

Hemipterological studies

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(Mit 13 Textabbildungen)

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Summary

The present article consists of remarks on the taxonomy of the genera *Phytocoris* FN., *Aeliomorpha* ST., *Caystrus* ST. and *Parantestia* LV. The following new taxa are described: *Phytocoris barikotus* sp. n. (Afghanistan), *P. djerablisus* sp. n. (Iraq), *P. paghmanus* sp. n. (Afghanistan), *Aeliomorpha grandis* sp. n. (East Africa), *Caystrus nuristanus* sp. n. (Afghanistan), *C. kivuanus* sp. n. (Zaire), *C. pseudobrunnescens* sp. n. (Sudan, Zaire), *C. niokanus* sp. n. (Zaire), *C. buzianus* sp. n. (East Africa) and *C. mawambinus* sp. n. (Zaire).

Zusammenfassung

Die hier vorgelegte Arbeit enthält Studien zur Taxonomie der Hemipterengattungen *Phytocoris* FN., *Aeliomorpha* ST. und *Parantestia* LV. Die folgenden Arten werden neu beschrieben: Miridae: *Phytocoris barikotus* sp. n. (Afghanistan), *P. djerablisus* sp. n. (Irak), *P. paghmanus* sp. n. (Afghanistan); Pentatomidae: *Aeliomorpha grandis* sp. n. (Ost-Afrika), *Caystrus nuristanus* sp. n. (Afghanistan), *C. kivuanus* sp. n. (Zaire), *C. pseudobrunnescens* sp. n. (Sudan, Zaire), *C. niokanus* sp. n. (Zaire), *C. buzianus* sp. n. (Ost-Afrika) und *C. mawambinus* sp. n. (Zaire).

Descriptions

Miridae

1. *Phytocoris barikotus* sp. n.

Fig. 1 a—b. Length 4 mm. Whitish ochraceous. Y-shaped median figure on tylus, longitudinal stripe on lorae und a dash in front of antennal tubercles sanguineous; frons with faint orangish lateral arcs, vertex with C-shaped orange figure on either side; eyes greyish brown. 1st antennal joint whitish with abundant dark brown mottling; 2nd joint brown with base and a narrowish median ring whitish; 3rd joint blackish, base white. Two spots on collar and filigranous stripes on callal area sanguineous; disk of pronotum either entirely dark brown with basal margin narrowly pale or only slightly infumed with dark brown stripe along lateral and basal margins and minute brown dots

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at middle. Scutellum with irregular inverted Y-shaped dark spot. Elytra whitish grey, clavus and corium with \pm intense confluent dark brown spotting, a distinct oblique dark brown figure on medio-apical area of corium as in *P. scitulus*, a triangular pale spot at middle of apical margin of corium; cuneus pale, only lateral and inner margins with fuscous irroration; membrane milky with faint brownish irroration, veins pale, longitudinal veins \pm infusate basally. Under surface with intense sanguineous or reddish brown markings,

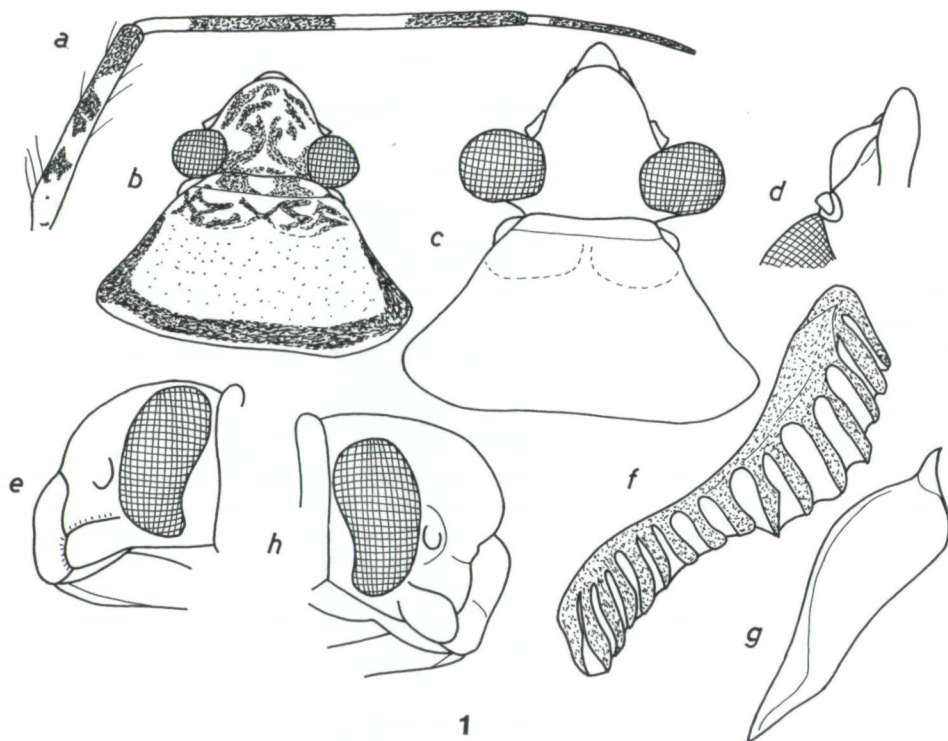


Fig. 1. *Phytocoris barikotus* sp. n.: a antenna; b head and pronotum. — *P. djerablissus* sp. n.: c head and pronotum; d left side of apex of head, dorsal view; e head in profile; f spiculum; g right stylus. — *P. paghmanus* sp. n.: h head from side.

e. g. sides of thorax largely dark. Femora with abundant dark brown irroration on apical two-thirds; tibiae with distinct blackish rings, those of fore and middle tibiae somewhat narrower than the alternating pale areas, rings of hind tibiae broad, irregular and provided with pale irroration; tarsi embrowned.

Small and relatively robust resembling *P. scitulus* in general appearance. Body $3.1 \times$ as long as broad at base of pronotum. Hair covering on upper surface longish, brown, semierect. Head in apical view broader than high (55:50), in profile higher than long (48:30), frons moderately convex, not protruding apically, only a shallow insinuation between it and tylus; eyes

relatively small, ocular index 1.45—1.71. Antennae long and gracile, 1st joint 1.0—1.11 \times as long as diatone, with erect long bristles and smooth brownish hairs, 2nd joint 1.43—1.54 \times as long as basal width of pronotum, proportions between joints 58:128:75:?. Rostrum unusually long, extending near to apex of abdomen. Pronotum 1.6 \times as broad as head, nearly twice as broad as long (incl. collar), lateral margins slightly insinuated. Elytra distinctly longer than abdomen. Tibial spines delicate, pale.

Material studied: Afghanistan: 25 km N of Barikot, Nuristan, 1800 m, 1 ♀, type and 1 ♀ paratype, 12—17. VII. 1963, KASY and VARTIAN. Type in Natural Hist. Mus. Vienna, paratype in my collection.

Of the *scitulus* group, differing from the other species as indicated in the following key.

Key to the species of the *scitulus* group

- 1 (2) Vertex remarkably narrow, in ♂ narrower, in ♀ slightly broader than eye. General colouring very dark. 1st antennal joint (♂) 0.86 \times as long as diatone. On *Pinus pallasiana* *scituloides* Ldb. (Cyprus)
- 2 (1) Vertex distinctly broader than eye 3
- 3 (4) 2nd antennal joint white with 3 distinct black rings. Ocular index 1.12 — 1.18 (♂) or 1.4—1.67 (♀). 1st antennal joint 1.02 (♂) or 1.14 (♀) \times as long as diatone. Spiculum with 3 teeth. On *Olea europaea* *oleae* Lv. (Israel)
- 4 (3) 2nd antennal joint yellow-brown with apex and a subbasal ring \pm fuscous, rarely with traces of 3 dark rings 5
- 5 (6) Antennae rather incrassate and dark, 2nd joint dark yellowish brown with apex and subbasal ring somewhat darker. Ocular index (♂) 1.8. Rostrum extending to hind coxae. Spiculum with several teeth *dorikha* Lv. (Iran)
- 6 (5) Antennae gracile, 2nd joint pale yellow-brown with apex and subbasal ring dark brown. Spiculum with 5—6 teeth (unknown in *P. barikotus*) 7
- 7 (8) Length 4 mm. Elytra without red tinge. Hair covering on upper surface relatively sparse. Rostrum extending near to apex of abdomen *barikotus* sp. n.
- 8 (7) Larger species. Elytra with distinct red tinge. Hair covering of upper surface remarkably dense, tomentose. Rostrum extending to base of abdomen 9
- 9 (10) Length 4.7—5.2 mm. Ocular index 1.26 (♂) or 1.64 (♀). Spiculum with 5—6 teeth. On *Taxus baccata* *scitulus scitulus* Rt. (Caucasia)
- 10 (9) Length 4.5—5 mm. Ocular index 1.35 (♂) or 1.72—1.92 (♀). Spiculum with 6 teeth *scitulus frater* Krz. (Crimea)

Of the other species of the subgenus *Ribautomiris* WGN. only *P. buxi* RIB. (France, Spain) has all tibiae annulated with black. It differs from the *scitulus* group in the uniformly pale yellowish head, for instance. In the other species (*P. minor* KBM., *P. fieberi* BOL., *P. parvulus* RT., *P. parvuloides* WGN. and *P. tauricola* Lv.) at most the fore tibiae are provided with dark rings.

