### New taxa of Heteroptera and Auchenorrhyncha from the Middle East and the Ethiopian Region

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In Heteroptera, the following new taxa are described: Miridae: Cyllecoris merope sp. n. from Israel; Lygaeidae: Barberocoris mirei periboia ssp. n. from Israel, B. leto sp. n. from Israel; Coreidae: Daladeropsis rhomboidalis sp. n. from Nigeria and Uganda; Pentatomidae: Bathycoelia alkyone sp. n. from Socotra. In Auchenorrhyncha, the new taxa described are as follows: Flatidae: Derisa asper sp. n. from Eritrea; Nogodinidae: Philbyella brevispina sp. n. from Algeria; Derbidae: Diostrombus nike sp. n. from South Yemen.

The lectotype is designated for the pentatomid Veterna alcanor Linnavuori, 1982, from Ethiopia.

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## On the West Palearctic species of *Cyllecoris* Hahn (Heteroptera, Miridae)

The following West Palearctic Cyllecoris species have been described: C. histrionicus (Linnaeus) (widespread on Quercus in the European deciduous forest zone), C. marginatus (Fieber) (Greece, host plant unknown) and C. djemagati Puchkov (on Ulmus scabra and U. foliacea in the Caucasus). One species, C. equestris Stål, occurs in the Far East on Ulmus pumila. C. ulmi Kulik (1965) (on Ulmus pumila in Siberia), which is unknown to me, belongs to Ulmocyllus Seidenstücker and is identical with U. virens Seidenstücker (1964) (cf. Kerzhner 1987).

A new species of *Cyllecoris*, described below, necessitates revision of the key to the West Palearctic species:

- 1 (4) Base of vertex smooth ..... 2
- 2 (3) 1st antennal joint orangish. Basal part of pronotum gray ...... histrionicus (Fig. 2a-f, h-j)

- 5 (6) Antennae yellow, 1st joint blackish, incrassate, about as broad as width of eye. Pronotum blackish with pale median stripe ......marginatus (Fig. 2g)
- 6 (5) Antennae black, 1st joint gracile, orangish with longitudinal black stripe. Only lateral margins of pronotum blackish ..... merope (Figs. 1, 3a-e)

*C. merope* sp.n. Figs. 1 and 3.

Length 6 mm. Head black, transverse spot at basal keel yellowish; eyes gray. 1st antennal joint orangish with longitudinal blackish stripe on upper surface, other joints black. Pronotum with collar, anterior lobe and posterior lobe at transverse sulcus orange, sides and humeral angles blackish. Base of scutellum orange, apex pale yellow, basal angles with black spot. Elytra: clavus and corium gray with two red longitudinal bands as indicated in Fig. 1, tip of clavus and apical margin of mesocorium blackish; cuneus red, base and tip orange; membrane brownish smoky, colorless spot at apex of cuneus, outer apical area blackish, apical part of veins orange. Rostrum and legs yellow-brown, last tarsomere brownish.



Fig. 1. — Cyllecoris merope sp.n.

Body gracile. Hair covering short, pale. Head about  $0.70-0.75 \times$  as broad as basal width of pronotum convex, middle of base of vertex delimited by curved transverse keel; ocular index 1.85–1.86 (J), 2.0–2.15 (Q). Antennae gracile, proportions between joints 15:50:26:7 (J), 19:60:27:10 (Q), 1st joint 0.75-0.83 ( $\sigma$ ) or 0.78–0.86 (Q) × as long as diatone, 2nd joint about  $1.8 \times as$  long as basal width of pronotum. Rostrum extending to middle coxae. Pronotum 1.64- $1.66 \times as$  broad as long in middle; anterior lobe constricted, about  $0.54-0.57 \times$  as broad as basal width of posterior lobe, calli slightly elevated, sides ecarinate; posterior lobe strongly widened at humeral angles, disk rugose. Other structures as in C. histrionicus.

