nec *Ocypus* Kirby 1819, Coleoptera). Type species: *Ocypus variegatus* Montrouzier.

*Neocyclus* Distant 1914:378 (new name, invalid, for *Ocypus* Montrouzier 1861). Type species: *Ocypus variegatus* Montrouzier (Carvalho 1955:225).

Diagnosis: A unique genus, readily distinguished by the very incrassate hind femora.

Description: Color brown to black. Body small and compact. Hair covering dense, semidecumbent, pale. Head short and broad, strongly declining ventrad, in apical view distinctly broader than high, part below eyes short, triangular, head in lateral view slightly higher than long with anterior margin strongly declining ventrad from the base of vertex, frons merging without notch into base of the prominent tylus; genae large, medially swollen, vertex faintly convex, basal margin callosely elevated, a roundish depression at basal corners of eyes; eyes contiguous with anterior margin of pronotum. Antennal pits close to lower angles of eyes; antennae short and gracile, with erect hair covering, 1st joint very short, 2nd expanding apicad. Rostrum extending to hind coxae. Pronotum broad, lateral margins straight, strongly laminate, diverging caudad, basal margin broadly rounded; collar broad, depressed, calli small, flattish, rest of disk  $\pm$  convex and densely punctate. Scutellum small, convex, punctate or wrinkled. Elytra a little longer than abdomen with apical part (cuneus and membrane)

strongly declining ventrad; costal margins parallel, clavus and corium finely rugose, cuneus small, inner cell of membrane large, roundish. Under surface of body with hind margins of meso- and metapleura rounded; ostiolar peritreme elongate. Legs short. Hind femur very incrassate,  $2.5 \times$  as long as broad; dorsal surface flattish; ventral surface very convex, with distinct apical depression, margin bordering the depression in dorsal part somewhat callose and whitish, ventral part with two whitish callose trichobothria, a third similar trichobothrium lying caudally near ventral margin, an apical whitish setigerous callosity also present. Hind tibia a little longer than femur, incrassate, with short dark spines and short hairs. Hind tarsus gracile, 2nd tarsomere small, claws with pulvilli.

Male genitalia (studied in *C. variegatus*): Genital segment small, twisted, short-haired, a spine-like process near upper margin of genital opening. Styles arising close to each other. Right style small, broadly triangular. Left style large with very long falcate hypophysis. Aedeagus small, theca narrow, vesica ending in a long protruding falcate appendage.

Distribution: Previously known only from Oceania. *C. variegatus* has been recorded from Australia, New Caledonia and New Zealand. Carvalho (1987) recently described four new species from New Guinea.

### *Coridromius schuhi* sp. n.

Fig. 7

Material: Ivory Coast: Mt. Tonkoui, ♀ holotype, 1♂ paratype, 15–22.X.1973, Linnavuori. Nigeria: SE St., Ikom-Obudu, 1♂ paratype, 25.VI.1973, Linnavuori. Cameroon: Bota, 1♂ paratype, 19–20.VI.1973, Linnavuori. Types in coll. Linnavuori.

Resembling *C. punctatus* Carvalho from New Guinea, but differing in the smaller size, dark coloring and pattern of the hind femora. *C. punctatus* (Fig. 6f): Length 3.2 mm. General coloring brown to light brown. Elytra dark brown with pale spots at basal third and apex of embolium and apex of cuneus. Pattern of hind femur as in Fig. 6g. Eyes larger, ocular index 2.0.

Length 2.25 mm. Subopaque. Dark or blackish brown. Head reddish brown, base of vertex nar-

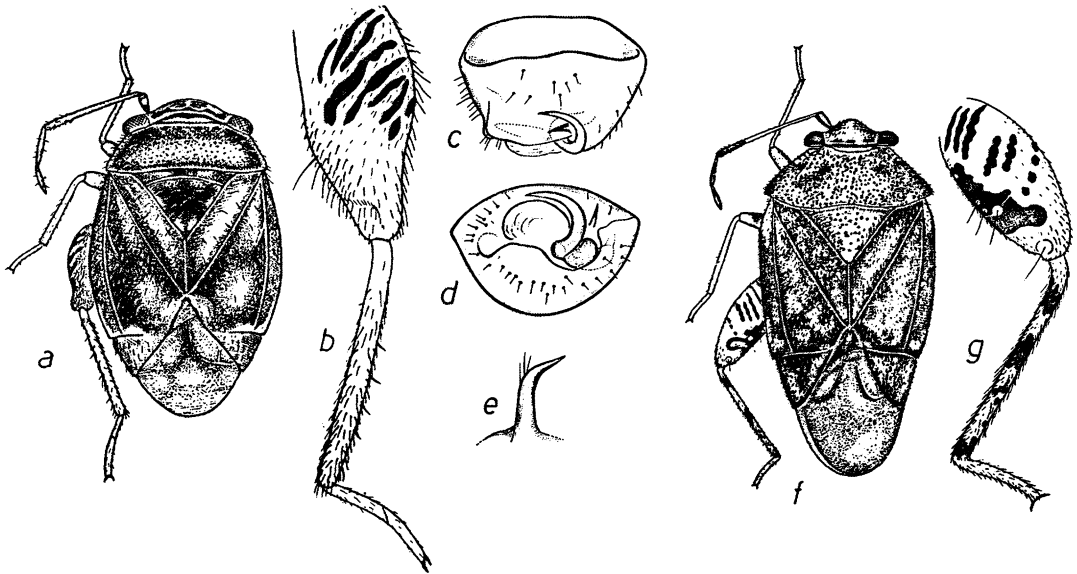


Fig. 6. *Coridromius variegatus* (Montrouzier): a) female, dorsal view; b) hind leg; c-d) pygofer in dorsal and in caudal view; e) process of pygofer. — *C. punctatus* Carvalho: f) female in dorsal view; g) hind leg. — After Carvalho 1987.

rowly blackish, the elevated basal margin of vertex, lateral margins of vertex and frons, the elevated median area of genae, and apex and margins of tylus whitish ochraceous; eyes reddish brown or grayish. Antennae black with tip of 1st joint, the gracile basal part of 2nd and extreme bases of 3rd and 4th joints pale ochraceous. Pronotum blackish, the very basal margin ochraceous. Scutellum blackish with tip yellow-brown. Elytra blackish brown, apical margin of corium with small pale sublateral dot; membrane brownish smoky, margins infumed, veins brown. Under surface blackish, margins of propleura pale, hind margins of meso- and metapleura with minute pale areas, ostiolar peritremes pale. Fore and middle femora brown, apically pale; dorsal surface of hind femur golden brown, ventral surface yellow-brown, anterior part with characteristic alternating blackish and whitish transverse stripes as seen in Fig. 7e. Other parts of legs pale ochraceous, fore and middle tibiae with small, hind tibiae with largish brown spots, apices of 3rd tarsomeres embrowned. Body small, parallel-sided, about 2.2 × as long as broad at base of pronotum. Hair covering dense, pale yellowish.

Head 0.65–0.68 × as broad as basal width of pronotum, in apical view 1.4 × as broad as high, in lateral view slightly higher than long; eyes small, ocular index 2.50–3.0. Proportions between antennal joints 9:40:15:13, 1st joint incrassate, very short, 0.2 × as long as diatone, 2nd joint 0.91 × as long as diatone, 0.62 × as long as basal width of pronotum, with apical third distinctly enlarged. Rostum extending to hind coxae. Pronotum about 1.92 × as broad as long in middle, hind margin with shallow lateral insinuations; disk convex, sloping apicad and laterad, densely and distinctly punctate. Scutellum punctate. Elytra finely rugose. Hind femur 2.5 × as long as broad. Hind tibia a little longer than femur. Hind tarsus about 0.38 × as long as tibia, proportions between tarsomeres 10:5:9.

**Biology:** On an unidentified bush near the top of Mt. Tonkouli in the Ivory Coast.

**Etymology:** The species is dedicated to Dr. Randall T. Schuh in the American Museum of Natural History, New York, for his excellent studies on the Miridae of South Africa and the Pacific area.

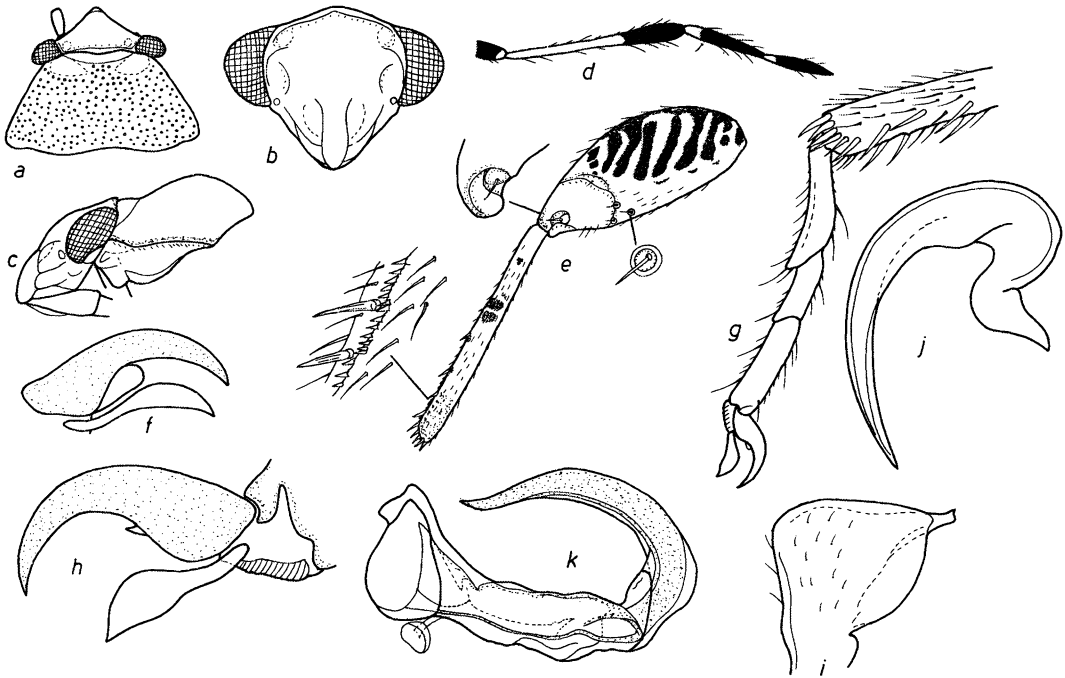


Fig. 7. *Coridromius schuhi* sp. n.: a) head and pronotum, dorsal view; b) head in apical view; c) head and prothorax, lateral view; d) antenna; e) hind femur and tibia; f) claw. — *C. variegatus* (Montrouzier) (ex from New Zealand): g) hind tarsus; h) claw; i) right style; j) left style; k) aedeagus.

***Coridromius variegatus* (Montrouzier)**

Figs. 6, 7

*Ocytus variegatus* Montrouzier 1861:67.  
*Coridromius variegatus* Signoret 1862:5.  
*Coridromius variegatus* Poppius 1911:15, Carvalho 1987:67–69.

Material: New Zealand: N. Auckland, Day’s Bay, 1♂ and 2♀♀, 1.II.1951, T.E.Woodward, in the British Museum.

The description in Carvalho 1987 is not repeated here.

Biology: The specimens studied were found on *Lepidium oleraceum*. Carvalho records it from *Chenopodium* and *Salicornia chenopodium*.

**Genus *Jiggiga* Linnavuori**

*Jiggiga* Linnavuori 1975:55–56. Type species: *J. nigra* Linnavuori.

Diagnosis: Recognized by the black and robust, somewhat Halticini-like body. Head in lateral view distinctly higher than long. Rostrum short, 1st joint incrassate. Male genitalia: pygofer without appendages. Right style small, left style large, circularly curved. Aedeagus with sclerified vesical appendages.

Description: Color shiny black with bluish tinge. Extremities also black. Body robust. Hair covering longish, black. Head short and broad, strongly declivous right from base, in apical view about 1.4 × as broad as high with lower part broadly triangular in outline, in lateral view distinctly higher than long, frons strongly declining ventrad, merging without notch into the base of the prominent tylus; lora moderately swollen; basal margin of vertex sharply upturned, with a transverse depression in front of it; eyes relatively small, touching anterolateral angles of pronotum. Antennae arising near lower angles of eyes, rather thin, 2nd joint shorter than basal

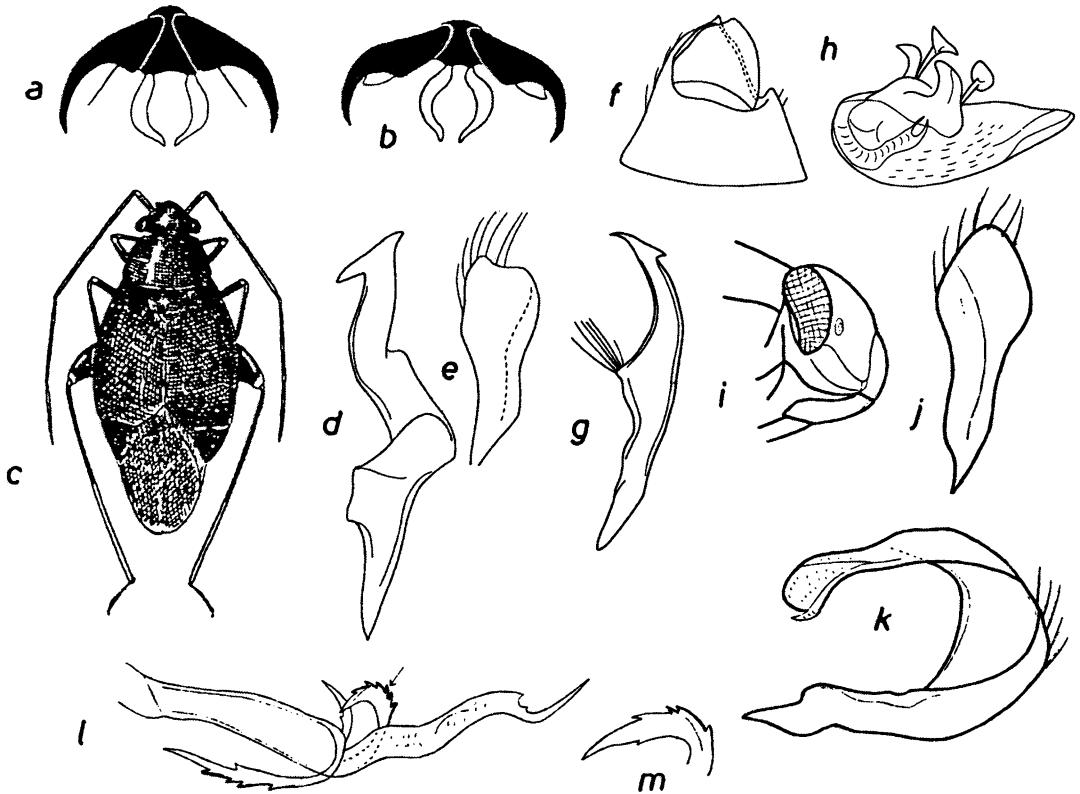


Fig. 8. *Orthocephalus saltator* (Hahn): a) claws. — *Orthotylus marginalis* Reuter: b) claws. — *Halticus tibialis* Reuter: c) dorsal view. — *Nanniella pallidiceps* Linnavuori: d) left style; e) right style. — *Laurinia bathyllus* Linnavuori: f) pygofer, dorsal view; g) left style; h) aedeagus, lateral view. — *Jiggiga nigra* Linnavuori: i) female head, lateral view; j) right style; k) left style; l) processes of vesica; m) process marked with arrow in Fig. 8, in broad aspect. — After Linnavuori 1973 and 1975, Wagner & Weber 1964 and Villiers 1952.

width of pronotum. Rostrum short, extending to near middle coxae, 1st joint incrassate. Pronotum nearly twice as broad as long in middle, distinctly broadening caudad, lateral margins straight, not carinate, basal margin very faintly insinuated; disk rather convex, sloping apicad, obsolete punctate, calli small, faintly elevated. Scutellum shagreened, apically sparsely and obsolete punctate. Elytra longer than abdomen, distinctly and rather densely punctate, shagreened. Legs relatively gracile; proportions between hind tarsomeres 9:12:12; claws with small pulvilli.

Male genitalia: Pygofer truncate apically, without appendages. Right style straight and small. Left style large, nearly semicircularly curvate. Aedeagus with dentate vesical appendages.

Distribution: Only known from Somalia.

### *Jiggiga nigra* Linnavuori

Figs. 8, 10–11

Types: Somalia, Jiggiga-Hargeisa, ♂ holotype, 1♀ paratype, 23.VI.1963, Linnavuori, in coll. Linnavuori.

Length 3.0–3.5 mm. Shiny black with bluish tinge.

Body parallel-sided (♂) or ovate (♀), about 2.1 × as long as broad. Hair covering black. Head 0.65 × as broad as basal width of pronotum; ocular index 2.0. Proportions between antennal joints 6:29:?, 1st joint 0.54 × as long as synthlipsis, 2nd 0.8 × as long as basal width of pronotum. Elytra in ♂ longer than, in ♀ as long as abdomen, leaving part of connexivum visible laterally.

Male genitalia in Fig. 8.

Biology: Swept from shrubs in a dry *Acacia* savanna.

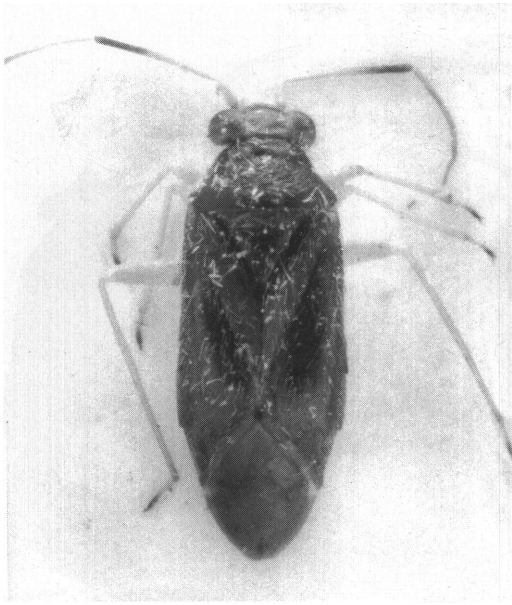


Fig. 9. *Grewiocris elongatus* Linnavuori. — After Linnavuori 1975.

### Genus *Grewiocris* Linnavuori

*Grewiocris* Linnavuori 1975:56. Type species: *G. elongatus* Linnavuori.

**Diagnosis:** Color black. Extremities yellow. Head short and broad, strongly declivous, vertical; eyes large. Pronotum finely punctate and rugose. Elytra finely rugose. Male genitalia: Pygofer with large or short processes. Right style large. Left style small. Aedeagus with dentate vesical appendages.

**Description:** Color shiny black. Antennae and legs pale yellow. Body elongate or elongately ovate. Hair covering on upper surface long, erect and yellowish. Head short and broad, strongly declivous, vertical, in apical view distinctly broader than high with lower part below eyes short, in lateral view distinctly higher than long, frons moderately convex, strongly declining ventrad, tylus prominent, strongly recurved ventrad; lora swollen; vertex flat with two faint depressions, base distinctly marginate; eyes large, touching anterolateral angles of pronotum, in lateral view extending to near ventral margin of head. Antennae arising near lower angles of eyes, gracile. Rostrum gracile extending to hind coxae.

Lateral margins of pronotum straight or insinuated, basal margin straight, disk sloping apicad, flattish, finely punctate and rugose, calli small and elevated (*elongatus*) or flattish (*harrarensis*). Elytra longer than abdomen, finely rugose. Legs long and gracile, tibial spines delicate, pale. 3rd joint of hind tarsus slightly longer than 2nd; claws with small pulvilli.

**Male genitalia:** Pygofer truncate apically, provided with large or small process. Right style voluminous. Left style with gracile hypophysis and prominent sensory lobe. Aedeagus with long dentate vesical processes.

**Biology:** In savanna habitats. *G. harrarensis* found on *Grewia*.

**Distribution:** Northern parts of the Sudanese subregion.

### Key to species of the genus *Grewiocris*

1. Length > 4 mm. Apical third of 2nd antennal joint dark. Body parallel-sided, > 3.0 × as long as broad. Lateral margins of pronotum insinuated ..... *elongatus*  
— Length 3.25–3.50 mm. 2nd antennal segment uniformly pale. Body ovate, 2.4 × as long as broad. Lateral margins of pronotum straight ..... *harrarensis*

### *Grewiocris elongatus* Linnavuori

Figs. 9, 11, 21

*Grewiocris elongatus* Linnavuori 1975:57.

**Type:** The Sudan, Equatoria, Kapoeta-Boma, ♂ holotype. 26–27.III.1963, Linnavuori, in coll. Linnavuori.

**Material:** Somalia: Afgoi, 2 exx, 16–30.IV.1974, L. Masutti; Sar Uanle, 1 ex, 29.V.1973, S.B.S., in coll. Linnavuori, Mus. Padova, Mus. Florence.

Length 4.25 mm. Shiny black. Antennae yellow-brown, apical third of 2nd joint embrowned. Legs yellow.

Body parallel-sided, about 3.25 × as long as broad. Hair covering long, erect, yellowish. Head 0.7 × as broad as basal width of pronotum, in apical view 1.35 × as broad as high, in lateral view 1.33 × as high as long; eyes large, ocular index 1.13 (♂) or 1.72 (♀). Antennae relatively incrassate; proportions between joints 7:28:22:? (♂), 8:31:21:14 (♀), 2nd joint 0.90–0.94 × as long as basal width of pronotum. Rostrum extending to apex of middle coxae. Pronotum twice as broad

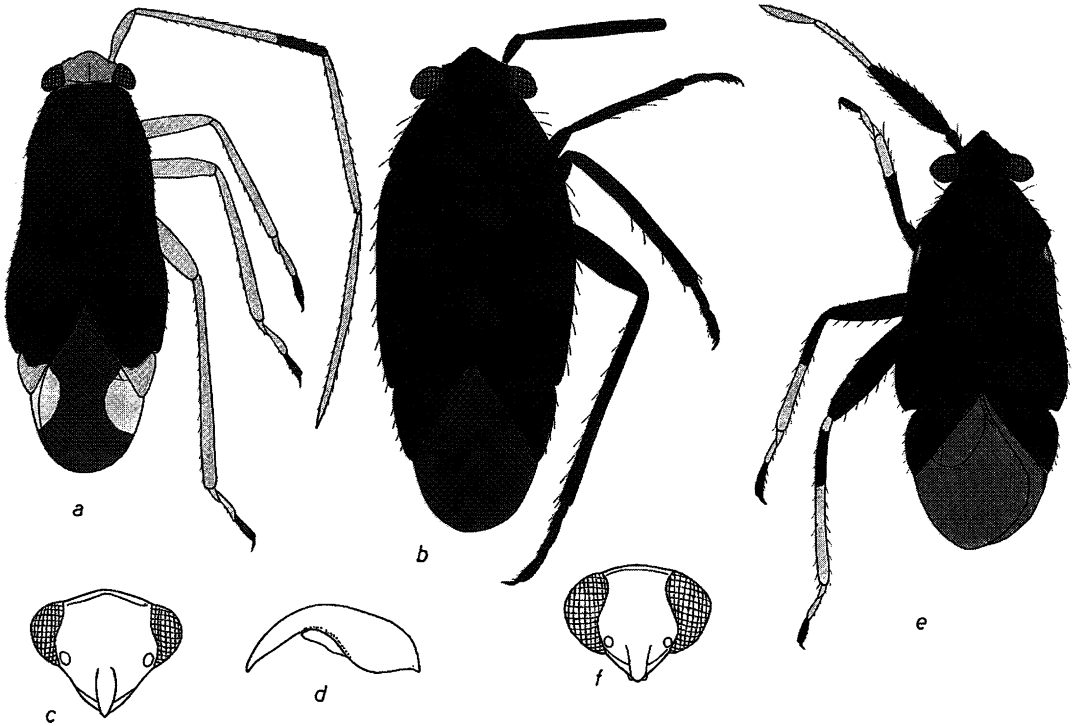


Fig. 10. *Nanniella alkithoe* sp. n.: a) dorsal view. — *Jiggiga nigra* Linnavuori: b) dorsal view; c) head, apical view; d) claw. — *Gilo tibialis* (Linnavuori): e) dorsal view; f) head, apical view.

as long in middle, lateral margins insinuated ( $\sigma^7$ ) or straight ( $\text{Q}$ ); calli distinct and moderately swollen, impunctate, with a small median depression; disk distinctly punctate and finely rugose. Scutellum and elytra shagreened. Male genitalia in Figs. 11j–k, 21a–b. Dorsolateral angles of pygofer prominent, the left one with blade-like process. Right style large, falcate, apically rectangularly bent mesad. Hypophysis of left style slender, digitate, dentate, sensory lobe sharp-tipped. Vesical appendages in Fig. 11k.

Distribution: NE Africa.

### *Grewiocris harrarensis* Linnavuori

Figs. 11, 21

*Grewiocris harrarensis* Linnavuori 1975:57.

Types: Ethiopia, near Harrar,  $\sigma^7$  holotype, 4 paratypes, 22.VI.1963, Linnavuori, in coll. Linnavuori.

Material: Nigeria: NE St., Kaltungo, several exx, 26–27.VIII.1973, Linnavuori.

Length 3.25–3.5 mm. Rather shiny. Black. Antennae yellow, extreme base of 1st joint dark. Legs pale yellow.

Ovate, body  $2.4 \times$  as long as broad. Hair covering dense, erect, yellow. Head  $0.66 \times$  as broad as basal width of pronotum, in apical view  $1.27 \times$  as broad as high, in lateral view  $1.3 \times$  as high as long; eyes relatively small, ocular index 1.8 ( $\sigma^7$ ) or 2.1 ( $\text{Q}$ ). Antennae gracile, proportions between joints 7:23:18:16, 2nd joint  $0.8 \times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum nearly twice as broad as long in middle, lateral margins straight, calli faint, without a median depression, disk obsolete punctate, distinctly rugose and shagreened. Elytra finely and densely punctate and shagreened.

Male genitalia (Fig. 21c–f). Middle of dorsal margin of genital opening of pygofer with a long



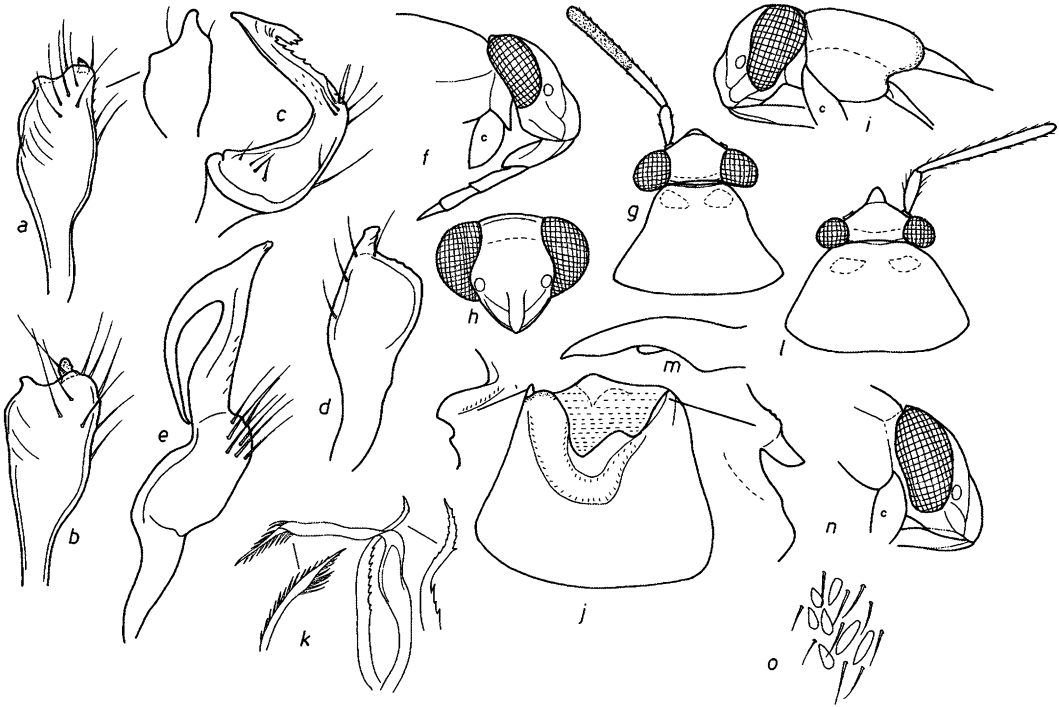


Fig. 11. *Nanniella chalybea* Reuter: a–b) right style (slide mount); c) left style (slide mount). — *N. palustris* Linnavuori: d) right style (slide mount); e) left style (slide mount). — *Jiggiga nigra* Linnavuori: f) male head and prothorax, lateral view (c = coxa). — *Grewiocoris elongatus* Linnavuori: g) male head and pronotum, dorsal view; h) male head, apical view; i) female head and prothorax in lateral view; j) pygofer, dorsal view; k) vesical appendages. — *G. harrarensis* Linnavuori: l) male head and pronotum, dorsal view; m) claw. — *Gilo tibialis* (Linnavuori): n) male head and pronotum, lateral view; o) chaetotaxy of elytron.

bifurcate marginally dentate appendage. Styles and aedeagus as in Fig. 21d–f.

Biology: On *Grewia tenax* in savanna habitats.

Distribution: Northern parts of the Sudanese subregion.

**Genus *Gilo* gen. n.**

Type species: *Druthmarus tibialis* Linnavuori.

Diagnosis: Color black. Body broadening caudad. Hair covering double with brownish semidecumbent setae and adressed scale-like silvery hairs. 2nd antennal joint flattened, clavate.

Description: Color black. Body small, elongate, broadening caudad, broadest at apical part of corium. With double hair covering; upper sur-

face with longish brownish semidecumbent setae and abundant adressed white scale-like hairs, the latter also present on thoracic pleura and venter. Head short, in apical view broader than high, in lateral view distinctly higher than long, frons weakly convex, strongly declining ventrad, merging without notch into base of the prominent tylus; basal margin of vertex carinate; eyes touching anterolateral angles of pronotum, largish, in lateral view extending to near ventral margin of head, antennal pits touching eyes, located near ventral corner; 1st antennal joint incrassate, conical, provided with black bristles, 2nd joint flattened, clavate, tapering apicad, provided with dense long black semierect hair covering, other joints gracile with short pale hair covering. Rostrum extending to middle coxae. Lateral margins

of pronotum straight, strongly diverging caudad; calli faint, disk weakly convex, obsolete tuberculate and rugose. Elytra longer than abdomen, costal margins diverging caudad, a strong notch between apex of corium and base of cuneus; clavus, corium and cuneus minutely tuberculate and rugose. Legs gracile, tibial spines delicate, pale. Proportions between hind tarsomeres 8:10:11. Claws with small pulvilli.

Male genitalia: Pygofer conical. Right style small. Left style with slender digitate hypophysis, sensory lobe rounded. Aedeagus short, with dentate vesical appendages.

Etyymology: Named after Gilo, the type locality of *G. tibialis*.

Both of the known African species were originally described as members of the genus *Druthmarus* Distant. According to Schuh (1984: 31–33) *Druthmarus* Distant 1909a:452, type species *D. magnicornis* Distant, belongs to the phyline tribe Pilophorini. Consequently, a new genus must be established for the African species.

#### Key to species of the genus *Gilo*

1. Tibiae bicolored, pale with basal third black. 2nd antennal joint moderately flattened (Fig. 21g–h) ..... *tibialis*
- Tibiae uniformly dark. 2nd antennal segment (Fig. 13d) strongly flattened, very broad ..... *congolensis*

#### *Gilo tibialis* (Linnavuori), comb. n.

Figs. 10–11, 13, 21

*Druthmarus tibialis* Linnavuori 1975:55.

Types: The Sudan. Equatoria, Imatong Mts., Kateri-Gilo, ♂ holotype, 1 paratype, 18.III.1963, Gilo 2 paratypes, 18–24.III.1963, Linnavuori, in coll. Linnavuori.

Material: Nigeria: SE St., Obudu cattle ranch, 1 ex, 21.III.1971, J.T.Medler, 1 ex, 26–27.VI.1973, Linnavuori. Ivory Coast: Mt.Tonkoui, 6 exx, 15–22.X.1973, Linnavuori.

Length 2.5–3.0 mm. Shiny black with a ± distinct metallic luster. Head with a roundish pale spot near each eye. Antennae black, 3rd joint pale ochraceous, apically embrowned, 4th darkened. Costal margin basally and extreme base of corium pale. Anterior femora pale yellowish, extreme apex darkened, other femora black.

Tibiae pale with basal third usually black. Tarsi pale, apically infusate. Tibial spines pale.