P. carayoni WGN. (Algeria, Morocco) and *P. paveli* Lv. (Sudan) of the subgenus *Compsoecorocoris* RT. resemble *P. barikotus* in the general habitus and colouring, but differ readily in the much more convex frons (a distinct notch between frons and tylus in profile), the shorter rostrum etc.

2. *P. djerablisus* sp. n.

Fig. 1 c—e. Length 6.25 mm. Pale ochraceous with scanty dark pattern. Sutures of lorae narrowly reddish brown, oblique dark stripe in front of antennal tubercles, head otherwise with only faint traces of brownish suffusion. Eyes brown. 1st antennal joint pale ochraceous with rather sparse brownish irroration, pale colouring dominant; 2nd joint yellow-brown, base narrowly whitish; 3rd joint brown, base yellowish. Basal margin of pronotum bordered with broken and relatively faint brown band, disk with faint brownish

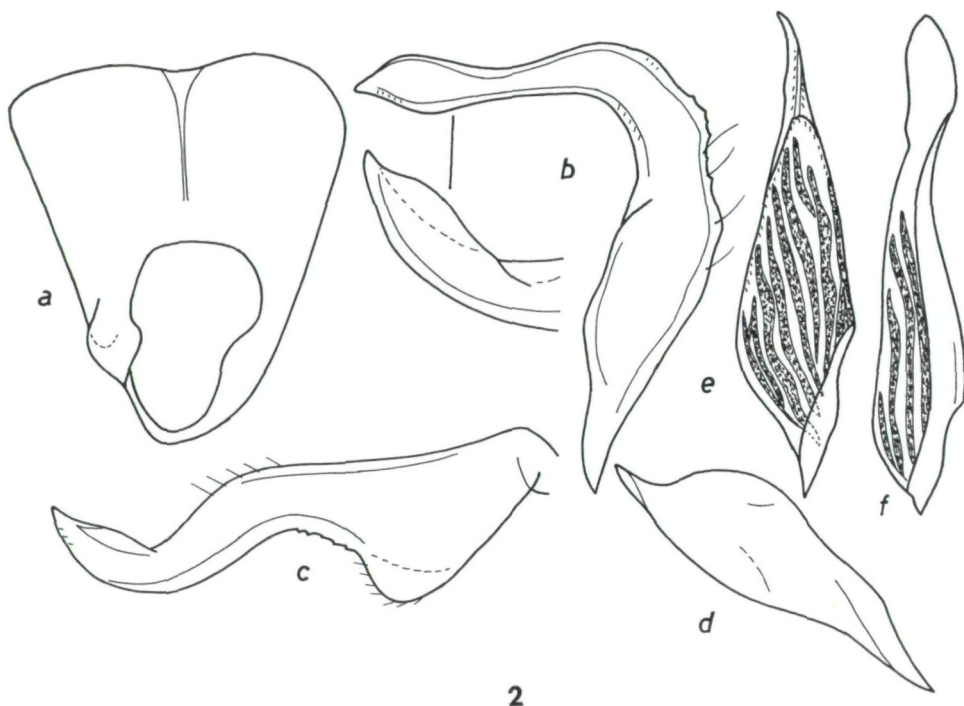


Fig. 2. *Phytocoris djerablisus* sp. n.: a pygophore; b—c left stylus. — *P. paghmanus* sp. n.: d right stylus; e—f spiculum.

suffusion and indistinct pale midline. Scutellum with faint inverted Y-shaped brownish figure. Elytra with indistinct brown irroration, pale colouring dominant, exocorium nearly immaculate, costal margin with small brown spots in apical half; apex of cuneus brown, inner margin with two dark spots; membrane milky with relatively faint brownish irroration, veins pinkish. Under surface with faint brownish markings. Apical part of fore femora with reddish brown irroration, anterior surface broadly immaculate basally; dark rings of fore tibiae narrow and indistinct; 1st and 3rd tarsal joints dark (middle and hind legs missing in the specimen studied).

Narrow, body $4.6 \times$ as long as broad at base of pronotum. Hair covering of upper surface longish, semidecumbent, pale. Head in apical view broader

than high (60 : 53), lorae bluntly prominent, in profile higher than long (48 : 41); frons moderately convex; eyes large, ocular index 1.16. Proportions between antennal joints 26 : 50 : ? : ?, 1st joint a little longer than diatone (26 : 24), cylindrical, with semidecumbent brownish hairs, 2nd $1.43 \times$ as long as basal width of pronotum, hair covering delicate, pale. Rostrum extending to base of venter. Pronotum $1.46 \times$ as broad as head, nearly twice as broad as long (incl. collar), lateral margins shallowly insinuated, posterior margin slightly curved, calli moderately raised. Hair covering of fore femora and tibiae longish, pale, tibial spines pale.

Male genitalia in Figs. 1 f—g and 2 a—c. Left side of pygophore with a blunt tubercle. Spiculum with about 16 strong teeth.

Material studied: Iraq: Djerablis on Euphrat, 1 ♂, type, V. 1914, PIETSCHMANN, Natural History Mus. Vienna.

Of the *zarudnyi* group (subgenus *Eriamiris* WGN.), recently revised by me (LINNAVUORI 1971 and 1974). Resembling *P. zarudnyi* Rt. (Iran, Turkestan) in the male genitalia but differing in the smaller size, the pale colouring, the much less prominent lorae, the smaller eyes etc. The other species *P. aietes* Lv. (Iran) and *P. kerzhneri* Lv. (Iran) differ in the male genital structure and the longer 1st and 2nd antennal joints, *P. aietes* also in the well developed dark pattern and *P. kerzhneri* in the less prominent lorae and the considerably larger eyes.

3. *P. paghmanus* sp. n.

Figs. 1 h and 3 e. Length 5.2—5.75 mm. Pale grey. A midline on tylus, a longitudinal band on lorae, several lateral arcs on frons, a dash along inner margins of eyes and a pair of curved stripes on vertex blackish brown. Eyes greyish. Collar with two brownish spots; disk of pronotum bordered with dark brown laterally and basally, basal margin with transverse undate blackish band, narrowly broken at middle, median parts of disk with only traces of brownish suffusion. Scutellum largely fuscous, basal margin with two pale spots, disk with indistinct pale midline. Elytra with evenly spread dense dark brown irroration, pale colouring dominant; apex and two small spots on inner margin of cuneus blackish; membrane with dense brown irroration, veins pale. Under surface with abundant fuscous markings, propleurae, for instance, with two longitudinal blackish bands. Coxae pale; femora with abundant dark irroration, spotting of base sparse, base of upper surface of hind femora immaculate; fore and middle tibiae with distinct blackish rings, slightly narrower than the alternating pale areas, rings of hind tibiae distinctly narrower than the pale areas; tarsi dark.

Narrow, body $3.8 \times$ as long as broad at base of pronotum. Hair covering of upper surface mainly dark, elytra also with scanty pale hairs. Head in apical view broader than high (58 : 53), lorae bluntly prominent, in profile higher than long (48 : 40), frons convex, a distinct notch between it and tylus;

eyes largish, ocular index 1.44–1.51. Antennae missing in the specimens studied. Rostrum extending to base of venter. Pronotum $1.52 \times$ as broad as head, nearly twice as broad as long (incl. collar), lateral margins straight or slightly insinuated, basal margin a little curved; calli rather small, distinct.

Male genitalia in Figs. 2 d–f and 3 a–d. Pygophore with a blunt tubercle on left side. Spiculum narrowly scoop-shaped, provided with several longitudinal chitinized bands.