Male genitalia in Fig. 3a-e.

Biology: On Acer microphyllum.

Etymology: Greek mythology, Merope, daughter of Atlas.

Material studied: Holotype, J and 6 paratypes: Israel, Mt. Dov, 21.V.1986, A. Freidberg, in coll. Linnavuori.

Note. The new species is readily distinguished from C. histrionicus and C. djemagati by the basal carina of the vertex. C. marginatus (unknown to me) differs in the incrassate black 1st antennal segment and the black pronotum. In C. equestris the 1st antennal joint is pale, thicker and a little longer than the diatone. the pronotum is dark with a percurrent median stripe, often also the collar and basal margin, pale and the clavus and corium are brown. The male genitalia are illustrated in Fig. 2k-o.

#### Genus Barberocoris Miller (Heteroptera, Lygaeidae)

The genus Barberocoris Miller (1951) contains the following previously known species: B. astragali Linnavuori 1984 (Iraq), B. mirei (Dispons 1963) (Tibesti, the Sudan, Somalia), B. myrmecoides Slater & Sweet 1970 (South Africa), B. risbeci Miller 1951 (Senegal), B. somalicus Linnavuori 1978 (Somalia, SW Arabia), and B. sudanensis Miller 1951 (the Sudan). Two new taxa are described below.

Key to the Middle East species:

- 1 (2) Rostrum short extending between middle coxae .. mirei
- 3
- much lower than basal lobe .....
- 4 (5) Antennae (Fig. 4h) shorter, 2nd joint  $1.25 \times as$ long as 3rd,  $0.77 \times$  as long as basal width of pronotum. Rostrum extending to apex of basal third of the fused sterna 2-5 ..... somalicus
- 5 (4) Antennae (Fig. 4g) much longer, 2nd joint  $1.31 \times$ as long as 3rd,  $0.77 \times$  as long as basal width of pronotum. Rostrum extending beyond apex of the fused sterna 2-5 ..... sudanensis
- 6(3) Pronotum (Fig. 3f) narrow; callal area in lateral view nearly as high as posterior lobe .....
- 7 (8) Antennae with 4th joint and apical two-thirds of 3rd black (Fig. 4i). Corium slightly shorter than membrane ..... astragali
- 8(7) Antennae yellow-brown, 4th joint dark brown. Corium longer than membrane ..... leto

#### B. mirei periboia ssp.n. Figs. 3-4.

Usually macropterous. Much larger than the nominate form, length 3.25-3.50 mm. Body parallelsided. Head finely punctate, in macropterous form



Fig. 2. — Cyllecoris histrionicus (Linné): a) dorsal view; b-d pronotum; e-f) head and pronotum in dorsal and in lateral view; h) left style; i) right style; j) spicula of penis. — C. marginatus (Fieber): g) head and pronotum. — C. equestris Stål; k-l) left style; m-n) right style; o) spicula of penis. — C. djemagati Puchkov; p) left style; q-r) right style; s) spicula of penis. — a-f and g after Wagner 1973, h-o after Josifov & Kerzhner 1984.

slightly narrower, in subapterous form broader than basal width of pronotum. Pronotum in macropterous form  $1.46-1.50 \times as$  broad as long in middle, calli moderately elevated, in lateral view much lower than basal lobe (as in *B. sudanensis* in Fig. 31), basal lobe strongly widened; pronotum in subapterous form much narrower, about  $1.33 \times as$  broad as long in middle, calli in lateral view nearly as high as basal lobe; puncturing on pronotum finer than in the nominate form. Elytra with parallel costal margins, corium slightly longer or shorter than membrane. Mesosternum in macropterous form large, convex, finely striated, in subapterous form similar to *B. mirei mirei* but broader.

Biology: Under Salsola baryosma in sandy localities.

Etymology: Greek mythology, Periboia, mother of Aias.