Body about twice as long as broad, with longish dark or brownish hairs and abundant silvery pubescence. Head 0.7 × as broad as basal width of pronotum, in apical view 1.3 × as broad as high; vertex with upturned hind margin owing to transverse subbasal depression; ocular index 1.5–1.6. Proportions between joints 11:50:26:18, 2nd joint 1.11 × as long as diatone, 0.8–1.0 × as long as basal width of pronotum, incassate and flattened, tapering apicad, breadth varying with individual. Rostrum extending to middle coxae. Pronotum twice as broad as long in middle, strongly widening caudad.

Male genitalia in Fig. 13a–c.

Biology: In mountain meadows.

Distribution: Mountains of NE and W Africa.

#### *Gilo congolensis* (Carvalho), comb. n.

Fig. 13

*Druthmarus congolensis* Carvalho 1951:104–105.

Type: Benza Mazola, ♀ holotype, 13.VI.1911, R.Mayné, in Mus. Tervuren (not studied).

Description (after Carvalho): Length 3.0 mm, width 1.3 mm. Head: length 0.1 mm, width 0.7 mm, vertex 0.3 mm. Antennae: segment I, length 0.1 mm; segment II 0.7 mm, width 0.2 mm; III and IV mutilated. Pronotum: length 0.5 mm, width at base 1.0 mm. Cuneus: length 0.3 mm, width at base 0.2 mm.

Color: black; the cuneus, legs and antennae with a brownish to reddish tinge; membrane with a small hyaline spot near apex of cuneus; apex of anterior femora and coxae, ostiolar peritreme and two first segments of tarsi yellowish.

Head strongly declivous, vertex carinate, somewhat projected backwards over pronotum; second antennal segment distinctly laminate with incassate margins; the cuneus a little longer than wide and rounded apically, cuneal incisure very deep and wide, areolar vein rounded apically; rostrum reaching the middle coxae. Pubescence easily rubbed off, but vestiges of semierect pubescence intermixed with scale-like hairs or whitish pubescence.

Distribution: Zaire.

**Genus *Pseudoloxops* Kirkaldy**

*Loxops* Fieber 1858:314. Type species: *Capsus coccineus* Meyer, n. prec. by *Loxops* Cabanis 1847 (Aves).

*Pseudoloxops* Kirkaldy 1905:268. Type species: *Capsus coccineus* Meyer.

*Aretas* Distant 1909:450. Type species: *A. imperatorius* Distant (Carvalho 1952:78).

**Diagnosis:** Yellowish species with abundant red markings. 2nd antennal joint very long, considerably longer than the combined length of segments 3 and 4.

**Description:** Yellowish species with abundant red markings: at least 1st antennal joint, sides of pronotum and pattern on elytra, often also apices of hind femora, red. Upper surface usually also with reddish or brownish dots, which on the elytra are slightly raised. Body elongate, parallel-sided or elongately ovate. Hair covering long, erect, yellowish. Head relatively small; frons somewhat bulbous, a clear notch between apex of frons and base of tylus; base of vertex bluntly raised; eyes in lateral view extending to ventral margin of head. 1st antennal joint incrassate with numerous erect long dark or pale bristles, 2nd joint < twice as long as the combined length of joints 3 and 4, likewise < twice as long as basal width of pronotum. Rostrum extending to middle of hind coxae. Pronotum strongly broadening caudad, > twice as broad as long in middle, lateral margins straight or slightly insinuated, basal margin insinuated, calli faint. Elytra coriaceous. Legs relatively incrassate. Hind tibia at most twice as long as basal width of pronotum, usually distinctly shorter, tibial spines long and pale.

Male genitalia as in *Mestra*.

**Biology:** Arboreal. The Palearctic species *P. coccineus* is found on *Fraxinus*.

**Distribution:** Paleotropical. Also in the adjacent parts of the Palearctic Region.

*Canariocoris* Lindberg (type species: *Orthotylus antennalis* Reuter) from the Canary Islands is a closely related genus. Representatives of that genus resemble *Orthotylus*; but are considerably robuster. The red pigment is often less intense or even absent. The frons slopes gradually ventrad, only a slight insinuation being formed between it and the base of the tylus. The pronotum is broader, trapezoidal and provided with a straight hind margin. A redescription of *Canariocoris* is given in Wagner 1973:251–257.

**Key to African species of the genus *Pseudoloxops***

1. Pronotum, scutellum, clavus and corium uniformly red ..... *transvaalensis*
- Coloring different ..... 2
2. Head, pronotum and scutellum uniformly dark coffee-brown. Pattern of elytra as in Fig. 27a ..... *galateia*
- Head, pronotum and scutellum pale yellow with red or orange markings ..... 3
3. Scutellum uniformly pale yellow. Pattern of upper surface as in Fig. 14e ..... *amabilis*
- Scutellum with red markings ..... 4
4. Upper surface with large contrasting red and pale yellow pattern as in Fig. 27b, no reddish or dark irroration ..... *amfitrite*
- Pattern of upper surface more variegated. With dark or reddish irroration ..... 5
5. Apical quarter of 2nd antennal joint red ..... *thetis*
- 2nd antennal joint uniformly pale ..... 6
6. Apical half of hind femur red ..... *niobe*
- Hind femur uniformly pale or ornamented by narrow subapical ring ..... 7
7. Elytra whitish yellow with scanty orange pattern as in Fig. 14b; dark irroration faint and scanty. Membrane of elytra uniformly pale ..... *sudanensis*
- Red pattern and dark irroration on elytra much more intense (Fig. 14c–d); membrane bicolored, apically dark, basally pale brownish ..... 8
8. Cuneus red, base with two small pale spots (Fig. 14c) ..... *nike*
- Cuneus (Fig. 14d) contrastingly pale yellow, apex narrowly red ..... *ninos*

***Pseudoloxops niobe* sp. n.**

Fig. 13

Material: Nigeria: NC St., Zaria ♂ holotype, 2–3.VIII.1973, Linnavuori, Zaria, Samaru, 7 paratypes, 15.IV.1974, J.Deeming. Upper Volta: Bobo Dioulasso, 1 paratype, 1–2.XI.1973, Linnavuori. Types in coll. Linnavuori.

Length 3.5 mm. Pale yellow. Head with narrow red median line, frons with fuscous irroration; eyes reddish brown. Antennae pale yellow, 1st joint red. Lateral margins of pronotum carmine red, disk with red median stripe and abundant fuscous mottling. Scutellum: base with red median band, sides and base of apical part red, pale areas with ± dense fuscous dots. Clavus and corium with dense fuscous and red irroration, costal margin and faint spots at claval suture on corium red; cuneus: apex red, pale basal part with red irroration; membrane pale grayish, apical



Fig. 12. *Pseudoloxops sudanensis* Linnavuori: a–b) right style; c) left style; d) sensory lobe and e) hypophysis of left style in broad aspect; f) aedeagus, lateral view. — After Linnavuori 1975.

part slightly darker, veins red, basally pale. Under surface whitish ochraceous, sides of head and of prothorax red. Legs whitish ochraceous, apical halves of hind femora red.

Hair covering long, yellowish. Head 0.69–0.71 (♂) or 0.64 (♀) × as broad as basal width of pronotum; ocular index 1.49–1.57 (♂), 1.68 (♀). Proportions between antennal joints 9:36:13:9 (♂), 10:41:16:?? (♀); 1st joint incrassate with long erect black bristles, 2nd 2.0–2.4 × as long as diatone, 1.38–1.70 × as long as basal width of pronotum. Rostrum extending slightly beyond middle coxae. Pronotum 2.43–2.6 × as broad as long in middle.

Male genitalia in Fig. 13f–k.

Biology: At lamps in savanna habitats.

Etymology: Greek mythology, Niobe, daughter of Tantalos.

### *Pseudoloxops thetis* sp. n.

Fig. 14

Material: Nigeria: W St., Igboho-Kishi, ♀ holotype, 19.VII.1973; Kw St., Shaganu Biological Station, 1♀ paratype, 20–22.VII.1973, Linnavuori; N C St., Zaria, Samaru, 1♀ paratype, 20.X.1970, J.Deeming; B Pl St., Gangare Kibo, 1♀ paratype, 28.VIII.1973, Linnavuori. Types in coll. Linnavuori.

Length 3.5 mm. Whitish yellow. Frons with a few fuscous dots and scanty red markings; vertex with red middle spot, basal margin with a row of 4 fuscous dots; eyes reddish gray. 1st antennal joint red, extreme apex and a subbasal spot on dorsal surface pale, apical quarter of 2nd joint red, apex of 3rd joint and 4th joint reddish. Pronotum: lateral margins, triangular middle spot on apical margin and roundish middle spot on basal lobe red, pale areas with scanty fuscous dotting. Basal part of scutellum orange, apical part with arrow-shaped red figure. Elytra: costal margin orange, mesocorium with red pattern as seen in Fig. 14a, clavus with dense fuscous dotting, dark dots on corium relatively scanty, apex of cuneus red; membrane smoky, veins reddish. Under surface intensely red. Legs whitish yellow, apical half of hind femur red.

Hair covering long, yellowish. Head 0.7 × as broad as basal width of pronotum; ocular index 1.82. Proportions between antennal joints 30:91:34:21, 1st joint incrassate with black bristles, 2nd 2.14–2.17 × as long as diatone, 1.44–1.5 × as long as basal width of pronotum. Rostrum extending to middle coxae.

Biology: At lamp in savanna habitats.

Etymology: Greek mythology, Thetis, one of the Nereides, daughters of Nereus, god of the sea.

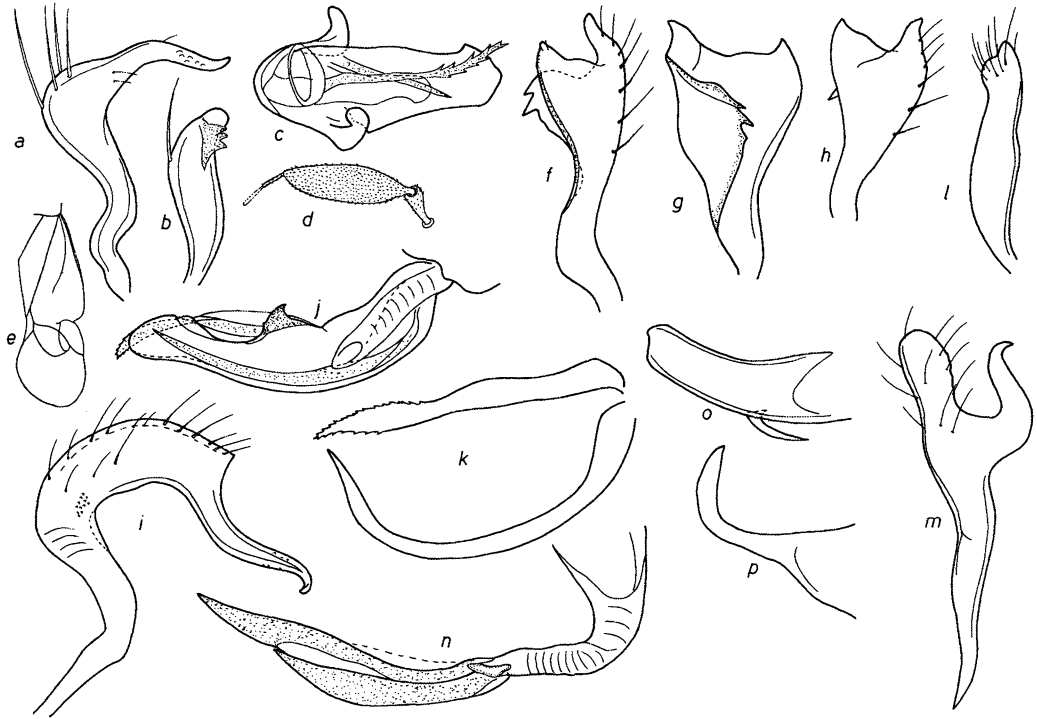


Fig. 13. *Gilo tibialis* (Linnavuori) (ex from Mt. Tonkouï): a) left style; b) right style; c) aedeagus, lateral view. — *G. congolensis* (Carvalho): d) female antenna; e) elytron. — *Pseudoloxops niobe* sp. n.: f-h) right style in different views; i) left style; j) aedeagus, lateral view; k) vesical appendages. — *P. nike* sp. n.: l) right style; m) left style; n) vesica; o) theca; p) process at genital opening of pygofer. — d-e after Carvalho 1951.

***Pseudoloxops sudanensis* Linnavuori**

Figs. 14, 12

*Pseudoloxops sudanensis* Linnavuori 1975:54-55.

Types: The Sudan, Kassala Prov., Kassala, ♂ holotype, 30.XI.1962; Equatoria, 1♂ and 1♀ paratype, 27.II-2.III.1963, Linnavuori, in coll. Linnavuori.

Length 4 mm. Whitish ochraceous. Head with narrow orange median stripe; eyes reddish. 1st antennal joint red, others uniformly pale. Lateral margins of pronotum red with dark dotting; triangular middle spot on anterior margin and roundish middle spot on basal lobe orange. Scutellum with wine glass-shaped orange figure. Clavus and corium with orange pattern as seen in Fig. 14b, apical margin of corium red; dark dotting on elytra scanty and faint, most distinct on apical part of corium;

cuneus pale, extreme tip pale; membrane pale brownish, veins red, basally pale. Under surface pale, sides of head and dorsolateral margins of prothorax sanguineous. Legs whitish ochraceous; hind femora with sanguineous subapical ring.

Hair covering pale yellow, long. Head 0.69 (♂) or 0.64 (♀) × as broad as basal width of pronotum; ocular index 1.33-1.62 (♂), 2.2 (♀). Proportions between antennal joints 11:41:14:10, 2nd joint 1.91-1.94 × as long as diatone, 1.2-1.3 × as long as basal width of pronotum, 1st joint incassate with long pale bristles. Rostrum extending to hind coxae. Pronotum about 2.6 × as broad as long in middle. Male genitalia in Fig. 12a-f.

Biology: At lamp in savanna habitats.

Distribution: Known only from the Sudan.

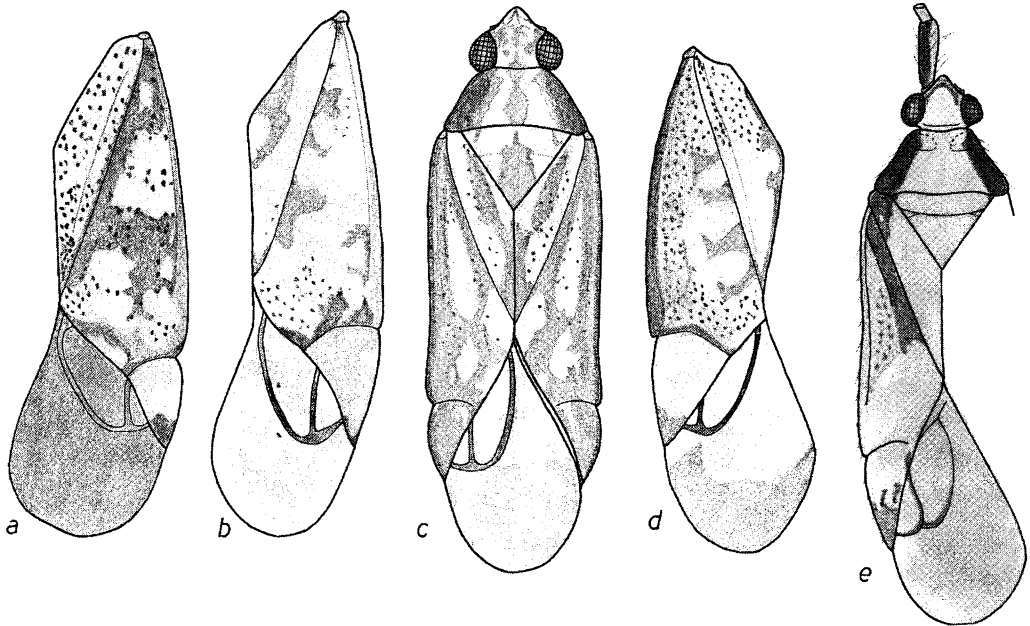


Fig. 14. *Pseudoloxops thetis* sp. n.: a) elytron. — *P. sudanensis* Linnavuori: b) elytron. — *P. nike* sp. n.: c) dorsal view. — *P. ninos* sp. n.: d) elytron. — *P. amabilis* Linnavuori: e) dorsal view.

***Pseudoloxops nike* sp. n.**

Figs. 13–14

Material: Nigeria: E C S t., Nsukka, ♂ holotype, 30.VI.1973, Linnavuori. Cameroon: Kumba, 1♀ paratype, 22.VI.1973, Linnavuori, in coll. Linnavuori.

Length 3.25 mm. Whitish yellow. Head with minute red markings; eyes reddish brown. 1st antennal joint red with pale stripe on inner surface, 2nd joint uniformly pale, extreme apex of 3rd reddish. Lateral margins of pronotum fuscous, sublateral stripes and median figure red. Base of scutellum with 3 small red dashes, apical part with large red middle spot. Elytra with intense red pattern as seen in Fig. 14c, costal margins narrowly infuscate, dark irroration scanty; cuneus intensely red, base with two small pale dashes, lateral margin narrowly infuscate; membrane bicolored, apical part dark fuscous, base orangish brown, veins red. Under surface pale, sides of head and dorsolateral margins of prothorax purplish. Legs uniformly pale.

Body elongate. Hair covering long, brownish. Head 0.78 (♂) or 0.69 (♀) × as broad as basal

width of pronotum; ocular index 1.33 (♂), 1.81 (♀). Proportions between antennal joints 25:91:35:?, 1st joint incrassate with long brownish bristles, 2nd 2.02 (♂) or 2.28 (♀) × as long as diatone, 1.57 × as long as basal width of pronotum. Rostrum extending beyond hind coxae. Pronotum about 2.8 × as broad as long in middle. Male genitalia in Fig. 131–p.

Biology: At lamp in rain forests.

Etymology: Greek mythology, Nike, the goddess of victory.

***Pseudoloxops ninos* sp. n.**

Fig. 14

Material: Nigeria: NE St., Kaltungo, ♀ holotype, 26–27.VII.1973, Zinna-Ngurore, 1♀ paratype, 25.VIII.1973, Linnavuori, in coll. Linnavuori.

Length 3.25 mm. Whitish yellow. Head with sparse fuscous dotting and a broken orange median stripe; eyes reddish. 1st antennal joint red with extreme tip pale, other segments uniformly pale. Pronotum with lateral margins carmine

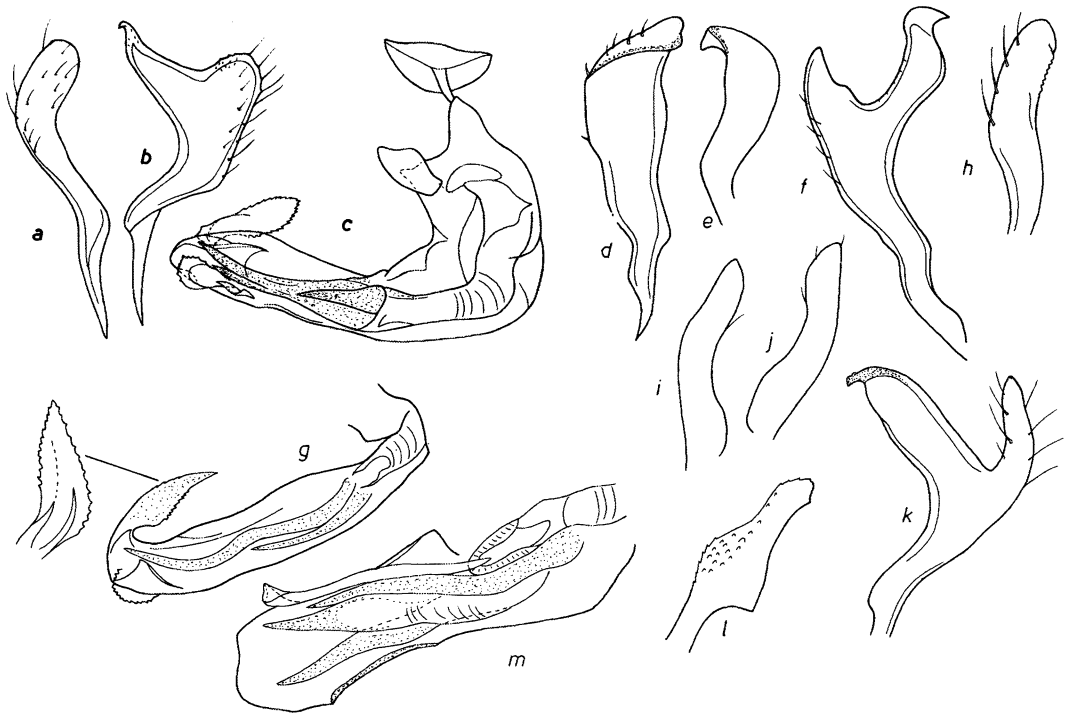


Fig. 15. *Pseudoloxops amabilis* Linnavuori: a) right style; b) left style; c) aedeagus in lateral view. — *P. galateia* sp. n.: d–e) right style; f) left style; g) aedeagus, lateral view. — *P. amfitrite* sp. n.: h–j) right style; k) left style; l) process at genital opening of pygofer; m) aedeagus, lateral view. — a–c after Linnavuori 1986.

red; median stripe on anterior lobe of disk and roundish middle spot on posterior lobe orange, fuscous dots present on lateral margins and lateral parts of the pale areas. Scutellum with a wine glass-shaped orange median figure, pale areas of apical part with sparse fuscous dotting. Costal margins of elytra carmine red; clavus and mesocorium with orange pattern as seen in Fig. 14d, dense fuscous dotting in basal part of clavus, on exocorium and apical part of mesocorium; cuneus contrastingly pale yellow, apex red; membrane bicolored, apical part dark smoky, basal part pale, veins red. Under surface uniformly pale; sides of head and dorsolateral margins of prothorax carmine. Hind femur pale, under surface with subapical transverse red stripe.

Body broadish. Hair covering long, pale. Head  $0.63 \times$  as broad as basal width of pronotum; ocular index 1.82–1.83. Proportions between antennal

joints 25:108:50:30; 1st joint incrassate with brown bristles, 2nd joint  $2.4 \times$  as long as diatone,  $1.52 \times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum  $2.96 \times$  as broad as long in middle.

Biology: At lamp in savanna habitats.

Etymology: Ninus, a mythic Assyrian king, who established the Assyrian empire.

### *Pseudoloxops amabilis* Linnavuori

Figs. 14, 15

*Pseudoloxops amabilis* Linnavuori 1986:142–144.

Type: Saudi Arabia, Wadi Liyah S of Taif, ♂ holotype, 13.II.1978, Linnavuori, in coll. Linnavuori.

The original description is not repeated here.

Biology: On *Cocculus pendulus*.

Distribution: Known only from Saudi Arabia.

***Pseudoloxops galateia* sp. n.**

Figs. 15, 27

Material: Cameroon: Kumba, ♂ holotype, 22.VI.1973, Linnavuori, in coll. Linnavuori.

Length 3.75 mm. Head, pronotum and scutellum uniformly dark coffee-brown. Eyes grayish. 1st antennal joint red, apex pale, 2nd whitish. Base of clavus and basal two-thirds of corium, save near claval suture, coffee-brown; the rest of clavus and corium contrastingly pale yellow with red pattern as seen in Fig. 27a; cuneus red, lateral margin coffee-brown, base with two small pale spots; membrane dark brown, veins concolorous with slight reddish tinge. Under surface pale ochraceous; sides of head and dorso-lateral margins of prothorax coffee-brown. Legs uniformly pale.

Body elongate. Hair covering long, on dark areas brown, on pale areas yellowish. Head 0.8 × as broad as basal width of pronotum; ocular index 1.38. Proportions between antennal joints 30:100:?: 1st joint incrassate with long pale bristles, 2nd 2.27 × as long as diatone, 1.82 × as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum 2.75 × as broad as long in middle.

Male genitalia in Fig. 15d–g.

Biology: At lamp in a rain forest.

Etymology: Greek mythology, Galateia, one of the Nereides.

***Pseudoloxops amfitrite* sp. n.**

Figs. 15, 27

Material: Nigeria: NE St., near Mai Fula, ♀ holotype, 24.VIII.1973, Linnavuori. Ivory coast: Foro-Foro, 1♂ paratype, 26–28.X.1970, A. Pollet, 1♀ paratype, 25–28.IX.1973, Linnavuori, in coll. Linnavuori.

Length 3.25 mm. Pale yellow with red pattern as seen in Fig. 27b. Without dark irroration. Eyes red. 1st antennal joint red, 2nd pale ochraceous. Membrane of elytra pale brownish, veins red. Under surface pale ochraceous. Sides of head and dorso-lateral margins of prothorax red. Legs pale. Apical half of hind femur, save extreme tip, red.

Body elongate. Hair covering long, pale. Head 0.8 × as broad as basal width of pronotum; ocular

index 2.0. Proportions between antennal joints 26:79:?, 1st joint incrassate with pale brownish bristles, 2nd 2.08 × as long as diatone, 1.58 × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum 2.8 × as broad as long in middle.

Male genitalia in Fig. 15h–m.

Biology: At lamp in savanna habitats.

Etymology: Greek mythology, Amfitrite, one of the Nereides.

***Pseudoloxops transvaalensis* Schuh**

*Pseudoloxops transvaalensis* Schuh 1974:43–47.

Description not repeated here.

Distribution: South Africa.

**Genus *Mestra* gen. n.**

Type species: *M. leucoptera* Linnavuori.

Diagnosis: Recognized by the very long 2nd antennal segment, pale coloring, very gracile body, hyaline elytra, and long and gracile legs.

Description: Color whitish or whitish yellow. Elytra whitish hyaline, only cuneus and extreme tip of costal margin with minute purplish markings, membrane milky hyaline. Legs pale, hind femur with dark subapical spot. Body gracile, about 4 × as long as broad at base of pronotum. Upper surface with long erect whitish hair covering. Head short and broad, in lateral view distinctly higher than long, frons strongly sloping ventrad, merging gradually into the base of the vertical tylus; head in apical view broader than high, ventral part below eyes very short; vertex somewhat convex, basal margin bluntly raised; eyes slightly separated from anterolateral corners of pronotum, in lateral view extending to ventral margin of head. Antennae long and gracile, 1st joint rather slender, > 4 × as long as broad, with semidecumbent shortish hair covering; 2nd joint > twice as long as the combined length of joints 3 and 4, twice as long as basal width or pronotum. Rostrum extending to hind coxae. Pronotum < twice as broad as long in middle, lateral margins straight, strongly diverging caudad, anterior margin with very narrow collar, hind margin



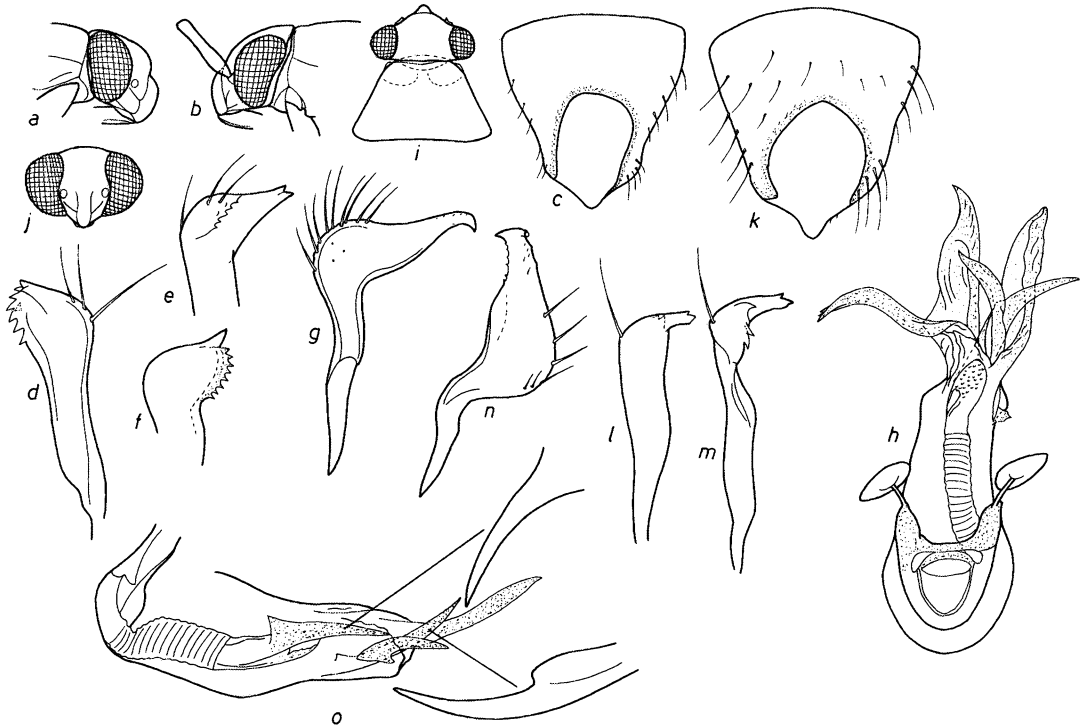


Fig. 16. *Pseudoloxops niobe* sp. n.: a) head, lateral view. — *Mestra leucoptera* gen. et sp. n.: b) male head, lateral view; j) male head, apical view; c) pygofer, dorsal view; d–f) right style in different views; g) left style; h) aedeagus, dorsal view. — *M. erato* sp. n.: i) male head and pronotum, dorsal view; k) pygofer, dorsal view; l–m) right style; n) left style; o) aedeagus, lateral view.

straight, calli small, posterior part of disk flat-tish. Elytra much longer than abdomen, narrow and hyaline. Legs long and gracile. Hind femur about 5 × as long as broad. Hind tibia very slender, > twice as long as basal width of pronotum, tibial spines delicate and pale. 3rd joint of hind tarsus a little longer than 2nd.

Male genitalia: Apex of pygofer conical. Right style with dentate apical part. Left style digitate. Vesica with falcate sclerified processes.

Biology: In rain forests.

Distribution: Guinean.

Etymology: *Mestra*, daughter of Erysisthon, a character in Ovidius's *Metamorphoses*.

Resembling *Pseudoloxops* and *Canariocoris* in the very long 2nd antennal segment. Readily distinguished by the pale coloring, very gracile body, hyaline elytra, and gracile legs. The 2nd antennal joint and hind tibia are twice as long as

the basal width of the pronotum and the 1st antennal joint is more gracile and short-haired.

#### Key to species of the genus *Mestra*

1. Length 4 mm. 1st antennal segment and extreme base of 2nd black ..... *leucoptera*
- Length 3 mm. Antennae uniformly pale ..... *erato*

#### *Mestra leucoptera* sp. n.

Figs. 16, 35

Material: Nigeria: SE St., Obudu cattle ranch, 1♂, holotype, 21.III.1970, J. Medler, in coll. Linnavuori.

Length 4 mm. Subopaque. Whitish. Eyes blackish. Antennae yellowish with 1st joint and extreme base of 2nd black. Apex of scutellum

black. Apex of cuneus and tip of costal margin dark purple, a purplish spot in apical margin of mesocorium close to basal median angle of cuneus, cuneus also with faint brownish irroration; membrane milky hyaline, veins pale. Under surface and legs pale yellow, hind femur with dark subapical spot on upper and under surface. 3rd tarsomeres dark.

Body  $4 \times$  as long as broad at base of pronotum. Head  $0.78 \times$  as broad as basal width of pronotum; eyes very large, ocular index 1.09. Proportions between antennal joints 13:51:16:9, 1st joint  $4.8 \times$  as long as broad,  $0.61 \times$  as long as diatone, 2nd joint  $2.04 \times$  as long as the combined length of joints 3 and 4,  $1.96 \times$  as long as basal width of pronotum. Pronotum  $1.86 \times$  as broad as long in middle, strongly widening caudad, lateral margins straight. Hind femur  $4.9 \times$  as long as broad. Hind tibia  $2.2 \times$  as long as basal width of pronotum. Proportions between hind tarsomeres 8:9:12.

Male genitalia in Fig. 16c–h.

### *Mestra erato* sp. n.

Fig. 16

Material: Nigeria: W St., Ile-Ife, 1♂, holotype, 5.I.1970, J. Medler, in coll. Linnavuori.

Length 3 mm. Moderately shiny. Whitish yellow. Eyes blackish brown. Antennae uniformly whitish yellow. Scutellum immaculate. Markings of cuneus as in the preceding species, veins of membrane partially orangish. Hind femur with dark subapical spot on ventral surface. 3rd tarsomeres embrowned.

Body  $4 \times$  as long as basal width of pronotum. Head  $0.82 \times$  as broad as basal width of pronotum; eyes small, ocular index 2.18. Proportions between antennal joints 10:45:9:6, 1st joint  $4.2 \times$  as long as broad,  $0.54 \times$  as long as diatone, 2nd joint  $3 \times$  as long as the combined length of 3 and 4,  $2.01 \times$  as long as basal width of pronotum. Pronotum  $1.93 \times$  as broad as long in middle, lateral margins slightly insinuated. Hind femur  $5.3 \times$  as long as broad. Hind tibia  $2.14 \times$  as long as basal width of pronotum.