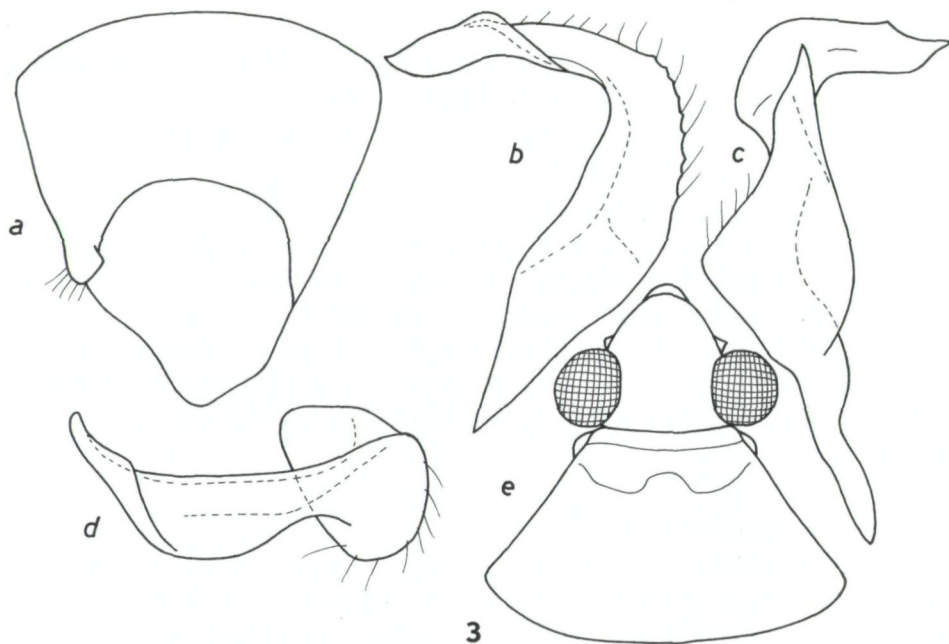


Fig. 3. *Phytocoris paghmanus* sp. n.: a pygophore; b–d left stylus; e head and pronotum.

Material studied: Afghanistan: Paghman, 30 km NW of Kabul, 2500 m, 1 ♂, type, 2 ♂ paratypes, 15.–18. VII. 1965, KASY and VARTIAN, in Natural History Mus. Vienna, a paratype also in my collection.

Of the *lineaticollis* group, recently revised by me (LINNAUVORI 1971 and 1972 a). Closely related to *P. schaeuffelei* WGN. (Iran), *P. calliger* WGN. (Iran) and *P. eileithya* Lv. (Armenia) in the narrow body and the colouring. Readily distinguished by the male genitalia. The shape of the spiculum is unique.

Pentatomidae

1. *Aeliomorpha grandis* sp. n.

Fig. 4 a. Length 11 mm. Opaque. Uniformly pale greyish green. Elytra and dorsum of abdomen with slight brownish tinge. Puncturing pale brownish. Eyes greyish. Ocelli reddish. Antennae pale greenish with minute brown dots, apical joints a little embrowned. Membrane hyaline, veins fuscous. Connexivum

and under surface unicoloured, pale. Legs pale ochraceous with faint reddish brown mottling.

Large and narrow, $2.4 \times$ as long as broad, moderately convex. Puncturing dense and fine. Head slightly longer than broad (63 : 61), $0.5 \times$ as broad as pronotum, slightly longer than median length of same (61 : 54); ocular index 5.6. Antennae gracile, proportions between joints 13 : 21 : 33 : 26 : 27 (diatone 61 units). Rostrum extending to hind coxae. Pronotum twice as broad as long medially, lateral margins straight, moderately diverging caudad,

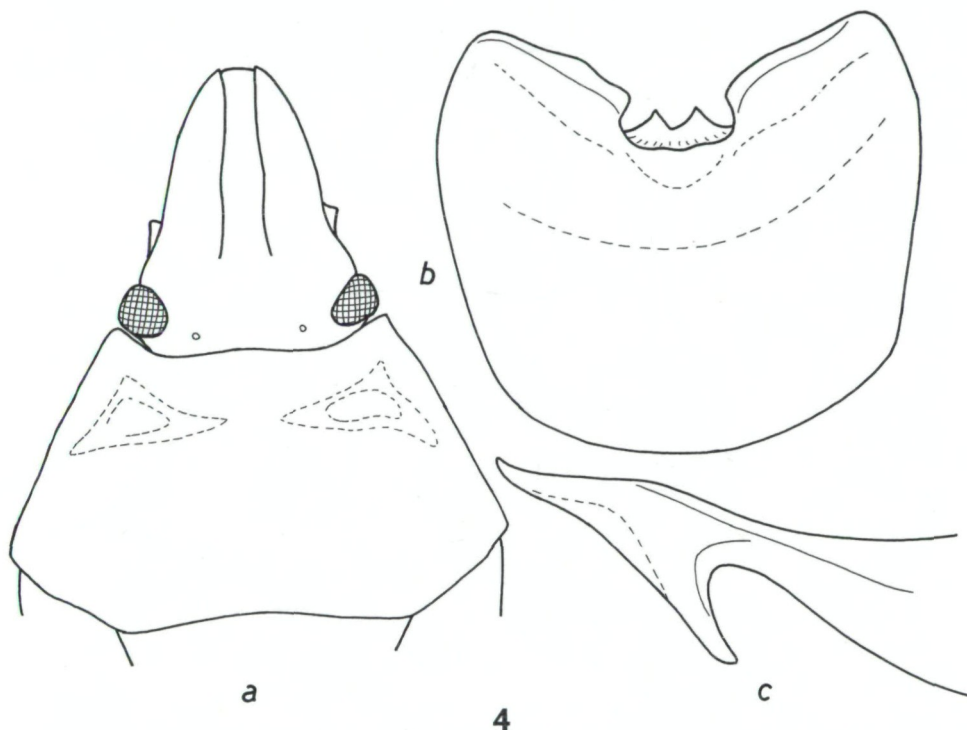


Fig. 4. *Aeliomorpha grandis* sp. n.: a head and pronotum. — *Caystrus nuristanus* sp. n.: b pygophore, ventral aspect; c hypophysis of stylus, broad aspect.

apico-lateral angles edentate, humeral angles rounded; disk densely punctate except in callal depressions, without a distinct callose midline. Scutellum longer than broad (95 : 70), narrow, with a faint impunctate midline, frena extending beyond middle. Elytra as long as abdomen. Puncturing on under surface of head and thorax coarse, thorax with irregular callose patches. Venter minutely punctate and densely shagreened. Legs longish, fore tibiae with a small black spine slightly beyond middle on inner surface.

Material studied: East Africa: Tana, 1 ♀, type, in Natural History Mus. Vienna.

Related to *A. senegalensis* SGN. (Senegal), of which the female sex unfortunately is unknown. The male is smaller, length 8 mm, the antennae

are bicoloured (1st and 2nd joints pale, others black) and the pronotum is provided with a narrow white midline and shallowly insinuated lateral margins. All other species of the genus are much smaller and broader.

2. *Caystrus nuristanus* sp. n.

Length 10 mm. Pale ochraceous with abundant coarse black puncturing. Puncturing of head dense, punctures often close to each other; ovate impunctate patch near either eye: eyes pale grey, ocelli red. Antennae yellow-brown

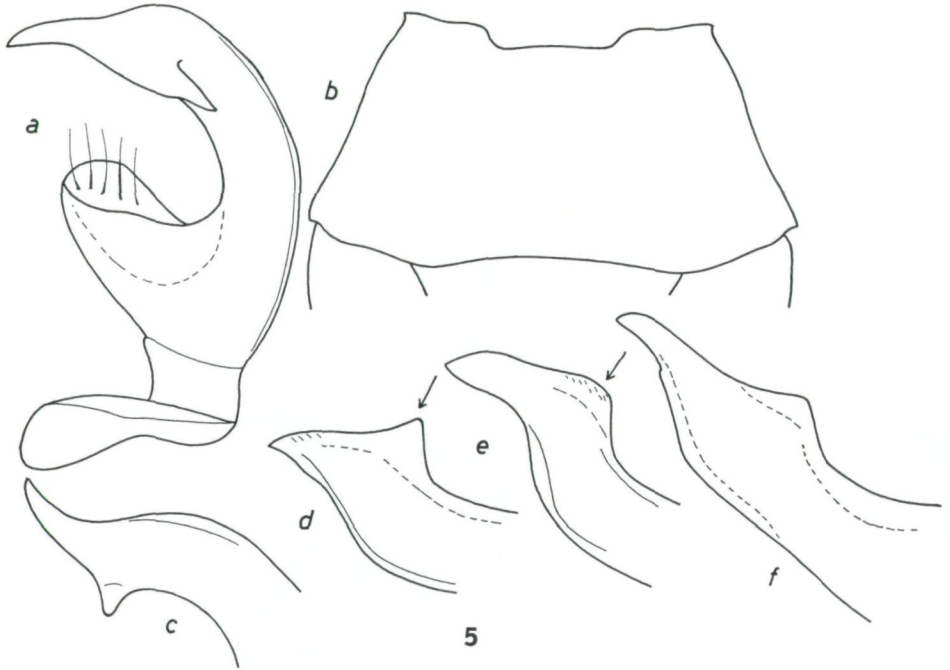


Fig. 5. *Caystrus nuristanus* sp. n.: a stylus. — *C. kivuanus* sp. n.: b pronotum; c hypophysis of stylus, broad aspect. — *C. trivialis* (Gst.): d same. — *C. marginiventris* St.: e same. — *C. quadrimaculatus* Lv.: f same.

with minute dark dots, 4th joint infumed apically, 5th dark brown with base whitish. Pronotum and scutellum with coarse and dense dark puncturing, punctures often close to each other. Puncturing of elytra somewhat sparser, longitudinal veins impunctate; membrane greyish, veins dark brown. Dorsum blackish brown. Connexivum yellow-brown with dense black puncturing. Under surface of head and thorax with dense black puncturing. Venter black, lateral margins pale ochraceous with distinct brown puncturing, lateral angles of parasternites and paratergites pale. Rostrum and legs yellow-brown, femora and tibiae with dark spots.