Material studied: Holotype of and 13 paratypes: Israel, 10–15 km N of Yotvata, 24.IV.1986, Linnavuori, in coll. Linnavuori.

Note. B. mirei mirei (Dispons) is always subapterous and much smaller (length 2.75 mm). The body (Fig. 3j-g) is pear-shaped. The head is broader than the basal width of the pronotum and more coarsely punctate. The pronotum (Fig. 4d-e) is narrowish with the globose calli in lateral view as high as the basal lobe. The costal margins of the elytra (Fig. 3h) are curvate and diverging caudad, and the corium is distinctly longer than the membrane. The mesosternum (Fig. 4f) is smaller and flatter.

Biology: On Salsola baryosma, in Somalia on S. battae.

Originally described from Tibesti.

Material studied: numerous exx. from the Sudan, Northem Province, Ed Damer, 5-10.VII.1961, Linnavuori, and Somalia, near Borama, 29.VI.1963, Linnavuori.



Fig. 3. — Cyllecoris merope sp.n.: a) left style; b-c) right style; d) penis, lateral view; e) spicula of penis. — Barberocoris mirei mirei (Dispons): f-g) in lateral and in dorsal view; h) elytron. — B. mirei periboia ssp.n.: i) dorsal view of macropterous form. — B. leto sp.n.: j) dorsal view; k) head and pronotum in lateral view. — B. sudanensis Miller: 1) head and pronotum in lateral view. — f) after Dispons 1963.

#### *B. leto* sp.n. Figs. 3–4.

Length 3.25–4.0 mm. Shiny. Golden brown. Vertex dark brown. Eyes reddish brown. Antennae yellow-brown, 4th joint dark brown. Pronotum golden brown. Scutellum and extreme base of elytra opaque, black. Elytra opaque, whitish. Caudal margins of metapleura whitish. Venter yellow- or golden brown, apically blackish. Femora golden brown, tibiae and tarsi whitish.

Body elongately pear-shaped, broadest at apical third of elytra. Hair covering long, erect, pale. Head with long erect hairs, elongately ovate,  $0.87-0.94 \times as$  broad as basal width of pronotum, strongly globose, obsoletely punctate, finely rugose; eyes small, ocular index 4.30–5.0. Antennae gracile, with semierect pale hairs, proportions between joints 18:40:30:35 (d), 22:51:38:38 (Q), 2nd joint 1.21-1.34 × as long as 3rd, 0.91-0.93 × as long as basal width of pronotum. Rostrum extending to apex of basal third of the fused

sterna 2–5. Pronotum  $1.23-1.42 \times as$  broad as long in middle, distinctly and rather densely punctate, with numerous erect bristles; calli elevated, in lateral view only a little lower than basal lobe. Elytra extending beyond tip of abdomen, costal margins distinctly curved; corium longer than membrane (measurement: corium, greatest length along costal margin, membrane, greatest length from tip of clavus to apex). Flying wings extending to middle of abdomen. Under surface of thorax finely punctate.

Biology: On Blepharis edulis in sandy habitats.

Etymology: Greek mythology, Leto, mother of Apollo and Artemis.

Material studied: Holotype of and 3 paratypes: Israel, Mt. Ramon, Es Saharonim, 13.VII.1986, Linnavuori; several paratypes: W. Faria, 27-31.V.1976, A. Freidberg; 1 paratype: Egypt, Sinai, 5 km N Ofira, 22.V.1981, A. Freidberg. Types in coll. Linnavuori, additional material in Mus. Tel-Aviv.

The species is closely related to *B. astragali*, *B. sudanensis* and *B. somalicus*. Differences indicated in the key.