Male genitalia in Fig. 16k–o.

Etymology: Greek mythology, Erato, the Muse of lyrics of love.

### Genus *Orthotylus* Fieber

*Orthotylus* Fieber 1858:315. Type species: *Cimex nassatus* Fabricius.

*Diommatus* Uhler 1887:32. Type species: *D. congrex* Uhler (Reuter 1909:67).

*Litosoma* Douglas & Scott 1865:334. Type species: *Orthotylus marginalis* Reuter (Reuter 1883:342).

*Tichorhinus* Fieber 1858:314. Type species: *Cimex nassatus* Fabricius (nec *Tichorhinus* Brandt, 1849, Mammalia) (Reuter 1883:342).

Diagnosis: Green elongate species. Head in lateral view roundedly declining ventrad, basal margin of vertex usually keeled. Pronotum trapezoidal. Structure of male genitalia often complicated.

Description: Color green or yellowish, rarely with fuscous pattern. Body elongate, females often shorter and broader than males. Hair covering on upper surface simple with semierect pale or dark hairs; in the subgenus *Melanotrichus* and in the *repandus* group of *Orthotylus* s. str. adpressed silvery scale-like hairs also exist. Head in apical view broader than high, in lateral view roundedly declining ventrad, frons merging gradually into base of tylus; basal margin of vertex keeled (save in *Ericinellus*). Eyes large, touching or nearly touching anterolateral angles of pronotum. Antennae and legs long and gracile. Pronotum trapezoidal, lateral margins straight, hind margin curved, calli faint. Male genitalia: Pygofer simple or provided with processes on dorsal margin of genital opening. Styles of variable shape, simple or complicated. Vesica usually with sclerified, often ramose appendages, in the subgenus *Ericinellus* and in some species of *Melanotrichus* simple.

Distribution: Cosmopolitan (except for the Neotropical Region).

A large genus in need of a world revision. The Palearctic species of *Orthotylus* have been grouped into 7 subgenera by Southwood 1953, Wagner 1956 and 1973 and Kerzhner 1988. The grouping is largely based on the chaetotaxy of the upper surface and the structure of the male genitalia. The majority of African species belongs to the *priesneri* group with a simple type of hair covering and complicated genital structure, thus representing *Orthotylus* s. str. In the *repandus* group, at least the South African species studied

have a double hair covering with patches of adpressed silvery pubescence, as in the subgenus *Melanotrichus*. The male genitalia, however, are complicated as in *Orthotylus* s. str. Consequently, I prefer to include them in the latter subgenus. A new subgenus, *Ericinellus*, is established for *O. ericinellae* and *O. selene*. Representatives of *Melanotrichus* occur only in the areas adjacent to the Palearctic Region.

**Key to African subgenera of the genus *Orthotylus***

1. Basal margin of vertex ecarinate. Body gracile. Pygofer small. Right style resembling a bird's head. Left style with long digitate hypophysis, sensory lobe rounded. Aedeagus small, vesica simple ..... *Ericinellus*
- Basal margin of vertex keeled. Genitalia different . 2
2. With fuscous pattern on head, pronotum scutellum and elytra. Eyes slightly separated from anterolateral angles of pronotum ..... *Pseudorthotylus* (Palearctic, in Africa adventitious)
- At most tylus and antennae black ..... 3
3. Small species. Upper surface always with double hair covering with semierect longish hairs and whitish adpressed pubescence. Right style small, ± spoon-shaped. Left style triangular. Aedeagus small, vesica with or without simple sclerified process(es) ..... *Melanotrichus* (primarily Palearctic)
- Largish elongate species. Upper surface with simple pale or dark semierect hair covering; the *repandus* group also with adpressed silvery hairs. Styles complicated. Vesica with sclerified, usually ramose processes ..... *Orthotylus* s. str.

**Subgenus *Orthotylus (Pseudorthotylus) Poppius***

*Pseudorthotylus* Poppius 1914:65. Type species: *P. sordidus* Poppius.

*Neomecomma* Southwood 1953:443. Type species: *Capsus bilineatus* Fallén, syn. n.

*Pseudorthotylus* was incorrectly included in the Mirinae by Carvalho (1952:92, 1955:93 and 1959:249). The examined lectotype of *P. sordidus* is similar to *O. bilineatus* (Fallén) and is therefore regarded as a synonym. Consequently, *Neomecomma* is a junior synonym of *Pseudorthotylus*.

A complete description in Wagner 1973:182–183.

***Orthotylus (Pseudorthotylus) bilineatus* (Fallén), comb. n.**

*Capsus bilineatus* Fallén 1807:122.

*Orthotylus bilineatus* Thomson 1871:438.

*Pseudorthotylus sordidus* Poppius 1914:66, syn. n.

Type: Tanzania, Daressalam, Pangani, ♂ lectotype, designated by Schuh, R. Regner, in Mus. Helsinki.

A description of this Palearctic species is not included.

Distribution: A widely distributed Euro-Siberian species. The find in Africa is undoubtedly adventitious, or the specimen is incorrectly labeled.

**Subgenus *Orthotylus (Orthotylus)***

Diagnosis: Hair covering usually simple. Male genitalia complicated.

Description: Body large, elongate. Hair covering on upper surface pale or dark, the *repandus* group also with whitish adpressed pubescence.

Male genitalia: Pygofer (in African species) with processes located on the dorsal margin of genital opening. Styles complicated. Vesica with long, ± ramose sclerified appendages.

**Key to species of the subgenus *Orthotylus (Orthotylus)* in West, Central and NE Africa**

1. Antennae black ..... *nigricornis*
- Antennae pale ..... 2
2. Cuneus purple ..... *rubrocuneatus*
- Cuneus green ..... 3
3. Right side of pygofer and anal cone with numerous dark teeth, middle of dorsal margin with minute dark apically dentate lobe (Fig. 26a) ..... *compactus*
- Pygofer different ..... 4
4. Left style (Fig. 24b) blade-like. Dorsal margin of pygofer (Fig. 24d–e) with two closely located processes, one of them broad, the other gracile and bifid ..  
..... *masuttii*
- Not as above ..... 5
5. Right dorsal angle of pygofer with a broad straight sclerified process, which is directed caudad, median margin of the process dentate (Figs. 22m, 23c) ..... 6
- Pygofer different ..... 7
6. Hypophysis of left style (Fig. 23g) long and narrow ..  
..... *althaia*
- Hypophysis of left style (Fig. 23b) short ..... *mollis*

7. Pygofer with one marginally serrate  $\pm$  lamellate process lying close to dorsal margin of genital opening . 8  
 — Dorsal margin of pygofer with at least two  $\pm$  prominent processes ..... 16
8. Sensory lobe of left style (Figs. 17c, 18k, 32a) narrow, horn- or plug-like ..... 9  
 — Sensory lobe of left style (Fig. 19c, h) broad ..... 11
9. Sensory lobe of left style (Fig. 32n) horn-like. Central sclerified band of vesica with a roundish marginally dentate subapical lobe (Fig. 32r) ..... *priesneri*  
 — Sensory lobe of left style (Figs. 17c, 18k) plug-like. Subapical area of central sclerified band of vesica minutely tuberculate ..... 10
10. Right style (Fig. 17b) elongate. Dorsal process of vesica (Fig. 17d) long and dentate ..... *mundricus*  
 — Right style (Fig. 18j) truncate apically. Dorsal process of vesica (Fig. 18l) short and ending in three large teeth ..... *vittiger*
11. Dorsal margin of left style (Fig. 19c) strongly notched in front of sensory lobe, the latter provided with a large coarsely dentate lobe, which is turned mesad. Apex of right style (Fig. 19b) narrow, strongly bent basad ..... *bobo*  
 — Not as above ..... 12
12. Apex of central sclerified band of vesica (Fig. 19i) bifid ..... *farcha*  
 — Central sclerified band of vesica ending in a strongly bent  $\pm$  foot-like apex ..... 13
13. Hypophysis of left style (Fig. 17g, l) long, conspicuously tapering apicad. Foot-like apex of central band of vesica with a distinct heel (Figs. 17h–i, 18a) .... 14  
 — Not as above ..... 15
14. Dentate process in dorsal margin of genital opening rectangular. Dorsal appendage of vesica with a couple of teeth in upper margin, apex edentate (Fig. 17h) ....  
 ..... *mentor*  
 — Dentate process in dorsal margin of genital opening foot-shaped. Apex of dorsal appendage of vesica (Fig. 18a) dentate ..... *massawanus*
15. Dorsal appendage of vesica (Fig. 18e) broad, strongly tapering apicad, its dorsal margin finely dentate .....  
 ..... *acacicola*  
 — Dorsal appendage of vesica (Fig. 22l) of uniform breadth, only apex provided with a few teeth .....  
 ..... *kenamuke*
16. Hypophysis of left style (Fig. 23k) very long and narrow, provided with a dentate lobe in middle of ventral margin ..... *repandus*  
 — Left style dissimilar ..... 17
17. Right style (Fig. 19k) long, very gracile, semicircular. Processes of pygofer as in Fig. 19j ..... *ife*  
 — Right style dissimilar ..... 18
18. Dorsal margin of pygofer (Fig. 22e–f) with four irregularly shaped marginally dentate processes. Vesica as in Fig. 22h ..... *strigilifer*  
 — Dorsal margin of pygofer with two processes ..... 19
19. Right style (Fig. 20d) elongate, straight, base with a claw-like process ..... *tamarindi*  
 — Apex of right style (Fig. 20i, l–m)  $\pm$  ovate, base with a dentate lobe ..... *nubaensis*

### The *priesneri* group

Opaque green or partially pale yellow species. Hair covering on upper surface long, dense, semierect and pale, sometimes brown hairs also present.

Male genitalia: Dorsal margin of pygofer with at least one marginally dentate process, which is either  $\pm$  transverse, lying close to the margin, or directed caudad. Right style well developed with elongate or expanded dentate apical part. Left style usually with roundedly produced or even horn-like sensory lobe. Vesica with several dentate processes.

Biology: On Leguminosae trees and shrubs such as *Acacia* and *Indigofera*.

Distribution: The Eremian and Sudanese subregions.

### *Orthotylus (Orthotylus) priesneri* Schmidt

Fig. 32

*Orthotylus priesneri* Schmidt 1939:22.

*O. macrophthalmus* Wagner 1960:93–94 (Linnavuori 1986:144).

*O. acaciae* Wagner 1968:1–2, syn. n.

Material: Numerous exx from Algeria: Abadia (type locality of *acaciae*), 15–18.IV.1966 and Kersaz, 150 km N of Adrar, 17.IV.1986, H. Eckerlein; Arak, 6.V.1973; In Guezzam, 6.XII.1973, Linnavuori. Egypt (Linnavuori 1964:329). Saudi Arabia (Linnavuori 1986:144). Israel: Shimron, 4.VIII.1958; Neot Hakikkar, 16–20.VII.1986, Linnavuori. Iraq: An Najaf, Najaf-Shabakah, 23.VI.1981, Khan Ruhabah, 6.IV.1981, Linnavuori. Niger: Assaouas, 14.XI.1973; Malbazza, 10–11.XI.1973; Niamey, 9.XI.1973; Tafadeck, 11.XI.1973; Tahoua-In Waggeur, 12–13.XI.1973, Linnavuori. Nigeria: K St., Kano-Wudil, 17.V.1973; NE St., near Kaltungo, 26–27.VIII.1973, Linnavuori. Chad: Farcha, 20–22.V.1973, Linnavuori. The Sudan (Linnavuori 1975:50). Eritrea: Asmara-Decamere, 25–26.V.1963; Tessenei, 22.V.1963, Linnavuori. Ethiopia: Lake Langanno, 6–7.VI.1963, Linnavuori. Somalia: Hargeisa, 23–28.VI.1963, Linnavuori. Yemen: Lahej, 9–15.VII.1963; Lahej-Dhala road, 13–14.VII.1963, Linnavuori.

Length 3.0–4.0 mm. Opaque. Green. Head, pronotum, scutellum and lateral margins of elytra often  $\pm$  yellow. Eyes brownish. Antennae pale yellow. Membrane of elytra smoky, veins green. Under surface greenish yellow. Legs pale yellow.

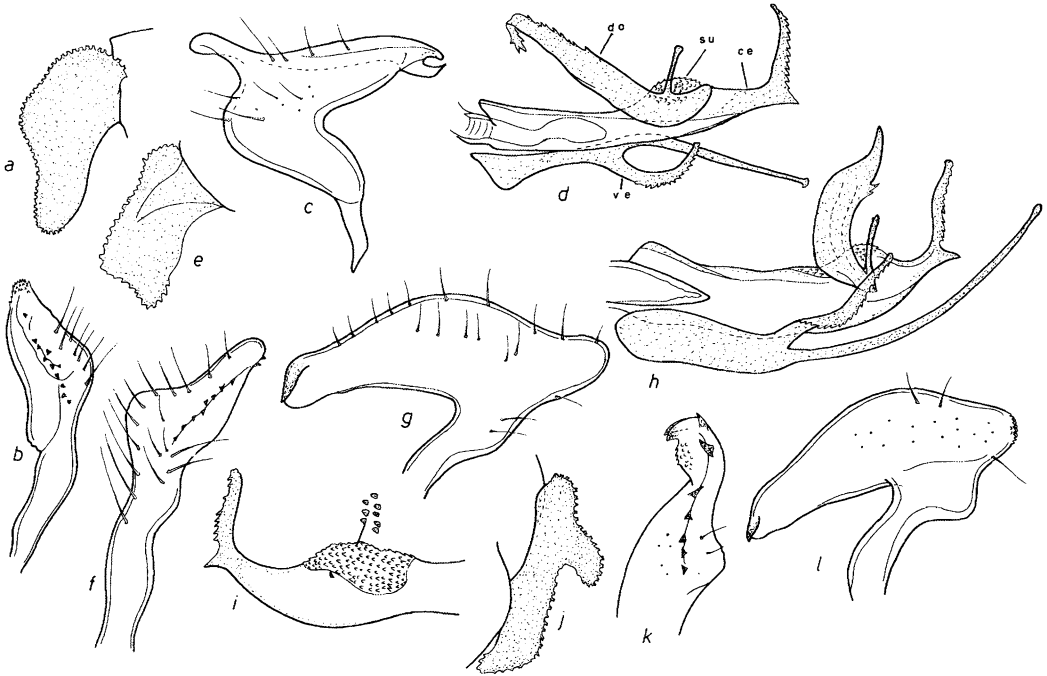


Fig. 17. *Orthotylus mundricus* sp. n.: a) process of pygofer; b) right style; c) left style; d) vesical appendages (ce = central sclerified band, su = subapical area of central band, do = dorsal process, ve = ventral process). — *O. mentor* sp. n.: e) process of pygofer; f) right style; g) left style; h) vesical appendages; i) apex of central band of vesica. — *O. massawanus* Linnavuori: j) process of pygofer; k) right style; l) left style.

Body gracile, ♂ nearly parallel-sided, ♀ narrowly ovate. Hair covering long, dense, semierect and pale, sometimes brown hairs also present. Head small, about 0.6 (♀) or 0.7 (♂) × as broad as basal width of pronotum. Size of eyes variable, ocular index 0.67–1.2 (♂), 1.4–1.8 (♀). Vertex narrow, base ecarinate. Proportions between antennal joints 19:75:67:30 (♂), 19:72:62:30 (♀), 2nd joint about 1.14 (♂) or 1.03 (♀) × as long as basal width of pronotum. Rostrum extending to hind coxae.

Male genitalia (Fig. 321–r): pygofer: narrow dentate process parallel to dorsal margin of genital opening. Right style elongate, ending in a coarsely dentate apex. Sensory lobe of left style with horn-like prolongation. Aedeagus: central sclerified band of vesica with narrow foot-like marginally dentate apex, “heel” sharp, subapical area of the band with a roundish marginally dentate lobe; dorsal appendage falcate, apically

finely dentate, base with a plug-like lobe; ventral appendage apically bifurcate, upper branch short and dentate, lower branch long and gracile.

Biology: On *Acacia*, sometimes on *Indigofera*.

Distribution: The commonest species of the group. Eremian, distributed from Algeria to Iraq. Also common in the semiarid parts of the Sudanese subregion.

***Orthotylus (Orthotylus) mundricus* sp. n.**

Fig. 17

Material: The Sudan: Equatoria, Mundri, ♂ holotype, 24.II.1963, Linnavuori, in coll. Linnavuori.

Length 3.5 mm. Externally like *O. priesneri*. Head 0.67 × as broad as basal width of pronotum. Ocular index 1.33. Proportions between antennal joints 16:76:?, 2nd joint nearly 1.3 × as long as basal width of pronotum. Male

genitalia (Fig. 17a–d): Pygofer with broad dentate process close to dorsal margin of genital opening. Apical part of right style broader, apex minutely dentate. Subapical area of central sclerified band of vesica tuberculate; subbasal plug-like process of dorsal appendage broader; dentate branch of ventral process slender.

***Orthotylus (Orthotylus) mentor* sp. n.**

Fig. 17

Material: Algeria: In Guezzam, ♂ holotype, many paratypes (♂♀), 6.XII.1973, Linnavuori, in coll. Linnavuori.

Length 3.75–4.25 mm. Like *O. priesneri*, but considerably robust.

Head 0.64–0.68 × as broad as basal width of pronotum. Ocular index 0.70–0.86 (♂), 1.43–1.54 (♀). Antennae relatively short and incrassate, proportions between joints 15:69:60:28 (♀), 15:74:61:28 (♂), 2nd joint 0.86–0.91 (♀) or nearly 1.0 (♂) × as long as basal width of pronotum. Pronotum 2.1–2.2 × as broad as long in middle.

Male genitalia (Fig. 17e–i): Process on dorsal margin of genital opening rectangular, marginally dentate. Right style elongate, apical part with a longitudinal row of small teeth. Left style large, sensory lobe parabolic, hypophysis long, moderately tapering apicad. Central sclerified band of vesica robust, subapically coarsely dentate, apical process slender, foot-shaped with sharp “heel”; dorsal appendage short and broad, blade-like, upper margin with a couple of small teeth.

Biology: On *Acacia* in sandy areas.

Etymology: Odysseus, Mentor and friend of Odysseus.

***Orthotylus (Orthotylus) massawanus***

**Linnavuori**

Figs. 17–18

*Orthotylus massawanus* Linnavuori 1975:50.

Types: Eritrea, Massawa, ♂ holotype, 1 paratype, 27–30.V.1963; Ailet, 7 paratypes, 30–31.V.1963, Linnavuori, in coll. Linnavuori.

Length 3 mm. Externally like *O. priesneri*. Ocular index 0.8–1.0 (♂), 2.0 (♀).

Male genitalia (Figs. 17j–l, 18a). Dentate process in dorsal margin of genital opening foot-shaped. Right style broad, provided with about 4 apical teeth and small tubercles on inner surface. Left style large, sensory lobe rounded, hypophysis long, strongly tapering apicad.

Distribution: Known only from the Red Sea Coast in Eritrea.

***Orthotylus (Orthotylus) acacicola* Lindberg**

Figs. 18, 30

*Orthotylus acacicola* Lindberg 1958:103–104.

Types: Cape Verde Islands, Boavista de Figueiras, ♂ holotype, 30.I.1954; S. Antão Chã de Morte, 1 paratype, 5.I.1954; Nicolau, Rib. Bravo, ♀ allotype, 6–19.XII.1953; S. Vicente, Mindelo, 3 paratypes, 10–11.I.1954; Rib. Julião, 1 paratype, 26.XI–2.XII.1953, Lindberg, in Mus. Helsinki, two paratypes in coll. Linnavuori.

Length 3–4 mm. Externally like *O. priesneri*.

Head about 0.65 × as broad as basal width of pronotum. Ocular index 1.2–1.23 (♂), 1.36–1.62 (♀). 2nd antennal joint about 1.13 (♂) or 1.23 (♀) × as long as basal width of pronotum.

Male genitalia (Fig. 18b–e): Pygofer with small dentate lobe close to upper margin of genital opening. Right style: apex minutely dentate, numerous strong teeth on inner surface. Left style: sensory lobe parabolic. Aedeagus: “heel” on apical process of central band obtuse, subapical area tuberculate.

Distribution: The Cape Verde Islands.

***Orthotylus (Orthotylus) acacicola chariensis***

**Linnavuori**

Fig. 18

*Orthotylus acacicola chariensis* Linnavuori 1975:50.

Types: Chad, Bas Chari, ♂ holotype, J. Péricart. Cameroon: Bas Chari, near Fort Foureau, 2♀ paratypes, 27.VII.1963, J. Péricart, in Mus. Paris, a paratype in coll. Linnavuori. Material: Nigeria: N C St., Yashi-Dayi, 1♂, 2♀♀, 23.VII.1973, Linnavuori.

Like the nominate form, but apex of right style (Fig. 18f) more elongate, left style (Fig.

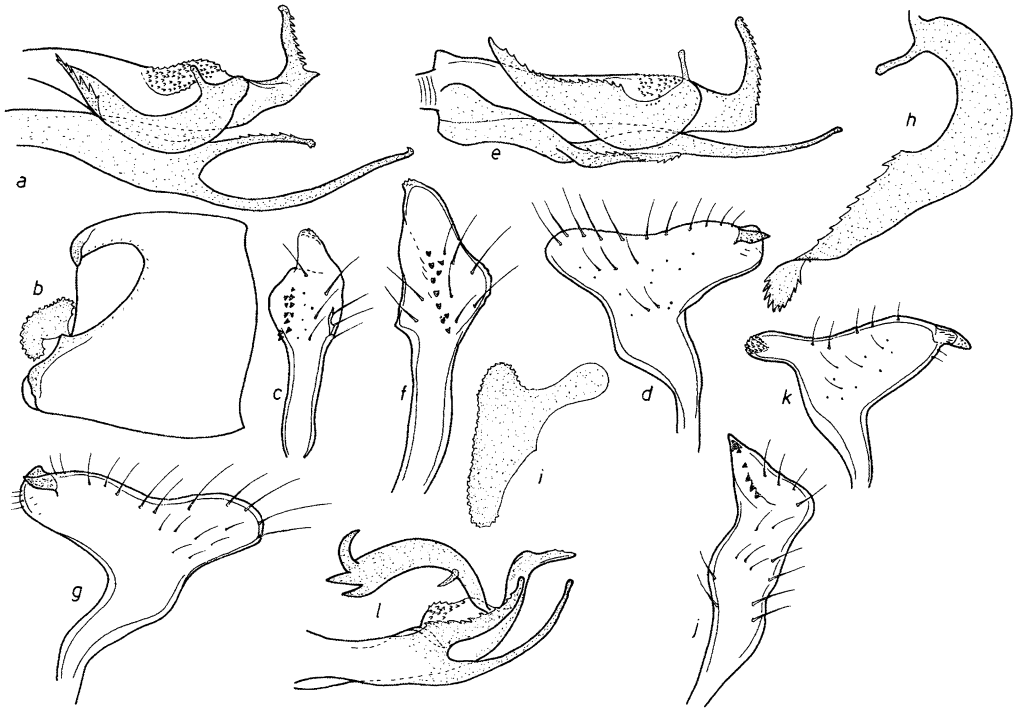


Fig. 18. *Orthotylus massawanus* Linnavuori: a) vesical appendages. — *O. acacicola* Lindberg (ex from Antao Cha de Morta): b) pygofer obliquely from above; c) right style; d) left style; e) vesical appendages. — *O. acacicola chariensis* Linnavuori (ex from Yashi-Dayi): f) right style; g) left style; h) dorsal process of vesica. — *O. vittiger* Linnavuori: i) process of pygofer; j) right style; k) left style; l) appendages of vesica.

18g) considerably broader and dorsal vesical appendage (Fig. 18h) longer with apex blunter and dentate. Pygofer as in the nominate form.

Distribution: West Sudanese.

***Orthotylus (Orthotylus) kenamuke* Linnavuori**  
Fig. 22

*Orthotylus kenamuke* Linnavuori 1975:51.

Types: The Sudan, Equatoria, Kapoeta-Boma, ♂ holotype, several paratypes, 26–27.III.1963, Linnavuori, in coll. Linnavuori.

Length 3.5 mm. Like *O. priesneri*, but hair covering on upper surface nearly totally pale. Ocular index 0.6–0.7 (♂), 2.0 (♀). Costal margins of elytra only slightly paler.

Male genitalia (Fig. 22i–l): Dorsal margin of genital opening of pygofer with broadly rounded dentate lobe. Styles as in Fig. 22j–k. Heel of apical process of central band of vesica totally rounded, subapical area of the band tuberculate; apex of dorsal process with a few teeth, lower process as in *O. priesneri*.

Biology: Probably on *Tamarindus indicus*.

Distribution: Known only from the Sudan.

***Orthotylus (Orthotylus) asper* Linnavuori**  
Fig. 21

*Orthotylus asper* Linnavuori 1975:51.

Type: The Sudan, Equatoria, Yei-Maridi, ♂ holotype, 13–15.IV.1963, Linnavuori. Other material: The Sudan,

Equatoria, Juba, 2 exx, 27.II–2.III.1963, Mundri, 1 ex, 24.II.1963, 30 km N of Terakeka, 3 exx, 2–6.III.1963, Linnavuori, in coll. Linnavuori.

Length 3.5 mm. Externally like *O. priesneri*. Ocular index 0.56 (♂), 1.4 (♀).

Male genitalia in Fig. 21i–k. Right style with strongly expanded apex bearing a group of coarse teeth. Left style triangular in outline. Apex of central vesical band claw-like, finely dentate, without “heel”; dorsal appendage smooth, falcate, with claw-like subbasal process.

Biology: On *Tamarindus indicus*.

Distribution: Known only from the Sudan.

### *Orthotylus (Orthotylus) vittiger* Linnavuori

Fig. 18

*Orthotylus vittiger* Linnavuori 1975:51.

Types: The Sudan, Equatoria, Kapoeta-Boma, ♂ holotype, several paratypes, 26–27.III.1963, Linnavuori, in coll. Linnavuori.

Length 2.75–3.0 mm. Like *O. priesneri*, but smaller. Upper surface usually with pale longitudinal line from head to tip of scutellum. Ocular index 0.95 (♂), 1.56 (♀).

Male genitalia (Fig. 18i–l): Dentate process in dorsal margin of pygofer narrowish. Apex of right style triangular. Left style with horn-like apically dentate sensory lobe. Heel of apical process of central vesical band rounded, subapical area tuberculate; dorsal appendage with 3 very large apical teeth.

Distribution: Known only from the Sudan.

### *Orthotylus (Orthotylus) bobo* sp. n.

Fig. 19

Material: Upper Volta: Bobo Dioulasso, ♂ holotype, 4 paratypes (3♂♂ 1♀), 1–2.XI.1973, Linnavuori. Nigeria: N C St., Zaria, 1♂ paratype, 2–3.VIII.1973, Linnavuori, in coll. Linnavuori.

Length 4 mm. Like the related species, but body gracile and head remarkably large, 0.75–0.80 (♂) or 0.7 (♀) × as broad as basal width of pronotum. Eyes very large, ocular index 0.73–0.80 (♂) or 1.5 (♀). Antennae dark yellow (pale

yellow in the related species), long and incrassate, proportions between joints 16:75:70:35 (♂), 16:72:61:?? (♀), 1st joint 0.36–0.40 × as long as diatone, 2nd 1.25–1.41 (♂) or 1.2 (♀) × as long as basal width of pronotum.

Male genitalia (Fig. 19a–e). Dentate process in dorsal margin of genital opening of pygofer rectangular. Apex of right style narrow, strongly curved, median surface with a row of strong teeth. Left style distinctive, hypophysis large and very broad, sensory lobe broadly roundedly produced ending in a large coarsely dentate lobe, which is turned mesad. Central sclerified band of vesica broad, apex bifid with a strongly bent, marginally dentate branch and a horn-like “heel”, which is provided with a couple of basal teeth; ventral process very broad, ending in a wing-like coarsely dentate lobe, a slender digitate subapical process also present; dorsal appendage digitate, arising near middle of dorsal margin of the central band.

### *Orthotylus (Orthotylus) farcha* sp. n.

Fig. 19

Material: Chad: Farcha, ♂ holotype, 1♂ paratype, 20–22.V.1973, Linnavuori. Nigeria: Bauchi, Kwangi, 1♂ paratype, 14–20.III.1974, H. Politzar, in coll. Linnavuori.

Length 3.5–4.0 mm. Like *O. priesneri*. Head 0.7 × as broad as basal width of pronotum; eyes large, ocular index 0.73–0.88. Proportions between antennal joints 15:71:65:30, 2nd joint 1.08 × as long as basal width of pronotum.

Male genitalia (Fig. 19f–i): Dentate process in dorsal margin of genital opening of pygofer foot-shaped. Right style ending in a narrow apically bidentate terminal portion, median surface with a group of several teeth. Left style long and narrow, hypophysis parallel-sided, sensory lobe broadly rounded. Apex of central vesical band bifurcate, subapical area tuberculate; dorsal process short and broad, apex truncate.

### *Orthotylus (Orthotylus) ife* sp. n.

Figs. 19–20

Material: Nigeria: W St., Ile-Ife, ♂ holotype, 29.XII.1970, 1♀ paratype, 25.III.1969, J. Medler, in coll. Linnavuori.





Fig. 19. *Orthotylus bobo* sp. n.: a) process of pygofer; b) right style; c) left style; d) vesical appendages; e) dorsal process of vesica in broad aspect. — *O. farcha* sp. n.: f) appendage of pygofer; g) right style; h) left style; i) vesical appendages. — *O. ife* sp. n.: j) appendages of pygofer; k) right style.

Length 3.5–3.75 mm. Like *O. priesneri*. Head 0.79 (♂) or 0.65 (♀) × as broad as basal width of pronotum. Eyes in ♂ large, ocular index 0.59 (♂), 1.47 (♀). Proportions between antennal joints 20:80:?, 2nd joint 1.40–1.43 × as long as basal width of pronotum.

Male genitalia (Figs. 19j–k, 20a–b) distinctive: Dorsal margin of genital opening of pygofer with two processes, one stout with a foot-shaped apex, the other long and slender, strongly twisted. Right style gracile, strongly curved, apical part with a few coarse teeth. Sensory lobe of left style broadly rounded, finely tuberculate. Apex of central vesical band foot-shaped, dentate; dorsal appendage gracile; lower branch of ventral appendage short and thick, rectangularly bent laterad.

***Orthotylus (Orthotylus) rubrocuneatus***

**Linnavuori**

Figs. 20, 21

*Orthotylus rubrocuneatus* Linnavuori 1975:51–52.

Type: Somalia: Hargeisa, ♂ holotype, 23–28.VI.1963, Linnavuori, in coll. Linnavuori.

Length 3 mm. Opaque. Greenish with golden tinge. Antennae bright yellow. Anterior and lateral margins of pronotum and costal margins of elytra whitish. Cuneus purple, lateral margin narrowly whitish; membrane and veins dark brown. Under surface pale. Legs yellowish.

Small and robust. Hair covering yellowish. Eyes large. Proportions between antennal joints 5:29:?, 2nd joint as long as basal width of pronotum. Rostrum extending to hind coxae.

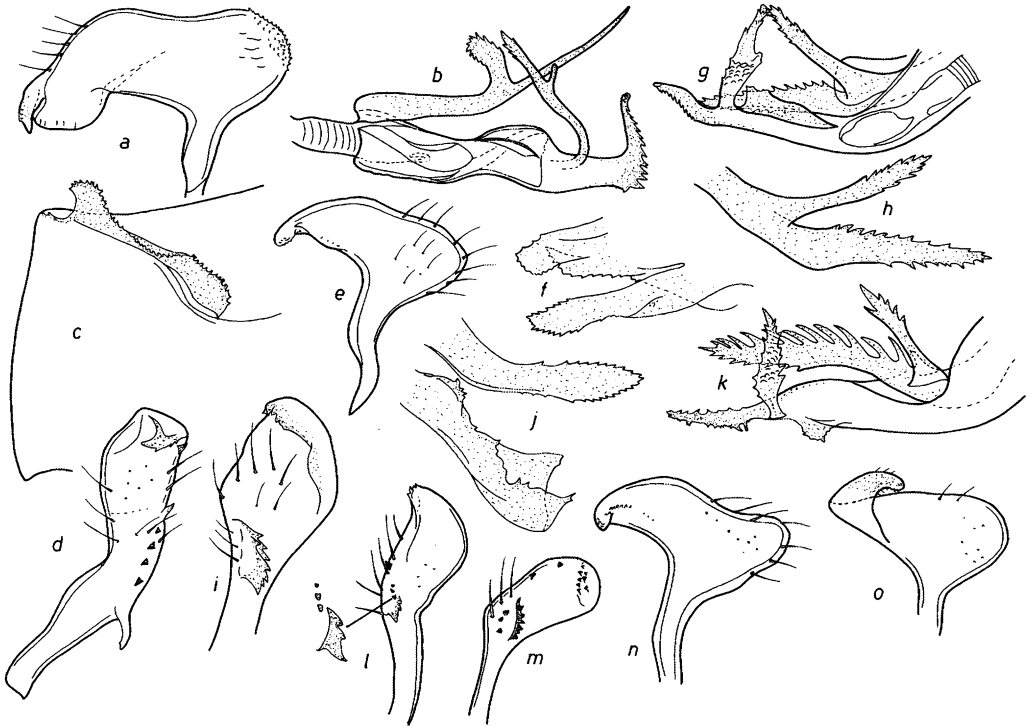


Fig. 20. *Orthotylus ife* sp. n.: a) left style; b) vesical appendages. — *O. rufocuneatus* Linnavuori: c) process of pygofer. — *O. tamarindi* Linnavuori: d) right style; e) left style; f) processes of pygofer; g) vesical appendages; h) basal appendage of vesica in broad aspect. — *O. nubaensis* Linnavuori (holotype): i) right style; j) processes of pygofer; k) appendages of vesica. — *O. nubaensis* Linnavuori (two exx from Niamey): l–m) right style; n–o) left style.