Small, broadly ovate, about $1.7 \times$ as long as greatest breadth, convex. Head $1.3 \times$ as broad as long, lateral margins in front of eyes shallowly insinua-

ted; genae broadish, extending beyond tylus but only slightly recurved mesad apically, apex of tylus therefore visible; ocular index 3.17. Antennae gracile, with longish semierect hairs, their total length $2.2 \times$ as long as diatone, proportions between joints 14:26:26:32:38. Rostrum extending slightly beyond middle coxae. Pronotum $2.3 \times$ as broad as long medially; lateral margins distinctly curved as in *C. pseudobrunnescens*, humeral angles blunt; disk in basal half distinctly convex, gently sloping apicad. Scutellum broadish, $1.26 \times$ as long as broad. Lateral margins of elytra distinctly curved, connexivum only narrowly visible. Dark median areas of venter densely and strongly shagreened and minutely punctate.

Male genitalia in Figs. 4 b—c and 5 a. Ventral surface of pygophore wrinkled and coarsely and remotely punctate.

Material studied: Afghanistan: 25 km N of Barikot, Nuristan, 1800 m, 1 ♂, type, 12.—17. VII. 1963, KASY und VARTIAN, in Natural History Mus. Vienna.

Key to the palearctic species

- 1 (2) Small, broadly ovate species, length 10 mm. Lateral margins of pronotum and elytra distinctly curved *nuristanus* sp. n.
- 2 (1) Large elongate species, length 13—14 mm. Lateral margins of pronotum nearly straight. Costal margins of elytra recurved mesad only in apical half 3
- 3 (4) Puncturing of upper and under surface sparse, distance between punctures generally at least as long as diameter of a puncture. Lateral margins of pronotum slightly curvate, distinctly and rather broadly upcurved. Lateral margins of venter contrastedly pale with remote brownish puncturing ... *langei* BDD. (Palestine)
- 4 (3) Puncturing very dense, punctures often very close to each other. Lateral margins of pronotum straight, only extreme margin upcurved. Lateral margins of venter only slightly paler than the median part, entire venter very densely punctate with brown *deserticolus* Lv. in press (Arabia)

3. Additional studies on the African species of the genus *Caystrus* ST.

The African species of the genus *Caystrus* ST. (= *Anarropa* GST., *Agabotus* DIST.) were revised by me (LINNAVUORI 1972b). Since this new material has been obtained for study from the British Museum, The Museum for Central Africa in Tervuren and the Natural History Museum in Vienna. In the material 5 new species were discovered.

Key to the species

- 1 (2) Lateral margins of pronotum broadly and contrastedly yellowish, convex. Antennae incrassate, black. Tibiae and tarsi blackish ... *ventralis* (DIST.) (Zaire)
- 2 (1) Lateral margins of pronotum not remarkably pale, flat or concave. Legs pale ... 3
- 3 (4) Antennae black and incrassate. Head remarkably long, $1.2—1.22 \times$ as broad as long. Lateral margins of pronotum broadly lamellate, upcurved and concave ...
..... *mawambinus* sp. n.

- 4 (3) Antennae usually pale, if blackish (*parviceps*, *kivuanus*) then gracile. Head considerably shorter. Lateral margins of pronotum only narrowly lamellate... 5
- 5 (6) Very small species, length 9 mm. Antennae short and incrassate. Puncturing of pronotum very coarse and dense, \pm confluent. Male genitalia much as in *C. quadrimaculatus* *pygmaeus* Lv. (Upper Volta)
- 6 (5) Larger species. Antennae gracile. Puncturing of pronotum \pm fine 7
- 7 (18) Lateral margins of venter less contrastedly pale, with brown puncturing 8
- 8 (11) Antennae dark brown or blackish 9
- 9 (10) Head small, sharply triangular in outline owing to the unusually narrow genae. Ocular index (φ) 2.82. Pronotum with lateral margins slightly curved, narrowly lamellate; disk convex, rather weakly rugose, puncturing relatively fine and sparse, no whitish callose spots behind callal area *parviceps* Lv. (Kenya)
- 10 (9) Head of normal breadth. Ocular index ($\delta\varphi$) 3.1–3.2. Lateral margins of pronotum (Fig. 5b) straight, rather broadly lamellate, upcurved and concave; disk convex only in basal margin, otherwise flat, remarkably rugose, coarsely and densely punctate, 4 small callose pale dots behind callal area. Male genitalia as in Figs. 5c and 6a *kivuanus* sp. n.
- 11 (8) Antennae pale 12
- 12 (13) Pronotum with 4 small callose whitish dots behind callal area. Puncturing on lateral margins of venter remote and relatively pale. Male genitalia as in Figs. 5f, 6b and 7a *quadrimaculatus* Lv. (Ivory Coast, Sierra Leone)
- 13 (12) Pronotum without callose pale spots behind callal area. Puncturing of lateral margins of venter dark brown and \pm dense 14
- 14 (15) Lateral margins of pronotum curved. Male genitalia as in Figs. 7b–c and 8a. Apico-ventral margin of pygophore in ventral aspect shallowly insinuated and strongly raised throughout, concealing the bidentate median process, well visible in all other species of the genus *buzianus* sp. n.
- 15 (14) Lateral margins of pronotum straight. Pygophore different, apico-ventral margin \pm evanescent medially 16
- 16 (17) Stylus as in Fig. 5e, subapical lobe of hypophysis rounded *marginiventris* St. (Nigeria, Ivory Coast)
- 17 (16) Stylus as in Fig. 5d, subapical lobe of hypophysis triangular *trivialis* (Gst.) (East Africa, Congo)
- 18 (7) Lateral margins of venter contrastedly pale, puncturing fine and concolorous .. 12
- 19 (24) Lateral margins of pronotum distinctly curved (Fig. 9a). 20
- 20 (23) Apico-ventral margin of pygophore in ventral aspect broadly and shallowly insinuated, only slightly expanded on either side of the bidentate median lobe (Fig. 11a–b) 21
- 21 (22) Hypophysis of stylus in broad aspect broad, obliquely truncate apically (Fig. 11c) *pseudobrunnescens* sp. n.
- 22 (21) Hypophysis of stylus in broad aspect gracile, apex \pm T-shaped (Fig. 7d–e) *hipponax* Lv. (Congo: Ituri)
- 23 (20) Apico-ventral margin of pygophore in ventral aspect deeply insinuated forming a distinct blunt angle on either side of the bidentate median lobe (Fig. 8b) *niokanus* sp. n.
- 24 (19) Lateral margins of pronotum straight (Fig. 13a) 25
- 25 (26) Small species, length < 11 mm. Puncturing relatively pale, only slightly darker than the ground colouring. Scutellum only 1.15 x as long as broad, remarkably broad apically, without impunctate midline ... *nigriventris* (Gm.) (South Africa).
- 26 (25) Larger species, length > 11 mm. Puncturing distinctly darker than the ground colouring. Scutellum 1.23–1.35 x as long as broad, narrow, with a fine impunctate midline. Male genitalia (Figs. 9b and 10a) much as in *C. niokanus* *basalis* (SCHT.) (Congo, East Africa, Sudan) (and *brunnescens* (Dist.) (Nigeria)

C. quadrimaculatus Lv., status n.*Caystrus marginiventris* St. ssp. *quadrimaculatus* LINNAVUORI 1972b.

Described on the basis of two females from the Ivory Coast.

