A revision of the African species of the genera *Leptocoris* HAHN, 1833, and *Boisea* KIRKALDY, 1910; and notes on other species of those genera

(Het, Rhodpalidae)

By **U. Göllner-Scheiding**

With 54 Illustrations in Text

Summary:

The 25 species and subspecies ,including 10 newly described species and 2 new subspecies, of the African genus *Leptocoris* have been revised in this manuscript. Some of the Southeast Asian and Australian/Pacific Island species have been added and changes to the nomenclature made. The species *coimbaterensis*, *flava*, *fulcrata*, *rubrolineata*, and *trivittata*,which were previously grouped into the genus *Leptocoris,* have been placed in the genus *Boisea*.

Introduction:

A revision of the African species of the genus *Leptocoris* was completed in preparation for the compilation of a general catalogue of the family Rhopalidae: Heteraoptera. Before now, a comprehensive treatment of African species of Leptocoris had never been completed. In treating this group it was necessary, however, to review other non-African species. Gross (1960) revised the Indopacific and Australian species, and other papers have reviewed the remaining Asian and American species (which I place in the genus *Boisea*). In the course of this revision it became apparent that five species that were previously placed in the genus *Leptocoris* should be removed from that genus and instead placed into the genus *Boisea*.

The majority of the necessary type specimens wereobtained and directly compared. The remaining material came from the collection of the Zoological Museum – Berlin and other European as well as non-European museums. At this point, I want to thank those who, through the lending of their material, made this work possible: Prof. J. CARAYON (Paris), Dr. L. DANIELSSON (Lund), Dr. P. H. VAN DOESBURG (Leiden), Dr. W. R. DOLLING (London), G. F. GROSS (Adelaide), Dr. L. HEDSTRÖM (Uppsala), Dr. I. LANSBURY (Oxford), Prof. R. LINNAVOURI (Raisio), Dr. N. MØLLER ANDERSEN (Copenhagen), Dr. P. I. PERSSON (Stockholm), Dr. G. PETERSEN (Eberswalde), Dr. G. SCHMITZ (Tervuren), Dr. R. T. SCHUH (New York), Dr. J. STEHLÌK (Brünn), and Dr. H. SYNAVE (Brussels).

For genital comparisons, the insects were soaked 5 – 10 min. in Barber's Solution and then washed in distilled water. The separated segments were then boiled for a short time in 10% potassium hydroxide and, after rinsing again in distilled water,were placed in glycerin.

General Characterization of the genus *Leptocoris*

Leptocoris HAHN, 1833[1]): Wanz. Ins. 1, 200; BURMEISTER, 1835, Handb. Ent., 2, 305; KIRKALDY, 1907, Entomologist, 40, 58; -- 1908, Entomologist, 41, 123; GROSS, 1960, Rec. S. Austr. Mus., 13, 403; SCHAEFER, 1965, Misc. Publ. Ent. Soc. Am., 5, Nr. 1, 9 u. a.; CHOPRA 1967, Trans. Ent. Soc. Lond., 119, 387.

Serinatha SPINOLA, 1837: Ess. Hem. Het., 247.

Lygaeomorphus BLANCHARD, 1840: in CASTELNAU LAPORTE (Hist. Nat. AN.), Hist. Nat. INS., 3, 116.

Pyrrhotes WESTWOOD, 1842: Cat. Hem. HOPE, II, 6.

Tynotoma AMYOT/SERVILLE, 1843: Hist. Nat. Hem., 220.

The genus *Leptocoris* was created by HAHN in 1833 for the species *rufus*, not in 1831, as is often incorrectly cited. An error that explains this confusion is that in most cases, HAHN's notebook pages are not dated with a year. Because the type specimen of rufus does not exist, a re-evaluation of the species has not been possible. The type information describing *Leptocoris rufus* is problematic:HAHN lists Brazil as the collection location, and no members of the genus *Leptocoris* are known from South America. From South America the only related species , which have radiated into the Americas, belong to the occasionally confused genus *Jadera*. However, based on HAHN's illustrations, his specimens had short bucculae; this supports the hypothesis that HAHN's collection was actually of *Leptocoris* since the bucculae of species of *Jadera* are distinctly longer. Therefore, it is possible that the collection locality given by HAHN was incorrect. The species *Leptocoris rufus* is currently viewed as a synonym to the older *abdominalis* (Fabricius, 1803), which is therefore the type specimen for the genus.

Based on the similarity between the names *Leptocoris* and *Leptocrisa*, a genus of the Alydidae, *Leptocoris* was given the alternative name *Serinetha* by SPINOLA in

[1] The year of discovery was taken from KIRKALDY (1907) and SHERBORN, 1914, Ann. Mag. Nat. Hist., (8) 13, 365.

1837; this has been adopted by many authors . *Pyrrhotes* and *Lygaeomorphus* are alternative names proposed by other authors. However, in 1908, KIRKALDY and VAN DUZEE (1914)[2] pointed out that this alternative nomenclature was incorrect. using the rules of nomenclature, *Leptocoris* is the valid name.

The members of the genus *Leptocoris*, along with the species of *Jadera,* and now *Boisea,* form the subfamily Serinethinae. Serinethinae was described by SCHAEFER (1965) based on various traits. One of these traits is the division of the 3rd and 4th sternites, which are fused in genera that belong to the subfamily Rhopalinae within the family Rhopalidae. As previously mentioned, the species of the genera *Leptocoris* and *Jadera* are grouped largely based off of the differences in bucculae: the bucculae of *Leptocoris* and *Boisea* are short – approx. 1/3 the length of the head – whereas in *Jadera* they are long and reach the posterior edge of the head (*Boisea* characteristics are described later in this manuscript).

The species of the genus *Leptocoris* are the largest members of the Rhopalidae at approximately 9 to 29 mm in length and approximately 3 to 5 mm in width; the largest African species is around 20 mm in length. Members of *Leptocoris* are yellowish-brown to black with red coloration and whitish yellow or black hairs of variable length.

The head is relatively wide and short with large compound eyes, apparent ocelli, and often has a well-pronounced line in the center. The bulges behind the eyes are large; the antennal pads are generally poorly defined; the bucculae are short and are not species-specific. The antennae are composed of a short and sturdy 1st member and 3 thin, elongate members. The four-membered rostrum often reaches the end of the thorax and occasionally past it.

The trapezoidal pronotum is distinct because of the large protrusion from the anterior edge, which is longer in the middle than it is laterally. The furrow lying behind this protrusion is flat and fairly long. Beginning at this gap, there is a strongly raised midline, which reaches the end of the pronotum. The dot pattern is generally clearly recognizable and the lateral edge often has short hairs. The scutellum is elongate and triangular– rarely is it broadly triangular.

The hemelytraare distinctly sclerotized in all species with somewhat raised veins and are often faintly dotted. The lateral edges run straight, but may be strongly bowed. The forewing is slightly glossy or mat – the latter via a thick pubescence. The membrane is generally dark colored and covers the abdomen in width; though in some species there is also a brachypterous form (most often in the females). The legs are

---

[2] VAN DUZEE, E. P., 1914, Can. Entomol., 46, 379.

slender and long with elongate 1st tarsal members. The spiracle openings on the 3rd thorax sternites are barely recognizable and lack peritreme.

The abdomen is composed of the visible tergites 1 through 7 and sternites 2through 7, as well as 5 clearly separated paratergites. The anterior edge of the 5th tergite is bowed slightly posteriorly and the posterior edge of the adjacent segment is curved anteriorly. In males, the 9th segment forms the pygophore (genital capsule). The ventral posterior edge of this segment is, in some species , elongate posteriorly and lacks a distinct protrusion, whereas in other species it has long protrusions. In females, the 7th sternite is set at the posterior and is either bowed slightly forward in the middle or straight. The lateral sides of the 8th and 9th are curved ventrally and have 1 or 2 valviferi with 1 or 2 valvulae. The ventrally curved side of the 8th tergite joins the 1st valvifer. Its lateral edges are convex posteriorly and carry the hairy or bristled 1st valvula, on which the ramus is easily recognizable. The very narrow valvifer begins with a pear-shaped enlargement and runs laterally under the 9th tergite. It runs over the 2nd ramus, and fuses with the 2nd valvula, which terminates with a short point. The enlargement of the 2nd valvifer is covered with robust hairs and spines. The form and spine pattern is species-specific and plays a role in the species determination of females; likewise, the less-apparent characteristics of the 2nd valvulae may help one to determine the species of females, but it is often not easy. The 9th paratergite – where each elongated ramus originates - is distinct among the species of *Leptocoris*.