Pronotum about  $2.2 \times$  as broad as long in middle. Male genitalia (Figs. 20c, 211–o): Dorsal margin of genital opening with long and narrow dentate process. Right style short, broadly club-shaped. Left style triangular in outline. Vesical appendages in Fig. 21n–o.

Distribution: Known only from Somalia.

***Orthotylus (Orthotylus) tamarindi* Linnavuori**  
Fig. 20

*Orthotylus tamarindi* Linnavuori 1975:51–52.

Types: The Sudan, Northern Province, Ed Damer-Shendi, ♂ holotype, many paratypes, 1.XI.1962, Linnavuori, in coll. Linnavuori.

Length 2.5–3.0 mm. Subopaque. Pale green. Head and pronotum somewhat paler. Antennae

yellowish. Membrane of elytra pale, veins greenish. Legs yellowish green.

Body parallel-sided, nearly  $3 \times$  as long as broad at base of pronotum. Head about  $0.73 \times$  as broad as basal width of pronotum; ocular index 0.9 (♂) or 1.6 (♀). Proportions between antennal joints 6:22:19:9, 2nd joint slightly shorter than basal width of pronotum. Pronotum twice as broad as long.

Male genitalia (Fig. 20d–h): Pygofer with a pair of dentate processes arising from the right side of the dorsal margin of the genital opening. Right style elongate, nearly parallel-sided, base with a strong claw-like process directed laterad. Left style with shortish hypophysis, sensory lobe rounded. Apex of central band of vesica ending in a pair of dentate processes, subapical area with a dentate lobe, a bifurcate lateral lobe also present.

Biology: On *Tamarindus indicus*.

Distribution: Known only from the Sudan.

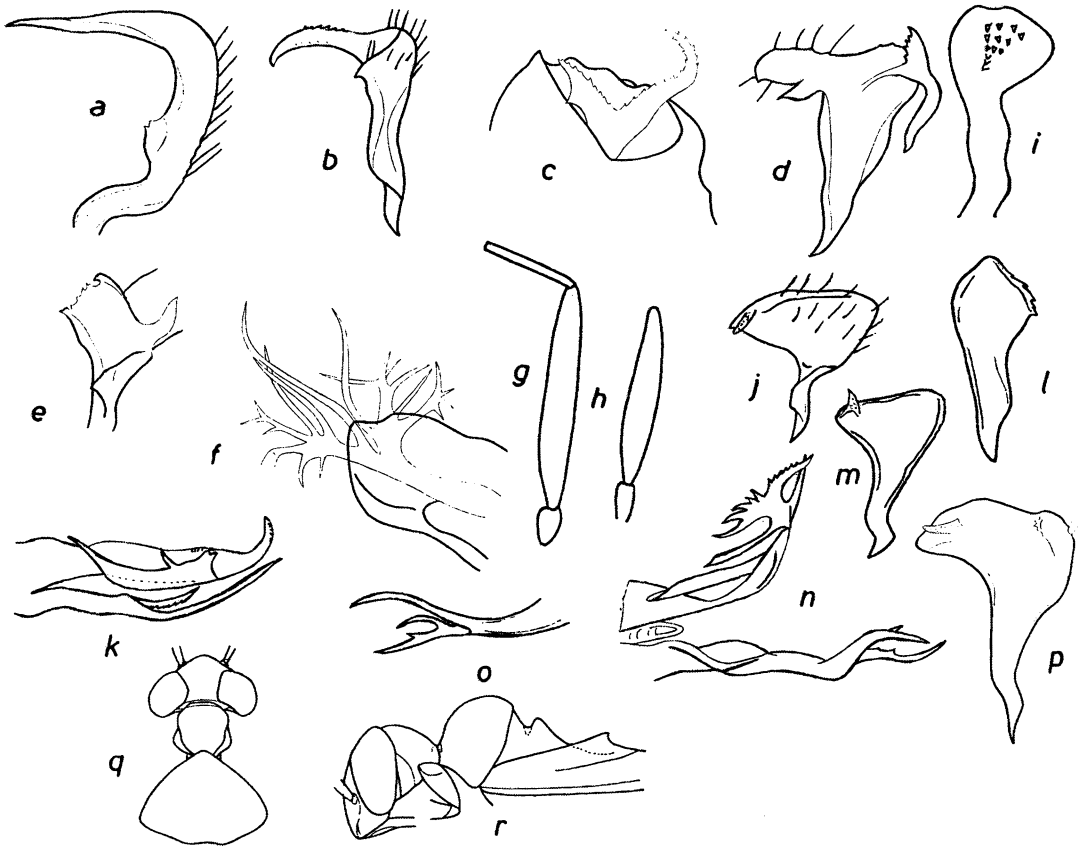


Fig. 21. *Grewiocris elongatus* Linnavuori: a) right style; b) left style. — *G. harrarensis* Linnavuori: c) pygofer, dorsal view; d) right style; e) left style; f) apex of aedeagus, lateral view. — *Gilo tibialis* (Linnavuori): g–h) male and female 1st and 2nd antennal segments. — *Orthotylus asper* Linnavuori: i) right style; j) left style; k) vesical appendages. — *O. rubrocuneatus* Linnavuori: l) right style; m) left style; n) vesical appendages; o) ventral vesical process in ventral view. — *O. strigilifer* Linnavuori: p) left style. — *Laurinia bathyllus* Linnavuori: q) male head and pronotum, dorsal view; r) male head and thorax, lateral view. — After Linnavuori 1973 and 1975.

***Orthotylus (Orthotylus) nubaensis*  
Linnavuori, status n.**

Figs. 20, 22

*Orthotylus tamarindi nubaensis* Linnavuori 1975:52.

Type: The Sudan, Kordofan, Kadugli, ♂ holotype, 2–14.II.1963, Linnavuori, in coll. Linnavuori.

Material: Niger: Niamey, 7 exx, 9.XI.1973, Linnavuori.

Length 3.0–3.25 mm. Like *O. tamarindi*, but readily distinguished by the shape of the right style: apical part distinctly expanded, ± ovate in outline, base with a coarsely dentate lobe, no

claw-like process. Lower branch of ventral vesical appendage with very long spine-like teeth.

Distribution: Apparently Sahelian.

***Orthotylus (Orthotylus) strigilifer*  
Linnavuori**

Figs. 21–22

*Orthotylus strigilifer* Linnavuori 1975:52.

Types: The Sudan, Equatoria, Kapoeta-Boma, ♂ holotype, 4 paratypes, 26–27.III.1963, Linnavuori, in coll. Linnavuori.

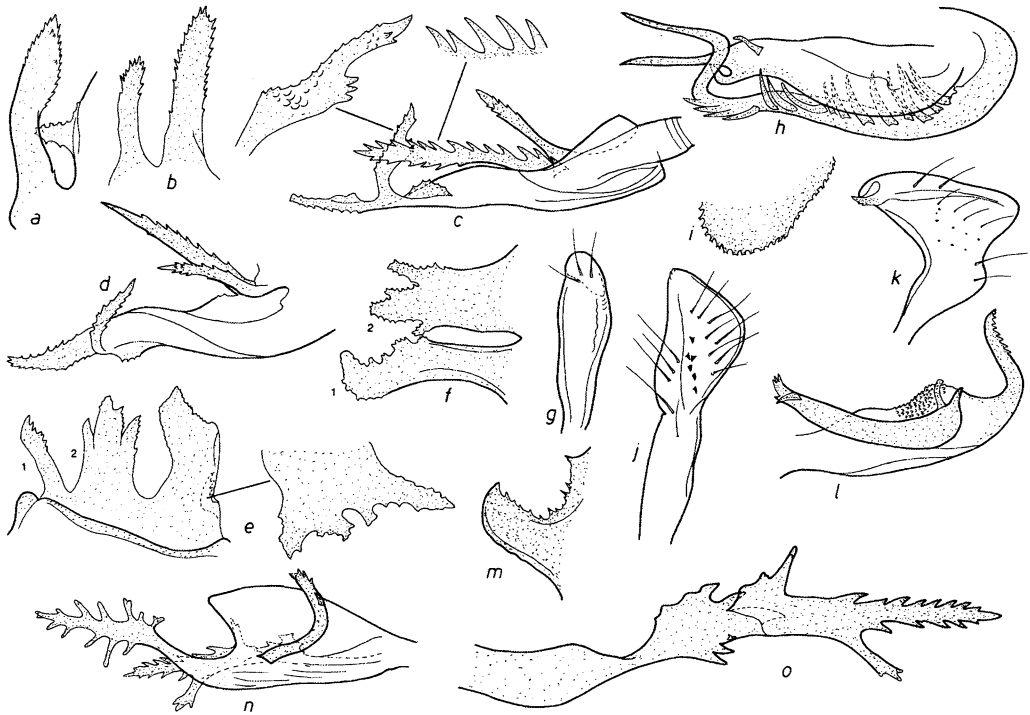


Fig. 22. *Orthotylus nubaensis* Linnavuori (two exx from Niamey): a–b) processes of pygofer; c–d) appendages of vesica. — *O. strigilifer* Linnavuori: e) processes of pygofer; f) processes 1 and 2 of pygofer in broad aspect; g) right style; h) appendages of vesica. — *O. kenamuke* Linnavuori: i) process of pygofer; j) right style; k) left style; l) central band and dorsal appendage of vesica. — *O. mollis* Linnavuori: m) process of pygofer; n) appendages of vesica; o) basal appendage of vesica in broad aspect.

Length 3.5–4.0 mm. Pale green, resembling the other species of the group. Body  $> 3 \times$  as long as broad at pronotum. Head  $0.7 \times$  as broad as basal width of pronotum. Eyes relatively small, ocular index 0.90–1.09 ( $\sigma$ ), 1.8 ( $\varnothing$ ). Proportions between antennal joints 7:29:22:10, 2nd joint  $1.16 \times$  as long as basal width of pronotum. Pronotum more than twice as broad as long.

Male genitalia (Figs. 21p, 22e–h): Dorsal margin of pygofer with 4 dentate processes. Right style small, narrow. Left style with short hypophysis, sensory lobe rounded. Central band of vesica with one long and straight and two short claw-like processes; ventral appendage strongly twisted apically, basal part with very long spines.

Distribution: Known only from the Sudan.

### *Orthotylus (Orthotylus) mollis* Linnavuori

Figs. 22–23

*Orthotylus mollis* Linnavuori 1975:52.

Types: The Sudan, Equatoria, Torit-Kapoeta,  $\sigma$  holotype, 4 paratypes, 26.III.1963, Lotti forest, 1 paratype, 14–17.III.1963, Nimule, 1 paratype, 11–13.III.1963, Linnavuori, in coll. Linnavuori.

Length 3.5 mm. Yellowish green. Elongate, body about  $3.4 \times$  as long as broad at pronotum. Head about  $0.72 \times$  as broad as basal width of pronotum. Eyes large, ocular index 0.70–0.77 ( $\sigma$ ), 1.5 ( $\varnothing$ ). Antennae long, proportions between joints 8:30:25:13, 2nd joint  $1.2 \times$  as long as basal width of pronotum. Pronotum slightly more than twice as broad as long.

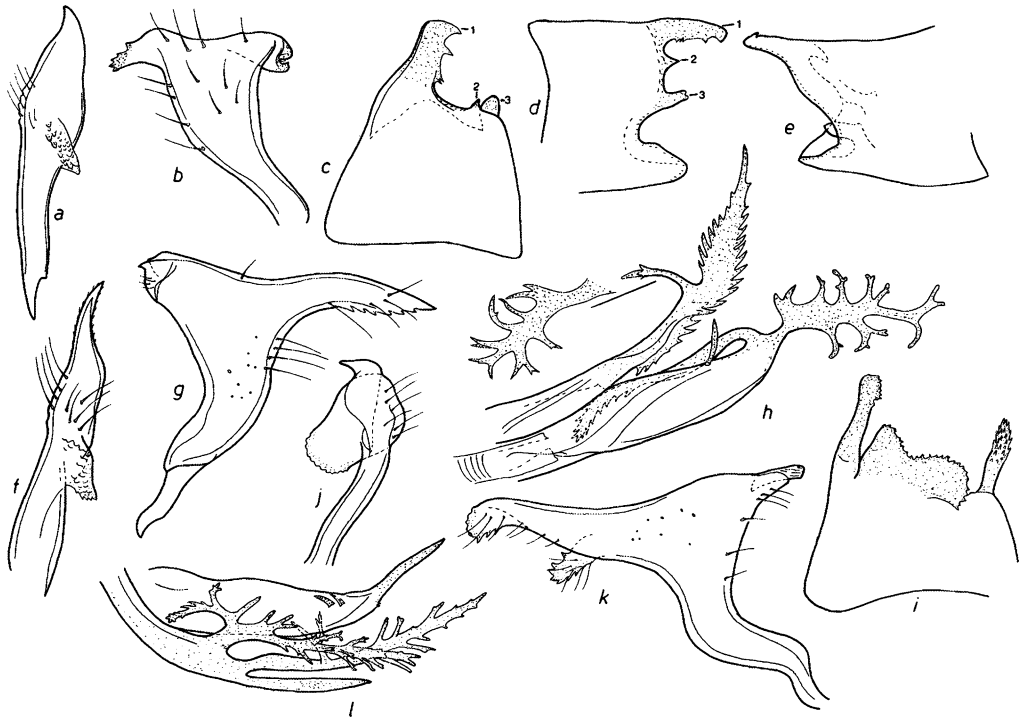


Fig. 23. *Orthotylus mollis* Linnavuori: a) right style; b) left style. — *O. althaiia* sp. n.: c) pygofer, dorsal view; d) pygofer from the left and e) from the right; f) right style; g) left style; h) appendages of vesica. — *O. repandus* Linnavuori: i) pygofer, dorsal view; j) right style; k) left style; l) appendages of vesica.

Male genitalia (Figs. 22m–o, 23a–b): Pronotum with broad marginally dentate sclerified process arising from right dorsal angle and directed caudad. Right style narrow, sharp-tipped, base with a sclerified dentate expansion. Hypophysis of left style short, sensory lobe with narrow dentate prolongation. Central band of vesica broad, provided with broad lateral lamella, dentate subapical lobe and straight apical process with numerous stout spines; dorsal appendage slender, curvate; ventral appendage with numerous spines.

Distribution: Known only from the Sudan.

***Orthotylus (Orthotylus) althaiia* sp. n.**

Fig. 23

Material: Nigeria: N C St., Malumfashi, ♂ holotype, 26–30.VII.1973, Linnavuori, in coll. Linnavuori.

Length 4 mm. Externally like the other species of the group. Body robust. Head  $0.71 \times$  as broad as basal width of pronotum; ocular index 0.86. Proportions between antennal joints 25:87:?, 2nd joint  $1.24 \times$  as long as basal width of pronotum.

Male genitalia (Fig. 23c–h): Pygofer: right dorsolateral angle with a long sclerified process, which is directed caudad, and with two small processes in middle of dorsal margin of genital opening. Right style long and narrow, apex pugionate, base with a dentate lobe. Left style: hypophysis long and narrow, lower margin dentate; sensory lobe narrowish, provided with short apical spine. Central vesical band apically bifurcate, one of the processes slender and recurved basad, the other straight, large, and provided with several long,  $\pm$  ramose lateral spines; lower vesical appendage ending in a large spiny apical part.

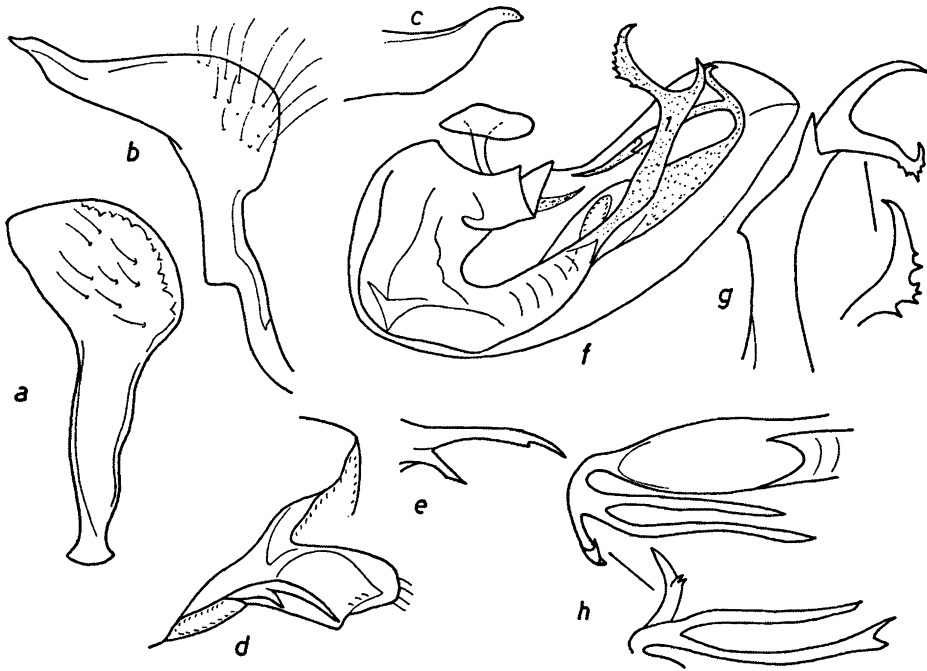


Fig. 24. *Orthotylus masuttii* Linnavuori: a) right style; b) left style; c) hypophysis of left style in broad aspect; d) processes of pygofer, dorsal view; e) bifurcate process of pygofer in broad aspect; f) aedeagus, lateral view; g) vesical process 1; h) vesical process 2. — After Linnavuori 1977.

***Orthotylus (Orthotylus) repandus***

**Linnavuori**

Fig. 23

*Orthotylus repandus* Linnavuori 1975:52.

Types: The Sudan, Equatoria, Kapoeta-Boma, ♂ holotype, 2 paratypes, 26–27.III.1963; Juba, 2 paratypes, 27.II–2.III.1963, Linnavuori, in coll. Linnavuori.

Length 4 mm. Body parallel-sided,  $3.2 \times$  as long as broad at base of pronotum. Head  $0.7 \times$  as broad as basal width of pronotum; eyes large, ocular index 0.67–0.86 (♂), 1.9 (♀). Antennae long, proportions between joints 8:38:30:15, 2nd joint  $1.3 \times$  as long as basal width of pronotum.

Male genitalia (Fig. 23i–l): Dorsal margin of pygofer with broad marginally dentate lamella between straight slender processes. Apex of right style broad, strongly recurved basad. Hypophysis of left style very long, ventral margin with a

dentate process; sensory lobe ending in a narrow apex. Aedeagus as in Fig. 23l.

Biology: On *Tamarindus indicus*.

Distribution: Known only from the Sudan.

***Orthotylus (Orthotylus) masuttii* Linnavuori**

Fig. 24

*Orthotylus masuttii* Linnavuori 1977:64.

Types: Somalia, Afgoi, ♂ holotype, 1♂ paratype, 16–30.IV.1974, L. Masutti. Holotype in Mus. Padua, paratype in coll. Linnavuori.

Length 3.25 mm. Externally like the other species of the group. Body small,  $3 \times$  as long as broad, parallel-sided. Head  $0.72 \times$  as broad as basal width of pronotum; eyes large, ocular index 0.7. Proportions between antennal joints

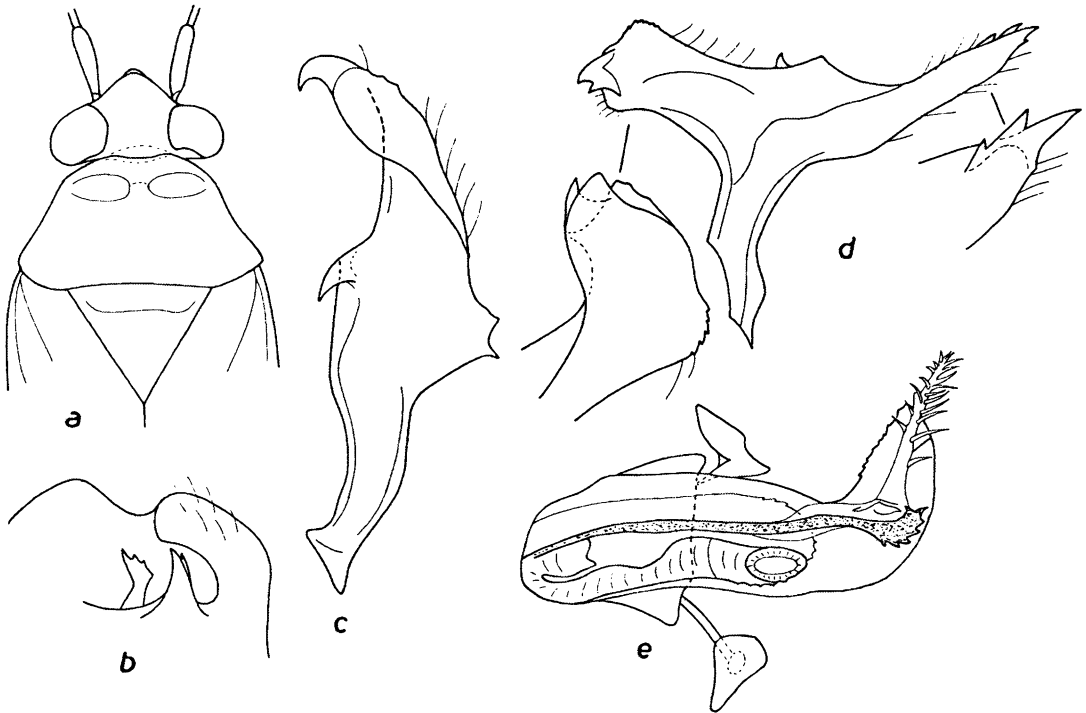


Fig. 25. *Orthotylus nigricornis* Linnavuori: a) head and thorax, dorsal view; b) processes of pygofer, dorsal view; c) right style; d) left style; e) aedeagus, lateral view. — After Linnavuori 1976.

16:74:?. 2nd joint  $1.2 \times$  as long as basal width of pronotum.

Male genitalia (Fig. 24a–h): Dorsal margin of pygofer with two processes, one broad, the other slender and bifurcate. Apex of right style broad. Left style blade-like. Aedeagus as in Fig. 24f–h.

Distribution: Known only from Somalia.

### *Orthotylus (Orthotylus) nigricornis*

Linnavuori

Fig. 25

*Orthotylus nigricornis* Linnavuori 1976:123–124.

Types: Somalia, Afgoi, ♂ holotype, 1♂ paratype, V.1972, L. Masutti. Holotype in Mus. Padua, paratype in coll. Linnavuori.

Length 4 mm. Fairly shiny. Reddish ochraceous. Tylus blackish, other parts of head reddish

brown, vertex along eyes ochraceous; eyes reddish brown. Antennae black, base of 3rd joint slightly paler. Anterior margin of pronotum yellowish, calli reddish brown, shiny, basal part of disk grayish ochraceous with slight reddish tinge. Elytra grayish ochraceous, mesocorium with slight reddish tinge; membrane brownish, veins concolorous. Under surface of thorax reddish brown. Abdomen dark brown. Legs pale ochraceous, femora slightly darker apically, tips of tarsi embrowned.

Body long, parallel-sided,  $3.5 \times$  as long as broad at base of pronotum. Hair covering longish, pale. Head large,  $0.8 \times$  as broad as basal width of pronotum, in apical view broader than high (54:45), in lateral view as long as high, base of vertex nearly ecarinate; eyes large, ocular index 1.0–1.18. Antennae long, proportions between joints 26:95:74:32, 1st joint  $0.48 \times$  as long as diatone, 2nd  $1.36 \times$  as long as basal width of pronotum. Rostrum extending to middle of ab-

domen. Pronotum  $1.84 \times$  as long as broad, lateral margins slightly insinuated, calli raised. Elytra much longer than abdomen. Hair covering of legs short, pale tibial spines delicate, pale. Proportions between hind tarsomeres 7:10:13.

Male genitalia in Fig. 25b–e. Left side of dorsal margin of genital opening with two dentate lobes. Structure of styles and aedeagus seen in the figures.

Distribution: Known only from Somalia.

### The *compactus* group

Opaque green species. Hair covering either simple, long pale and semierect (*compactus*) or double (the other species): pale or brownish long semierect hairs and patches of adpressed stiff silvery pubescence, in *O. akastos* and *O. aineias* stiff adpressed black hairs also present.

Male genitalia: Pygofer and anal tube with groups of black spines. Right style very small. Left style blade-like, sensory lobe totally rounded. Vesica with several dentate processes.

Distribution: South and East Africa. In South Africa apparently several closely related species, three of which are described below.

Biology unknown.

The group resembles the Palearctic subgenus *Neopachylops* Wagner in the type of hair covering, but differs in the presence of black spines on the genital segment, reduced right style, totally rounded sensory lobe of the left style, and the complicated structure of the vesica.

### *Orthotylus (Orthotylus) compactus*

Linnavuori

Figs. 26, 38

*Orthotylus compactus* Linnavuori 1975:53.

Types: The Sudan, Equatoria, Torit-Kapoeta, ♂ holotype, 1 paratype, 26.IV.1963; Bahr el Ghazal, Wau, 1 paratype, 19.II.1963, Linnavuori, in coll. Linnavuori.

Length 3.0–4.5 mm. Relatively shiny. Greenish yellow. Antennae and legs yellow-brown. Elytra green, membrane pale, veins green.

Body robust, elongately ovate,  $2.7\text{--}3.0 \times$  as long as broad at pronotum. Hair covering pale.

Head  $0.7 \times$  as broad as basal width of pronotum, base of vertex sharply marginate and provided with a median longitudinal depression; ocular index 1.5 (♂), 2.18 (♀). Proportions between antennal joints 7:30:?, 2nd joint as long as basal width of pronotum. Rostrum extending to near hind coxae. Pronotum slightly more than twice as broad as long, calli distinctly elevated.

Male genitalia (Figs. 26a–b, 38a–b): Middle of dorsal margin of pygofer with small dark apically dentate lobe, right side of pygofer with numerous black teeth, which are also present on the anal cone. Right style very small, ovate. Left style blade-like. Aedeagus as in Fig. 26b.

Distribution: Known only from the Sudan.

### Extralimital species

### *Orthotylus (Orthotylus) akheloos* sp. n.

Fig. 26

Material: South Africa: Seweweekspoort, ♂ holotype, 22.IV.1973, J.G. Theron, in coll. Linnavuori.

Length 4.5 mm. Opaque. Pale green. Head, anterior margin of pronotum, base of scutellum, under surface and legs pale yellow. Eyes brownish gray. 1st antennal joint pale yellow, other joints slightly embrowned. Membrane of elytra pale brownish, veins green.

Body robust, elongately ovate. Hair covering long, dense, semierect, brownish, patches of stiff silvery adpressed pubescence also present. Head  $0.81 \times$  as broad as basal width of pronotum; eyes small, ocular index 1.92. Proportions between antennal joints 18:82:35:18, 2nd joint  $1.3 \times$  as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum  $1.7 \times$  as broad as long in middle. Hind tibia  $4.36 \times$  as long as tarsus.

Male genitalia (Fig. 26c–f): Pygofer as in Fig. 26c. Right style very small as in the related species. Left style with very long hypophysis ending in a triangular lobe. Central sclerified band of vesica stout, expanding apicad, ending in three dentate processes; two basal processes, one of them falcate, the other bifid.

Etymology: Greek mythology, Akheloos, the god of rivers.



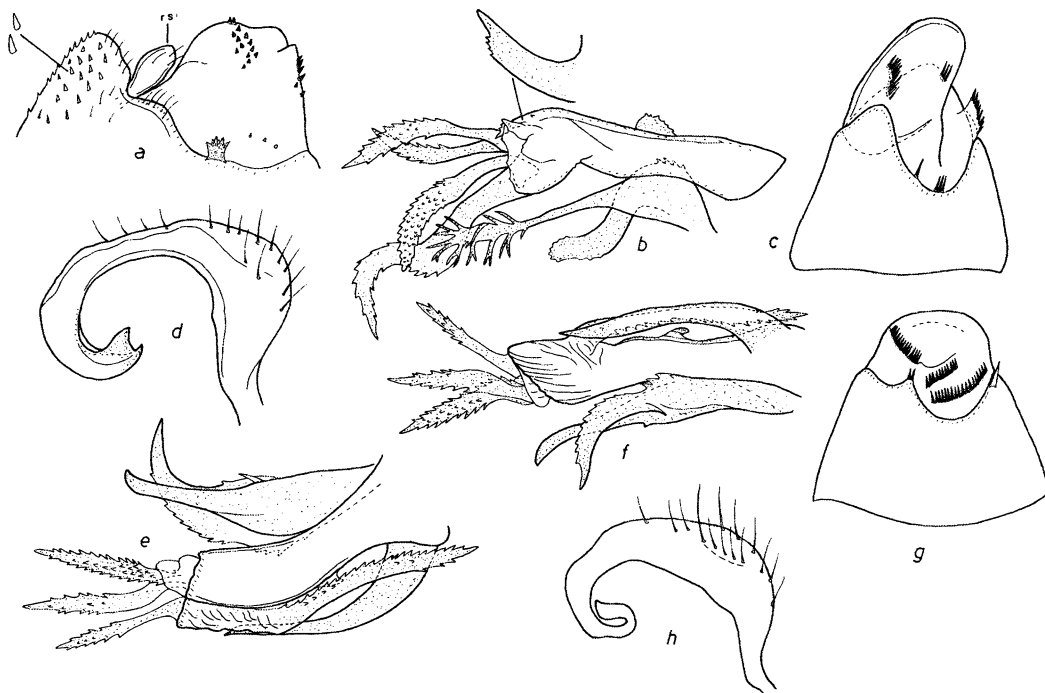


Fig. 26. *Orthotylus compactus* Linnavuori: a) pygofer, dorsal view (rs = right style); b) appendages of vesica. — *O. akheloos* sp. n.: c) pygofer, dorsal view; d) left style; e–f) vesical appendages in different views. — *O. akastos* sp. n.: g) pygofer, dorsal view; h) left style.

***Orthotylus (Orthotylus) akastos* sp. n.**

Figs. 26, 28

Material: SW Africa: Noordoewer, ♂ holotype, 9.VII.1974, J.G.Theron, in coll. Linnavuori.

Length 4.25 mm. Like the preceding species, but upper surface also with stiff adpressed black hairs.

Head 0.64 × as broad as basal width of pronotum. Eyes very small, ocular index 2.1. Proportions between antennal joints 21:75:?, 2nd joint 1.01 × as long as basal width of pronotum. Rostrum extending to middle coxae. Hind tibia 4.8 × as long as tarsus.

Male genitalia (Figs. 26g–h, 28a): Left side of dorsal margin of genital opening with a pale spine. Right style as in the related species. Hypophysis of left style very long, apex truncately expanded. Apically expanded central band of vesica with 4 apical processes, one of them very

long, smooth, and ending in a dentate apex, the others tapering apicad, spiny.

Etymology: Greek mythology, Akastos, son of Pelios, one of the Argonauts.

***Orthotylus (Orthotylus) aineias* sp. n.**

Fig. 28

Material: South Africa: Robertson, ♂ holotype, 31.III.1973, J.G.Theron, in coll. Linnavuori.

Length 3.75 mm. Opaquely shiny. Green. Head, pronotum, scutellum, and cuneus yellow, base of corium with yellow tinge. Eyes yellowish gray. Antennae yellow. Membrane of elytra brownish smoky, veins yellow. Under surface and legs yellow.