Easily distinguished from *C. marginiventris* by the small and more broadly ovate body, length 10.5–11.5 mm. The lateral margins of the pronotum and elytra are \pm curvate as in *C. pseudobrunnescens* and the scutellum is shorter and broader than in *C. marginiventris*. The head (σ) is narrower, $1.35 \times$ as broad as long, the eyes are smaller, ocular index about 3.0, and the antennae (proportions between the joints 15:20:27:35:38) considerably shorter (their total length about $2.3 \times$ as long as diatone).

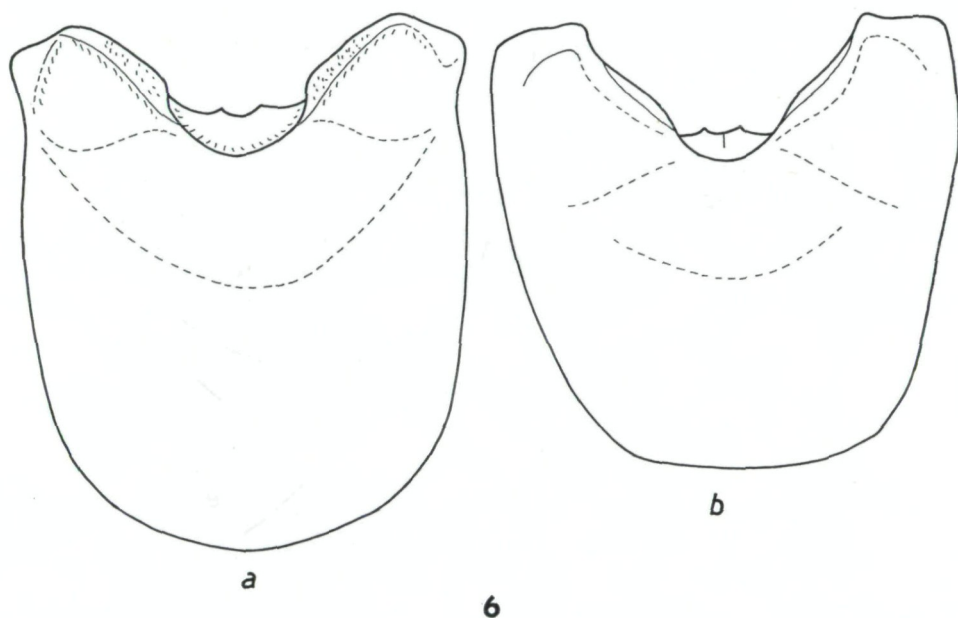


Fig. 6. *Caystrus kivuanus* sp. n.: a pygophore, ventral aspect. — *C. quadrimaculatus* Lv.: b same.

Male genitalia in Figs. 5 f, 6 b and 7 a. Hypophysis of stylus very broad.

New records: Senegal, 1 ♀, in coll. SIGNORET, Natural History Mus. Vienna. Ivory Coast: Bouake, 2 exx., IV. 1964, R. Cobben; Foro-Foro, several exx., 1971–1972, A. Pollet.

The male genitalia are much as in *C. pygmaeus* Lv., but both species are otherwise very different.

C. kivuanus sp. n.

Length 10–12 mm. Opaque. Pale ochraceous or yellowish brown. Appearing dark owing to abundant blackish puncturing. Head densely punctate with dark brown, ovate impunctate patch near either eye. Eyes reddish

brown. Antennae \pm dark brown, base of 5th joint generally pale ochraceous. Pronotum with very dense blackish puncturing, 4 small pale callosities behind calla area, vague impunctate midline present in apical part of disk. Scutellum with very dense blackish puncturing and faint pale midline, a small whitish callosity at either basal angle. Elytra with dense brown puncturing; membrane brownish, veins dark brown. Dorsum dark yellowish brown or coffee brown; connexivum with dense black puncturing. Under surface of thorax with coarse black puncturing. Venter black, sometimes with pale irroration; pale



Fig. 7. *Caystrus quadrimaculatus* Lv.: a stylus. — *C. buzianus* sp. n.: b pygophore, ventral aspect; c hypophysis of stylus, broad aspect. — *C. hipponax* Lv.: d—e same.

lateral margins with dense blackish puncturing, in darkest specimen also lateral margins blackish. Legs dark yellow-brown, femora with faint dark irroration.

Small, rather parallel-sided, depressed. Head about $1.3 \times$ as broad as long, apical part moderately broad, genae extending distinctly beyond apex of tylus; ocular index $3.1\text{--}3.2$. Antennae gracile, about 2.6 (σ) or 2.4 (φ) \times as long as diatone. Rostrum extending to hind coxae. Pronotum (Fig. 5 b) $1.7\text{--}2.4 \times$ as broad as long at middle; lateral margins straight, recurved upwardly, concave; disk flat, only basal margin convex, remarkably rugose. Scutellum sharply triangular, $1.3\text{--}1.4 \times$ as long as broad. Lateral margins of

elytra parallel in basal half, faintly recurved mesad in apical one, connexivum narrowly visible. Microsculpturing of venter very dense.

Male genitalia (Figs. 5c and 6a) much as in *C. niokanus* but pygophore in ventral aspect narrower and hypophysis of stylus a little dissimilar.

Material studied: Zaire: Kibali-Ituri, Nioka, 9 paratypes, 7. VII. 1934, J. LEROY and IX. 1953, J. HECQ; Kivu, Bwito, 1700 m, 1 ♂, type and 6 paratypes, 26. VI. 1934, Lt. MARLIER; Kivu, Kavimvira (Uvira), 1 paratype, 1–15. V. 1955, G. MARLIER; Kivu, Masisi-Kisheryo, 3 paratypes, 1935,

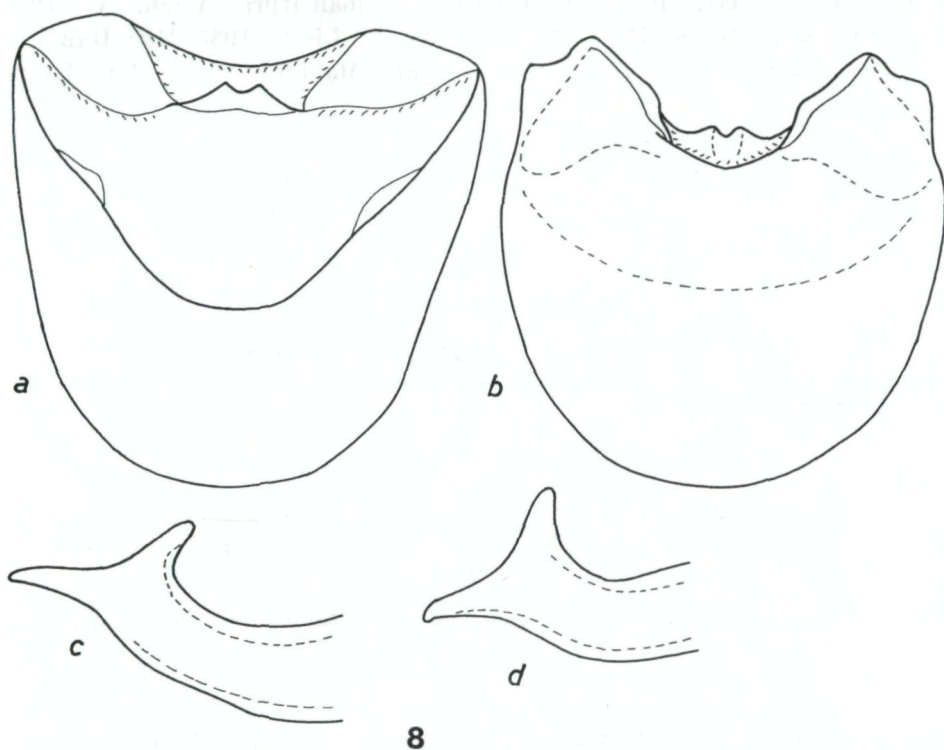


Fig. 8. *Caystrus buzianus* sp. n.: a pygophore, dorsal aspect. — *C. niokanus* sp. n.: b same, ventral aspect; c—d hypophysis of stylus, broad aspect.

H. HERMAN; Kivu, Muhungu, Tshibinda, 1 paratype, XI. 1951, P. LEFEVRE; Kivu, Riv. Nyakagera, terr. Kabare, 1600–1700 m, Forêt transition, 2 paratypes, XI. 1955, N. LELEUP; N Lac Kivu, Rwankwi, several paratypes, I. 1948, J. LEROY. Type and paratypes in Mus. Tervuren, paratypes also in my collection.

C. parviceps Lv., known only in the female sex, resembles *C. kivuanus* in the dark antennae, but differs in the smaller and anteriorly much narrower head, the more convex and less rugose pronotum with somewhat curved and only narrowly lamellate lateral margins, the finer and considerably sparser puncturing on the head and pronotum etc.