Fig. 4. — Barberocoris mirei periboia ssp.n.: a) elytron of macropterous form; b) pronotum of subapterous form; c) meso- and metasternum of macropterous form. — B. mirei mirei (Dispons): d-e) pronotum (of specimens from Borama and Ed Damer); f) meso- and metasternum. — B. sudanensis Miller; g) antenna. — B. somalicus Linnavuori: h) antenna. — B. astragali Linnavuori; i) antenna. — B. leto sp.n.: j) antenna. — Daladeropsis rhomboidalis sp.n.: k) dorsal view. — D. dispar Schouteden: l) pronotum. — Bathycoelia buonopoziensis (Palisot de Beauvois): n) lateral angle of pygofer in caudal view; m) pygofer in ventral view. — B. alkyone sp.n.: o) pygofer, ventral view; p-q) lateral angle of pygofer in median and in lateral view.

# Genus Daladeropsis Karsch (Heteroptera, Coreidae)

A revision of *Daladeropsis* was published in Linnavuori, 1975: 56–64. The genus contains the following previously known taxa: *D. africana africana* (Dallas), *D. africana ampliata* Linnavuori, *D. pelops* Linnavuori, *D. hutereauae* Schouteden, and *D. dispar* Schouteden. A new distinctive species, detected in the British Museum and in my collection, is described below.

#### **D.** rhomboidalis sp.n. Fig. 4.

Length 21–23 mm, greatest breadth 13.5–14 mm. Opaque. Reddish brown. Antennal joints 1–3 dark brown, 4th joint, in the holotype also 3rd, ochraceous. Membrane of elytra brownish. Tarsi ochraceous.

Hair covering of body short, pale. Head a little longer than broad, parallel-sided, densely covered with small setigerous tubercles; eyes small, ocular index 3.65. Proportions between antennal joints 70:70:80: 49; 1st joint thick, cylindrical, 2nd slightly flattened, 3rd joint clavate, strongly flattened, 4th joint slender, cylindrical; antennae covered with small setigerous tubercles. Rostrum extending to fore coxae. Pronotum strongly broadening caudad, lateral margins finely tuberculate, in anterior part insinuated, humeral lobes prominent, rounded, slightly upcurved; disk densely punctate, interspaces  $\pm$  elevated. Scutellum transversely wrinkled and punctate. Elytra densely punctate. Abdomen distinctive, very strongly expanded in middle, rhomboidal in outline. Under surface finely punctate, parasternites also minutely tuberculate. Legs gracile, femora with very indistinct tubercles.



Fig. 5. Bathycoelia buonopoziensis (Palisot de Beauvois): a) style; b) hypophysis of style, median view; c) sensory lobe of style in lateral view; d) basal process of style in broad aspect. — B. alkyone sp.n.: e) style; f-g) hypophysis of style in median and in dorsal view; hi) sensory lobe of style in lateral and in median view; j) basal process of style in broad aspect. — Derisa asper sp.n.: k) pygofer in lateral view; l) style; m) anal tube in lateral view; n) penis, lateral view. — Philbyella brevispina sp.n.: o) style; p-q) anal tube in lateral and in dorsal view.

Material studied: Holotype  $\varphi$ ; Nigeria, NW St., Mokwa, 22.XII.1970, given by J. T. Medler, in coll. Linnavuori; 1 $\varphi$ paratype: Panshanu Savannah, 24.VIII.1962; 1 $\varphi$  paratype: Uganda, Ungama, Gulu, 30.VI.1936, G. H. E. Hopkins. Both paratypes in the British Museum.

Resembling *D. dispar* (Fig. 41) in the finely dentrate lateral margins and rounded humeral lobes of the pronotum, but readily distinguished by the narrow parallel-sided head, the insinuated lateral margins and more prominent humeral lobes of the pronotum, and especially, by the curiously shaped abdomen.

#### Taxonomic notes on the Pentatomidae

#### Veterna alcanor Linnavuori

Veterna alcanor Linnavuori & Cobben was listed as a manuscript name in Linnavuori 1982:113. Although the manuscript was never published, description in a key to the species of the genus Veterna Stål can be regarded as sufficient to make it a valid taxon, V. alcanor Linnavuori.