The previous members of the genus *Leptocoris* could be divided into multiple groups using only the structure of the pygophore or the form of the female genital segments – as was expressed by Gross (1960). Using these traits, 2 historic groups – the predominantly African *hexophthalmus* and the Indopacific *abdominalis* groups – show little differentiation and should ,in my opinion, remain in the genus Leptocoris. However, species in the 3rd group are greatly differentiated from the rest using these and other traits. From this group, I have assembled the genus *Boisea* to include the 5 species: *coimbatorensis*, *flava*, *fulcrata*, *rubrolineata*, and *trivittata*.

Characteristic traits of the genus *Leptocoris,* as compared to *Boisea,* are the wider and somewhat shorter head, which is usually flatter and has a well-defined sunken midline at the suture (in *Boisea*, the head is more arched and is longer). The furrow at the posterior edge of the pronotum is strongly curved along its width, and there is usually a projection between this and the raised midline (this is lacking in *Boisea*). In *Leptocoris*, the insects are semiglossy to matte with relatively long and often dense hairs, whereas, in *Boisea*, the insects are glossier with shorter hairs. The posterior-ventral edge of the pygophore is either long, wide, tapered to the rear, or terminates in 2 long lateral spines. The middle spine, which compromises the terminal end of the aedeagus that lies inside the capsule, is of variable lengths. The parameres are slender with one rounded, poorly developed terminal segment, and occationally possess a spur-

like lateral appendage. The 7th sternite of the female is wide and bowl-shaped, elongate toward the rear, and is at most barely keeled at its terminus, though it is usually arced forward or ± straight along its posterior edge (in *Boisea* it is noticeably keeled and bowed). The enlarged end of the 2nd valvifer is either laterally or dorsally oriented along its posterior edge. The valves of the seminal receptacle behind the bursa copulatrix are double and rather loose.

The genus *Leptocoris* currently has 45 speceis and subspecies, which comprise the groups *hexophthalmus* (30) and *abdominalis* (15). They are distributed throughout central and southern Africa, the Pacific region in southern and southeastern Asia, and in Australia. Within Africa (including the Seychelles Islands and Madagascar) there are 25 species and subspecies, whereas the remaining regions contain the remaining 20 species and subspecies. Interestingly, none of the *abdominalis* group are found in Africa; their distribution solely reaches from India to the Pacific Islands. In contrast, the species of the group *hexophthalmus* exist outside of Africa only in the southern portion of East Asia,the Malaysian Peninsula, India, and Indonesia. They reach their eastern distribution at Timor, an island in the Malaise archipelago, and they are not found in the neighboring regions to the north and east. The distributions of these two groups overlap in the same botanical and zoological regions along the Wallace Line. However, the majority of the species in the *hexophthalmus* group occur in Africa. Based on this distribution, I suggest that it is very likely that the origin of this group within *Leptocoris* occurs in Africa.

What I found noticeable is the fact that some of the examined species are being subdivided, which leads to several groups that are very similar and hard to classify (such as *chevreuxi, griseiventris, lata,* and *productus*). One must also consider the very broad area of distribution, which differs in terms of environmental factors. Similar species, with respect to both body form and to more species-specific features such as the shape of the pygophore and paremeres, occur in vastly different geographic ranges (for example *chevreuxi* is found in Africa and *augur* is found in India; additionally, *albisoleatus* is in Madagascar, *toricollis* is in the Seychelles and *coniculatus* is in India).

a) Hexophthalmus group

In the males of these species, the rear end of the pygophore is of variable lengths and is elongated toward the back. The rear end of this elongation is either straight or is bowed forward in the middle, where it has two relatively wide, though equal in length,

short lateral or middle spines. There are no long and slender middle-lying spines in the group *abdominalis*. The middle spine in *hexophthalmus* is relatively short and is partially elongated on the dorsal inward side because of a deep groove which separates it from the ventral posterior edge. The curving of the parameres and also the paramere itself are more dorsal in the inside of the pygophore. In some species, there are short lateral spines on the pygophore, which are lateral, slender appendages of variable lengths. In the females of this group, the enlarged end of the 2nd valvifer is oriented more posteriorly. On the upper 3rd of the dorsal side of this there are erect bristles (see Figure 3a). The already described African species *aethiops*, *albisoleatus*, *amictus*, *chavreuxi*, *cinnamomensis*, *griseiventris*, *hexophthalmus*, *intermedia*, *mutilatus*, *nigrofasciatus*, and *toricollis* belong to this group as do the newly described African species *affnis*, *lata*, *obscura*, *paramictus*, *productus*, *seidenstueckeri*, *stehliki*, *teyrovskyi*, and *wagneri* and the new subspecies *amictus rubra* and *pectoralis camerunensis* as well as the far-flung southeast Asian members of this group: *augur*, *capitis*, *corniculatus*, *dispar*, and *minisculatus*.

b) Species of the *abdominalis* group

In the males of these species, there are generally 2 relatively long and slender spines along the ventral posterior edge of the pygophore. The long and slender middle spine in this group is usually positioned only slightly dorsally in the inside of the genital capsule, which also meets the curve of the paramere and the parameres themselves. In the females of this group, the enlarged end of the 2nd valvifer is oriented more posteriorly. It is laterally elongate and may possess noticeable spines on the top. This group contains the Indian and Pacific species *abdominalis, coxalis, insularis, isolatus, longiusculus, marquesensis, mitellatus, rufomarginatus, subrufescens, tagalicus, and vicinus*. The type species for this genus, *abdominalis,* is largely differentiated from other specimens in this group by the structure of the female genital segments: the 2nd valvifer is wider and the 2nd valvula possesses a lateral lobe.

Characterization of the African species

1. *aethiops* DISTANT, **1901** (Fig. 1-2)

Serinatha aethiops DISTANT, 1901: Ann. Mag. Nat. Hist., (7) 7, 429.

Serinatha fraternal var.: DALLAS 1852, List. Hem. 2, 462.

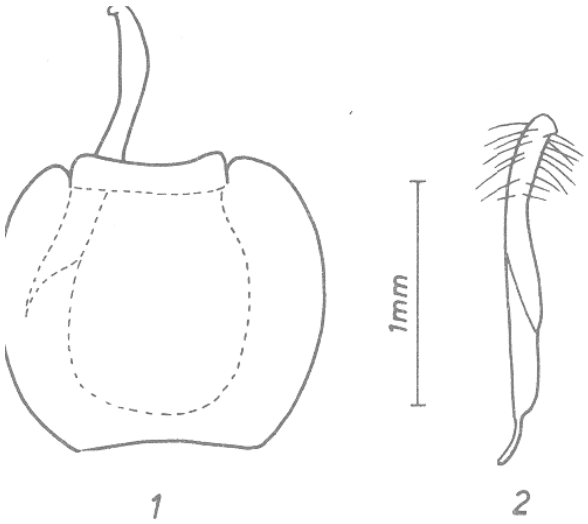
Serinatha fraternal: STÅL, 1865, Hem. Afr., 2, 112.

This species was described in 1901 based off of material from West Africa. The type specimen remains intact. The specimens from DALLAS and also from STÅL, which were described as *fraternal*, were placed in *aethiops* by DISTANT in 1901.