C. trivialis (GST.)

New records: Numerous specimens from the following localities in Zaire: Aruwimi, Panga, VI. 1926, E. BOCK; Bas Congo, Kisantu, V. 1945, RÉV. FR. ANASTASE; Bas Congo, Luki, 22. X. 1952, A. VAN ALSTEIN; Basoko, X. 1948, P. BENOIT; Bomokandi, 22. XI.—6. XII. 1925, S. A. R. PRINCE LÉOPOLD; Budjala, Ubangi VII. 1937, G. LEONTOVITCH; Buta, 1949, P. SAMUEL; Equateur, Bokuma, I. 1952, R. LOOTENS; Haut-Uele, Moto, 1920, L. BURGEON; Haut-Uele, Yebo-Moto, 1926, L. BURGEON; Ituri, Plaine d'Odongo, 11. III. 1929, A. COLLART; Kibali-Ituri, Yindi, V. 1949, A. BERTRAND; Libenge, IV. 1937, LEONTOVITCH; Lisala, 1935, MME BABILON; Lulonga, Lisafa, XI. 1927, LT. GHESQUIÈRE; Mayidi, 1942, P. VAN EYEN;

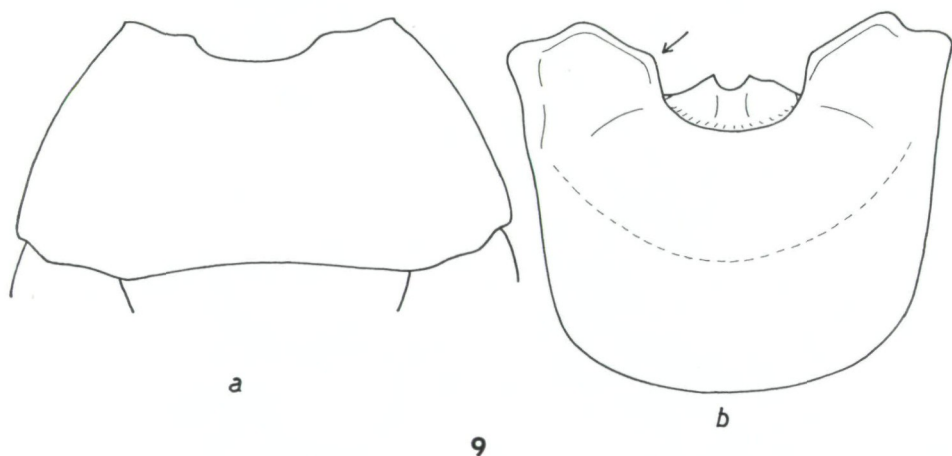


Fig. 9. *Caystrus niokanus* sp. n.: pronotum. — *C. basalis* (SCHT.): b pygophore, ventral aspect.

Mayumbe, VII. 1917, R. MAYNÉ; Mongbwalu, II. 1939, A. LEPERSONNE; Poko-Nala-Rungu, 1912, ME HUTEREAU; Terr. Lisala, 1. IV. 1937, LEONTOVITCH; Ubangi, Businga, 3. III. 1932, H. BRÉDO; Ubangi, Ubangi, Gemena, 10. II. 1937, G. LEONTOVITCH; Uele, Paulis, 1946, ABBELOOS; Wamba, 1936, DEGOTTE; Watsa i Niangara, VII. 1920, L. BURGEON. Mus. Tervuren.

C. basalis basalis (SCHT.)

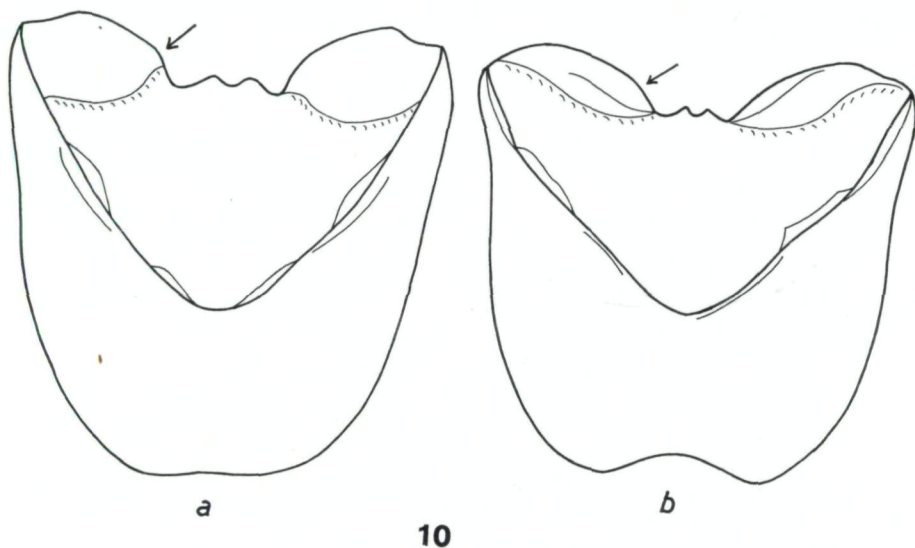
New records: Sudan: Malakal, 2 exx., L. BURGEON. Zaire: Bambesa, 2 exx., 1. 10. 1938, J. VRYDAGH; Bas Congo, Longo, 1 ex., 23. I. 1925, R. HULSTAERT; Bolobo, Makamandelu (N'Kele), 4 exx., 1938, H. SCHOUTEDEN; Brabanta (Basongo), IV.—V. 1949, 1 ex., P. HENRARD; Eala, 1 ex., 30. VIII. 1933, A. CORBISIER; Equateur, Lukolela, 1 ex., 1951, R. DEGUIDE; Kinschassa, 1 ♀ cotype, designated here to the lectotype, 25. V. 1899, WAELEBROCK. in Mus. Tervuren. Ruanda: Kigali, 1 ex. VII.—IX. 1933, A. BECQUET. Mus. Tervuren.

C. basalis minor LV.

New records: Zaire: Bas-Kasai 1 ex., IX. 1920, P. VANDERIJST; Kalina-Leopoldville, 1 ex., 1953, R. THEUNISSEN; entre Kinshassa et Coquilhatville, 1 ex., 1. — 10. VI. 1925, S. A. R. PRINCE LÉOPOLD; Leopoldville 1 ex., 1930, R. TINANT; Lomami, Kaniama, 2 exx., 1931, R. MASSART; Sankuru, Gandajika, 2 exx., 1952, P. DE FRANQUEN. Mus. Tervuren.

C. brunnescens (DIST.)

The holotype of *Agabotus brunnescens* DIST. is fragmentous with the right elytron and the abdomen missing. The specimen closely resembles



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Fig. 10. *Caystrus basalis* (SCHT.): a pygophore, dorsal aspect. — *C. pseudobrunnescens* sp. n.: b same (ex. from Ituri).

C. basalis in the shape of the pronotum (Fig. 13a), the puncturing etc. The only difference is the fact that the 2nd antennal joint is unusually long ($0.91 \times$ as long as 3rd). Its length, however, is greatly variable in *C. basalis* too ($0.62 - 0.90 \times$ as long as 3rd joint). Both species are apparently identical. In that case the valid name for the species is *C. brunnescens* (DIST.) (= *C. basalis* SCHT.). The synonymy can finally be fixed only after examining of additional topotypic material from Nigeria,

Measurements of the type:

Ocular index 2.82. Proportions between antennal joints $14 : 31 : 33 : ? : ?$ (diatone 30 units). Pronotum $2.2 \times$ as broad as long medially. Scutellum distinctly longer than broad ($28 : 22$).

Material studied: Nigeria: S Nigeria, 1 ex. (apparently ♂), type, FORBES, British Museum. Another specimen, identified as *brunnescens* in the

British Museum, a male from the Sudan, Upper Nile, Drury, is typical *C. basalis*.

***C. pseudobrunnescens* sp. n.**

Caystrus brunnescens LINNAVUORI 1972b, nec DISTANT 1880.