A syntype & from Ethiopia, Jimma, 31.X.1968, R. H. Cobben in coll. Linnavuori, is here designated as the lectotype.

#### *Bathycoelia alkyone* sp. n. Figs. 4–5.

Length 18 mm. Green. Eyes reddish gray. Antennae violet, base of 1st joint green, joints 4 and 5 greenish. Elevated lateral margins of pronotum dark violet. Basal angles of scutellum with roundish black pit, surrounded by whitish callose ring. Membrane of elytra greenish hyaline. Connexivum immaculate, yellowish, the very lateral margin greenish. Under



Fig. 6. Derisa atratula Melichar: a) face; b) general habitus, lateral view; c) head; d) apex of elytron. — D. pugionata Linnavuori; e) head; f) apex of elytron; g) male genital segment, lateral view; h) aedeagal appendage. — After Dlabola 1960 and Linnavuori 1973.

surface pale green. Legs pale greenish, fore tibiae and extreme bases of middle and hind tibiae violet.

Resembling *B. buonopoziensis*. Head  $1.11 \times as$  broad as long, lateral margins of genae nearly straight; upper surface of head densely and finely punctate; ocular index 3.09. Antennae long, proportions between joints 20:44:54:58:57 (diatone 89 units). Rostrum extending to apex of 4th visible sternite. Pronotum 2.45 × as broad as long in middle, lateral margins nearly straight, humeral angles bluntly prominent; disk uneven with double puncturing, dense coarser punctures forming irregular ± transverse rows, very fine punctures present on interspaces. Scutellum 1.17 × as long as broad, densely punctate, punctures of the size of the larger punctures on pronotum. Puncturing on clavus and corium similar. Paratergites densely and finely punctate.

Male genitalia in Figs. 40-q and 5e-j.

Etymology: Alkyone, Greek mythology, daughter of Aiolos.

Material studied: Holotype J; NE Africa: Socotra, in coll. Linnavuori.

A revision of the African species of the genus was published in Linnavuori 1982:143–146). The new species resembles *B. buonopoziensis* (Palisot de Beauvois) (male genitalia in Figs. 4m–n, 5a–d), but differs in the longer head, coarser puncturing, conspicuous black depressions at the basal angles of the scutellum, and the structure of the male genitalia.



Fig. 7. — *Derisa farinosa* Dlabola: a) style; b-c) penis in ventral and in lateral view; d) pygofer and anal tube, lateral view; e) anal tube, dorsal view; f) elytron; g) head. — After Dlabola 1980.

#### New species of Auchenorrhyncha

### Derisa asper sp.n. (Flatidae)

Fig. 5.

Length 7.5 mm. Opaque. Golden yellow. Upper part of frons with dense fuscous irroration. Vertex and mesonotum fuscous. Eyes pale gray. Elytra irmmaculate, veins concolorous.

With the general structure of the genus. Clypeus protruding upwards, upper margin triangular, median keel sharp. Frons  $0.77 \times$  as broad as long (total length), broadening ventrad, broadest at starting points of antennae, lateral margins upcurved, median keel strong, lateral keels faintly indicated below dorsal margin. Vertex  $2.33 \times$  as broad as long in middle, apical margin bluntly angular as in *D. atratula*, apical keel sharp; basal compartment short, in middle concealed by anterior margin of pronotum. Pronotum and mesonotum as in *D. atratula*. Elytra shorther than in *D. atratula*.

Male genitalia in Fig. 5i-d.

Material studied: Holotype J; Eritrea, Massawa, 27-30.V.1963, Linnavuori, in coll. Linnavuori.