Types: West Africa: Lectotype _, Brit. Mus. London. – Paralectotype _, same as lectotype. The collection locations of “Sierra Leona” and “Calaber leg. RUTHERFORD” are present in the publication, but missing on the type specimens.

Description: Fairly large, black, rarely occurring as a more brown morph, recognizable by its distinctly elongate, elevated, and yellow paraclypeus.

The head is black with wide yellowish-ochre sides; the eyes are red; the paraclypii are yellow and distinctly longer than the dark colored clypeus. The paraclypii are strongly curved and anteriorly tightly joined. The antennae are black with long members. The pronotum is dark brown with a dark furrow and is posteriorly brown-black colored. The pronotum is relatively long and rounded in the rear. Its surface is dotted and wrinkled with an elevated front edge, which is elongate in the middle. The midline is visible almost in entirety. The hemelytraare black – rarely more brown – with slightly elevated veins, are covered in thick yellow hair, and are laterally slightly convex. The legs are brownish-black with yellow hairs. The tibia is especially densely haired. The underside is yellowish-brown. The rostrum surpasses the rear coxae.



Figs 1-2: *Leptocoris aethiops* (Dist.). – 1) Pygophore – ventral view; 2) Parameres

Genital segments: a) Male: The central 2/3 width of the ventral rear edge of the pygophore is only slightly posteriorly elongated. The parameres possess long hairs on their upper 1/3, are slender and nearly straight, and possess a small lateral beak at the end. b) Female: The 7th sternite is broadly cupped and is distinctly longitudinally rounded and anteriorly concave. The upper half of the enlarged free end of the 2nd valvifer is oriented dorsally and has dense, long hairs. The 2nd valvulae have pointy ends, are hairy, and possess distinctly scleritized edges.

Size: Male: 13.7–14.8 mm; Female: 15.1–18.1 mm

Distribution: The material used comes from West and Central Africa (Ivory Coast to Kibali-Ituri / Belgium Congo) approximately in the region between 10°N and 10°S. Some specimens were light trapped.

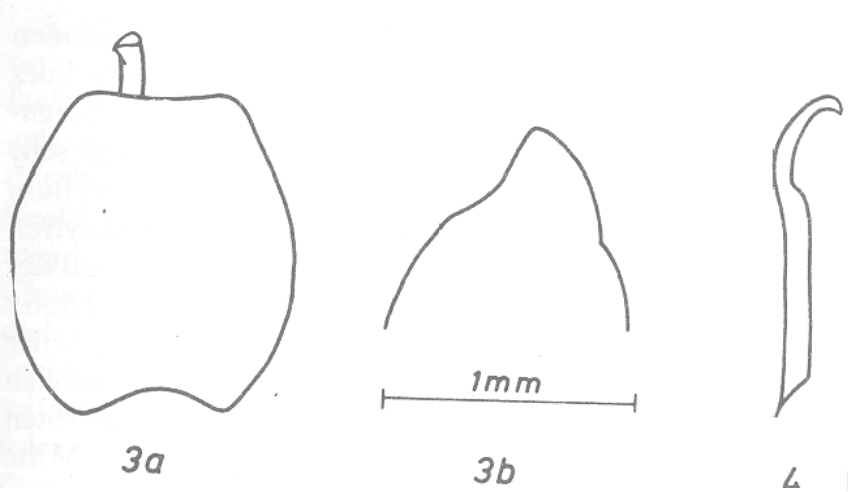
2. *affinis* sp. n. (Fig. 3-4)

Leptocoris affinis **sp. n.**

In the material from London, I found an apparently novel specimen from Abyssinia [Ethiopia], which I treated as a new species. I received a similar exemplar specimen from the Museum of New York, which was collected in Butandigo.

Types: Abyssinia [Ethiopia], Higo Samula, 30.10.11, R. J. STORDY, Nr. 329-1912: Holotype _, British Museum London – Butandigo, 7000 ft., 8.-12. I., Mt. Elgon, A. LOVERIDGE; Paratype _, Mus. New York.

Description: Light brown with a black, relatively pointy head and dark lateral wing edges. The pronotum is short and wide. The head is black, pointed, and yellow colored in a narrow region adjacent to the eyes (reaching nearly to the midpoint between the eyes). The eyes are red. The antennae are black. The pronotum is light ochre with a black furrow. It is densely spotted, fairly wide and short (the front edge width is nearly equal to the width of the head's rear edge). The scutellum is dark. The hemelytra are ochre, dotted, with differentiated brownish black lateral edges, and a brownish black membrane. The legs are dark. The femurs are completely light ventrally. The tibias of the males are light brown in the middle. The dorsal side of the insect is yellowish brown. The underside is yellowish ochre. The posterior half of each thoracic segment is light in color. The rostrum surpasses the rear coxae. The first member is light colored, the rest are dark.



Figs 3-4: Leptocoris affinis sp. n. – 3a. Ventral: pygophore, 3b. pygophore lateral 4. paramere

Genital Segments: a) Male: The pygophore is simlar to that of hexophthalmus, but more strongly rounded, and the ventral posterior edge is slightly concave. The parameres are slender and lack lateral protrusions on their upper portion.

Size: 10.7 mm (Male)

Distribution: Currently only known from Abyssinia [Ethiopia] and Butandigo, Mont Elgon (approx. 34.5°E, 1°N).

3. **albisoleatus** BERGROTH **1912** (Fig 5-6)

Serinatha albisoleatus BERGROTH, 1912: Ann. Soc. Ent. Belg., 56,91: *Leptocoris albisoleatus*-comb.nov

This species was described by BERGROTH in 1912 based on specimens from East Madagascar. The type specimen, as with many from BERGROTH, could not be found and is likely missing. Based on the description though, other specimens from Madagascar could be determined as *albisoleatus.*

Type: Isle Saint Marie, East Madagascar, no proof of locality.

Description: These insects are rather big and red and brown in color with a short dark pubescence. The antennal pads are noticeably dotted and bulged near the margin of the pronotum. The head is yellow or more red with a slightly bulged brown area and the clypeus is the same length or somewhat shorter than the paraclypees. The antennal pads were noticeably dotted and bulged, with shorter brown hair growth.

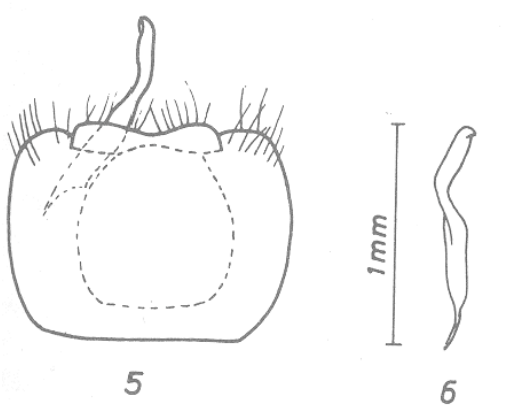


Fig. *5-6* Leptocoris *albisoleatus,* 5. pygophore ventral,6. paramere

The antennae are very elongateand black, except for the reddish yellow colored first member. The pronotum is pubescent with short black hair, distincly pointed with a rounded broadly bent up margin. The margin shows a very thick pubescence, the protrusion from the anterior edge is shifted in the middle and only very finely dotted, and the center line is barely pronounced and sometimes is not continuous. The scutellum is elongate, triangular, and slightly wrinkled.

The hemelytra are reddish yellow in color and finely dotted with brownpubescence. The side margin of the corium is relatively broad and slightly bulged upwards and the membrane is dark brown. The legs are relatively long and thin and the femurs are brownish black, except for the lighter colored tibias. The dorsal side is red and black colored and the underside is black, except for the broad red rear parts of the sternites and the mainly red seventh sternite. The rostrum reaches into the middle of the rear coaxa.

Genital segments:

a) Male: The ventral posterior edge of the pygophore is shifted a bit to the rear (about 2/3 of the rear margin's breadth). The parameres are slender and are slightly emarginated in the first third; they also have a tiny protrusion at the end.

b) Female: The end of the second valiferi is thickly thorned and has long single hairs. The second alvulae are relatively broad and are ventral at the end with a rounded angle.