Body gracile, parallel-sided, 3.3 × as long as broad. Upper surface with long semierect pale hairs and patches of adpressed silvery tomentum,

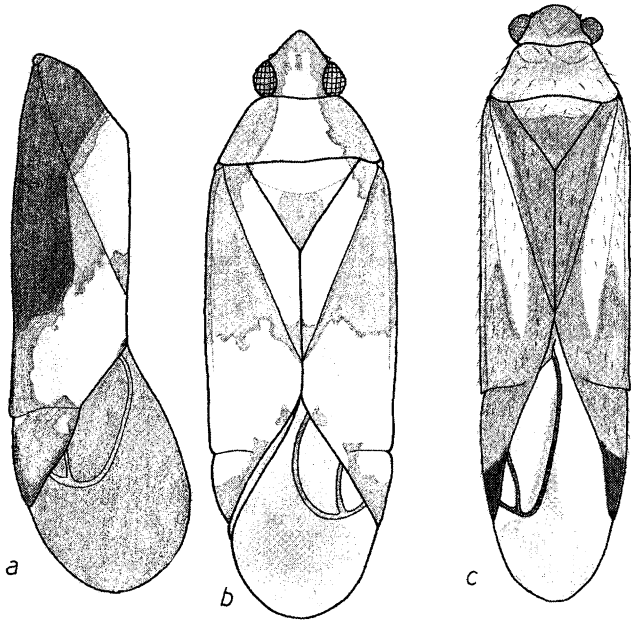


Fig. 27. *Pseudoloxops galateia* sp. n.: a) elytron. — *P. amfitrite* sp. n.: b) dorsal view. — *Orthotylus ericinellae* Poppius: c) male, dorsal view.

elytra also with numerous stiff adpressed black hairs. Head  $0.62 \times$  as broad as basal width of pronotum; eyes very small, ocular index 2.7. Proportions between antennal joints 19:75:34:18, 2nd joint  $1.15 \times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Hind tibia  $4.6 \times$  as long as tarsus.

Male genitalia (Fig. 28b–f): Spinulation of pygofer and structure of vesica as in Fig. 28b–c, f. Right style very small, with blunt apical tooth. Hypophysis of left style relatively short.

Etymology: Greek mythology, Aineias, a Trojan hero, son of Ankhises and Aphrodite.

### Subgenus *Orthotylus* (*Ericinellus*) subgen. n.

Type species: *Orthotylus ericinellae* Poppius.

Diagnosis: Resembling the Palearctic subgenus *Litocoris* Fieber, but differing in the ecarinate vertex and simple structure of the aedeagus.

Description: Color green. Cuneus red. Membrane of elytra variegated, milky with large brown

apical spot. Body gracile. Hair covering simple, long, erect brown or black. Base of vertex ecarinate. Eyes a little removed from the anterolateral angles of pronotum.

Male genitalia: Pygofer small. Right style resembling a bird's head. Left style with long digitate hypophysis, sensory lobe rounded. Aedeagus simple, without sclerified processes.

Biology: On Ericaceae.

Distribution: South and East Africa. In South Africa apparently several closely related species, one of them is described below.

### *Orthotylus* (*Ericinellus*) *ericinellae* Poppius

Figs. 27, 28

*Orthotylus ericinellae* Poppius 1914:69–70, Linnavuori 1975:54.

Types: East Africa, Kilimanjaro, Kibonoto, 3000–4000 m, 2♂ and 1♀ syntypes, Sjöstedt, in Mus. Helsinki. A male syntype is here designated as the lectotype.

Material: Ethiopia: Mai Chew, 3♂♂, 1.VI.1963, Linnavuori.

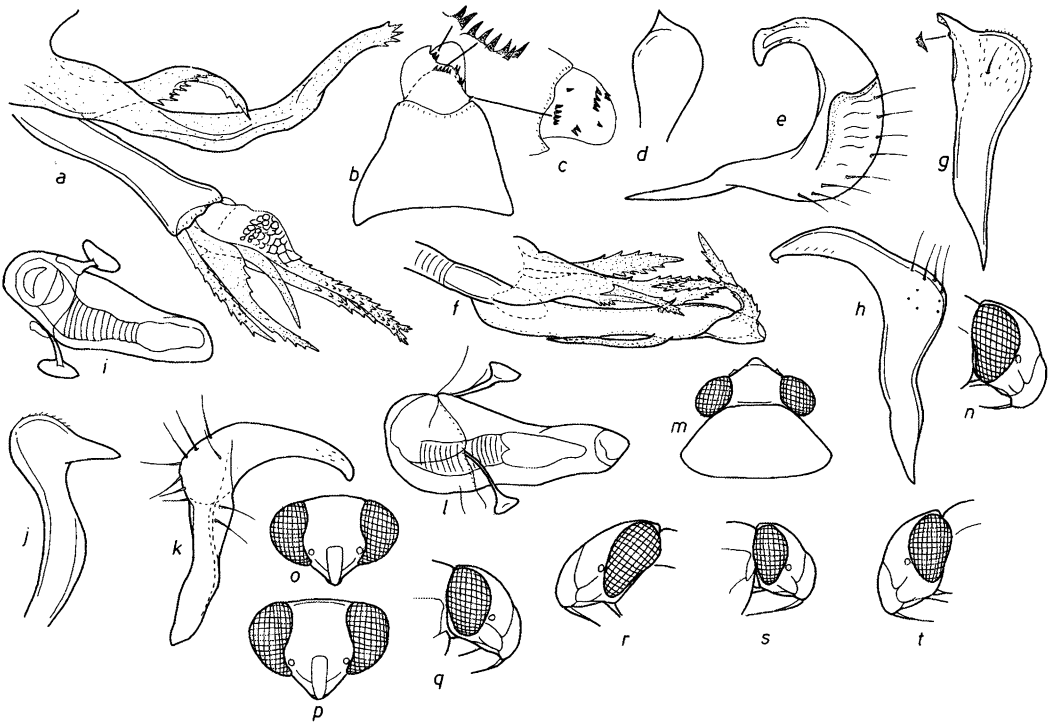


Fig. 28. *Orthotylinus akastos* sp. n.: a) appendages of vesica. — *O. aineias* sp. n.: b) pygofer, dorsal view; c) apex of pygofer, lateral view; d) right style; e) left style; f) appendages of vesica. — *O. ericinellus* Poppius (syntype): g) right style; h) left style; i) aedeagus, dorsolateral view. — *O. selene* sp. n.: j) right style; k) left style; l) aedeagus, dorsolateral view. — *O. monticolus* Linnavuori: m) male head and pronotum, dorsal view; n–o) male head in lateral and in apical view. — *O. halaibicus* Linnavuori: p) male head in apical view; q–r) male head in lateral view (q ex from Mersa Halaib, r of a large small-eyed ex from Eilat). — *O. arabicus* Wagner: s–t) male head, lateral view (s ex from Al Hasa, t of a large ex from Layla).

Diagnosis: Body gracile. Green. Elytra variegated with milky areas, apex of cuneus red; membrane milky with large apical infuscation, veins reddish.

Length ♂ 4.0–4.75 mm, ♀ 3.5 mm. Green. Head, anterior margin of pronotum and scutellum yellow, head sometimes with reddish tinge. Eyes gray. Antennae yellow, joints 3 and 4 fuscous. Elytra green or partially yellowish, mesocorium with large milky area, apex of cuneus red; membrane milky with large apical infuscation, veins orange or red. Under surface greenish. Legs yellowish, tarsi infuscate.

Body in ♂ parallel-sided, very long and gracile, 4.1–4.3 × as long as basal width of pronotum, in ♀ robuster, 3.3 × as long as basal width of pronotum. Hair covering long, erect, brown or

black. Head 0.71–0.77 × as broad as basal width of pronotum; ocular index 1.55–1.77 (♂) or 2.42 (♀). Proportions between antennal joints 25:96:63:39 (♂), 23:77:?? (♀), 2nd joint 1.7–1.8 (♂) or 1.43 (♀) × as long as basal width of pronotum. Rostrum extending far beyond hind coxae. Pronotum short, in ♂ about 2.5, in ♀ 3 × as long as medium length. Elytra extending far (♂) or a little (♀) beyond tip of abdomen. Legs long and gracile. Hind tibia 4.83 (♂) or 4.9 (♀) × as long as tarsus, 2.63 (♂) or 2.33 (♀) × as long as basal width of pronotum.

Male genitalia in Fig. 28g–i.

Biology: Found on *Ericinella manni* in Kilimanjaro, *Erica arborea* in Ethiopia.

Distribution: Known from mountains of East and NE Africa.

*Extralimital species:*

***Orthotylus (Ericinellus) selene* sp. n.**

Figs. 28, 31

Material: South Africa: Stanford, Salmonston, ♂ holotype, 2 paratypes (♂♀), 1.X.1972, J.G.Theron, in coll. Linnavuori. Other material: South Africa: Swellendam, State Forest, 8 exx, 13.X.1972, J.G.Theron, in coll. Linnavuori.

Diagnosis: Much smaller than the preceding species. Cuneus red. Body robust.

Description: Length 3.5 mm. Green. Head, pronotum and scutellum yellow. Eyes brownish gray. 1st antennal joint yellowish, others embrowned. Base of mesocorium ± yellowish. Cuneus red; membrane milky with large apical infuscation, veins yellowish. Under surface of head and thorax yellow, abdomen greenish. Legs yellowish, tarsi blackish.

Body parallel-sided, in ♂ 3.4, in ♀ 3.0 × as long as broad at base of pronotum. Head 0.76 × as broad as basal width of pronotum; ocular index 2.0–2.2 (♂), 2.7 (♀). Proportions between antennal joints 20:83:50:21 (♂), 19:70:45:20 (♀), 2nd joint 1.5 (♂), 1.27 (♀) × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum 2.5–2.6 × as long as broad in middle. Elytra extending considerably beyond tip of abdomen. Hind tibia about 5 × as long as tarsus, 2.17 (♂) or 2.1 (♀) × as long as basal width of pronotum.

Male genitalia (Fig. 28j–l) much as in the preceding species.

Etymology: Greek mythology, Selene, the goddess of the moon.

**Subgenus *Orthotylus (Melanotrichus)* Reuter**

*Orthotylus* subgenus *Melanotrichus* Reuter 1875:92. Type species: *Phytocoris flavosparsus* Sahlberg.

*Allocotus* Puton 1874:218. Type species: *A. rubidus* Puton. *Halocapsus* Puton 1878:38, new name for *Allocotus* Puton 1871, nec *Allocotus* Fischer 1838, Pisces. Type species: *Allocotus rubidus* Puton (Reuter 1883:342).

Description: Small or medium-sized species. Upper surface with double hair covering: longish semierect pale, brown or black hairs and adpressed silvery or yellowish scale-like hairs.

Male genitalia: Pygofer small. Right style small, ± spoon-shaped, with claw-like apical spine, sometimes also with accessory subapical spines. Left style triangular, upper margin ± straight, hypophysis with a blade-like process, which is recurved mesad, sensory lobe rounded. Aedeagus small, chitinized process (es) of vesica simple.

Biology: Mainly on Chenopodiaceae. Many species live on halophytes such as *Anabasis*, *Salsola* and *Suaeda*.

Distribution: Holarctic. Well represented in the Mediterranean and Eremian subregions.

**Key to the species in NE Africa of the subgenus *Orthotylus (Melanotrichus)***

1. Bicolored species: head, pronotum and cuneus black, rest of upper surface grayish green or yellowish ..... *martini*
- Uniformly green or yellow-green species ..... 2
2. Opaque. Pale yellowish. Semierect hairs on upper surface totally pale. Eyes (♂) in lateral view extending to ventral margin of head. Pygofer (Fig. 29k) short-haired ..... *monticolus*
- Shiny green species. Semierect hairs on upper surface, in apical part of elytra especially, partially dark or even black. Eyes not extending to ventral margin of head. Pygofer long-haired ..... 3
3. Larger, length ♂ 3.5–4.0 mm, ♀ 3.0–3.25 mm. Eyes in ♂ large, ocular index 1.35–1.55, in ♀ about 2.43. Hind tibia (measured in slide mount) 3.45–3.60 × as long as tarsus. On *Suaeda monoica* in salt marshes . *halabicus*
- Smaller, length ♂ 2.75–3.50 mm, 2.75–3.0 mm. Eyes in ♂ smaller, ocular index 1.60–2.21 (♂), 2.35–2.65 (♀). Hind tibia 3.16–3.32 × as long as tarsus. Widespread on halophytes in desert habitats ..... *arabicus*

***Orthotylus (Melanotrichus) martini* Puton**

Fig. 40

*Orthotylus martini* Puton 1887:307.

Material: The Sudan: Kassala, Suakin, 1 ex, 5.XII.1962, Linnavuori.

Description in Wagner 1973:225–226.

Biology: Recorded from *Suaeda fruticosa* (Wagner 1973:226).

Distribution: Eremian, known from Algeria, Tunisia and the Red Sea Coast in the Sudan and Saudi Arabia.

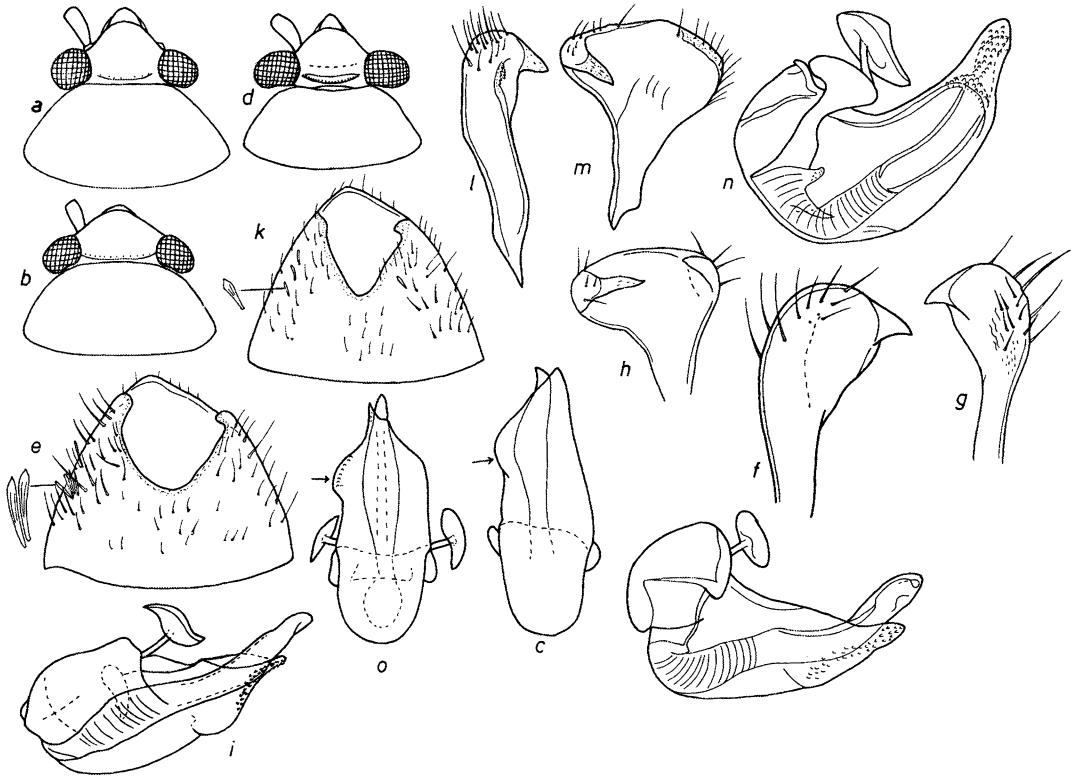


Fig. 29. *Orthotylus arabicus* Wagner: a–b) male and female head and pronotum, dorsal view; c) aedeagus, ventral view. — *O. halaibicus* Linnavuori: d) male head and pronotum, dorsal view; e) pygofer, dorsal view; f–g) right style; h) left style; i–j) aedeagus of two specimens, lateral view. — *O. monticolus* Linnavuori: k) pygofer, dorsal view; l) right style; m) left style; n–o) aedeagus in lateral and in ventral view.

***Orthotylus (Melanotrichus) monticolus***

**Linnavuori**

Figs. 28–29

*Orthotylus (Melanotrichus) monticolus* Linnavuori 1975: 53–54.

Types: The Sudan, Kassala, Erkowit, ♂ holotype, 1♂ paratype, 5–10.VII.1961, Linnavuori, in coll. Linnavuori.

Length 3.5 mm. Opaque. Pale yellowish. Eyes grayish brown. Antennae and legs whitish ochraceous. Membrane of elytra brownish smoky, veins yellowish.

Body robust, 2.6 × as long as broad. Semierect hairs on upper surface completely pale, silvery adpressed hairs scanty. Head broad; eyes large,

in dorsal view encircling anterolateral margins of pronotum, in lateral view extending to ventral margin of head; ocular index 1.40–1.47. Proportions between antennal joints 5:22:18:12, 2nd joint slightly longer than basal width of pronotum. Rostrum extending to hind coxae. Pronotum 2.5 × as broad as long in middle. Hind tibia (in slide mount) 3.21 × as long as tarsus.

Male genitalia (Fig. 29k–o): Pygofer short-haired, the scale-like erect hairs on sides of pygofer also considerably shorter than in the other species. Apical part of right style narrower and straighter than in the related species, inner surface with very small dentate lamella. Process on hypophysis of left style short, sensory lobe broadly rounded. Aedeagus robust, left side of theca with strong dentate subapical expansion,

apex of theca in lateral view broadish, coarsely dentate.

Distribution: Known only from the Red Sea Hills in the Sudan.

***Orthotylus (Melanotrichus) halaibicus***

**Linnavuori**

Figs. 28–29, 33

*Orthotylus (Melanotrichus) halaibicus* Linnavuori 1975:54, 1986:148.

Types: The Sudan, Kassala, Suakin, ♂ holotype, 1 paratype, 5.XII.1962; several paratypes from Jebel Elba, 10–14.XII.1962, Mersa Halaib, 10–14.XII.1962 and Mohammed Qol, 15.XII.1962, Linnavuori, in coll. Linnavuori.

Material: Israel: many exx from Eilat, 20.VI.1958, 17.VI.1986; En Tamar, 15.IV.1986; Neot Hakikkar, 16–20.VII.1986; Newe Zohar, 28.IV.1986, Linnavuori. Saudi Arabia: 37 km NE of Wadi Dawasir, several exx, 4.II.1978, Linnavuori.

Length ♂ 3.5–4.0 mm, ♀ 3.0–3.25 mm. Shiny. Green or yellowish green. Eyes grayish or reddish brown. Antennae yellow. Membrane of elytra grayish, veins green. Legs yellowish.

Robust, body in ♂ parallel-sided, in ♀ elongately ovate. Hair covering on upper surface long, dense, yellowish, in apical part of elytra dark or blackish, silvery adpressed hairs sparse. Eyes in ♂ large, transverse, ocular index ♂ 1.35–1.55 (exceptionally in large specimens 1.6), ♀ about 2.43; base of vertex, in ♂ especially, strongly keeled. Proportions between antennal joints 6:27:21:11, 2nd joint in ♂ slightly longer or shorter than basal width of pronotum, in ♀ about 0.84 × as long. Rostrum extending to hind coxae. Pronotum about 2.4 × as broad as long in middle. Hind tibia (in slide mount) 3.45–3.60 × as long as tarsus.

Male genitalia (Figs. 28e–j, 33i–k). Pygofer long-haired. Styles in Figs. 28f–h, 33i–k. Aedeagus: theca with low subapical expansion on left side, apex narrowish and dentate. K-structure (♀) in Fig. 33l–m.

Biology: On large *Suaeda monoica* bushes in salt marshes. Often accompanied by the pentatomid *Tarisa elongata* Horvath.

Distribution: The Red Sea Coast in the Sudan and Israel. An isolated inland find from Wadi Dawasir in Saudi Arabia.

***Orthotylus (Melanotrichus) arabicus* Wagner**

Figs. 28–29, 33

*Orthotylus (Melanotrichus) arabicus* Wagner 1962:215–216.

*O. (Melanotrichus) jordanicus* Wagner 1963:270–272 (Linnavuori 1986:147).

*O. (Melanotrichus) halaibicus abbreviatus* Linnavuori 1975:54 (Linnavuori 1986:147).

Types: Saudi Arabia, Riyadh, ♂ holotype of *arabicus*, IX.1958, Diehl, in Mus. Hamburg; Israel, Jericho, ♂ paratype of *jordanicus*, 5.V.1962, Eekerlein, in coll. Linnavuori; Saudi Arabia, Lith, ♂ holotype, 1♂ paratype of *abbreviatus*, Uvarov, in the British Museum and coll. Linnavuori.

Material: Numerous exx from Israel: Ein Avdat, 10.VIII.1986; Elifaz near Timna, 23.VI.1986; En Aqrabbim, 31.VII–9.VIII.1986; Ein Gedi, 22.VI.1986; En Orahot, 15.VII.1986; En Tamar, 15.IV.1986; Hazeva, 15.IV.1986; Idanre, 30.VII.1986; Nahal Arugot, 22.VII.1986; Neot Hakikkar, 18–20.VII.1986; Newe Zohar, 28.IV.1986, Linnavuori. Jordania: Suweima, 22.VII.1981, Linnavuori. Syria: Raqqa-Deir es Zor, 11.VIII.1979, Linnavuori. Iraq: Ain al Tamar, 17.VII.1980; Al Amarah, 23–24.X.1979; Baghdad, IV.VII.1980; Mosul, 28.VIII.1980; Sawa Lake, 21.X.1979; Tharthar Lake, 23.VIII.1979, Linnavuori. Saudi Arabia: localities listed in Linnavuori 1986:147. Yemen: San'a, 2–9.X.1937, C. Rathjens; Lahej-Dhala road, 13–14.VII.1963, Linnavuori. Eritrea: Docali, 30.V.1963; Massawa, 27–30.V.1963, Linnavuori. Somalia: Berbera, 26.VI.1963, Linnavuori.

Like the preceding species, but smaller, length ♂ 2.25–3.50 mm, ♀ 2.35–3.0 mm. Coloring somewhat paler. Upper surface with abundant adpressed silvery pubescence. Eyes in ♂ smaller, ocular index 1.60–2.21 (in some specimens from Somalia and Eritrea 1.48–1.55), in ♀ 2.35–2.65; base of vertex moderately keeled. 2nd antennal joint in ♂ longer, in ♀ slightly shorter than basal width of pronotum. Hind tibia (in slide mounts) 3.16–3.32 × as long as tarsus.

Male genitalia and K-structure of ♀ (Figs. 29c, 33a–h) as in *O. halaibicus*. Vesica somewhat less protruding than in *O. halaibicus*.

Biology: On halophytes such as *Salsola oppositifolia* and *Suaeda pruinosa*, and apparently temporarily on *Zygophyllum*.

Distribution: Widespread and common in the Arabian Peninsula and the adjacent Eremian countries.

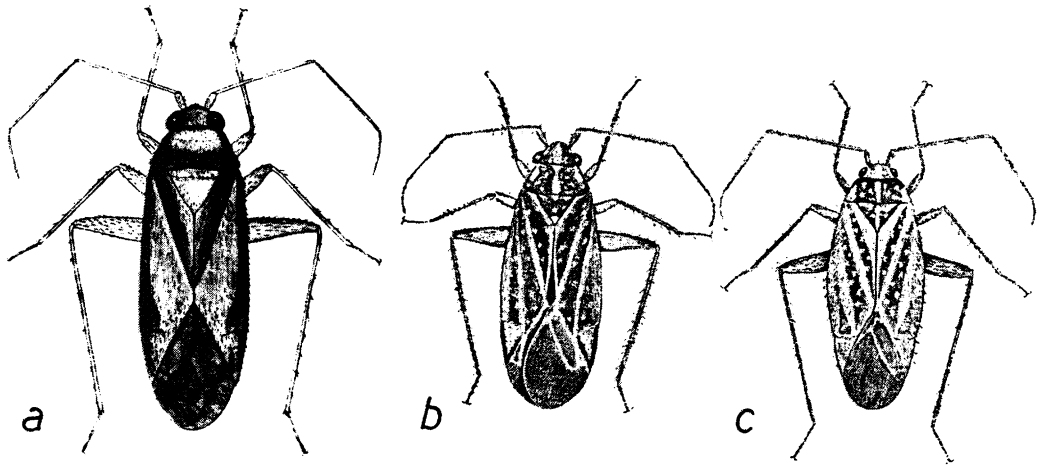


Fig. 30. *Orthotylus acacicola* Lindberg: a). *Erythrocorista echii* Lindberg: b). *E. odontospermi* Lindberg: c). After Lindberg 1958.

***Orthotylus (Melanotrichus) sp.***

Material: The Cape Verde Islands: Sal Santa Maria, 3 exx, 18–26.I.1954; Sal Pedro Lume, 3 exx, 19–27.I.1954, H.Lindberg, in Mus. Helsinki.

Recorded as *O. pusillus* Reuter in Lindberg 1958:104. Since the specimens studied are females, a positive identification is impossible.

**Genus *Erythrocorista* Lindberg**

*Erythrocorista* Lindberg 1958:107. Type species: *E. echii* Lindberg.

Diagnosis: Principal characters as in *Orthotylus*, from which it is distinguished by the distinctive longitudinal red stripes on the upper surface.

Description: The original description is not repeated. Hair covering double: long dense erect brownish hairs and patches of adpressed silvery brown-like pubescence.

Male genitalia (according to Lindberg): right style narrow, falcate. Left style with long digitate hypophysis and small rounded sensory lobe. Aedeagus without sclerified vesical processes.

Biology: On *Echium* and *Odontospermum*.

Distribution: Known only from the Cape Verde Islands.

***Erythrocorista echii* Lindberg**

Fig. 30

*Erythrocorista echii* Lindberg 1958:108.

Types: The Cape Verde Islands: São Tiego, Serra do Pico la Antonio, ♂ lectotype, designated by Schuh, 7 paratypes, 10.II.1954, H. Lindberg, in Mus. Helsinki, a paratype in coll. Linnavuori.

The original description not repeated.

Biology: On *Echium hypertropicum*.

***Erythrocorista odontospermi* Lindberg**

Fig. 30

*Erythrocorista odontospermi* Lindberg 1958:109.

Types: The Cape Verde Islands: São Nicolau, Monte Gordo, ♂ holotype, 1 ♀ paratype, 15.XII.1953, H.Lindberg, in Mus. Helsinki.

The original description not repeated.

Biology: On *Odontospermum smithii*.

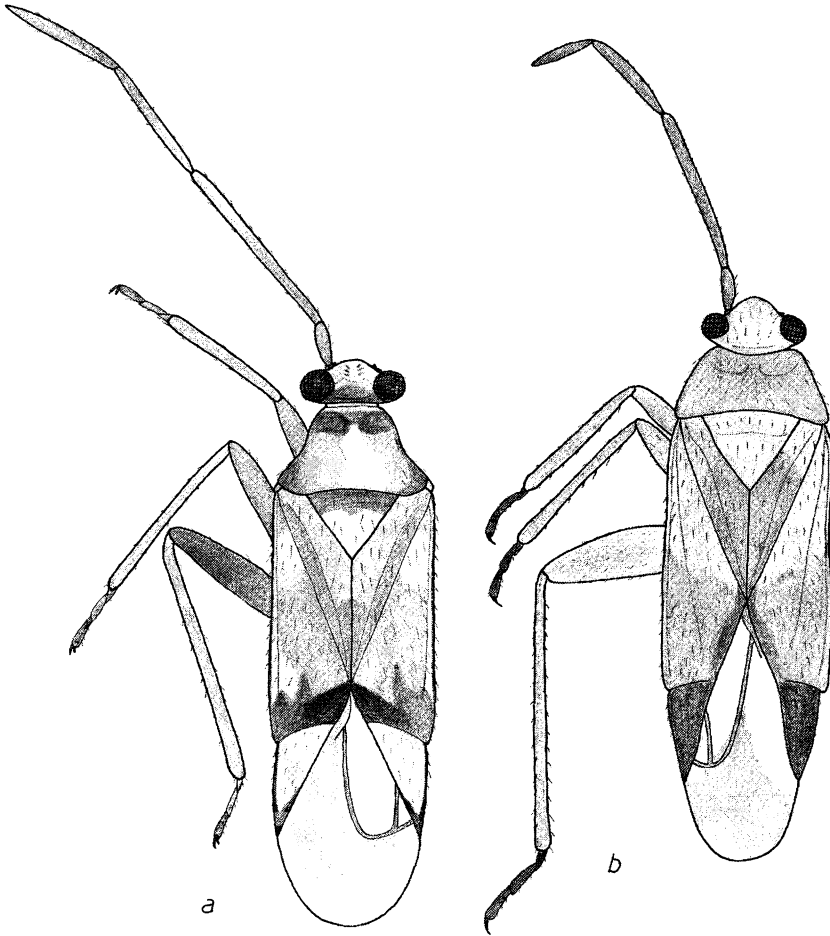


Fig. 31. *Hekate eirene* gen. et sp. n.: a) male, dorsal view. — *Orthotylus selene* sp. n.: b) male, dorsal view.

### Genus *Hekate* gen. n.

Type species: *H. eirene* Linnavuori.

**Diagnosis:** Like *Orthotylus*, but with bright red and orange pattern, head very short and broad, eyes separate from anterolateral angles of pronotum, and distinctive genitalia.

**Description:** Color pale yellowish with red and orange pattern. Body elongate, parallel-sided,  $>3 \times$  as long as broad. Hair covering long, erect, yellowish. Head very short and broad, in lateral view distinctly higher than long with vertical face, in apical view broader than high with lower part very short; frons vertically sloping ventrad, vertex shallowly concave, basal margin distinctly

keeled. Eyes separate from anterolateral angles of pronotum, in  $\sigma$  voluminous, in  $\text{♀}$  smaller. Antennae arising below middle of eyes, long and gracile, with short semierect hair covering, 2nd joint shorter than the combined length of joints 3 and 4. Rostrum extending to middle coxae. Pronotum with narrow but distinct collar, lateral margins strongly insinuated, calli elevated. Elytra much longer than abdomen, costal margins parallel, cuneus twice as long as broad. Legs gracile, tibial spines delicate and pale; hind tibia  $>6 \times$  as long as tarsus; 2nd hind tarsomere longer than 3rd.

**Male genitalia:** Pygofer with falcate process arising from left side of genital opening. Right



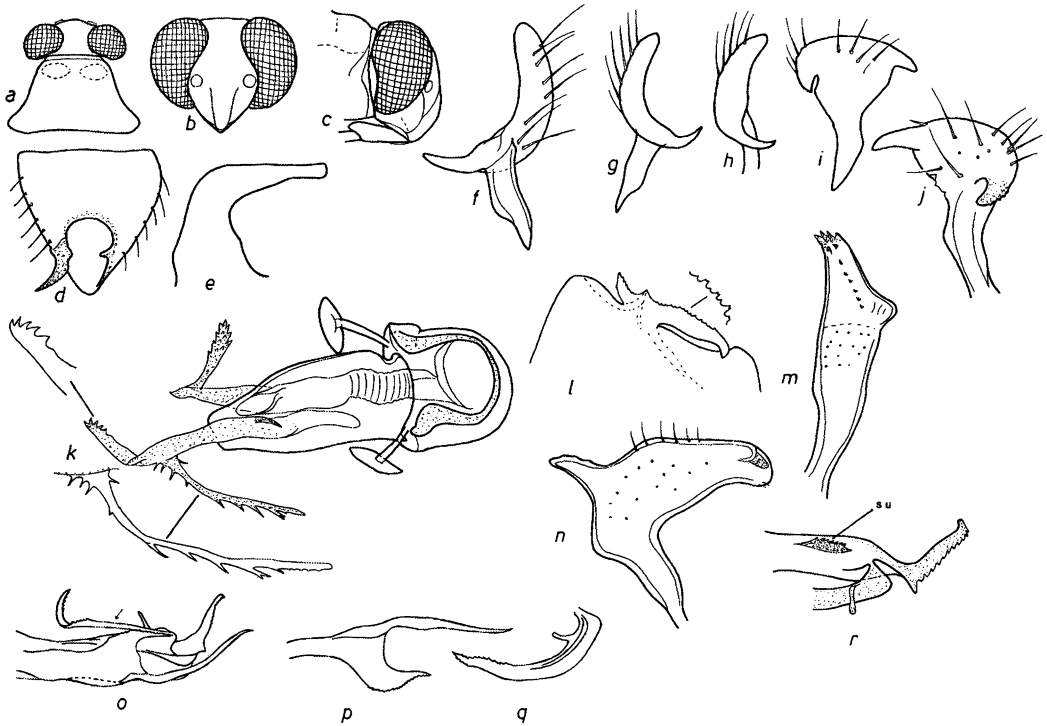


Fig. 32. *Hekate eirene* gen. et sp. n.: a) male head and pronotum, dorsal view; b) male head, apical view; c) male head, lateral view; d) pygofer, dorsal view; e) process of pygofer; f-h) right style in different views; i-j) left style; k) aedeagus, dorsal view. — *Orthotylus priesneri* Schmidt: l) process of pygofer; m) right style; n) left style; o) processes of vesica, lateral view; p) ventral process of vesica; q) dorsal process of vesica; r) apex of central sclerified band of vesica (su = subapical lobe). — o-q after Linnavuori 1986.

style distinctive, long, narrow and arcuate. Left style roundedly triangular in outline, hypophysis short and claw-like, sensory lobe with blunt claw-like process. Aedeagus with long ramose and dentate vesical appendages.