Differences from the other species of the genus *Derisa* Melichar indicated in the following key:

- Apical margin of elytra concave, dorsoapical angle prominent (Fig. 6j). Male genitalia as in Fig. 6g-h...pugionata Linnavuori (the Sudan, Saudi Arabia)



Fig. 8. — *Philbyella elba* Linnavuori: a) anal tube and pygofer in lateral view; b) style; c-d) penis in lateral and in ventral view. — *P. ailet* Linnavuori: e) style; f-g) penis in lateral and in ventral view. — After Linnavuori 1973.



Fig. 9. — Philbyella wittmeri Dlabola: a-b) penis in ventral and in lateral view; c-d) anal tube in lateral and in dorsal view; e) style. — P. banajai Dlabola; f-g) penis in ventral and in lateral view; h) style; i-j) anal tube in lateral and in dorsal view. — After Dlabola 1980.

- 3 (4) Length 7.5 mm. Ground color golden yellow.
   Frons shorter than long (total length). Penis as in
   Fig. 51 ...... asper sp.n.

- 6 (5) Basal compartment of vertex longer, in middle distinctly visible (Fig. 6c) ..... atratula Melichar (Iran).



Fig. 10. — *Diostrombus nike* sp.n.: a) elytron; b) anal tube and pygofer, lateral view; c-d) style, e-f) penis.

#### *Philbyella brevispina* sp.n. (Nogodinidae) Fig. 5.

Length 8.5 mm. Externally like *P. elba* Linnavuori. Readily distinguished by the male genitalia: apical part of penis large, broadly triangular, provided with small median notch; middle of dorsal surface with strong tubercle; aedeagal appendages very short. Anal tube short, in lateral view nearly straight, in dorsal view parallel-sided.

Material studied: Holotype & Algeria, Hoggar Mountains, near Tamanrasset, 7-8.V.1973, Linnavuori, in coll. Linnavuori.

The genus *Philbyella* China has previously been known only from the eastern parts of the Eremian subregion: Iran, Arabia, Eritrea, and the Kassala Province in the Sudan. The male genitalia of the related African species *P. elba* Linnavuori (The Sudan) and *P. ailet* Linnavuori (Eritrea) are illustrated in Fig. 8. In these species the penis is differently shaped and provided with long appendages. The male genitalia of the recently described Arabian species *P. banajai* Dlabola and *P. wittmeri* Dlabola are seen in Fig. 9.

#### *Diostrombus nike* sp.n. (Derbidae) Fig. 10.

Length 8 mm. Pale ochraceous. Apex and sides of clypeus in lower part dark fuscous, middle orangish; the scored median part of frons dark fuscous, sides along eyes orangish. Eyes dark brown. Pronotum with orange spot behind each eye, sides whitish. Middle of mesonotum yellowish, sides brownish. Scutellum golden brown, margins fuscous. Elytra hyaline with dark fuscous markings as indicated in Fig. 10a; costal margin yellowish, opaque; veins yellowish, in apical part fuscous. Flying wings hyaline. Middle of dorsum of abdomen with orangish and fuscous markings, sides with broad longitudinal fuscous band. Under surface and legs ochraceous.

Clypeus large, with strong median carina, lateral keels faint. Frons in lateral view regularly convex, in ventral view parallel-sided, deeply scored, lateral margins strongly raised. 2nd antennal segment globose,  $1.48 \times as$  long as broad. Basal compartment of vertex nearly parallel-sided, as long as broad,  $0.79 \times as$  broad as eye, shallowly concave, anteriorly delimited by obtuse keel. Pronotum ecarinate. Mesonotum with 3 longitudinal keels. Venation of elytra shown in Fig. 10a. Flying wing about  $0.31 \times as$  long as elytron.

Male genitalia in Fig. 10b-f.

Etymology: Greek mythology, Nike = Goddess of Victory.

Material studied: Holotype &: South Yemen, near Lahej, in coll. Linnavuori.

The first record of the genus from the Arabian Peninsula. A revision of the African species of *Diostrombus* Uhler was published by Synave (1973:23-66). The new species is readily distinguished by the coloring and the male genitalia.

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