Size: Male 12.9mm, Female 15.4 –16.66mm

Distribution: This species has only been found in Madagascar so far. The specimens at hand (four females and one male) are from north Madagascar (Amber Mountains, Mus.

Mus. Berlin; Vahemer, Mus. Tervuren), thenortheast of the island (Ambodivoangy, Mus.Tervuren), and from Sianaka (Mus. Leiden).

4a. amictus amictus GERMAR **18 37** (Fig. 7--8)

Leplocuris amictus GERMAR, 1837: SILBERM. Rev., **5**, 144; *Serinetha amicta:* DALLAS1852*,* List **Hem.,**1 1,462;

Leptocoris amictus: BLÖTE, 1934, Zool. Meded., **17,** *267.*

Serinetha moesta STAL, 1855: Ofv. Vet. Ak. Forh, **12,** 29.

*Tynuloma vii!afu*A MYOT/SEKYIL1I.8E4,3 : Hist "at. **Hem.,**2 20.

The species was described by GERMAR in 1837 and it was, according to material from South Africa, from the Cape of Good Hope. The type specimen could not be found. It could, however, be compared to the type specimen of Moesta, which was considered synonymous to amictus by STAL in 1865. Also GERMAR'S description is in accordance with the insects at hand. Tynotoma viltata was considered synonymous to amictus by DOHRN in 1859, however, I could not examine this type specimen, but the description is correct.

Types: *amictus* GERMAR:, Cape of Good Hope, leg. DRÈGE, no information on its whereabouts

moesta STAL: Caffraria, **J.** WAHLB.H; holotype _,Mus. Stockholm.

Note : All the insects WAHLBERG collected in South Africa, are labeled with,"Caffrariaa", as the location. STAL'S statement on location, "terra natalensi", is thusidentical (BOHEMAN 1848[3]).

vittata AM./SERV.: Cape of good Hope; no proof of its whereabouts exists.

Description: The insects are blackish brown, witha short white pubescence. The sides of their reddish yellow heads are small, and they have a yellow pronotum and corium. The pronotum is relatively flat and broad.

The head is dark brown to black, and it is red, broad, and slightly bulged next to and behind the eyes, with a broad tip at the front. The antennal pads are dark brown and the pronotum is brown,often light brown, and is horizontally sulcated. The posterior end is yellow in colorand broad with rounded sides. The entire surface is relatively flat, with a distinct elevated line in the center. It is slightly dotted, and there is a small protrusion on

[3] BOHEMAN, C.H., 1848, Insecta Caffraria annia 1838- 1845 a A.J.WAHLBERG collecta. **1,** 1 Holmiae.

the anterior edge. The scutellum is dark brown with a light tip and small yellow bulges at the sides. The hemelytra are brown to dark brown and the vein at the side is slightly elevated. The membrane is brown to black, the legs are brown, and the femurs are relatively long with mostly yellow lower sides. The edges of the coxae and the rear end of the prothorax and metathorax are red: The rostrum reaches the middle of the rear coxae.

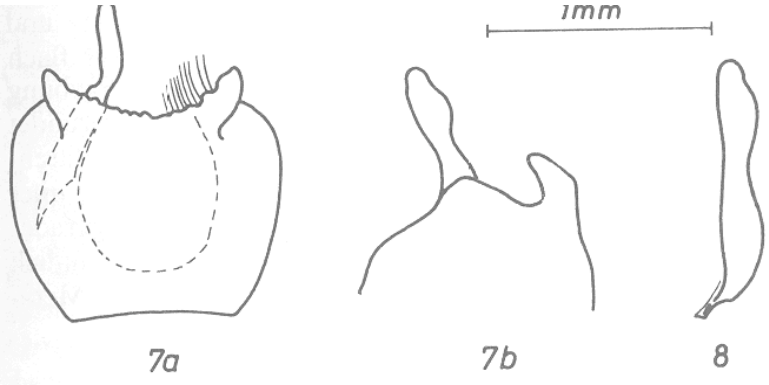


Fig. 7-8

Leptcororis amictus amictus GERM-. 7a. Pypophore ventral, 7b. Pygophore lateral, 8. Paramere**.**

Size: Male: 11.0–14.2 mm, Female: 13.3–15.9mm

Genital segments: a) Males: ventral posterior edge of the relatively rounded pygophore is shifted in all its breadth to the rear end. In the center they are slanted, and broadly denticulated. The frontal cappet is rounded and extends over the rear edges of the capsule. The central tip of the pygophore is short and broad. The capsule is short and broad at the middle tip of the pygophore. The parameres have a broad rounded rear piece, which is bulged to the side with a small emargination. Lateral attachments of the vesica are similar to those of the amictus rubra, but broader and shorter with a broader tip.

b) Females: The end of the 2nd valifer has long hair in the upper end. The 2nd valvula has a relatively small end, which is protrudes and is rounded.

Distribution: Most of the examined insects were found in the area between 14” north and 32” south latitude, respectively 28” and 39” east longitude; this is from the central and eastern parts of Central and South Africa. Only a few insects were found more west (to about 22” eastern longitude). However, I would dismiss DOHRN’S claim of Sierra Leone in West Africa as a location. Interestingly, there was one brownish-red insect in the London material from the Sahara (without further specification of its location).

4b. amictus rubra ssp. n. (Fig. 9--10)

Leptocoris amicta rubra **ssp. n**.

Serinetha hexophtalma: LINNAVUORI, 1978, Acta zool. Fenn.Nr. 153, 43, Fig.

The samples from Tervuren, Belgium contained some larger and mostly reddish orange colored insects, that looked similar to *amictus* with respect to the shape of the pronotum and the male genital segments. They also originated from Central Africa, but they were distributed more to the west than the common *amictus amictus.*

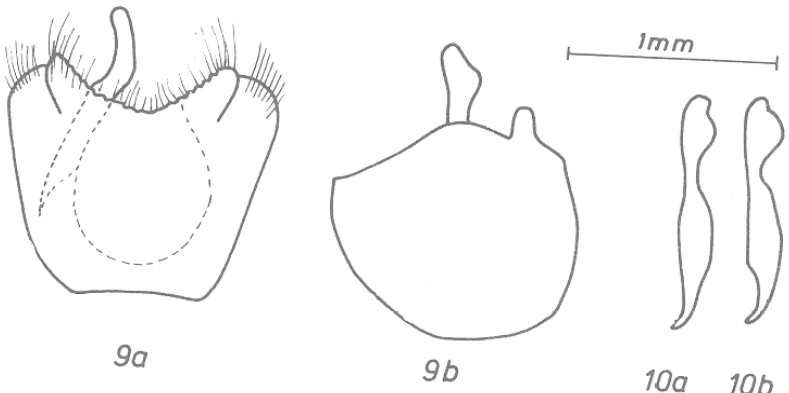
The figure of the species, which LINNAVUOARIS determined as *Serinerha hexophthalmus* corresponds to a subspecies of *amictus rubra.*

Types: Lulua: Kapanga, XI. 1932, F. G. OVERLAETII;holotype*6,* Mus. Tervuren.

Paratypen: 2 *$8* und I $ Likete s/Lomela, VI. 1936, J. GHESQUIER*1*E *8*; und 1 *S*

Mus. Tervuren, 1 $ Mus. Berlin.

Description: Big, reddish-orange colored insects. The sides of the pronotum are slightly more rounded than they are on *amictus amictus*. The pronotum is flatter than that of the similarily colored *nigrufasciatus.*The paraclypees are also flatter than *toricollis,* which is also similar looking. The head is black, red behind the eyes, and relatively pointy and short. The antennae are blackish-brown. The pronotum is redish-orange, relatively broad, and lightly dotted. There is a slight dark red protrusion at the anterior edge. There is a horizontal brownish black furrow, with slightly rounded sides (these sides are more straight then they are on *amictus amictus*), there is a slightly elevated line in the center and the area is rather flat. The scutellum is dark with a yellowish red edge. The hemelytra are reddish orange with a black membrane and the edge at the side is almost straight. The legs are black, the dorsal side is dark red, and the rear side ranges from a reddish-yellow to a reddish-brown. The head is black at the lower part and the frame of the coxae is red, as is the rear edges of the pro- and metathorax.