Resembling *C. basalis minor* but generally more broadly ovate. Males are readily distinguished by the genital structure: the apico-ventral margin of the pygophore in ventral aspect (Figs. 10b and 11a—b) is broadly and shallowly

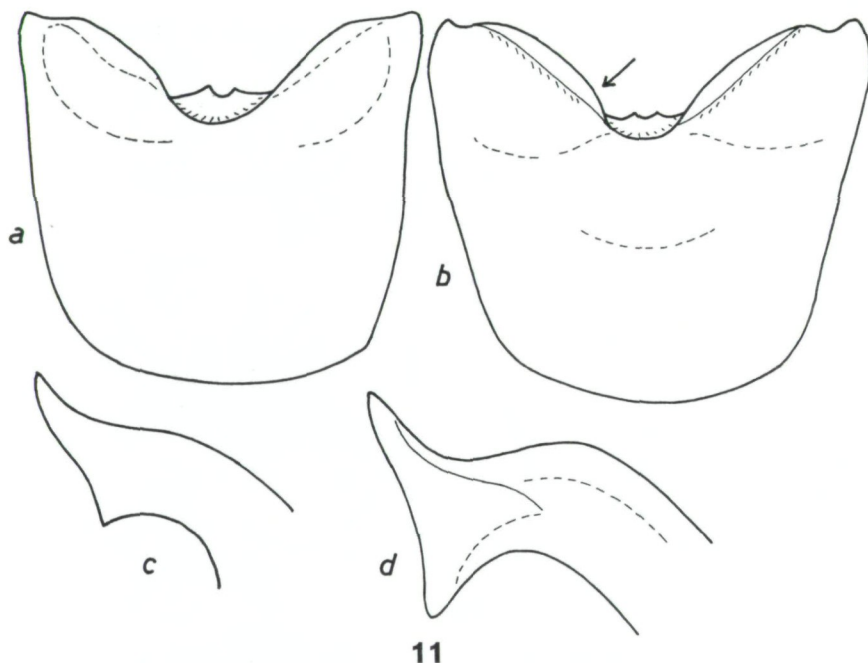


Fig. 11. *Caystrus pseudobrunnescens* sp. n.: a pygophore, ventral aspect (ex. from Ituri); b same (ex. from Mahagi-Port); c hypophysis of stylus, broad aspect. — *C. mawambinus* sp. n.: d same.

insinuated and only slightly expanded on either side of the bidentate median phragma, while the insinuation in *C. basalis* (Figs. 9b and 10a) is U-shaped owing to a distinct bluntly angular lobe on either side of the phragma. The lateral callose areas on the dorsal surface of the apico-ventral margin are much narrower than in *C. basalis*. The hypophysis of the stylus (Fig. 11c) is broad with the apex obliquely truncate, while in *C. basalis* the hypophysis is gracile and \pm T-shaped apically. Females are generally distinguished by the broader body. Specimens of the Ituri population are unusually narrow, however. The brown puncturing is more dense and the head is somewhat narrower. The pronotum appears broader, the apical margin is more shallowly insinuated, the lateral margins are more curvate with the tooth in apico-lateral angle

obtuse or nearly absent and the humeral angles more rounded. The scutellum is shorter. The lateral margins of the elytra are more strongly curved with the apico-lateral angle of the corium blunter than in *C. basalis*. The apical angles of the paratergites are distinctly black, while they are only faintly darkened in *C. basalis*.

Material studied: The Sudan: Equatoria, Yambio, 1 paratype, 17.—25. IV. 1963 and Yei-Maridi, 2 paratypes, 13.—15. IV. 1963, LINNAVUORI. Zaire: Buta, 1 ♂, type, in my collection. Numerous paratypes from the following localities in Zaire in Mus. Tervuren: Aruwimi, Panga, VII. 1926, E. BOCK; Bamania (près Coq.), 1936, R. HULSTAERT; Basoko, V. 1948, L. BENOIT; Boloko, Makamandelu (N'Kele), 1938, H. SCHOUTEDEN; Bumba, 3. VI. 1909, S. A. R. le PRINCE ALBERT; Congo de Lemba, V. 1912, R. MAYNÉ; Dungu, V. 1912, ME HUTEREAU; Equateur, Bokoma, I. 1952, R. LOOTENS; Isanghi, coll. SCHOUTEDEN; Ituri, Forêt de Kawa, 18. IV. 1929, A. COLLART; Kabinda, Dr. SCHWETZ; Karemi, V. 1912, Dr. BAYER; Likengi, Mistidagh; Lukolela, IX. 1923, J. GHESQUIÈRE; Lusambo, 2.—24. X. 1949, M. FONTAINE; Mayidi, 1942, P. VAN EYEN; Mahagi-Port, X. 1935, H. BRÉDO; SL Edouard, r. Rwindi, 1000 m, 14. II. 1936, L. LIPPENS; Stanleyville, 27. VIII. 1921, Mme TINANT and IV. 1926, J. GOLIN; Ubangi, Jacoma, Dr. BOMSTEIRE; Ubangi, Nouvelle Anvers, 9. XII. 1952, P. BASILEWSKY; Uele, Tokowo, VII. 1937, J. VRIJDAGH; Rutshuru, II. 1938, J. GHESQUIÈRE; Watsa à Niangara, VII. 1920, L. BURGEON; Yangambi, II. 1952, J. DECELLE.

C. hipponax Lv.

Length 9.5—11 mm. Smaller and somewhat narrower than the preceding species. Eyes smaller. Stem of hypophysis of stylus (Fig. 7 d—e) slender and ± T-shaped apically.

New record: Zaire: Ituri, Bunia, 6 exx., VI. 1938, P. LEFÈVRE. Mus. Tervuren.

C. niokanus sp. n.

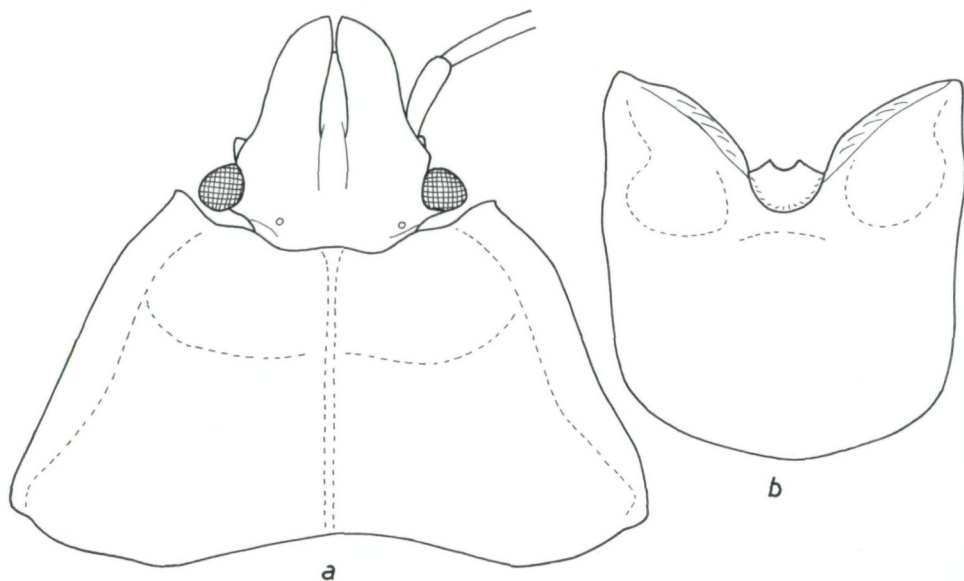
Length 10—11 mm. Small opaque yellowish brown species with abundant fine brown puncturing. Resembling *C. hipponax* but pronotum and scutellum with ± developed narrow callose pale midline. Paratergites and parasternites uniformly pale (in *hipponax* extreme lateral angles of connexival segments dark). Body convex and generally more broadly ovate than in *C. hipponax*.

Measurements: Head 1.33—1.4 × as broad as long, genae extending beyond apex of tylus, ocular index 2.7—2.9 (♂) or 3.0—3.4 (♀). Antennae rather short, proportions between joints 13 : 19 : 29 : 32 : 42 (♂) or 14 : 20 : 29 : 31 : 39 (♀), total length of antennae 2.1—2.2 × as long as diatone. Pronotum 2.3—2.5 × as broad as long medially, lateral margins distinctly curved (Fig. 9a). Scutellum 1.25—1.4 × as long as broad, sharply triangular.

Male genitalia (Fig. 8b—d) much as in *C. basalis*.

Material studied: Zaire: Ituri, Nioka, 1 ♂, type and many paratypes, VII. 1934, J. LEROY, 1 paratype, 1. XII. 1955, J. HECQ; Kivu, Bwito, 1700 m, 1 paratype, IX. 1934, Lt. MARLIER, in Mus. Tervuren, paratypes also in my collection.

Easily distinguished from *C. pseudobrunnescens* by the shape of the pygophore, the dissimilar stylus and the smaller size, from *C. basalis* by the small size, the curved lateral margins of the pronotum, the very dense puncturing, the much shorter antennae etc.



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Fig. 12. *Caystrus mawambinus* sp. n.: a head and pronotum (♀); b pygophore, ventral aspect.

***C. buzianus* sp. n.**

Length 11–12 mm. As *C. pseudobrunnescens* but the pale lateral margins of venter with distinct brown spots.