**Etyymology:** Greek mythology, Hekate, the goddess of the moon.

***Hekate eirene* sp. n.**

Figs. 31-32

**Material:** Nigeria: W St., Ile-Ife, ♂ holotype, 25.VIII.1970, J.T.Medler. Ivory Coast: Man, 1♀ paratype, 14-21.X.1973, Linnavuori, in coll. Linnavuori.

**Length** 3.50-3.75 mm. Shiny. Pale yellowish. Lateral arcs on frons and base of vertex red. Eyes

dark or reddish brown. 1st antennal joint red, 2nd orangish, others embrowned. Calli of pronotum red, posterior part of disk, save pale midline, orange, humeral angles embrowned. Base of scutellum red, apical part whitish yellow. The very costal margins of the elytra, large apical spot on corium and apical angle of cuneus bright red, inner basal area of clavus reddish, other parts of clavus, large area on mesocorium and inner apical angle of corium embrowned, lateral margins of elytra and two spots on mesocorium and cuneus yellowish; membrane brownish smoky, cells hyaline, veins red or fuscous. Under surface brightly orange and red, apical margins of tergites pale. Scent gland orifices whitish. Coxae and bases of femora orangish, fore and middle femora otherwise orange, hind femora red; tibiae and tarsi orangish, 3rd tarsomeres dark.

Body  $3.4 \times$  ( $\sigma$ ) or  $3.2 \times$  ( $\varnothing$ ) as long as broad (measured at base of elytra. Head  $0.9$  ( $\sigma$ ) or  $0.76$  ( $\varnothing$ )  $\times$  as broad as basal width of pronotum; ocular index  $0.6$  ( $\sigma$ ) or  $1.20$  ( $\varnothing$ ). Proportions between antennal joints  $21:55:60:40$  ( $\sigma$ ),  $20:85:60:53$  ( $\varnothing$ ), 2nd joint  $1.47$  ( $\sigma$ ) or  $1.42$  ( $\varnothing$ )  $\times$  as long as basal width of pronotum. Pronotum about  $1.93 \times$  as broad as long in middle. Hind tibia  $2.17$  ( $\sigma$ ) or  $2.0$  ( $\varnothing$ )  $\times$  as long as basal width of pronotum, about  $6.25 \times$  as long as hind tarsus.

Male genitalia in Fig. 32d–k.

Biology: At lamps in rain forests.

Etyymology: Greek mythology, Eirene, daughter of Zeus and Themis.

### Genus *Cyrtorhinus* Fieber

*Cyrtorhinus* Fieber 1858:313. Type species: *Capsus elegantulus* Meyer, a synonym of *Capsus caricis* Fallén.

*Chlorosomella* Reuter 1904:6–7. Type species: *C. geniculata* Reuter, syn. n.

*Reuteriessa* Usinger 1951:3. Type species: *Cyrtorhinus lividipennis* Reuter (Carvalho 1958:54).

*Cyrtorhinus* Carvalho & Southwood 1955:35.

Diagnosis: Color green or yellowish, usually with dark pattern. Head large, eyes distinctly separate from anterolateral corners of pronotum. Pronotum campanuliform. Elytra usually much longer than abdomen, cuneus at most twice as long as broad basally. Aedeagus with one sclerified spiculum.

Description: Color green or yellowish, usually with  $\pm$  intense dark pattern. Small to medium-sized species. Hair covering on upper surface pale, rarely black, semierect. Head large, only a little narrower than base of pronotum, rounded anteriorly, face semivertical, base of vertex bluntly carinate or ecarinate; eyes separate from anterior margin of pronotum by about diameter of 2nd antennal joint. Antennae arising near lower corner of eyes, gracile, 2nd joint shorter than the combined length of joints 3 and 4. Rostrum extending to middle coxae. Pronotum campanuliform, lateral margins insinuated, calli  $\pm$  raised. Elytra usually much longer than abdomen, cuneus at most twice as long as broad basally; rarely (in *dimorphus*) the elytra are shorter than the abdomen, in which case the membrane rudiments are clearly visible. Legs gracile, tibial spines delicate, 2nd hind tarsomere shorter than 3rd.

Male genitalia: Pygofer conical. Right style usually bifid owing to a parabolic subapical process, which is directed dorsad, apical lobe of style dentate. Left style with long digitate hypophysis, sensory lobe usually strongly prominent. Aedeagus narrow, provided with one sclerified spiculum, which is usually pointed apically and bears a rounded dentate subapical expansion.

Biology: Representatives of the genus are found in swampy meadows and shores. The Palearctic *C. caricis* (Fallen) is found on *Carex*, *Juncus* and *Scirpus*.

Distribution: Paletropical, one species Holartic.

### Key to the African species of the genus *Cyrtorhinus*

1. Upper surface with distinct black markings, at least on anterior part of head ..... *melanops*  
— Upper surface uniformly green or yellowish ..... 2
2. Lateral margins of pronotum strongly insinuated. Hair covering pale. 1st antennal joint, save base and extreme tip, and base of 2nd joint blackish. Extreme bases of tibiae black.  $\varnothing$  macropterous ..... *geniculatus*  
— Lateral margins of pronotum straight or slightly insinuated. Hair covering black. Antennae in  $\sigma$  black, in  $\varnothing$  yellow with joints 3 and 4 embrowned.  $\varnothing$  brachypterous ..... *dimorphus*

### *Cyrtorhinus geniculatus* (Reuter), comb. n.

Fig. 33

*Chlorosomella geniculata* Reuter 1904:7–8.

*Cyrtorhinus viridis* Linnavuori 1975:58–59.

Types: Zaire, Kinchassa, 1 $\sigma$  syntype of *geniculatus*, designated here as the lectotype, 9.III.1899, Waelbrock, in Mus. Helsinki. The Sudan, Equatoria, Juba,  $\sigma$  holotype of *viridis*, 27.II–2.III.1963, Linnavuori; several paratypes from Blue Nile, Singa-Damazin, 15–17.XI.1962; Upper Nile, Malakal, 5–20.I.1963; Equatoria, Nimule, 11–13.III.1963, 30 km N of Terakeka, 2–6.III.1963, Linnavuori, in coll. Linnavuori.

Material: Many exx from Ivory Coast: Adiopodoumé, 1967, P.J.Hummelen; Foro-Foro, 25–28.IX.1973; Gouméré, 19.IX.1973; Lamto, 6–9.X.1973; Man, 14–21.X.1973; Mt.Tonkoui, 15–22.X.1973, Linnavuori. Togo: Anié, 11–12.IX.1973, Linnavuori. Benin: Parakou, 5–6.IX.1973, Linnavuori. Nigeria: NW St., Badeggi, 8–9.VIII.1973; N C St., Kagoro forest, 2.VIII.1973, Malumfashi, 26–

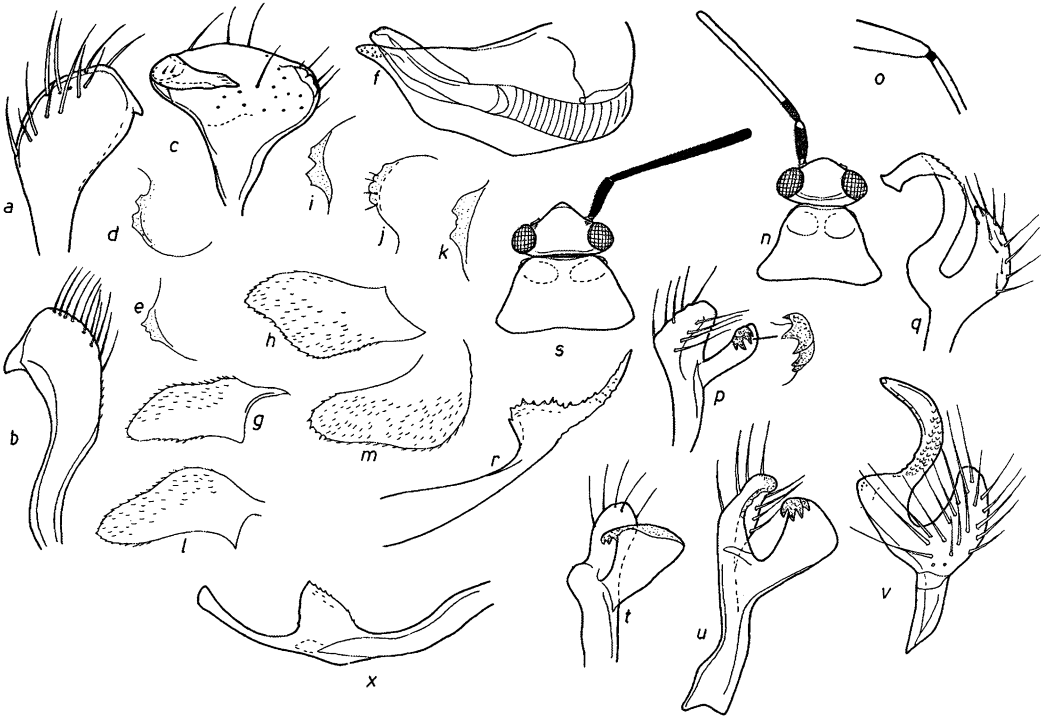


Fig. 33. *Orthotylus arabicus* Wagner: a–b) right style of two specimens; c) left style; d–e) sclerifications of sensory lobe of left style of two specimens; f) aedeagus, lateral view; g–h) K-structure of female of two specimens. — *O. halaibicus* Linnavuori: i–k) sclerifications of sensory lobe of left style (of three specimens); l–m) K-structure of female of two specimens. — *Cyrtorhinus geniculatus* (Reuter) (lectotype): n) male head and pronotum; o) base of fore tibia; p) right style; q) left style; r) spiculum of vesica. — *C. dimorphus* sp. n.: s) male head and pronotum, dorsal view; t–u) right style; v) left style; x) spiculum of vesica.

30.VII.1973, Zaria, 2–3.VIII.1973, Linnavuori; W St., Ibadan, 30.X.1970, in the British Museum; Kw St., Sinau, 4.IX.1973; B Pl St., Katsina Ala, 15.VIII.1973, near Makurdi, 30.VIII.1973; R St., Mbiama, 4–5.VII.1973; SE St., Obudu cattle ranch, 16–18.VIII.1973; NE St., Lankoviri, 24.VIII.1973, Linnavuori. Upper Volta: Niangoloko, 28.X.1973, Linnavuori. Niger: Niamey, 9.XI.1973, Linnavuori. Central African Republic: Bossangoa-Bossembéle, 2.VI.1973, Linnavuori. Zaire: Lubumbashi, 9–10.III.1971, A.B.Stam.

Length 3.5–4.0 mm. Green, head and anterior part of pronotum often yellowish. 1st antennal joint blackish with base and apex whitish, in pale specimens only under surface darkened, 2nd joint yellowish brown, basal quarter dark brown, other joints dark brown. Elytra bright green; membrane grayish smoky, veins nearly concolorous.

Legs greenish yellow, extreme bases of tibiae black.

Macropterous. Hair covering pale. Head 0.73–0.90 × as broad as basal width of pronotum; ocular index 1.52–1.60 (♂), about 1.85 (♀). Proportions between antennal joints 26:75:68:39, 2nd joint 1.35–1.40 (♂) or about 1.05 (♀) × as long as basal width of pronotum, 1.03–1.10 (♂) or 1.23 (♀) × as long as 3rd joint. Pronotum 2.0–2.2 × as broad as long in middle, lateral margins strongly insinuated, calli elevated. Cuneus shorter than twice its basal width.

Male genitalia in Fig. 33p–r.

Biology: In swampy meadows and shores.

Distribution: Widely distributed in tropical Africa.

***Cyrtorhinus dimorphus* sp. n.**

Figs. 33, 35

Material: Ethiopia: Sululta, ♂ holotype, many paratypes, 11.VI.1963; Omo Valley, 2 paratypes, 12.VI.1963, Linnavuori, in coll. Linnavuori.

Length: Macropterous ♂ 4.0–4.75 mm, brachypterous ♀ 3.25 mm. Verdigris-colored or yellowish green. Head, anterior part of pronotum and base (♂) or entire (♀) scutellum yellow. Head in ♂ with slight suffusions above antennal pits; eyes reddish brown. Antennae in ♂ black with extreme base and tip of 1st joint and the very base of 2nd joint whitish, in ♀ yellow with joints 3 and 4 embrowned. Membrane of elytra (♂) smoky with veins green, membrane rudiments in ♀ whitish. Dorsum of abdomen and under surface of body yellow, sides of prothorax with slight suffusion in anterior margin. Legs green or yellow, 3rd tarsomeres darkened.

♂: Body long and gracile, parallel-sided, 4 × as long as basal width of pronotum. Upper surface with conspicuous black hair covering. Head 0.75–0.79 × as long as basal width of pronotum, base of vertex bluntly keeled; ocular index 1.92–2.0. Proportions between antennal joints 30:80:60:30, 2nd joint 1.17–1.30 × as long as basal width of pronotum, 1.25–1.33 × as long as 3rd. Pronotum 2.03–2.18 × as broad as long in middle, lateral margins nearly straight, calli elevated. Elytra extending far beyond tip of abdomen, cuneus twice as long as broad basally. ♀: Body pear-shaped, about 3 × as long as broad at base of pronotum. Hair covering blackish. Head large, 0.82–0.83 × as broad as basal width of pronotum, ocular index 2.17–2.57. Proportions between antennal joints 19:45:38:30, 2nd joint 0.78–0.94 × as long as basal width of pronotum, 1.18–1.45 × as long as 3rd. Pronotum 2.1–2.22 × as broad as long in middle, lateral margins slightly insinuated, calli largish. Elytra shorter than abdomen, cuneus short, membrane rudiments narrow.

Male genitalia in Fig. 33t–x. Hypophysis of left style digitate, scaly. Spiculum with large triangular, marginally finely dentate subapical lobe, apical part slender and long, tip expanded.

Biology: On *Euphorbia* sp. in a moist meadow on a high plateau.

***Cyrtorhinus melanops* Reuter**

Figs. 34, 40

*Cyrtorhinus melanops* Reuter 1905:6.

*Cyrtorhinus melanops* Carvalho & Southwood 1955:40–41, Schuh 1974:38–40.

Material: Ethiopia: Hawash River, W of Mount Zaquala, 6000 ft, 1♂, 28.XI.1926, J.Omer-Cooper, in the British Museum.

The redescriptions in Carvalho & Southwood and Schuh are not repeated.

Measurements (♂): Ocular index 1.31. Proportions between antennal joints 25:75:?, 2nd joint 1.32 × as long as basal width of pronotum.

Male genitalia in Fig. 34a–c. Spiculum gracile, apex long and slender and provided with small subapical tooth, triangular subapical expansion edentate.

Distribution: Known from South Africa and Ethiopia.

**Genus *Mecomma* Fieber**

*Mecomma* Fieber 1858:313. Type species: *Capsus ambulans* Fallén.

*Sphyracephalus* Douglas & Scott 1865:348. Type species: *Capsus ambulans* Fallén (Reuter 1883:383).

*Sphyrops* Douglas & Scott 1866:16 (nom. nov. for *Sphyracephalus* Douglas & Scott 1865). Type species: *Capsus ambulans* Fallén (Reuter 1883:383).

*Antiphilus* Distant 1909b:521. Type species: *A. amicus* Distant (Carvalho 1952:78).

*Aristobulus* Distant 1910:16. Type species: *A. filius* Distant (Carvalho 1952:78).

Diagnosis: Color black, elytra in macropterous specimens with yellow-brown pattern. Dimorphic: ♂ macropterous, ♀ nearly always brachypterous. Head large, eyes distinctly separate from anterolateral corners of pronotum. Pronotum in ♂ campanuliform, in ♀ narrow, collar-like. Cuneus in macropterous specimens long, about twice as long as wide. Aedeagus with two sclerified appendages.

Description: Color black. Elytra in ♂, sometimes also in ♀, with yellow-brown pattern. Dimorphic. ♂ macropterous with parallel-sided gracile body, ♀ nearly always brachypterous with pear-shaped body. Hair covering on upper surface long, brownish. Head large, short and broad, frons strongly sloping ventrad, face therefore vertical;

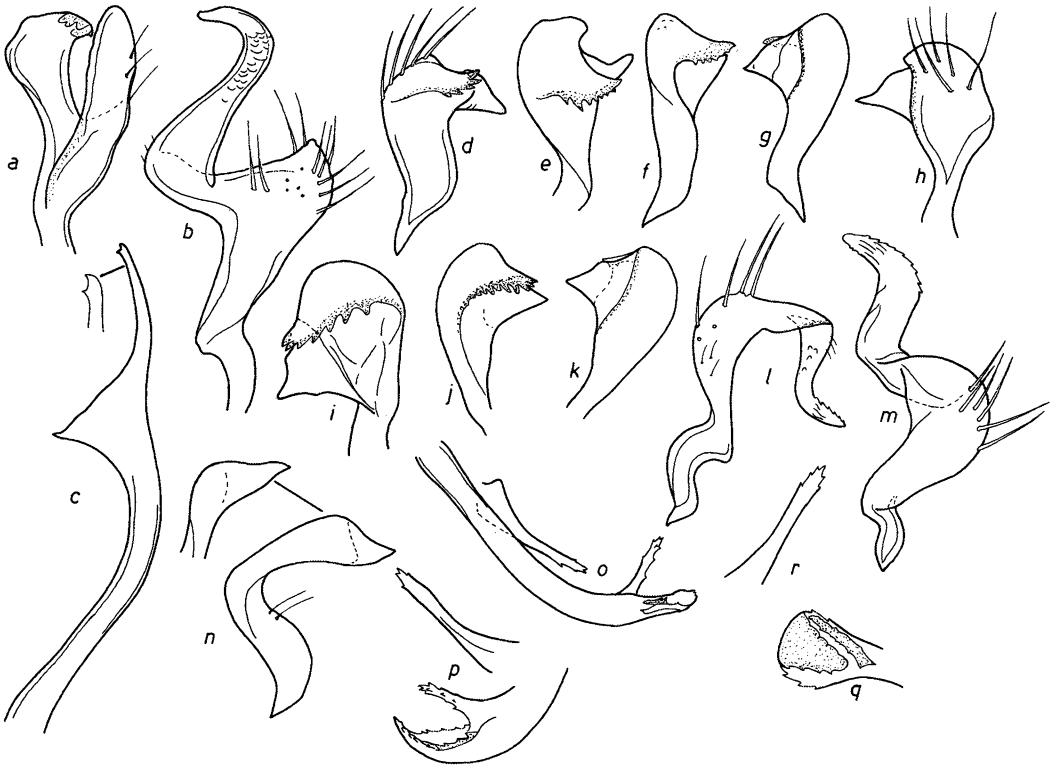


Fig. 34. *Cyrtorhinus melanops* Reuter (ex from Ethiopia): a) right style; b) left style; c) spiculum of vesica. — *Mecomma khrysothemis* sp. n.: d–k) right style in different views (d–g of specimens from Gembu, h–k from Obudu); l–n) left style (l and n exx from Obudu, m ex from Gembu, l–m slide mounts, n in glycerine); o–p) vesical appendages (exx from Obudu and Gembu); q) apex of longer vesical appendage in dorsal view (ex from Obudu); r) shorter vesical appendage (ex from Obudu).

vertex flat or slightly concave, with shallow median sulcus, base ecarinate or bluntly carinate. Antennae arising near lower corners of eyes, long and gracile, 2nd joint in ♂ gracile, in ♀ ± widening apicad, shorter than the combined length of joints 3 and 4. Rostrum extending to or beyond hind coxae. Pronotum with narrow collar, campanuliform, in ♂ strongly widening caudad, lateral margins shallowly insinuated, calli small, disk moderately convex and smooth, pronotum in ♀ much narrower, ± collar-like, lateral margins usually strongly insinuated, callal area ± raised, posterior part of disk ± rugose. Elytra in ♂ much longer than abdomen, costal margins straight, cuneus long, about twice as long as wide. Elytra in ♀ much shorter than abdomen, broadening apicad, coriaceous, apical margin obliquely truncate or

rounded, upper surface of elytra convex, rugose, obsolete punctate, membrane rudiments absent or very narrow. Legs long and gracile. 2nd joint of hind tarsus longer than 3rd.

Male genitalia: Pygofer conical. Right style with a transverse ridge of teeth near upper margin and with ± triangular subapical expansion. Left style with long strongly curved ± digitate hypophysis. Aedeagus elongate, two sclerified vesical appendages, one of them long ending in a ± scoop-shaped dentate apex, often with a slender dentate subapical process arising from inner surface of the scoop; the second process slender, falcate, often weakly sclerified.

Biology: The African species occur on undergrowth in mountain forests.

Distribution: Holarctic and Palearctic.

Key to the African species of the genus *Mecomma*

## Males

1. Large species, length 5 mm. Base of vertex distinctly carinate. Genitalia as in Fig. 39e–i ..... *grandis*
- Smaller species. Base of vertex finely keeled ..... 2
2. 1st antennal joint black ..... 3
- 1st antennal joint pale ..... 6
3. Femora bright red, tibiae also reddish. Pronotum remarkably narrow (Fig. 38d) ..... *angusticollis*
- Legs yellow-brown. Pronotum much broader ..... 4
4. Cuneus pale. Longer sclerified vesical appendage simple ..... *rectangulus*
- Apex and inner margin of cuneus dark brown. Longer sclerified vesical appendage with subapical process 5
5. Length 3.5 mm. Vesical appendages as in Fig. 34o–r. .... *fumida*
- Length 4.5 mm. Vesical appendages as in Fig. 39s .... *juno*
6. 3rd antennal joint black, 2nd 1.7 × as long as basal width of pronotum ..... *khrysothemis*
- Base of 3rd antennal joint whitish, 2nd joint 1.42 × as long as basal width of pronotum ..... *ruficeps*

## Females

1. Elytra ± horizontal with pale pattern and distinctive membrane rudiments ..... 2
- Elytra convex, black, without membrane rudiments .4
2. Elytra with 3 longitudinal testaceous bands ..... *ruwenzoriense*
- Elytra with different pattern ..... 3
3. Antennae black. Head narrower than pronotum. Pronotum broad with shallowly insinuated lateral margins ..... *grandis*
- Antennae bicolored with 2nd joint totally or partially pale. Head broader than pronotum. Pronotum narrow with distinctly insinuated lateral margins ..... *juno*
4. Femora and base of tibiae black ..... *kharon*
- Legs uniformly pale ..... 5
5. Head red ..... *ruficeps*
- Head black ..... 6
6. Pronotum narrow with distinctly insinuated lateral margins. 1st and 2nd antennal joints incrassate. Elytra densely and distinctly rugosely punctate ..... *khrysothemis*
- Pronotum much broader. Antennae gracile. Microsculpturing of elytra faint ..... *fumida*

*Mecomma khrysothemis* sp. n.

Figs. 34–37, 39

Material: Nigeria: SE St., Obudu cattle ranch, ♂ holotype and many paratypes, 16–18.VIII.1973; NE St., Gembu, many paratypes, 21–22.VIII.1973, Gembu-Yelwa, 1 paratype, 22.VIII.1973, Linnavuori, in coll. Linnavuori.

Length ♂ 4.0–4.25 mm, ♀ 3.0–3.25 mm. ♂: Moderately shiny. Black. Vertex with small pale

spot close to each eye; eyes reddish brown. Antennae black, 1st joint yellowish. Elytra yellow-brown or greenish, clavus, save extreme base, and inner apical part of mesocorium dark brown; membrane brownish smoky, veins brown. Under surface black. Legs yellow-brown, 3rd tarsomeres dark. ♀: Very shiny. Black. Eyes reddish brown. Vertex with pale spot close to each eye. 1st antennal joint and basal half of 2nd yellow-brown, apical part of 2nd joint black, other joints dark brown, base of 3rd whitish. Elytra uniformly black, apical margins sometimes a little paler. Under surface black. Legs yellow-brown, base of hind femur sometimes embrowned, 3rd tarsomeres dark.

Male: Body gracile, about 4 × as long as broad (measured at elytra). Hair covering long, yellowish. Head 0.75–0.81 × as broad as basal width of pronotum; vertex slightly concave with faint median furrow, basal margin bluntly declining ventrad; ocular index 1.07–1.16. Proportions between antennal segments 23:100:75:30, 2nd joint about 1.7 × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum about 1.7 × as broad as long in middle, lateral margins shallowly insinuated, disk finely rugose. Cuneus about 2.4 × as long as broad. — Female: Elongately pear-shaped, body about 2.3 × as long as broad (measured at broadest point of elytra). Hair covering long, brownish. Head slightly broader than basal width of pronotum; vertex shallowly concave with faint median sulcus, basal margin bluntly keeled; ocular index 1.29–1.34. Proportions between antennal joints 20:80:55:32, 2nd joint slightly broadening apicad, about 1.34 × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum about 1.45 × as broad as long in middle, lateral margins distinctly insinuated, anterior lobe relatively globose and smooth, basal lobe flattish and rugose. Scutellum transversely rugose. Elytra extending to base of 6th tergite, about twice as long as broad, moderately expanding apicad, convex, densely and distinctly rugosely punctate, costal margin very narrow, apical margin obliquely roundedly truncate, no membrane rudiments. Dorsum of abdomen very shiny, smooth. Visible part of abdomen elongately conical.

Male genitalia in Figs. 34d–r, 36a–b. Apex of right style with transverse row of several teeth.

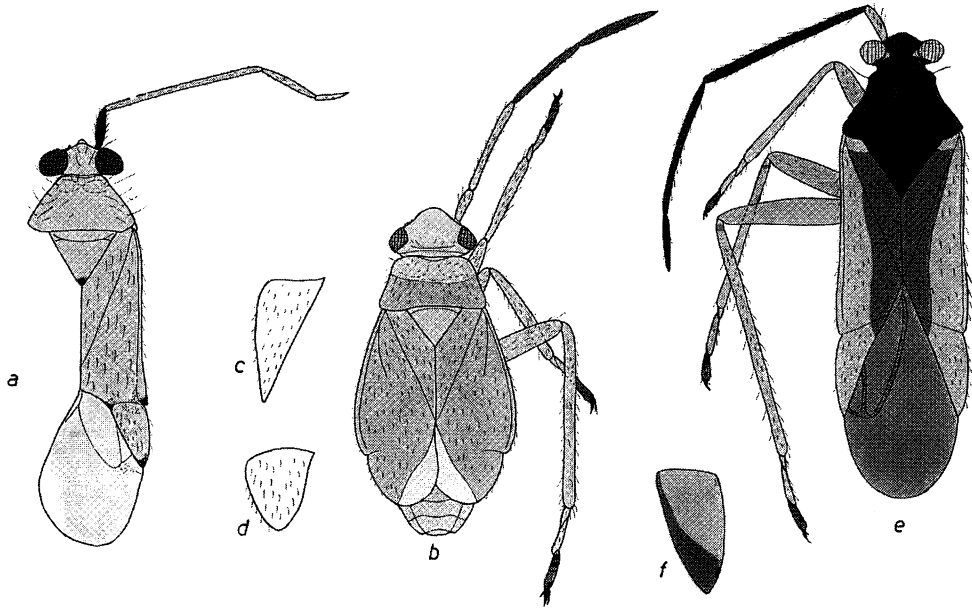


Fig. 35. *Mestra leucoptera* gen. et sp. n.: a) male, dorsal view. — *Cyrtorhinus dimorphus* sp. n.: b) female, dorsal view; c–d) cuneus of a male and a female. — *Mecomma khrysothemis* sp. n.: e) male, dorsal view. — *M. fumida* Linnavuori: f) male cuneus.

Long vesical appendage with a gracile subapical process arising from ventral surface of the scoop; small vesical process slender, apically edentate.

Biology: On undergrowth in mountain forests and in mountain meadows.

Etymology: Greek mythology; Khrysothemis, daughter of Agamemnon and Klytimestra, one of the Tantalids.

***Mecomma ruficeps* sp. n.**

Figs. 36–37

Material: Nigeria: SE St., Obudu cattle ranch, ♀ holotype, 1♂ paratype, 3–4.III.1971, J. Medler, in coll. Linnavuori.

Length ♂ 3.75 mm, ♀ 2.5 mm. Like the preceding species, but in ♂ basal half of 3rd antennal joint whitish and hind tibiae embrowned. Head in ♀ reddish with tylus and lora embrowned.

Male resembling *M. khrysothemis*, but 2nd antennal joint thicker and shorter, 1.42 × as broad as long as basal width of pronotum. Other measurements: Head 0.75 × as broad as basal width of

pronotum. Proportions between antennal joints 20:84:60:25. Pronotum 1.7 × as broad as long in middle. — Female broadly pear-shaped, body 1.8 × as long as broad. Head 0.85 × as broad as basal width of pronotum; ocular index 2.0. 2nd antennal joint shorter, 1.15 × as long as basal width of pronotum and apically thicker. Pronotum much broader, 1.73 × as broad as long in middle, anterior lobe considerably broader, posterior lobe strongly widening caudad. Elytra extending to 7th tergite, 1.8 × as long as broad. Visible part of abdomen more broadly conical.

Male genitalia (Fig. 36c–h) as in the preceding species, but right style with 4 large teeth in the apical transverse row.

***Mecomma fumida* Linnavuori**

Figs. 35–36

*Mecomma fumida* Linnavuori 1975:58.

Types: Ethiopia, Bellela forest, ♂ holotype, 1 paratype, 13–14.VI.1963; Gembu near Agaro, 7 paratypes, 15.VI.1963, Linnavuori, in coll. Linnavuori.



Fig. 36. *Mecomma khrysothemis* sp. n.: a–b) vesical appendages (of two exx from Gembu). — *M. ruficeps* sp. n.: c–d) right style; e) left style; f) apex of left style (dry mount); g) vesical appendages; h) apex of longer vesical appendage. — *M. tumida* Linnavuori: i) female head and pronotum, dorsal view; j) right style; k) left style; l) vesical appendages. — *M. rectangulus* (Ghauri): m) right style; n) left style; o) vesical appendages.

Length ♂ 3.50–3.75 mm, ♀ 2.75–3.0 mm. ♂ like *M. khrysothemis*, but antennae totally black and apex of cuneus dark brown. ♀ more opaque than *M. khrysothemis* and 1st antennal joint usually partially infumed.

Male head 0.80–0.84 × as broad as basal width of pronotum; ocular index 1.26–1.30. Proportions between antennal joints 7:28:21:11, 2nd joint about 1.3 × as long as basal width of pronotum. Pronotum about 1.8 × as broad as long in middle. Cuneus twice as long as broad. — Female more broadly pear-shaped than *M. khrysothemis*, body about 1.8 × as long as greatest width. Head about as broad as basal width of pronotum; ocular index 1.43–1.57. Antennae remarkably gracile, proportions between joints 7:26:22:12, 2nd joint about 1.4 × as long as basal width of pronotum. Pronotum considerably broader, 1.81–1.85 × as broad as long in middle.

Elytra extending to middle of 7th tergite or even to 8th tergite, twice as long as broad, apical margin roundedly truncate, microsculpturing much more obsolete.

Male genitalia in Fig. 36j–l. Dentate apical portion of long vesical appendage much longer than in *M. khrysothemis*, falcate appendage edentate.

Biology: On undergrowth in cloud forests.

Distribution: Known from Ethiopia.

#### *Mecomma rectangulus* (Ghauri), comb. n.

Figs. 36, 40

*Cyrtorhinus rectangulus* Ghauri 1970:101–102.

Type: Kenya, Nairobi, Muguga, 2♂ paratypes, 1.IV.1968, in the British Museum.



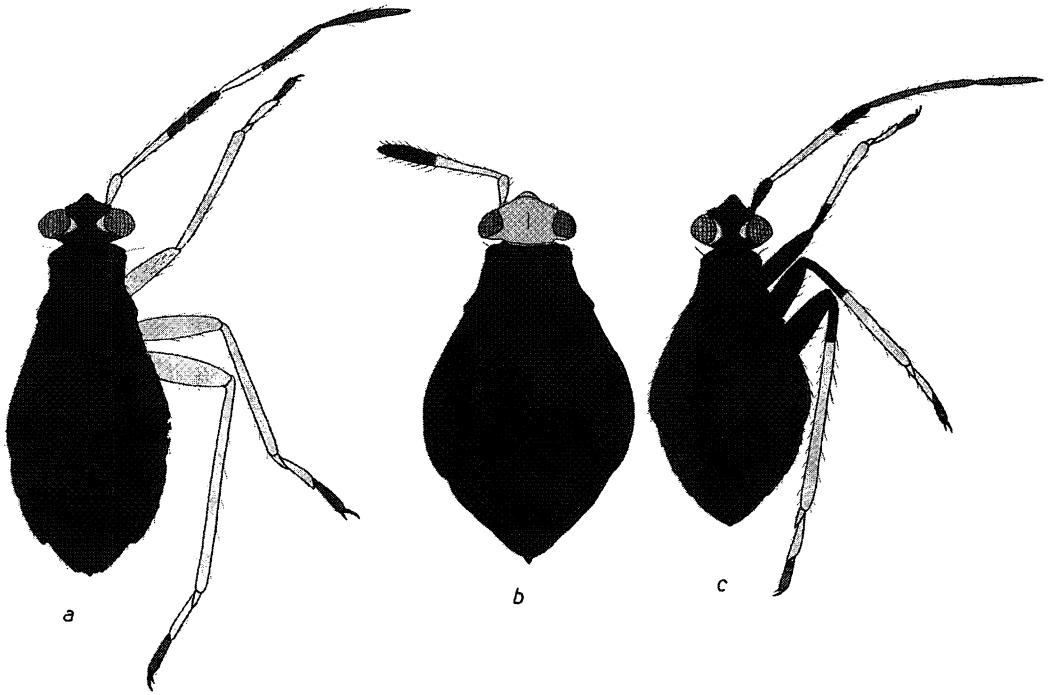


Fig. 37. Female of *Mecomma khrysothemis* sp. n.: a), *M. ruficeps* sp. n.: b), and *M. kharon* sp. n.: c).