. ig. 9—10

Fig.9-10 *Leptocoris amictus rubra,*ssp.n. –9a Pygophore ventral, 9b pygophre lateral, 10a paramere. Lulua /Kampanga, 10b. Paramere Likete

Size: Males 11,8–14,2 mm, Females 1 3, 3–14,4 mm.

Genital segments: a) Males: The ventral posterior edge of the pygophore is less shifted to the rear side as it is in *amictus* s. str., which is otherwise similarly triangular in shape. However, the lateral tips of the pygophore are barely sticking out. The capsule is broader in the back. From a lateral view the capsule has a smaller emargination. The parameres are rounded at the rear end and are strongly bulged at the upper side, with a deeper emargination. The upper bulge is generally more pronounced than the lower part of the paramere (in *amictus* s.str both bulges are of the same size). Lateral attachments of the vesica are very similar to the ones of amictus s.str.

b) Females: Not very different from the females of *amictus* s. str.

Distribution: I was examining nine insects from the area between 0”-8” southern latitude, and 21”-25 eastern longitude: Lulua: Kapanga (I), Tshuapa: Bokuma (I), Likete Lomala (3), Bambesa (3) and Stanleyville (1)

5. chevreuxi NOUALHIER **1898** (Fig. 11 -12)

Scrinetho chevreuxi NOUALHIER,1898: Bull. Mus. Paris, **4**, 233: *Lepoctoris chevreuxi,* - **comb. Nov.**

Lygaeomorphus augur BLANCHARD,1840,: in CASTELNAU LAPORTE, (Hist. *nat.* An.) Hist. nat. Ins., **3,** 116 – **syn.nov.**

Serinetha griseiventis*:* DISTANT 1901, Proc. zool. Soc. Lond., **1901**, 1, 332.

NOUALHIER (1898) described *Leptacoris chevreuxi* based specimens of CHEVREUX, found in 1889/90 in Dakar, Senegal; according to the text it was a male insect.

Based on the reassessment of the type specimen at the museum in Paris, I found it to be a female of the species that corresponds to the description. In 1901, DISTANT considered the species synonymous to those of the *griseiventris*, but in my opinion, it is an autonomous species. The insects I was examining,however, were vermillion red, but the type specimen shows a more reddish-yellow coloration, which could also indicate a *griseiventris* . *Leptocoris chevreuxi* is also characterised by its shorter and more bulged head. *Griseiventris* generally has a longer and flatter head. In many collections this species often has been determined as *haematica*. However, the latter has a different local distribution, and is, due to the type comparison, considered synonymous to *hexophthalmus*. *Lygaeomorphus augur* (*Lygaeamorphus* is a substitue name for *Leptocoris,* introduced by BLANCHARD) was caught in Senegal and in South Africa.

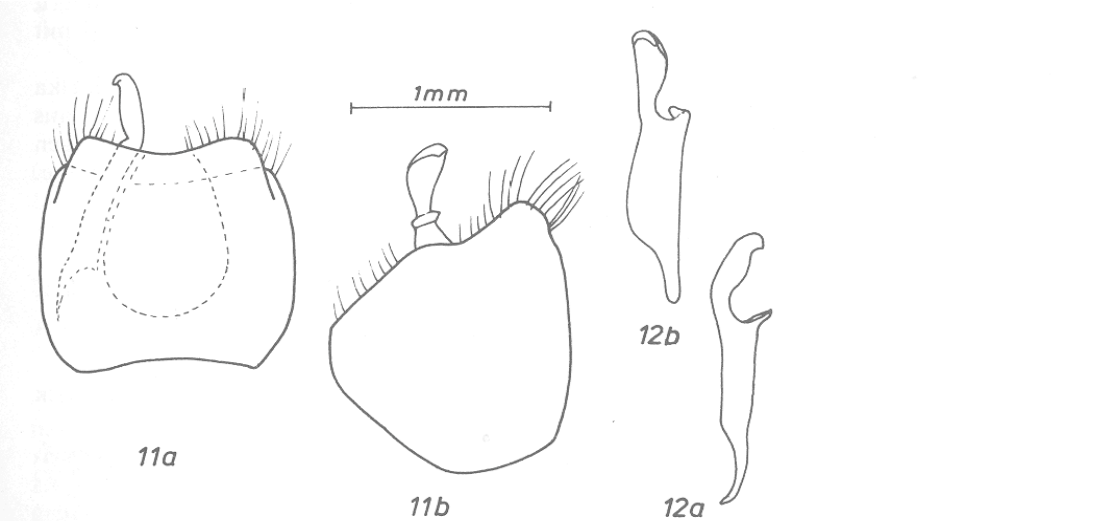


Fig. 11—12
Leptocoris chevreuxi (NOUALH.). — 11a. Pygophore ventral, 11b. Pygophore seitlich, 12a. Paramere, 12b. Paramere von oben.

Leptocoris ***chevreuxi*** **(NOUALH-.)** .I l a. Pygophore ventml, 11 b. Pygophore lateral ,12 Paramere, 12b Paramere from above

However, Leptocoris augur is a Southeast Asian species and does not occur in Africa. But, this species, shows many similarities to *chevreuxi*, which leads me to assume that BLANCHARD was inspecting this species. However, the location in South Africa is not correct.

Type: Dakar 111, CHEVREUXHI, holotype _, Mus.Paris (according to the text a _).

Description: Medium sized vermillion red, sometimes yellow colored insects with black antennae and legs, and a relatively short, clearly bulged head. The pronotum is coarsely dotted. The head is generally red, but sometimes a bityellowish, with slight brown pubescence. It is also rather short and strongly bulged (the bulge is more distinct in the females, especially with the brachtypers of the type). The antennae and first limb are black. The pronotum is red, sometimes a bit yellow, coarsely dotted, has relatively straight sides, and rounded rear edges that are slightly smaller than in *griseiventris.* The line in the center is stronger and becomes thinner posteriorly. The scutellum has the shape of a long triangle and is reddish brown and rather yellow. The hemelytra are usually red or, very rarely, a yellow shade, and have a dark membrane, a light pubescence, and are distinctly dotted. The side is distinctly bulged and brachypterous insects are known (mostly female). The legs are black, and the lower side generally is monochrome red or yellow. The upper sections of the thorax are very dark black brown, and the rostrum of the male specimen slightly overlaps the rear coxae. In the female specimen, the rostrum overlaps the rear coxae further (length varies).

Size: Males 10.5–11.8 mm, Females 11.5–13.3 mm

Genital segments: a) Males: Ventral posterior edge of the pygophore is shifted to the back in almost its entire breadth. It is bulged in the middle. If looked at from a lateral view, itslopes with little interruption dorsally. The parameres are relatively long and slender with a distinct spout at the lateral end. They are laterally slightly bulged, with a relatively strong spur to the side.

b) Females: The first valiver is rounded and the second valifer is enlarged, more broad, and elongated. It has a relatively big field of bristles and the upper half is covered with relatively long and strong spines. The lower half and side have a thick and long pubescence. The lower half and side has a long and strong pubescence. The end of the second valvula is relatively tipped and slightly shifted. The 9th tergite has several spines at the ventral side. The 10th segment has more frail spines.

Distribution: The insects at hand originated mainly from West Africa, that is, the Senegal, Gambia, and North Nigeria. Moreover, I had specimens from Sudan and Eritrea, and a group that was slightly different that was caught at the Tschad lake. The insects were all found in an area between 10”-15” latitude. The insects in question (females) were from North East Rhodesia.