Measurements: Head $1.4 \times$ as broad as long, ocular index 2.7–2.9. Proportions between antennal joints 15:27:36:42:44, total length of antennae $2.45 \times$ as long as diatone. Pronotum $2.35 \times$ as broad as long medially. Scutellum $1.25 \times$ as long as broad.

Male genitalia in Figs. 7 b–c and 8 a. Pygophore distinctive: apico-ventral margin in ventral aspect shallowly insinuated, strongly raised throughout, concealing the median bidentate lobe. Stylus with hypophysis gracile, apex T-shaped as in *C. hipponax*.

Material studied: Mozambique: Buzi, 1 ♂, type, 11. XI. 1961, in Natural History Mus. Vienna. East Africa, 1 ♂ paratype, 1889, HÖHNEL, in my collection.

C. ventralis (DIST.)

Previously known as a single male from Kambowe, Zaire. The female resembles the male, but is considerably larger, length 13 mm. The head is $1.46 \times$ as broad as long, ocular index 3.2.

New record: Zaire: Lomami, Kaniama, 1 ♀, 1931, R. MASSART, in Mus. Tervuren.

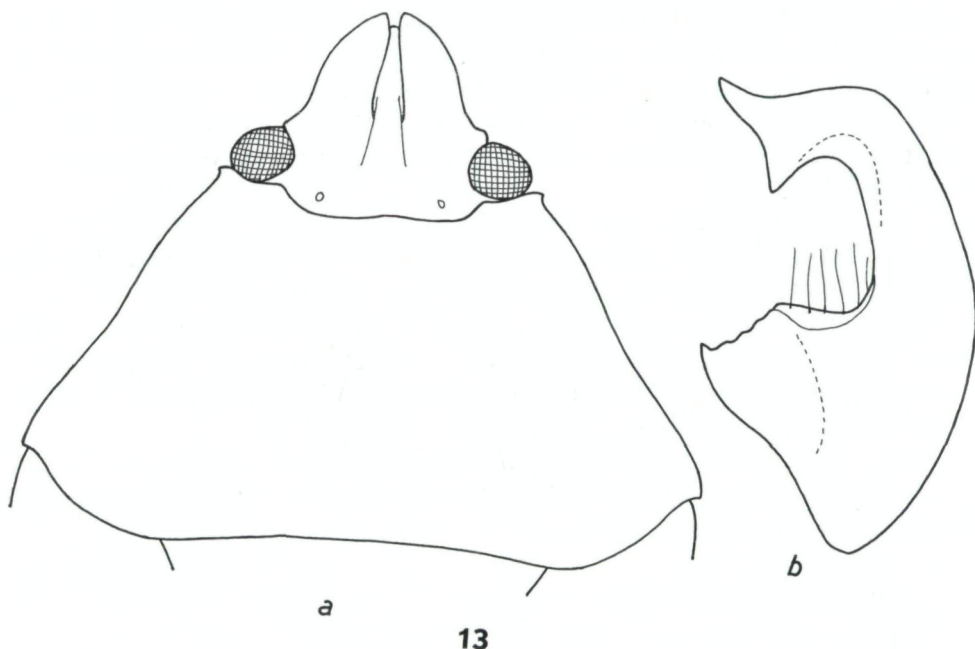


Fig. 13. *Caystrus brunnescens* (DIST.) (holotype): a head and pronotum. — *C. mawambinus* sp. n.: b stylus.

C. mawambinus sp. n.

Fig. 12 a. Length 12–14 mm. Pale ochraceous or reddish brown with dense brown puncturing. Head with dense brown puncturing and indistinct pale midline, lateral margins narrowly black. Eyes dark brown. 1st antennal joint brown with apex and a longitudinal band on outer surface dark brown, 2nd–4th joints black, 5th joint whitish with apex infuscate. Pronotum with a sharply delimited callose whitish midline, otherwise densely punctate with brown, extreme lateral margins pale. Scutellum with a pale callose midline, otherwise with dense brown puncturing. Elytra with dense brown puncturing, longitudinal veins pale and \pm raised; membrane brownish, veins dark. Dorsum

orangish brown; connexivum yellowish brown, with faint brownish puncturing, apical and basal lateral angles and extreme lateral margin of paratergites blackish. Under surface of thorax with dense blackish puncturing and infuscations; lamellate lateral margins of prothorax pale, sparsely punctate with brown. Venter blackish with faint pale irroration; lateral margins broadly and contrastedly pale yellow, basal and apical angles of paratergites black. Rostrum yellow-brown. Legs reddish brown, tarsi \pm pale.

Very large, ovate, depressed. Head longish, $1.2-1.22 \times$ as broad as long; lateral margins distinctly insinuated and upcurved in front of eyes; genae extending distinctly beyond apex of tylus; eyes small, ocular index $3.3-3.46$. Antennae incrassate and long, 3.6 (σ) or 2.7 (φ) \times as long as diatone, proportions between joints $18:33:44:50:53$ (σ) or $19:29:42:49:53$ (φ). Rostrum extending to hind coxae. Pronotum about $2.6 \times$ as broad as long at middle; lateral margins rather straight, broadly lamellate, upcurved and concave. Scutellum appearing short and broadish, $1.17 \times$ as long as broad. Elytra slightly shorter than abdomen, lateral margins distinctly curved, connexivum broadly visible.

Male genitalia in Figs. 11d, 12b and 13b.

Material studied: Zaire: Kivu, Kavumu à Kabunga km 82 (Mingazi), 2 paratypes, II.—III. 1951, H. BOMANS; Lokandu, Ile Biawa, 1 paratype, V.—VI. 1939, Capt. MARÉE; Mawambi-Beni, 1 φ , type and 3 paratypes, 1910, GRAUER; Mongbwalu (Kilo) 3 paratypes, 10. III. 1939, A. LEPERSONNE. Holotype and paratypes in Natural History Mus. Vienna, paratypes in Mus. Tervuren and my collection.

The closely related *C. ventralis* differs in the distinctly curved convex and pale lateral margins of the pronotum, the shorter head, the black tibiae and tarsi and the shape of the pygophore.

4. *Parantestia dohrni* (St.), comb. n.

Nezara dohrni STAL 1864, p. 195.

Zangis dohrni STAL 1876, p. 93.

Length 12 mm. Pale green. Lateral margins of genae narrowly black, sides of head with a black stripe between eyes and antennal tubercles. Eyes grey. 3rd antennal joint slightly embrowned apically. Lateral margins of pronotum narrowly purplish. Exocorium with very indistinct purplish tinge; membrane hyaline. Connexivum pale, extreme apico-lateral angles of paratergites very indistinctly dark. Legs green.

Broadly ovate. Puncturing concolorous and relatively fine. Head $1.33 \times$ as broad as long, lateral margins shallowly insinuated in front of eyes, tylus tapering apicad; vertex and genae uniformly and densely punctate, puncturing on tylus more remote; ocular index 2.93 . Antennae with short semierect hair covering, proportions between joints $14:26:40:?:?$ (diatone 69 units). Rostrum extending slightly beyond hind coxae. Pronotum $2.4 \times$ as broad as long medially; lateral margins straight, acute, humeral angles bluntly rounded;

anterior margin distinctly elevated at middle; disk moderately convex, sloping apicad, with double puncturing: large puncturing dense, punctures often close to each other, minute puncturing sparse and very indistinct, disk between punctures somewhat callose. Scutellum longer than broad (29:24), elongately triangular, densely punctate. Elytra densely punctate without impunctate callosities. Puncturing on under surface of thorax dense and fine. Venter very finely punctate, faintly shagreened, basal median hump obtuse. Dorsal surface of tibiae finely sulcate.

Material studied: Nigeria, Calabar, 1 ♀, type, in coll. SIGNORET, Natural Histor. Mus. Vienna.

The species has generally been regarded as a member of the oriental genus *Glaucias* Kk. (= *Zangis* St.), a genus that differs from *Parantestia* Lv. in the not elevated anterior margin of the pronotum and the strong horn-shaped basal hump of the venter.

P. dohrni is related to *P. dryas* Lv. (Sudan) and *P. viridula* Lv. (Ethiopia) differing from them as follows:

- 1 (2) Extreme base of tibiae orange. Elytra, excluding costal margin, with distinct purplish tinge and large impunctate pale callosities *dryas* Lv. in press
- 2 (1) Tibiae and elytra uniformly green 3
- 3 (4) Elytra uniformly and densely punctate. Pronotum less rugose, minute punctures between larger ones very indistinct *dohrni* (St.)
- 4 (3) Mesocorium with distinct impunctate patches. Pronotum uneven, with distinct double puncturing *viridula* Lv. in press

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