Male like *M. fumida* but somewhat bigger, length 4.75–5.0 mm, clavus and inner part of mesocorium paler brown, and cuneus uniformly pale.

Measurements: Head 0.8 × as broad as basal width of pronotum; eyes small, ocular index 1.40–1.42. Proportions between antennal joints 32:100:85:32, 2nd joint 1.5 × as long as basal width of pronotum. Pronotum 1.86 × as broad as long in middle. Cuneus 1.95 × as long as broad.

Male genitalia in Fig. 36m–o. Long vesical process slender, edentate, short appendage very narrow, apex tridentate.

Distribution: Known from Kenya.

#### *Mecomma kharon* sp. n.

Fig. 37

Material: Nigeria: NE St., Gembu, ♀ holotype, 1♂ paratype, 21–22.VIII.1973, Linnavuori, in coll. Linnavuori.

Female. Length 3 mm. Opaque. Black. Vertex with pale spot close to each eye. Eyes reddish gray. 1st antennal joint and apical part of 2nd black, 2nd joint otherwise yellow-brown with extreme base embrowned, joints 3 and 4 brown, base of 3rd whitish. Femora and bases of tibiae black, other parts of legs pale yellowish, 3rd tarsomeres infumed.

Broadly pear-shaped, body 1.75 × as long as greatest width. Hair covering long, gray. Head about as broad as basal width of pronotum, finely shagreened, vertex shallowly concave, basal margin narrowly carinate; ocular index 1.23–1.27. Proportions between antennal joints 24:70:55:29, 1st joint incrassate, 2nd gracile, 1.4 × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum 1.6 × as broad as long in middle, lateral margins strongly insinuated, basal lobe distinctly rugose. Elytra convex, very rugose, 1.9 × as long as broad, extending to 7th tergite, costal margins very narrow, no membrane rudiments, apical margin broadly rounded.

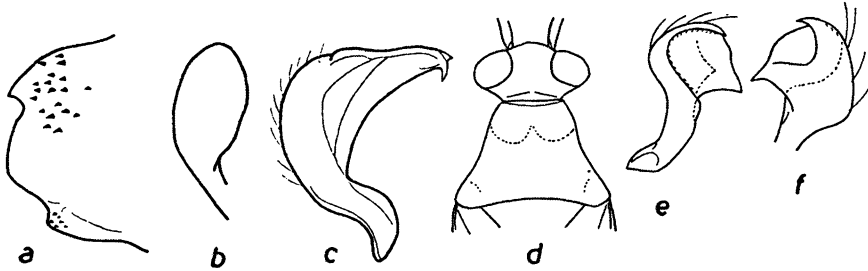


Fig. 38. *Orthotylus compactus* Linnavuori: a) pygofer, lateral view; b) right style; c) left style. — *Mecomma angusticollis* Linnavuori: d) male head and pronotum, dorsal view; e–f) right style. — After Linnavuori 1973 and 1975.

Biology: Swept from a mountain meadow.

Etymology: Greek mythology; Kharon (Charon), the ferryman of Hades.

edentate, sharp-tipped. Short vesical process small, edentate.

Distribution: Known from Zaire (Katanga).

#### *Mecomma angusticollis* Linnavuori

Figs. 38–39

*Mecomma angusticollis* Linnavuori 1973:84–85.

Types: Zaire: Katanga, Lubumbashi, ♂ holotype, 1♀ paratype, 2–3.V.1971, A.B.Stam, in coll. Linnavuori.

Male length 4 mm. Shiny. Head black, vertex with indistinct brown spot near each eye; eyes dark brown. 1st and 2nd antennal joints (others absent) black. Pronotum and scutellum black. Elytra yellowish brown, apical part of clavus and endocorium slightly darkened; membrane dark brown. Under surface black or blackish brown. Legs red, coxae and bases of femora yellowish, tibiae slightly darkened basally, tarsi yellowish brown, 3rd tarsomeres dark.

Elongate, about 4 × as long as broad at base of pronotum. Hair covering brownish, smooth. Head about 0.83 × as broad as basal width of pronotum; eyes large, ocular index 1.13–1.20. Antennae relatively incrassate, proportions between joints 11:33:?, 2nd joint 1.33 × as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum 1.5 × as broad as long (total length), anterior part unusually narrow, basal part strongly widened, calli strongly raised. Cuneus 1.67 × as long as broad.

Male genitalia in Figs. 38e–f, 39a–c. Apex of long vesical appendage resembling a bird's head,

#### *Mecomma grandis* Carvalho & Southwood

Figs. 39–40

*Mecomma grandis* Carvalho & Southwood 1955:55–56.

Material: Ethiopia: Addis Abeba, 1♂, in coll. Linnavuori; Agheresalam, alt. 2900 m, 1♀, 8.VI.1963, Linnavuori.

Length ♂ 5 mm, ♀ 3.25 mm. ♂: head, pronotum and scutellum black. Vertex with small pale spot close to each eye; eyes dark brown. Antennae missing in the specimen studied. Elytra grayish yellow, scutellar and commissural margins of clavus embrowned, cuneus immaculate; membrane grayish yellow, veins pale. Under surface black. Legs yellow-brown, 3rd tarsomeres embrowned. ♀: black. Vertex with pale spot near each eye; eyes grayish. Antennae black. Elytra blackish with a lateral and apical band of about 1/3 their width yellow-testaceous. Legs testaceous, 3rd tarsomere dark.

Male: parallel-sided. Hair covering long, brownish. Head 0.82 × as broad as basal width of pronotum; vertex with distinct median sulcus, base distinctly carinate; ocular index 1.41. Rostrum extending to hind coxae. Pronotum 1.8 × as broad as long in middle, lateral margins distinctly insinuated. Cuneus 2.1 × as long as broad. — Female: pear-shaped, body 1.9 × as long as greatest width. Hair covering short, brownish.

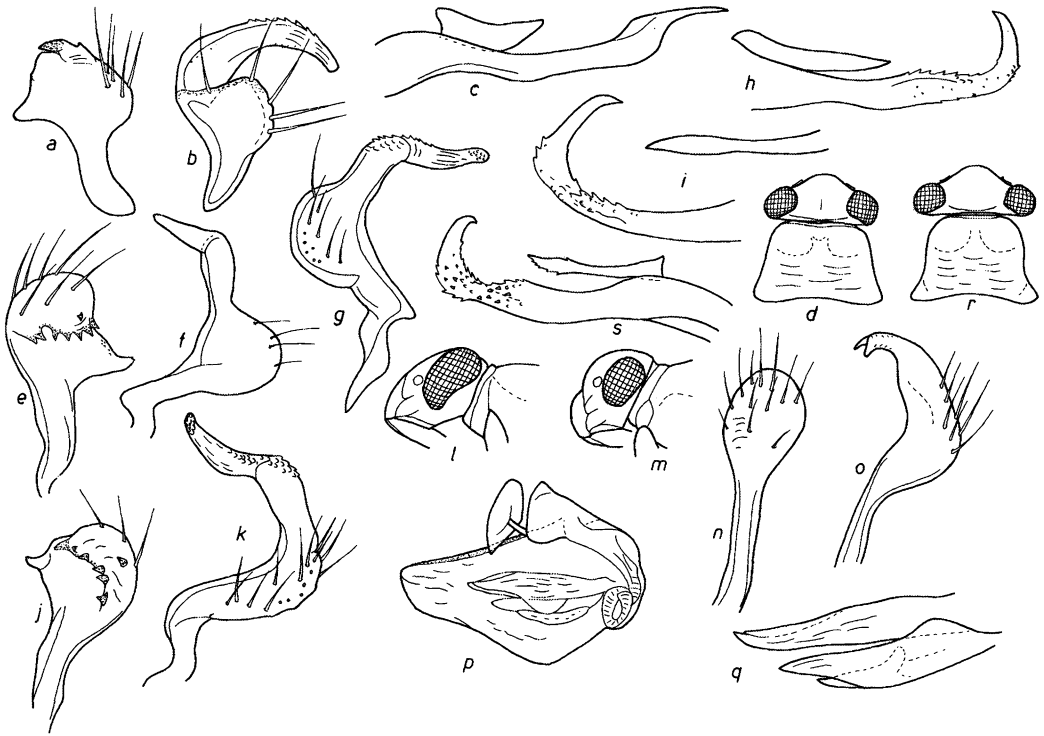


Fig. 39. *Mecomma angusticollis* Linnavuori: a) right style; b) left style; c) vesical appendages. — *M. grandis* Carvalho & Southwood: d) female head and pronotum, dorsal view; e) right style; f–g) left style (in glycerine and in slide mount); h–i) vesical appendages. — *M. juno* sp. n.: r) female head and pronotum, dorsal view; j) right style; k) left style; s) vesical appendages. — *M. khrysothemis* sp. n.: l) male head, lateral view. — *Nycticapsus melanocephalus* Poppius: m) male head, lateral view; n) right style; o) left style; p) aedeagus, lateral view; q) vesical appendages.

Head  $0.94 \times$  as broad as basal width of pronotum, base of vertex keeled; ocular index 1.53. Proportions between antennal joints 25:70:?, 2nd joint  $1.1 \times$  as long as basal width of pronotum. Pronotum  $1.94 \times$  as broad as long in middle, lateral margins shallowly insinuated, disk flattish, callal area faintly raised. Elytra extending to basal margin of 7th tergite,  $2.1 \times$  as long as broad, flat, finely rugose, costal margins distinctly delimited, small membrane rudiments visible.

Male genitalia in Fig. 39e–i. Long vesical appendage in apical half dentate, apex hooked, smooth. Small vesical appendage edentate.

Biology: Originally found in a *Podocarpus* and *Juniperus* forest.

Distribution: Known from Ethiopia.

***Mecomma juno* sp. n.**

Fig. 39

Material: The Sudan: Equatoria, Imatong Mts., Gilo, ♂ holotype, 3 paratypes, 18–24.III.1963, Linnavuori, in coll. Linnavuori.

Male length 4.5 mm, ♀ 3 mm. Like *M. grandis*, but in ♂ entire clavus and apex and inner margin of cuneus brown, in ♀ 2nd antennal joint yellow-brown with apex and extreme base sometimes dark, and base of 3rd joint pale.

Male: head  $0.83\text{--}0.90 \times$  as broad as basal width of pronotum, basal margin of vertex relatively finely carinate; ocular index 1.33–1.42. Antennae black, proportions between joints 30:88:32:?, 2nd joint  $1.50\text{--}1.54 \times$  as long as ba-

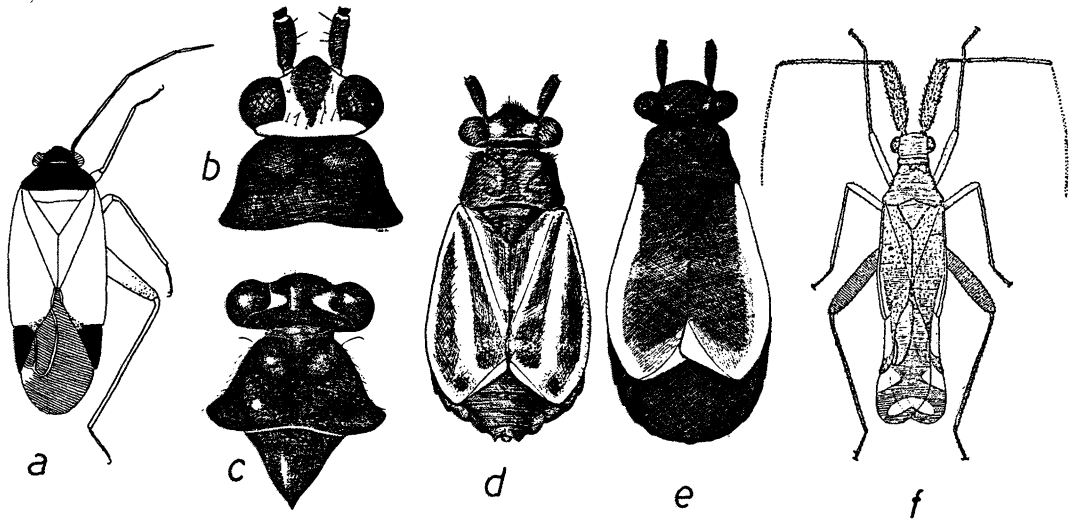


Fig. 40. *Orthotylus martini* Puton: a) male, dorsal view. — *Cyrtorhinus melanops* Reuter: b) male head and pronotum, dorsal view. — *Mecomma rectangularus* (Ghuri): c) male head and pronotum, dorsal view. — *M. ruwenzoriense* Ghauri: d) female in dorsal view. — *M. grandis* Carvalho & Southwood: e) female, dorsal view. — *Ueleana longicuneata* Carvalho: f) female, dorsal view. — After Carvalho 1951, Carvalho & Southwood 1955, Ghauri 1964 and 1970, and Wagner 1973.

sal width of pronotum. Pronotum  $1.84 \times$  as broad as long in middle. — Female: head  $1.07 \times$  as broad as basal width of pronotum; ocular index 1.43. Proportions between antennal joints 25:77:65:25, 2nd joint  $1.38 \times$  as long as basal width of pronotum. Pronotum nearly  $1.9 \times$  as broad as long in middle, lateral margins distinctly insinuated, callal area strongly raised. Elytra as in *M. grandis*.

Male genitalia in Fig. 39j–k, s. Long vesical appendage shorter and thicker than in *M. grandis*. Small process dentate.

Biology: On undergrowth in mountain forests of the *Podocarpus* and *Juniperus* zone.

Etymology: Roman mythology, Juno, the supreme goddess, spouse of Jove.

### *Mecomma ruwenzoriense* Ghauri

Fig. 40

*Mecomma ruwenzoriense* Ghauri 1964:13–14.

The holotype is preserved in the British Museum.

The original description not repeated.

Distribution: Known from Uganda (Ruwenzori, alt. 12900 ft.).

### Genus *Nycticapsus* Poppius

*Nycticapsus* Poppius 1914:73. Type species: *N. melanocephalus* Poppius.

*Nycticapsus* Linnavuori 1975:59.

Diagnosis: Near *Mecomma*, but color pale ochraceous with black pattern, body small and gracile, frons and vertex convex, females macropterous, and male genitalia dissimilar.

Description: Shiny pale ochraceous species. Head black. Pronotum, scutellum and elytra with blackish pattern. Antennae black with 1st joint pale. Legs pale yellowish, upper surface of hind femur with elongate blackish spot.

Body small and gracile. Hair covering pale, semierect and longish. General structure as in *Mecomma*, but frons and vertex convex, without

median sulcus, base of vertex finely but distinctly carinate. 2nd antennal segment (♂♀) long and gracile. Elytra extending far beyond tip of abdomen.

Male genitalia: Pygofer conical. Right style long, extending distinctly beyond pygofer, apical part elongately ovate, edentate. Left style with digitate hypophysis, which is provided with an apical or subapical tooth. Aedeagus short and broad, one or several short sclerified vesical processes.

Biology: In moist meadows and on undergrowth in luxuriant forests.

Distribution: Tropical Africa.

Key to the species of the genus *Nycticapsus*

- 1. Smaller, length 2.5–3.25 mm. 2nd antennal joint < twice as long as basal width of pronotum. Sensory lobe of left style without a tooth-like process ..... *melanocephalus*
- Larger, length 3.25–3.75 mm. 2nd antennal joint > twice as long as basal width of pronotum. Sensory lobe of left style with tooth-like process ..... *major*

***Nycticapsus melanocephalus* Poppius**

Figs. 39, 41, 49

*Nycticapsus melanocephalus* Poppius 1914:73–74.  
*N. melanocephalus* Linnavuori 1975:59.

Material: Many exx from Ivory Coast: Forêt d'Angué-dédou, 24.V.1958, H. Gruis; Gouméré, 19.IX.1973; Man, 14–21.X.1973, Linnavuori. Togo: Anié, 11–12.IX.1973, Linnavuori. Benin: Parakou, 5–6.IX.1973, Linnavuori. Nigeria: W St., Idanre, 23.XI.1969, Ile-Ife, 20.X.1969, J.T. Medler, Olokemeji forest, 9.VII.1973; R St., Ebubu near Bori, 2.VII.1973, Mbiama, 4–5.VII.1973, Linnavuori. Cameroon: Abong Mbang-Ayos, 15.VI.1973, Dimako-Abong Mbang, 13.VI.1973; Kumba, 24.VI.1973; Kumba-Mamfé, 25.VI.1973; near Victoria, 21.VI.1973, Linnavuori. Central African Republic: Bossangoa-Bossemblele, 2.VI.1973; LaMaboke, 6–9.VI.1973, Linnavuori. The Sudan: localities listed in Linnavuori 1975:59. Ethiopia: Belleta forest, 13–14.VI.1963; Gembi near Agaro, 15.VI.1963; Shashamanni, 7–8.VI.1963, Linnavuori. Angola: Carmona, J.A.Quartau.

Length 2.50–3.25 mm. Head black. Eyes reddish gray. 1st antennal joint pale, apex sometimes infumed, other segments black. Pronotum, save collar and the very anterior margin, in dark specimens uniformly black, in pale specimens

the black area divided by a narrow or broad pale median band. Base of scutellum black, apex pale ochraceous. Elytra pale ochraceous with dark brown pattern as seen in Fig. 49a; membrane brownish smoky, marginally a little paler, veins concolorous. Under surface black. Rostrum and legs pale yellowish, hind femur with longitudinal blackish spot on upper surface; 3rd tarsomeres infumed.

Very small and gracile. Head about 0.8 × as broad as basal width of pronotum. Ocular index (♂♀) 1.50–2.0. Proportions between antennal joints 17:90:65:45 (♂), 16:80:66:47 (♀), 2nd joint 1.8–1.9 × as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum 1.8–1.9 × as broad as median length.

Male genitalia (Figs. 39n–q, 41a): enlarged apex of right style ovate. Sensory lobe of left style rounded, hypophysis with small apical tooth. Aedeagus with several falcate sclerifications.

Biology: In moist meadows and in undergrowth in luxuriant savanna and rain forests.

Distribution: Widespread in tropical Africa. Originally described from Lake Nyasa.

***Nycticapsus major* sp. n.**

Fig. 41

Material: Nigeria: NE St., near Mambila, ♀ holotype and several paratypes, 23.VIII.1973; N C St., Kagoro forest, several paratypes, 29–30.VIII.1973, Linnavuori, in coll. Linnavuori.

Like the preceding species, but bigger, length 3.5–3.75 mm. Pronotum, excluding collar and the very anterior margin, uniformly black. 2nd antennal joint 2.13–2.3 × as long as basal width of pronotum. Rostrum extending to hind coxae.

Measurements: head 0.70–0.74 × as broad as basal width of pronotum. Ocular index (♂♀) 1.48–1.64. Proportions between antennal joints 10:48:36:28 (♂), 8:49:40:27 (♀). Pronotum about 1.7 × as broad as long in middle.

Male genitalia (Fig. 41b–h): enlarged apical part of right style elongate. Sensory lobe of left style with claw-like process, apex of hypophysis with strong subapical tooth. Aedeagus with one stout sclerification and an adjacent membranous process.

Biology: In moist mountain meadows.

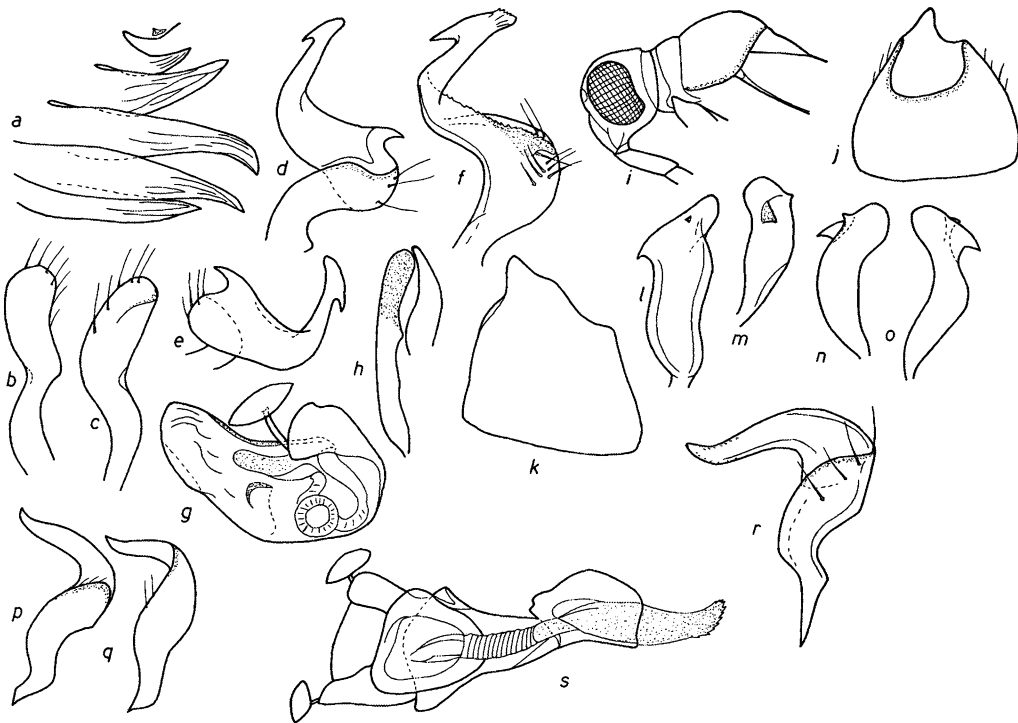


Fig. 41. *Nycticapsus melanocephalus* Poppius: a) vesical appendages (spread out). — *N. major* sp. n.: b–c) right style; d–f) left style (d–e in glycerine, f in slide mount); g) aedeagus, lateral view; h) vesical appendages. — *Felisacodes bryocorina* (Poppius): i) head and thorax, lateral view; j–k) pygofer in dorsal and in lateral view; l–o) right style in different views (l in slide mount); p–r) left style in different views (r in slide mount); s) aedeagus, lateral view.

### Genus *Ueleana* Carvalho

*Ueleana* Carvalho 1951:102. Type species: *U. longicuneata* Carvalho.

**Diagnosis:** A unique genus. Readily distinguished by the long and gracile body, stout 1st antennal joint and very long and somewhat curved cuneus.

The original description: Head glabrous, vertex convex, carinate posteriorly, with a short neck; eyes small, rounded, distant from anterior margin of pronotum by a distance equal to about half the width of eye, frons vertical; seen from front the head is triangular, acutely pointed at apex. Rostrum apparently reaching middle coxae. Antennae inserted contiguous to eye internally, the first joint strongly incrassate, about as head and pronotum together, strongly narrowed at base,

clothed with dense and stout bristles, second segment very slender, linear, shortly and sparsely pubescent, third and fourth mutilated. Pronotum glabrous, impunctate, faintly rugose transversally, constricted anteriorly, the lateral margins rounded, the posterior margin strongly dented inwards at middle of mesoscutum, calli polished and strongly shining, anterior area imitating a collar, rugose. Mesoscutum partially covered; scutellum flat and small. Hemelytra short, sparsely and semi-addressedly pilose, dilated at middle and constricted at level of cuneal incisure; embolium slightly widened toward apex where it is more or less laminate; cuneus about three times as long as wide, somewhat curved outwards apically; membrane bicellulate, large, with apex pointed outwards. Hind legs more developed than the median and anterior pair, the hind femora thickest at

middle, tibiae with short spines, tarsi very long and slender, linear, claws slender, parempodia convergent at apex, of the *Orthotylinae* type.

***Ueleana longicuneata* Carvalho**

Fig. 40

*Ueleana longicuneta* Carvalho 1951:103.

Type: Zaire, Haut Uele, Yebo Moto, ♀ holotype, IX.1926, L.Burgeon, in Mus. Tervuren (not studied).

The original description: Female: length 3.4 mm, width 0.9 mm. Head: length 0.2 mm, width 0.5 mm, vertex 0.27 mm. Antennae: segment I length 0.8 mm, II 1.4 mm, III and IV mutilated. Pronotum: length 0.5 mm, width at base 0.8 mm. Cuneus: length 0.7 mm, width at base 0.2 mm.

Color: head, pronotum, first joint of antennae, base of second joint, underside and posterior legs (except apex of hind tibiae and tarsi) piceous brilliant; hemielytra black to fuscous, apex of cuneus darker; a hyaline spot on outer apex of corium and embolium reaching the apical third of cuneus, another on membrane near apex of cuneus and a third one apically in the middle, second antennal segment except base, middle and fore legs, rostrum, genae, apex of coxae, apex of hind tibiae and hind tarsi, flavous to yellowish. Distribution: Zaire.

**Genus *Felisacodes* Bergroth**

*Rhodesiella* Poppius 1914:64. Type species: *R. bryocorina* Poppius.

*Felisacodes* Bergroth 1926:64, new name for *Rhodesiella* Poppius, nec *Rhodesiella* Adams 1906, Diptera.

*Felisacodes* Schuh 1974:40.

Diagnosis: Body very gracile. Color greenish with intense dark markings. Clavus with a row of punctures parallel to claval suture.

Description: Color green or pale yellowish. Head, pronotum, scutellum and elytra with intense dark markings. Body very gracile. Hair covering on upper surface longish, erect and pale. Head short, anterior margin of frons in dorsal view roundedly truncate extending only slightly beyond anterior margins of eyes, tylus not visible, vertex convex, basal margin finely keeled, in lateral

view frons convex, strongly vertically sloping ventrad, tylus vertical. Eyes clearly separated by a distinct neck from anterior margin of pronotum. Antennal pits near lower corners of eyes; antennae very long and gracile, 1st joint longer than diatone. Rostrum long, extending beyond hind coxae. Pronotum with distinct collar-like anterior margin; anterior part of pronotum narrow with raised calli, posterior part strongly widening caudad, convex, sloping anterolaterad, rugose, basal margin shallowly curved. Elytra long and narrow, hyaline; clavus with a row of punctures parallel to claval suture, cuneal fracture faint. Legs very long and gracile, spinulation and tarsal structure as in *Zanchius*.

Male genitalia: Pygofer conical. Right style with two apical teeth. Left style with digitate hypophysis, sensory lobe rounded. Aedeagus with an apically dentate sclerified process.

Biology: On undergrowth in mountain forests.

Distribution: Widely distributed in the Ethiopian Region.

***Felisacodes bryocorina* (Poppius)**

Figs. 41–42

*Rhodesiella bryocorina* Poppius 1914:65.

*Felisacodes bryocorina* Bergroth 1926:64, Carvalho 1952:76, Schuh 1974:40–41.

*Felisacodes dibuora* Odhiambo 1967:1681–1682, syn. n.

Type: Cameroon, Mt. Cameroon, 1800–2000 m, versant SE, 1♀, holotype of *F. dibuora*, 1939, Lepesme, Paulian, Villiers, in Mus. Paris.

Material: Nigeria: NE St., Ngel Nyaki, 1 ex, 31.III.1970, J. Medler. Cameroon: Mt. Cameroon, 1♂, 16–18.VI.1973, Linnavuori. The Sudan: Equatoria, Imatong Mts. Gilo, several exx, 18–24.III.1963, Linnavuori. Equatoria: Belleta forest, 1 ex, 13–14.VI.1963; Gembi near Agaro, 1 ex, 15.VI.1963, Linnavuori.

Length 4.0–4.75 mm. Shiny. Head blackish, near basal corners of eyes sometimes yellow-brown. Eyes dark gray. Antennae blackish, base of 1st joint yellowish, that of 3rd joint whitish. Pronotum black to blackish brown, callal area yellowish, basal margin often pale; sometimes entire basal lobe yellow-brown with dark lateral spot behind callal area on each side. Scutellum black or dark yellow-brown. Elytra hyaline, green or pale yellowish, clavus and a spot near tip of

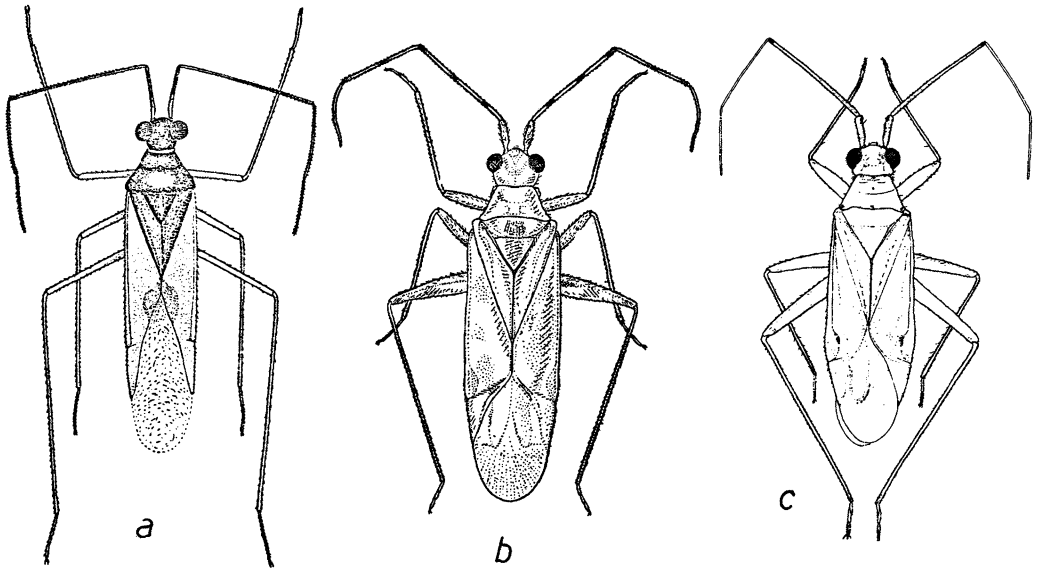


Fig. 42. Dorsal view of *Felisacodes bryocorina* (Poppius): a), *Zanchius alatanus* Hoberlandt: b), *Z. breviceps* (Wagner): c). — After Carvalho, Dutra & Becker 1960, van Doesburg 1984 and Hoberlandt 1955.

clavus in inner basal angle of corium blackish brown, apex of cuneus infumed; membrane brownish smoky, apex and the large cell whitish hyaline. Under surface of head and thorax and lateral margins and apex of venter blackish; anterior part of pronotum and middle of venter yellowish. Legs pale yellowish or greenish.

Body very gracile, nearly 4 × as long as broad. Hair covering long and pale. Head 0.65–0.72 × as broad as basal width of pronotum; ocular index ♂ 1.11–1.20, ♀ 1.50–1.55. Antennae very long and gracile, finely haired; proportions between joints 47:121:7 :52, 1st joint tapering apicad, 1.07–1.12 × as long as diatone, 2nd 1.95 (♂) or 1.73 (♀) × as long as basal width of pronotum. Rostrum long, extending to base of venter. Pronotum 1.5–1.6 × as broad as long in middle, apical margin rugose, callal area globose and glabrous; posterior part of disk convex, transversely wrinkled and rugose. Elytra narrow, nearly 7 × long as broad (width measured at tip of clavus). Propleura rugose. Legs very long and gracile, hind tibia about 2.6 × as long as basal width of pronotum.

Male genitalia in Fig. 41j–s.

Biology: On undergrowth in mountain forests. Host: *Plectranthus fruticosus* (Schuh 1974:41).

Distribution: Widely distributed in tropical Africa. Originally described from Chirinda in S Rhodesia.

### Genus *Zanchius* Distant

*Zanchius* Distant 1904:477. Type species: *Z. annulatus* Distant.

*Uzeliella* Poppius 1911:31. Type species: *U. flavovirens* Poppius (Carvalho 1952:79).

*Poppiella* Bergroth 1911:188, new name for *Uzeliella* Poppius 1911 (nec *Uzeliella* Baguel 1908, Thysanoptera). Type species: *Uzeliella* Poppius (Carvalho 1952:79).

*Zonodorus* Distant 1909b:522. Type species: *Z. gubernator* Distant (Carvalho 1958:133).