6. **cinnamomensis** IZZARD**1**, **960** (Fig. 13~-14)

Leplocoris cinnamumensi IZZARD, ***1960:*** S. Afr. An. Life, **7,** 483, Fig.

The species was described by IZZARD in 1960, following the description of BRINCK-RUDEBECK in 1951 from SouthWest Africa. The types could be compared.

Types: Anabib (Orumpembe), Kakaoveld, SW- Africa, 12.-13. VI. 1951, Holotype _,Zool. Inst. Lund.- Paratypes:1_ as the holotype, but 7th-9th VI. 1951, 2 __, as holotype.

Description: Typical yellow, big, strong, and sturdy insects with light and dark hair. The pronotum is coarsely dotted and the side of the corium is blackish brown. The head is yellow, bulged, and broad. The clypeus is slightly longer than the paraclypeus and small and dark colored at the end. The antennae are blackish brown with strong elements and short hair. The pronotum is yellow, and distinctively heightened. It is coarsely dotted andwrinkly with a center line that does not go through its entire length. The rear edges are slightly rounded and the scutellum is yellow and is about as long as it is wide. It has a fine grate pattern and a dark spot. The corium of the hemelytra is yellow with a brown fringe and is coarsely dotted and wrinkled. The membrane is dark brown and brachypterous. The legs are blackish brown; the back is yellow and the lower side is yellowish colored. The ventral part of the thorax are blackish-brown, and the rostrum reaches the rear coxae.

Size: Males ca. 15.0 mm (object was damaged)–16.l mm; Females 14.8–16.6 mm.

Genital segments: a) Males: The ventral posterior edge of the pygophore is slightly elongated toward the back and has a small bulge in the middle which points toward the front. The parameres are elongated with a small spout at the rounded limb and they broaden on their lateral side.

b) Females: The rear bulge of the seventh sternite is straight.. The genitals were not examined.

Distribution: I had only a few specimens for examination (only the type specimens). The species was not represented in the examined collections, and it seems that this species only occurs in South West Africa.

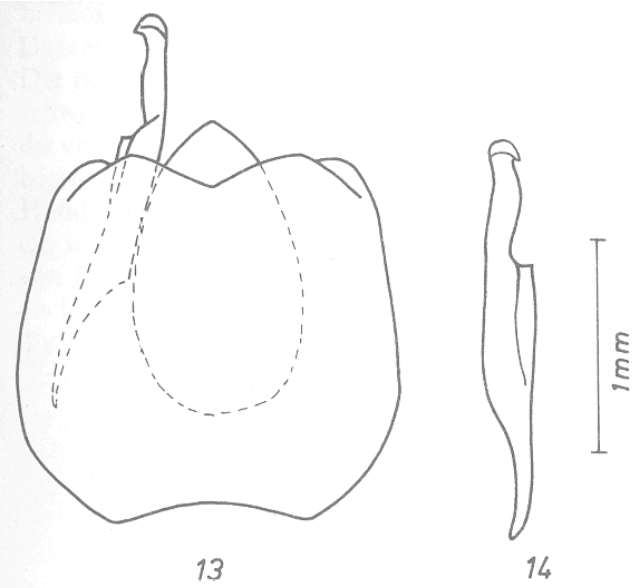


Fig. 13—14
Leptocoris cinnamomensis Izz. — 13. Pygophore ventral, 14. Paramere.

7. griseiventris WESTWOOD**1**,**8 42** (Fig. 15-16)

Pyrrhotes griseiventis WESTWOOD, 1842: Cat. Hem. HOPE,II,6,26; *Lepoctoris griseiventris*:BLÖTE, 1934, Zool. Meded. **17**, 267

This species was described by WESTWOOD in 1842 according to insects from West Africa, without further information on their location. However, the typecould be compared. *Leptocoris griseiventris* has some similarities with *chevreuxi*, and *chevreuxi* has been considered synonymous. In my opinion this is a mistake (see above). Thus

chevreuxi is, in its description, like the holotype *griseiventris*; mainly yellowish-red to yellowish-brown colored. They are yellow, strong and broad, very typical insects that, with some regularity, can be of a vermillion red color. *Griseiventris* however has a short dark pubescence and the pronotum is coarsely dotted. The lateral edge of the corium is black, which can make it hard to distinguish from the new species, *productus,* as well as from smaller specimens of the new species and *teyvrovskyi*. This is possible with the analysis of the male genital segments.

The length of the rostrum, which is cited in the literature as the distinguishing feature, varies a little bit. However, *chevreuxi* generally has the shortest rostrum, *productus* has the longest, and *griseiventris* has a rostrum of medium length.

Types: West Africa; Lectotypus male, HOPE Dept. Oxford. Paralectotypes: 1 male as the Lectotypus, 1 female Tombuctoo, HOPE, Mus. Leiden.

Description: Mostly yellowish-red, also yellowish-brown, rarely more red or boldly colored.It has a relatively short and pointy head and a slightly dotted pronotum that becomes broader posteriorly.

The head is slightly bulged and pointed. It is flatter and more pointed than *chevreuxi's* and shorter than *productus'.* The ocelli are close to each other and they are brown. The antennae are blackish-brown. The pronotum has the shape of a trapezoid with relatively slanted sides. It is slightly shorter and has a much finer dotting than *chevreuxi* has. The sides are more straight in *chevreuxi* and *productus.* The front side of the pronotum is relatively small; the scutellum is rather brown and is shaped like a long triangle. The hemelytra are mostly light brown, sometimes more red, with a dark membrane, and are lightly dotted. The side of the corium is partially dark colored, and runs ovally, but is less pronounced than *chevreuxi* and *teyvrosky*. The legs are brownishblack and the lower side is yellow. The rostrum is relatively long and goes to the end of the fourth sternite (longer than in *chevreuxi* but generally shorter than *productus*).

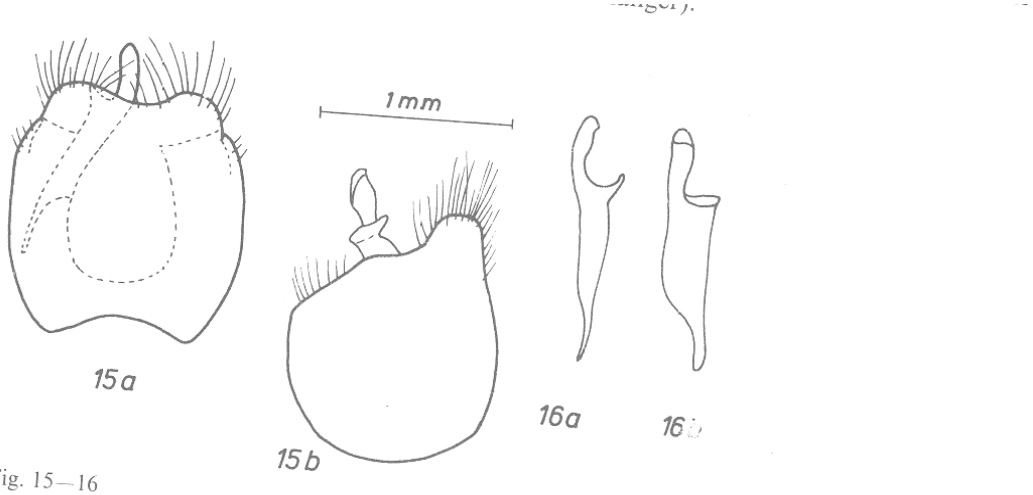


Fig. 15—16
Leptocoris griseiventris (WESTW.). — 15a. Pygophore ventral, 15b. Pygophore seitlich, 16a. Paramere, 16b. Paramere von oben.