*Habrocoris* Wagner 1951:153–155. Type species: *H. breviceps* Wagner (Linnavuori 1964:329).

Diagnosis: Gracile green species. Head short and quadrate; eyes separate from anterolateral corners of pronotum. Pronotum small, lateral and basal margins insinuated, mesoscutum broadly visible. Pygofer conical. Right style small.



Aedeagus broad, provided with dentate, ± sclerified plates, sometimes also with 1–2 falcate or claw-like spiculi.

Description: Color green. Antennae often with dark or red markings. Body remarkably gracile. Hair covering long, semierect, pale. Head short and quadrate, in dorsal view frons extending only slightly beyond anterior margins of eyes and apex of tylus only slightly visible, in lateral view frons and tylus strongly vertically declining ventrad; basal margin of vertex smooth or ± raised and then strongly sloping ventrad; eyes conspicuously set forward, separated by a distinct neck from the anterior margin of the pronotum. Antennal pits inserted near ventral margins of eyes. Antennae long and gracile, 1st joint shorter than diatone, 2nd much longer than basal width of pronotum (exception: *depressus*); hair covering of antennae short. Rostrum extending beyond mesocoxae, sometimes very long extending to middle of venter. Pronotum relatively small, lateral and basal margins distinctly insinuated; anterior margin collar-like, calli elevated, disk sloping laterad. Mesoscutum broadly visible. Elytra hyaline or subhyaline (except in *depressus*), very long. Legs very long and gracile; tibiae with a few very thin pale spines about length of tibial diameter, hind tibiae with longitudinal rows of tiny closely spaced spines; 2nd hind tarsomere longer than 3rd.

Male genitalia: Pygofer conical, base of genital opening sometimes with tubercles. Right style very small. Left style with ± curvate hypophysis, sensory lobe roundedly expanded (in *depressus* the entire style is narrow and falcate). Penis broad, provided with dentate ± sclerified plates (absent in *depressus*), sometimes also with 1–2 falcate or claw-like spiculi.

Owing to weak sclerification specimens of the genus are often ± shrunken. Exact statistical measurements are then impossible.

Biology: In savanna and rain forest habitats. *Z. breviceps* occurs on Malvaceae.

Distribution: Palearctic.

Affinities: *Malacocoris* Fieber (Palearctic) differs from *Zanchius* in the narrower and considerably longer head, in which the frons is more produced and the tylus in dorsal view clearly visible. A description of *Malacocoris* in Wagner 1973:162–163.

Key to the species is West, Central and NE Africa of the genus *Zanchius*

1. Antennal joint 2 with 3–5 red spots ..... 2
- At most, extreme tip of 2nd antennal joint red ..... 3
2. Antennae gracile, 2nd joint with 3 red rings (Fig. 42b), extreme base pale. Eyes small, ocular index (♂) > 1.0. Pronotum with two narrow ± faint whitish longitudinal bands on posterior part of disk ..... *alatanus*
- Antennae incrassate, 2nd joint (Fig. 48a) with 5 (including extreme base) red rings. Eyes in ♂ large, ocular index < 1.0. Pronotum with two broad strongly elevated whitish longitudinal bands on posterior part of disk ..... *bilineatus*
3. Scutellum and elytra with conspicuous pink markings ..... 4
- Scutellum and elytra without red spots ..... 5
4. Large, length > 4.0 mm. Lateral and basal margins of pronotum strongly insinuated. Elytra with two pink spots ..... *ekho*
- Small, length < 3.0 mm. Lateral margins of pronotum straight, basal margin slightly insinuated. Elytra with one pink spot ..... *amabilis*
5. 2nd antennal joint as long as basal width of pronotum ..... *depressus*
- 2nd antennal joint much longer ..... 6
6. 1st antennal joint with longitudinal blackish stripe ..... *montanus*
- Not as above ..... 7
7. Apex of pygofer with plug-like process (Fig. 44b) . 8
- Pygofer different ..... 9
8. 1st antennal joint with distinct red apical spot. Aedeagus with long falcate spiculum ..... *breviceps*
- 1st antennal joint uniformly pale. Spiculum of aedeagus very short ..... *ladameia*
9. Length < 4 mm. Apex of pygofer conical. Hypophysis of left style straight, bidentate ..... *prokris*
- Length > 4 mm. Pygofer and left style dissimilar . 10
10. Apex of pygofer broad, truncate. Hypophysis of left style strongly curved, thick ..... *oreithyia*
- Apex of pygofer provided with two teeth as in Fig. 45h. Hypophysis of left style long and gracile *bidens*

### *Zanchius alatanus* Hoberlandt

Figs. 42–43

*Zanchius alatanus* Hoberlandt 1955:45–48.

Types: Turkey, Alata, 1♂ and 1♀ paratype, 26.VIII.1947, Exp. M.Mus. ČSR, in coll. Linnavuori.

Material: Israel: Hula, 1 ex, 3.X.1966, J. Margalit, 1 ex, 15.VI.1986, Linnavuori. Iraq: near Dukan, 1 ex, 12.VI.1980, Linnavuori. Nigeria: W St., Ile-Ife, 3 ex, 5.I. and 29.XII.1970, J. T. Medler, 7–8.VII.1973, Linnavuori. Central African Republic: Bossembélé-Bangui, 1 ex, 3.VI.1973, Linnavuori.

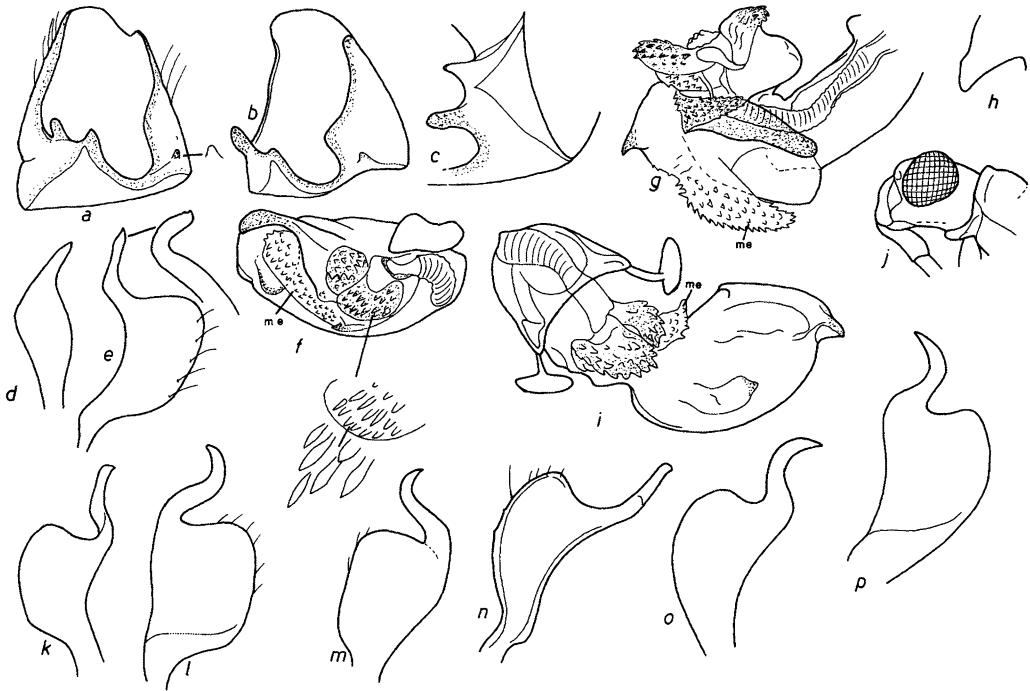


Fig. 43. *Zanchius alatanus* Hoberlandt: a–b) pygofer in dorsal and in dorsolateral view; c) process on right side of pygofer in lateral view; d) right style; e) left style; f) aedeagus, lateral view (ex from Hula, me = membranous dentate lobe); g) inflated aedeagus, lateral view (ex from Central African Republic). — *Z. bilineatus* Linnavuori; h) process of pygofer; i) aedeagus, lateral view. — *Z. breviceps* (Wagner): j) male head, lateral view; k–p) left style in different views (k–n of specimens from Khartoum, o–p of paratype of stami).

Length 2.7–3.23 mm. General color light bright green, in some specimens passing subtly to yellowish green. Eyes brownish red. Antennae light yellowish green, under surface of 1st joint with oval spot in middle and narrow transverse band at apex, 2nd joint with three and 3rd joint with two rings red or pink. Posterior part of pronotum with two narrow and  $\pm$  faint longitudinal whitish bands, sometimes lateral margins also white. Apical portion of scutellum with triangular whitish lateral spots. Elytra bright light green, here and there with unevenly dense green pigmentation; corium at the base with a longitudinal irregular whitish spot, in the middle of the corium a transversal, unclearly delimited whitish band, which does not quite reach the emboliar margin of the corium; in some specimens it is  $\pm$  reduced or it fuses with the basal spot; emboliar margin in the apical third with an irregular whitish spot,

inner posterior angle of corium with a small round whitish spot; outer part of cuneus with an irregularly delimited whitish spot; membrane grayish green, opalescent, veins and cells green. Legs pale ochraceous with greenish tinge, tarsi a little darkened apically.

Body parallel-sided, about  $3.3 \times$  as long as wide. Head  $0.8\text{--}0.9 \times$  as broad as pronotum. Eyes small, ocular index 1.13–1.40 ( $\sigma$ ), 1.67 ( $\varnothing$ ). Antennae long and gracile, proportions between joints 19:70:57:15, 1st joint  $0.43\text{--}0.58 \times$  as long as diatone, 2nd  $2.06\text{--}2.22$  ( $\sigma$ ) or  $2.27$  ( $\varnothing$ )  $\times$  as long as diatone,  $1.60\text{--}2.0$  ( $\sigma$ ) or  $1.87$  ( $\varnothing$ )  $\times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum  $1.82\text{--}2.0 \times$  as long as its total length,  $2.11\text{--}2.35 \times$  as long as median length.

Male genitalia (Fig. 43a–g): Pygofer broadly conical, right side of dorsal margin of genital opening with a plug-like process. Styles as in Fig.

43d–e. Aedeagus with two sclerified dentate patches and a long membranous dentate process.

Biology: In moist localities. In Israel found in *Papyrus* swamps in shores of the Lake Hula.

Distribution: Previously known from the Middle East. Apparently widespread in tropical Africa.

### *Zanchius bilineatus* Linnavuori

Figs. 43, 48

*Zanchius bilineatus* Linnavuori 1973:84.

Type: Zaire, Katanga, Lubumbashi, ♂ holotype, 27–28.II.1971, A. B. Stam, in coll. Linnavuori.

Length 3.5 mm. Shiny green. Head pale ochraceous, base of vertex greenish with a largish, slightly callose, whitish median spot; eyes brownish. Antennae whitish (only two basal joints present), 1st joint with 3 (including extreme base), 2nd joint with 5 (including extreme base) ± incomplete red rings. Posterior part of pronotum with two broad strongly elevated white bands, diverging caudad; lateral margins also callose and white. Scutellum with slightly callose white basal triangles; apex also pale. Elytra green, with costal margin, claval suture, an oblique transverse band in corium at middle, a roundish apical spot in mesocorium and a spot in inner basal angle of cuneus, white; clavus and corium with a longitudinal pale orangish band, the latter band broken by the whitish areas; membrane pale brownish, cells green. Under surface whitish green. Legs pale ochraceous, femora with slight greenish tinge, tarsi a little darkened apically.

Body robuster than in *Z. alatanus*. Head 0.8 × as broad as basal width of pronotum; eyes large, ocular index 0.90. Antennae thicker, proportions between joints 8:30:?, 1st joint 0.46 × as long as diatone, 2nd 1.92 × as long as diatone, 1.58 × as long as basal width of pronotum. Rostrum extending beyond hind coxae. Pronotum broader than in *Z. alatanus*, 2.1 × as broad as long (total length).

Male genitalia in Figs. 43h–i, 48c–d. Pygofer as in *Z. alatanus*. Aedeagus with two sclerified dentate patches, membranous dentate process short.

Distribution: Known only from Zaire (Katanga).

### *Zanchius breviceps* (Wagner)

Figs. 42–44, 47

*Habrocoris breviceps* Wagner 1951:153–155.

*Zanchius breviceps* Linnavuori 1964:329.

*Z. stami* van Doesburg 1984:27–33, syn. n.

Types: Syria, Deir es Zor, 4 paratypes of *stami*, VIII.1982, P. A. Stam, in coll. Linnavuori.

Material: Numerous exx from Egypt (Linnavuori 1964:329). Israel: Herzliya, 26.VII.1958; Rehovot, 28.VII.1958; Tel Aviv, 24.VII.1958, Linnavuori. Iraq: Baghdad, IV–X.1980; Baghdad, Dawrah, 15.IX.1979, Linnavuori. Saudi Arabia (Linnavuori 1986:142). Nigeria: NW St., Birni Yauri-Rijau, 23.VII.1973, Zuru, 23.VII.1973, Yelwa, 23.VII.1973; NC St., Zampari forest reserve, 24.VII.1973, Yashi-Dayi, 25.VII.1973, Kagoro forest, 7.VIII.1973; NE St., Jalingo-Lankoviri, 24.VIII.1973, Kaltungo, 26–27.VIII.1973, Mai Fula, 24.VII.1973, Zinna-Ngurore, 23.VIII.1973; Kw St., Shaganu-Rofia, 22.VII.1973; B Pl St., Gangare Kibo, 5.VIII.1973, Linnavuori. Upper Volta: Niangoloko, 26.X.1973; Ouagadougou, 3–5.XI.1973; Sindou, 27–28.X.1973, Linnavuori. Niger: Niamey, 9.XI.1973, Linnavuori. Chad: Bebedja, 28–31.V.1973; Farcha, 20–22.V.1973, Linnavuori. The Sudan (Linnavuori 1975:57). Eritrea: Docali, 30.V.1963, Linnavuori.

Length 3.3–3.9 mm. Pale yellowish green. Eyes reddish brown. Antennae yellowish, 1st joint with red spot on under surface of apex, orange streak on outer surface, and a small orange spot proximally on inner surface; extreme apex of 2nd joint red, undersides of 2nd, 3rd and 4th joints tinged with rose. Head, thorax and hyaline corial part of elytra including membranal basal cell, greenish, color ± concentrated in small grains or accumulation of grains, leaving ill-defined uncolored areas on elytra, especially lateral part of clavus, anterior half and apex of exocorium, medial part and apex of endocorium, and posterior part of membranal cell; rest of membrane lightly clouded with a beige tinge, iridescent and with a dark green to blackish spot along the posteroapical side of the cell. Legs pale yellowish, femora lightly tinged with green, last tarsomeres darkened.

Body gracile, parallel-sided, almost 4 × as long as broad at base of pronotum. Head 0.83–0.93 × as broad as basal width of pronotum; ocular index 1.36–1.39 (♂), 1.50–1.62 (♀). Proportions between antennal joints 22:97:75:60, 1st joint 0.53–0.56 × as long as diatone, 2nd 2.03–2.20 × as long as diatone, 1.80–1.88 × as long as basal width of pronotum. Rostrum extending to

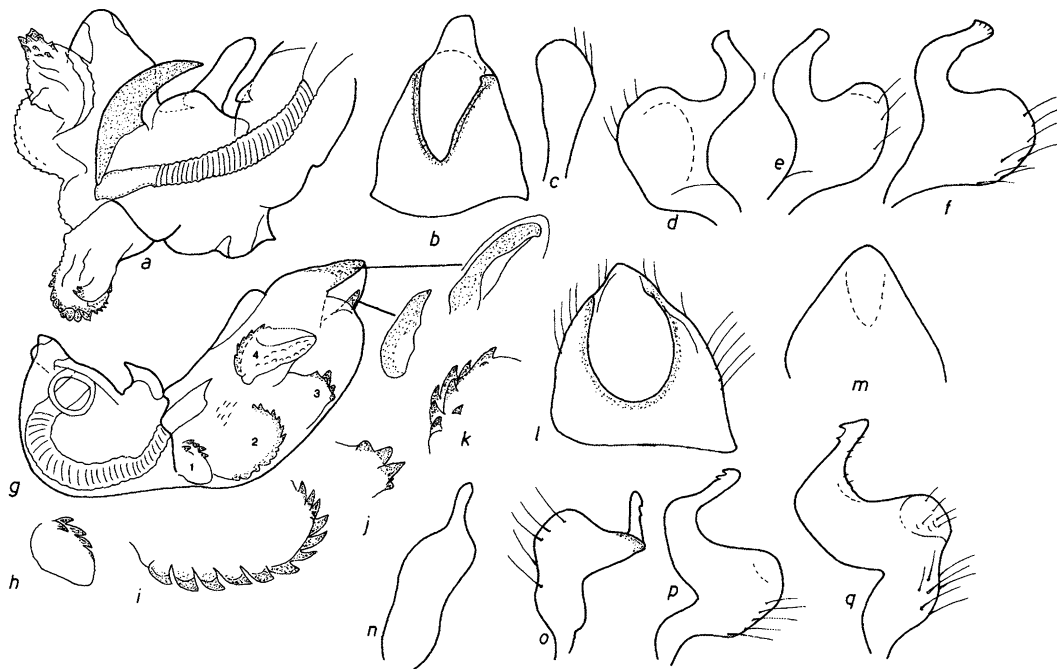


Fig. 44. *Zanchius breviceps* (Wagner): a) aedeagus. — *Z. laodameia* sp. n.: b) pygofer, dorsal view; c) right style; d–f) left style in different views; g) aedeagus, lateral view; h–k) dentate sclerifications of aedeagus. — *Z. prokris* sp. n.: l–m) pygofer in dorsal and in ventral view; n) right style; o–q) left style in different views (q in slide mount).

base of hind coxae. Pronotum  $1.92\text{--}2.20 \times$  as broad as long in middle.

Male genitalia (Figs. 43k–p, 44a): Pygofer with plug-like apex as in *Z. laodameia*. Aedeagus with long falcate spiculum.

Biology: On Malvaceae such as *Abutilon* and *Gossypium*.

Distribution: Widely distributed within the eastern parts of the Eremian subregion and in arid and semiarid areas of the northern Sudanese subregion.

### *Zanchius laodameia* sp. n.

Fig. 44

Material: Nigeria: R St., near Mbiama, ♂ holotype, 3 paratypes, 4–5.VII.1973; W St., Ife, 1 paratype, 7–8.VII.1973, Linnavuori. Central African Republic: M'Baiki, 1 paratype, 6–9.VI.1973, Linnavuori, in coll. Linnavuori. Other material (♀♀): Ivory Coast: Man, 2 exx, 14–21.X.1973, Linnavuori. The Sudan: Equatoria, Imatong Mts., Gilo, 1 ex, 18–24.III.1963; Juba, 1 ex, 27.II–2.III.1963, Linnavuori.

Length 3.5–3.75 mm. Like *Z. breviceps* but 1st antennal joint uniformly pale and red apical spot on 2nd joint faint. Male genitalia (Fig. 44b–k): Pygofer as in *Z. breviceps*. Styles as in Fig. 44c–f. Spiculum of aedeagus very short, sclerifications as in Fig. 44g–k.

Etymology: Laodameia, spouse of Protesilaos, a Greek soldier killed by Hector in the Trojan war.

Biology: At lamp in rain forest.

### *Zanchius prokris* sp. n.

Figs. 44–45

Material: Cameroon: Bota, ♂ holotype, 4 paratypes, 19–20.VI.1973, Linnavuori, in coll. Linnavuori.

Length 3.5–3.75 mm. Like *Z. laodameia*.

Male genitalia (Figs. 44l–q, 45a): Apex of pygofer conical. Left style distinctive: hypophysis straight, apically bidentate. Aedeagus as in Fig. 45a.

Etymology: Prokris, spouse of Erekhtheus, a mythic king of Attica.

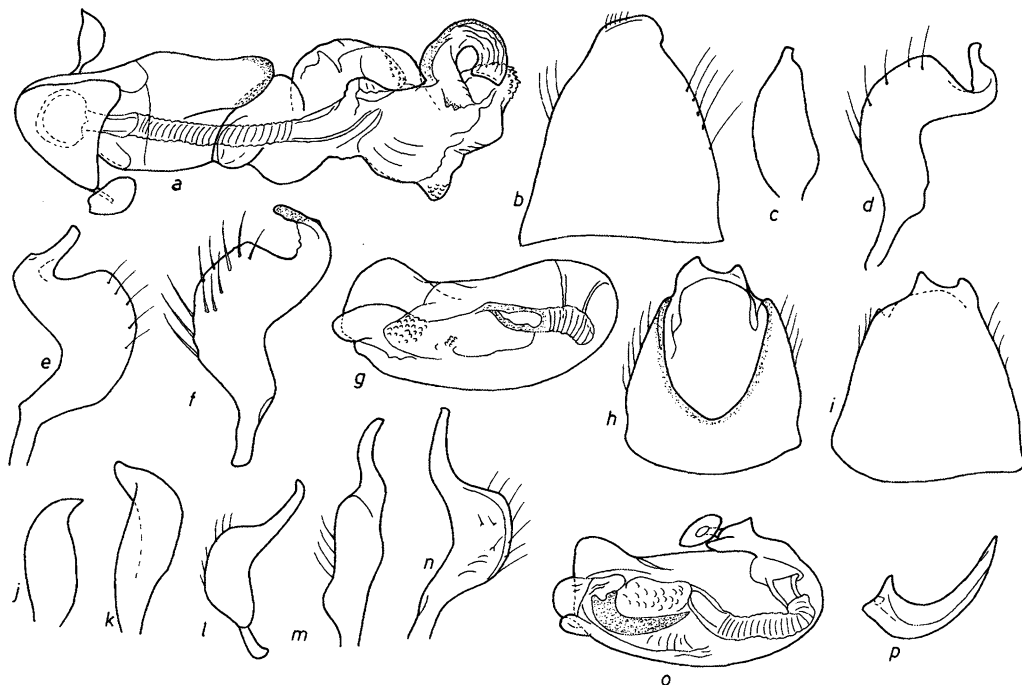


Fig. 45. *Zanchius prokris* sp. n.: a) aedeagus, lateral view. — *Z. oreithya* sp. n.: b) pygofer, ventral view; c) right style; d–f) left style in different views (f in slide mount); g) aedeagus, lateral view. — *Z. bidens* sp. n.: h–i) pygofer in dorsal and in ventral view; j–k) right style; l–n) left style in different views (n in slide mount); o) aedeagus, lateral view; p) spiculum of vesica.

### *Zanchius oreithya* sp. n.

Fig. 45

Material: Nigeria: N C St., Kagoro forest, ♂ holotype, 7 paratypes, 7.VIII.1973, Linnavuori, in coll. Linnavuori.

Length 4.0–4.5 mm. Considerably bigger than the related species. Antennae uniformly pale ochraceous. Clavus, corium and cuneus variegated owing to  $\pm$  contrasting green and pale yellow patches.

Head  $0.73\text{--}0.76 \times$  as broad as basal width of pronotum; ocular index 1.0 (♂), 1.48 (♀). Proportions between antennal joints 17:50:22:? (♂), 17:52:36:? (♀), 1st joint  $0.76$  (♂) or  $0.68$  (♀)  $\times$  as long as diatone, 2nd  $2.78$  (♂) or  $2.70$  (♀)  $\times$  as long as diatone, 2.12 (♂) or  $1.98$  (♀)  $\times$  as long as basal width of pronotum. Rostrum extending beyond hind coxae. Pronotum  $2.0\text{--}2.13 \times$  as broad as long in middle.

Male genitalia (Fig. 45b–g): Apex of pygofer broad, truncate. Hypophysis of left style thick,

strongly curvate. Aedeagus small, weakly sclerified.

Etymology: *Oreithya*, spouse of Boreas (Greek mythology).

Biology: At lamp in a rain forest.

### *Zanchius bidens* sp. n.

Fig. 45

Material: Nigeria: W St., Ile-Ife, ♂ holotype, 25.III.1969, J. T. Medler, in coll. Linnavuori.

Diagnosis: Like *Z. oreithya* but apex of pygofer bidentate.

Description: Length 3.75 mm. Resembling *Z. oreithya* in the variegated elytra but smaller.

Head  $0.93 \times$  as broad as basal width of pronotum. Eyes large, ocular index 0.82. Proportions between antennal joints 25:99:?, 1st joint  $0.5 \times$  as long as diatone, 2nd  $1.98 \times$  as long as diatone,  $1.83 \times$  as long as basal width of pron-

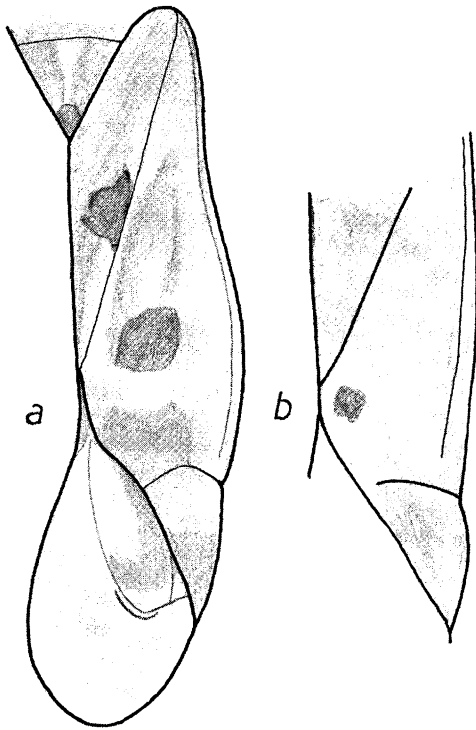


Fig. 46. *Zanchius ekho* sp. n.: a) scutellum and elytron. — *Z. amabilis* sp. n.: b) elytron.

tum. Rostrum extending to hind coxae. Pronotum  $1.93 \times$  as broad as long in middle.

Male genitalia (Fig. 45h–p): Apex of pygofer bidentate. Aedeagus with large falcate spiculum lying close to a membranous dentate area.

### *Zanchius ekho* sp. n.

Fig. 46

Material: Nigeria: SE St., Ikom-Obudu, ♀ holotype, 25.VI.1973, Linnavuori, in coll. Linnavuori.

Length 4.25 mm. Head and anterior lobe of pronotum pale yellow. Eyes pale gray. Antennal joints 1 and 2 orange, extreme base of 2nd joint white, joints 3 and 4 brownish. Basal lobe of pronotum greenish. Base of scutellum pale yellowish, apical part pale greenish, tip pink. Elytra yellowish green with green patches, a spot arising from sutural margin on clavus and another spot at

the level of apex of clavus on mesocorium pink; membrane pale brownish, cells with green patches, a curved dark spot at apex of the large membranal cell. Under surface and legs pale yellowish. General structure as in the *breviceps* group. Head  $0.78 \times$  as broad as basal width of pronotum, vertex with distinct median sulcus; ocular index 1.2. Antennae very long, proportions between joints 31:100:86:100, 1st joint  $0.78 \times$  as long as diatone, 2nd  $2.5 \times$  as long as diatone,  $1.96 \times$  as long as basal width of pronotum. Rostrum long, extending to middle of venter. Pronotum  $2.13 \times$  as long as median length, shape as in the *breviceps* group.

Etymology: Ekho (Echo), a nymph in Ovidius's *Metamorphoses*.

*Z. gubernator* (Distant) from Ceylon (Peradeniya, 1♂, in the British Museum) is a similar species, which differs in the fainter red markings on the upper surface. The eyes are considerably smaller, ocular index 1.55, and the antennae much shorter: 1st joint  $0.51 \times$  as long as diatone, 2nd  $2.05 \times$  as long as diatone,  $1.57 \times$  as long as basal width of pronotum. The pronotum is broader,  $2.32 \times$  as broad as long in middle, the lateral and hind margins are only slightly insinuated.

### *Zanchius amabilis* sp. n.

Figs. 46–47

Material: Cameroon: Kumba, ♂ holotype, 22.VI.1973, Linnavuori, in coll. Linnavuori.

Length 2.75 mm. Green. Head and callal area of pronotum yellow. Eyes gray. 1st and 2nd antennal joints orangish, 1st joint with faint red apical ring, joints 3 and 4 embrowned. Base of scutellum yellow, apex red. Clavus, corium and cuneus uniformly green, medioapical angle of corium with small red roundish spot near apex of clavus; membrane pale brownish, a distinct curved dark stripe at apex of the large cell. Under surface pale greenish. Legs yellow.

Body small and relatively robust. Hair covering longish, pale. Head  $0.93 \times$  as broad as basal width of pronotum; eyes large, ocular index 1.0. Antennae shortish; proportions between joints 13:60:48:45, 1st joint  $0.33 \times$  as long as diatone, 2nd  $1.54 \times$  as long as diatone,  $1.43 \times$  as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum  $2.33 \times$  as broad as long in middle, lat-

eral margins straight, hind margin shallowly insinuated.

Male genitalia (Fig. 47f–k). Pygofer short and broad, dorsal margin on right side of genital opening with a horn-like process, ventral margin with a plug-like process and a small apically bifid lobe. Styles digitate. Aedeagus with needle-like spiculum.

Biology: At lamp in a rain forest.

***Zanchius montanus* (Linnavuori), comb. n.**

Fig. 47

*Malacocoris montanus* Linnavuori 1975:57.

Type: Ethiopia, Agheresalam, alt. 2900 m, ♀ holotype, 8.VI.1963, Linnavuori, in coll. Linnavuori.

Length 5 mm. Yellow-green. Antennae yellow, 1st joint with a longitudinal blackish stripe. Membrane of elytra with a few roundish green spots. Legs yellow.

Body long and gracile, 3.5 × as long as broad. Hair covering erect, yellowish. Head 0.7 × as broad as base of pronotum, vertex basally not marginate; eyes small, ocular index 2.25. Antennae long, proportions between joints 11:44:27:?, 1st joint 0.64 × as long as diatone, 2nd 1.9 × as long as basal width of pronotum. Rostrum extending far beyond hind coxae. Pronotum remarkably narrow, 1.8 × as broad as long, lateral and basal margins shallowly insinuated; disk convex, sloping laterad, calli large (occupying half the length of pronotum), fused and swollen. Scutellum well elevated. Legs long and gracile.

Biology: Swept from undergrowth in a cloud forest.

Distribution: Ethiopia.

***Zanchius depressus* (Linnavuori), comb. n.**

Figs. 47–48

*Hyalosomella depressus* Linnavuori 1975:57.

Types: The Sudan, Blue Nile, Wad Medani, 11–12.XI.1962; Upper Nile, Malakal, 1 paratype, 5–20.I.1963; Kordofan, Dilling-Kadugli, 1 paratype, 30.I–1.II.1963, Lake Keilak, 1 paratype, 8–11.II.1963; Equatoria, Juba, 1 paratype, 27.II–2.III.1963, Linnavuori, in coll. Linnavuori.

Material: Nigeria: N C St., Zampari forest reserve, 2 exx, 24.VII.1973; NE St., Zinna-Ngurore, 1 ex,

25.VIII.1973, Linnavuori. Upper Volta: Bobo Dioulasso, 2 exx, 1–2.XI.1973; Kariaguela, 1 ex, 29.X.1973, Linnavuori. Chad: Bebedja, 1 ex, 28–31.V.1973, Linnavuori.

Length 3.0–3.5 mm. Opaque. Green. Head, antennae, pronotum, excluding the basal margin, and scutellum yellow. Membrane of elytra hyaline, veins greenish. Legs yellow.

Body small, ovate, nearly 3 × as long as broad. Hair covering fine and pale. Head 1.9 × as broad as long, finely microsculptured; vertex flat, with a faint depression near each eye, base sharply carinate; ocular index 1.31 (♂), 1.75 (♀). Antennae short, proportions between joints 5:22:15:?, 1st joint 0.4 × as long as diatone, 2nd as long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum twice as broad as long, lateral and basal margins distinctly insinuated; disk finely microsculptured, basally flat, apically shallowly convex, calli small but distinct. Elytra rather coriaceous. Legs shortish.

Male genitalia (Figs. 47m–o, 48f–g): Pygofer short and broad, apex broadly conical with small plug-like median process. Left style gracile, curvate, without expanded sensory lobe. Aedeagus small, membranous, with two falcate spiculi, no dentate lobes.

Biology: On *Gardenia ternifolia* in savanna habitats.

Distribution: Apparently widespread within northern parts of the Sudanese subregion.

*Extralimital species*

***Zanchius alba* Schuh**

Fig. 47

*Zanchius alba* Schuh 1974:60–61.

Type: South Africa, Natal, Oliviershoek Pass Summit, 5400 ft 25 mi. S. Harrismith, 1♂ paratype, 4.III.1968, Schuh, J. & S. Slater, M.Sweet, in the American Museum of Natural History.

The description not repeated.

Male genitalia in Fig. 47p–q. Right style as in *Z. leucosideae*. Aedeagus membranous and deformed in the specimen studied.

Biology: On *Buddleia salviifolia*.

Distribution: South Africa.