Fig. 15- 16 *Leptocoris griseiventris* (WESTWOOD). 15a ventral pygophore, 15. Lateral view of pygophore, 16a. Paramere, 16b. Paramere from above

Size: Males 9.2mm–11.4mm, Females: 11.8mm–13.1mm

Genital segments: a) Males: The ventral posterior edge of the pygophore is elongated to the rear side and is slightly bulged in the center. It broadly points toward the front. The lateral tips of the pygophore are rounded and the sides of the pygophore are relatively straight. The parameres are relatively short without a spout at the end and have a distinct spur. In lateral view, the capsule has a stronger passage than *chevreuxi.*

b) Females: The enlargement of the second valvifer is pear shaped, and the upper third is slightly bristled. The second valvula is pointed at the end.

Distribution: The information on the distribution found in the literaturemost likely concerns different species, mostly *chevreuxi,* and maybe *hexophthalmus*. I also had insects from Côte d'Ivoire to Central and East Africa; some insects were also from Mozambique and North East Rhodesia.

8a. Hexophthalmus hexophthalmus THUNBERG, 1784 (Fig. 17-18) (cf p.148)

Cimex hexophthalmus THUNBERG,1784: Diss. ent. nov. Ins., 3, 54,; *Leptocoris hexophthalmus:* Blöte, 1934, Zool. Meded., **17,** 267.

Leptocoris haematica GERMAR,1837: Silberm. Rev. Ent., **5**,144 – **syn. nov.**

Pyrrhotes fraterna WESTWOOD,1842: Cat. Hem. HOPE, II,6,16—**syn.nov.**

Serinetha orodemias LINNAVUORI,1978: Acta zool. Fenn., Nr. 153, 44, Fig. – **syn.nov.**

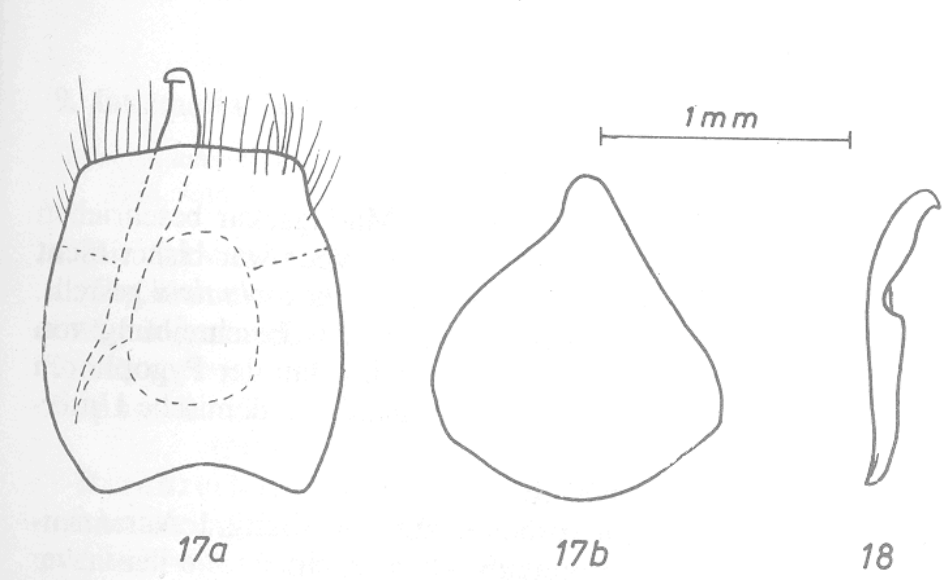
An examination of the type of the species *Cimex hexophthalmus* THUNBERG had described in 1874 according to material from South Africa, brought a surprise in that it was a different species than the one that had been expected, considering the content of the collection's material at hand. The species always had been considered synonymous to *fulcatra* GERMAR–a synonym which is astonishing since *fulcatra* and *hexophthalmus* are two very different and easily discerned species. This leads to more synonyms, which invalidates widely used and common names. This concerns the following two species: *Leptocoris haematica,* which was described by GERMAR in 1837 and collected at the Cape of Good Hope by DRÈGE, and the species *Pyrrhotes fraterna* (no information on its location) which was determined by WESTWOOD in 1842. One type of *Leptocoris haematica*, a female, from the museum in London is labeled "Cap Gd. Hope, det. GERMAR, coll. DRÈGE", but it is not known who did the determination of the type. The description of GERMAR is short but mostly consistent, with respect to the black color of the head and the brownish-red color of the hemelytra. The species of *chevreuxi,* which often has been classified as *haematica,* is, however, a monochromatic vermillion red, and is not found in South Africa. I also think that on the basis of the type, *Pyrrhotes fiaterna* is synonym with *hexophthalmus*. However, it is a female that is not easily classified. An examination of the species *Serinetha orodemnias* from Sudan, which LINNAVUORI described in 1978, revealed it to be identical to *hexophthalmus.*

Types: *hexophthalmus* THUNB.: Capite bonae spei; Lectotypus female, Univ. Uppsala (no information on location found).

haematica GERM.: Cap Good Hope, coll. DRÈGE; Lectotypus female, Mus. London

(# 1211).

fraterna WESTW.: place?; Lectotypus female, HOPE Dept. Oxford (damaged and without information on location).



Leptocoris hexophthalmus hexophhtalmus (THUNB.) – 17a. Pygophore ventral, 17b Pygophore lateral, 18 Paramere

Orodemnias LINNAV.:nr. Damazin, blue Nile, Sudan, 17. – 22. XI. 62 LINNAVUOURI, holotype female,Coll. LINNAVUORI. – Paratype: 1 female as holotype, Mus. Lervuren

Description: Relatively slender insects of a mostly brownish yellow color, but sometimes a brownish red (or monochromatic red) color. The head is slightly bulged and broad, the pronotum is slightly dotted, and the rear end is slightly rounded and slanted. The head is black and has a relatively broad tip. Next to and behind the eyes it is red, as well as on the rear end; it is more wide than long, and slightly bulged (less thin than with *mutilatus*). The antennae are blackish brown, the front of the pronotum is yellowish red, and there is a horizontal gouge, which is brown with reddish orange sides. It is very finely and closely dotted and pubescent. The posterior corners are slightly rounded (*chevreuxi* and *mutilatus* have a straight side) with a slightly elevated line in the middle that is slightly brighter than the area and does not pass through the entire length of the prontoum. The scutellum is dark brown and the hemelytra are brownish yellow or reddish brown (rarely more red) with a brighter posterior end and a dark membrane that is slightly dotted. The vein is partially dark brown, the legs are brownish black, the bottom side is yellowish brown, sometimes a bit lighter, and the thoracic segments are generally brown anteriorly. The rostrum barely overlaps the rear coxae.

Size: Males: 11.8–13.00 mm, Females: 12,7–15.5 mm

Genital segments: a) Males: The ventral posterior end of the pygophore is shifted relatively far to the back; it is straight in the middle or has very small bulges towards the back. The parameres are slender with a little spout at the round end and a small impression in the middle.

b) Females: The upper end of the second valvifer is ovally broadened, and covered in the upper part (roughly half) with closely grown and very sturdy spines; in the lower half there is a pubescence. The lower part of the second valvula is relatively slender and pointed at the end; the 9th tergite has two spines on each side at its posterior end and there is long pilosity on the 10th segment.

Distribution: According to the material at hand*, hexophthalmus hexophthalmus* seems to be the most common of the *Leptocoris* species. It is found in the entire region of Central Africa down to South Africa; I even had insects originating from the island St. Thomas.

Among the material of the London Museum was a series of monochromatic red colored insects from the Sokotra island, which I consider to be *hexophthalmus hexophthalmus.*

8b. hexophthalmus lateralis SIGNORET, **1861** (Fig. 19- 20)

Serinetha lateralis SIGnORET, 1861: Ann. Soc, ent. France, (3) ***8,*** 839.

Serinerha haematica: STÅL**,** 1865, Hem. Afr., **2,** 113.

Leptocoris hexophthalmus lateralis – **comb.nov.**

Serinetha lateralis was described by SIGNORET in 1861 based on insects from Madagascar, without information on the number or on the location of the specimens. The type, so far, could not been found. The species was considered synonymous to *haematica* (which is synonymous to *hexophthalmus*) by STÅL in 1865. However, among the material from Madagascar, I found some insects which correspond to the description of SIGNORET. I consider these to be an endemic subspecies of the *hexophthalmus*, due to the missing differences in the pygophores of the male *hexophthalmus* and *lateralis*.

Type: Madagascar; no evidence of its location.

Description: Relatively large, slender insects of a reddish-orange color. The 1st antenna member and femur are always red (on *hexophthalmus* they are brownish-black). The head is reddish-orange with a broad and slightly elevated paraclypeus. The antennae are brownish black with the exception of the strongly red colored 1st antenna member. The pronotum is red with a dark, partially red, horizontal gouge. The sides are barely bulged, and the scutellum is a monochromatic red. The hemelytra are reddish orange

with almost straight sides and the membrane is dark. The legs are long and the femurs are generally red or brownish- black. The lower side is reddish -orange and the thoracic segments in the upper section are brown. Also the anterior section of the sternites is partially dark brown. The rostrum slightly surpasses the rear coxae.

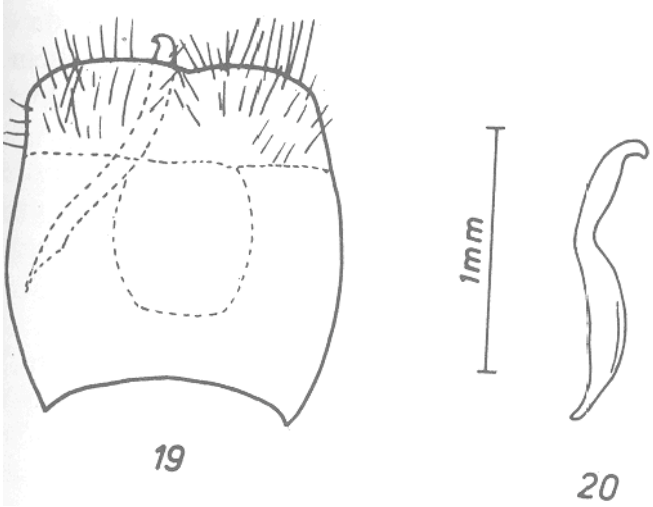


Fig. 19- 20

Leptocoris hexophthalmus lateralis (SIGN.)—19 Pygophore ventral, 20 Paramere

Size: Males 12.7–13.0 mm, females 13.7–15.0 mm

Genital segments: a) Males: The ventral posterior end of the pygophore is shifted straight to the back (exactly as in *hexophthalmus*) and is partially concave in the middle. The capsule is also a bit broader than *hexophthalmus*. The paramere has the same structure as *hexophthalmus* but is slightly smaller.

b) Females: The 7th sternite has a little dent at the middle of the posterior end. The enlargement of the 2nd valvifer is relatively small and has spines in the upper third and thin pilosity elsewhere. The lower end of the 2nd valvula is a bit more blunt than with *hexophthalmus.*

Distribution: This subspecies could only be found in Madagascar. I was examining material from Tananarive, Vokimar, and Fampanambo (North Madagascar) (Mus.Tervuren und Mus. Berlin).

9. intermedia DISTANT,**1914,** (Fig. 21-22)

Serinetha intermedia DISTANT,1914: Ann. Mag. Nat. Hist., (8) **13,**178; *Leptocoris intermedia:* SCHOUTEDEN,1938, Ann. Mus. Congo Belge, Zool. (3) **1**, 306.This species was described by DISTANT in 1914 according to material from Uganda. The insects had been collected in June 1911, and were described by C. C. GOWDEY in the same year. The type, a male, could be compared. Since, in DISTANT's description, there is only one statement of the length of the insects, I assume that he only had the type at hand.

Type: L. George S., Uganda, ***C.*** C. GOWDEY, 7. VI. 11; Holotype _, Mus. London

(# 2769).

Description: The insects are small, light brown in color and very shiny. The head is rather broad and the side of the corium is very distinct. It may be easily confused with a smaller specimen of *hexophthalmus hexophthalmus* or *pectoralis pectoralis*. The head is shiny, light brown, and partially darker brown colored. However, the clypeus is lighter colored. The area next to the eye is yellow or red. It is relatively broad and pointy and the distance between the ocelli is three times as wide as the distance between the ocelli and eye. The antennae are brown, and the front of the pronotum is light brown and elongated in the middle. The adjacent horizontal gouge is black and the area is light brown, coarsely dotted, and barely bulged. The sides are relatively straight and the rear edges are only slightly rounded. The elevated line passes through the center and the scutellum is yellowish brown, but light on the sides. The hemelytra were light brown with a relatively broad and very distinct darker side and a light rear end. The clavus is a little darker than the rest of the area; all in all this entire area is lighter in color than *pectoralis pectoralis.* The membrane is dark brown, the legs are light brown, the dorsal side is yellowish red, the lower side is yellowish brown (or even darker), and the rostrum reaches the end of the posterior coxae.

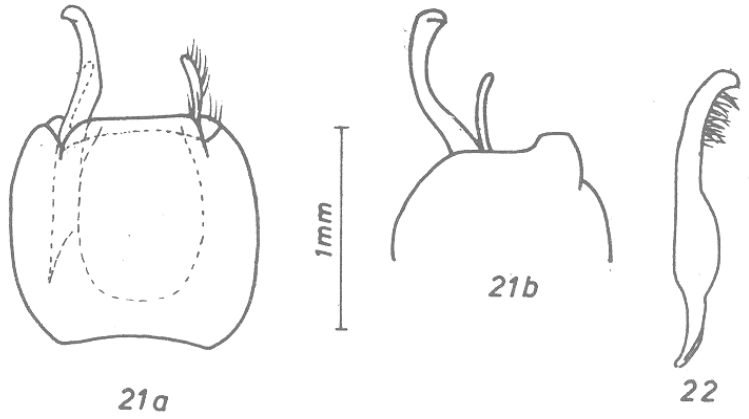


Fig. 21—22

Leptocoris intermedia (DIST.) 21a Pygophore ventral, 21b Pygophore lateral, 22 Paramere

Size: Males 10.0–12.2 mm, Weibchen 11.1–12.X mm

Genital segments: a) Males: The ventral rear end of the pygophore is shifted only a little bit to the back and has straight points and peaks on the side. They are the same length and have relatively long, thin processes. The parameres are slender and have a small nose at the rounded end. They also have a light convex bulge on the side of the lower section.

b) Females: The 7th sternite is barely emarginate. The enlargement of the 2nd valvifer is relatively short and the upper section is covered with a few bristles. The lower end of the 2nd valvula is rather short and the 9th tergite has a strong pilosity on the lower side.

Distribution: The material I had at hand originated from the central and western parts of Central Africa. VILLIER(1952) also suggests Dahomy (West Afrika), but an examination of these insects was not possible.

10. lanuginosa LETHIERRY, **1881**

Serinetha lanuginosa LETHIERRY, 1881: Ann. Mus. Genova, **16,** 288.

Leptocoris lanuginosa – **com. nov.**

This species was described by LETHIRERRY in 1881 according to an insect (without information on the sex), that had been collected in Let-Marefià during an Italian exhibition through equatorial Africa. Unfortunately, the location of the type could not be found and an inquiry at the museum in Genova was unsuccessful. The very rare species could no longer be found (or it had been confused with another similar species).

Among the material from Berlin and London that I examined werefemales which, in my opinion, correspond to LETHIERRY's description. They too were collected in the equatorial part of Africa. The insects are the largest species of *Leptocoris* in Africa.

Type: Let-Marefià, equatorial Africa, no information on its whereabouts.

Description: Very big, and mostly dark colored insects. They have a long yellow pubescence on the pronotum and the head.. The lower side of the head and the thorax are covered with strong, long, yellow hair.

The head is black with dark red eyes and long upstanding hairs with single yellow hairs in between. The antennae are dark and covered with short, bristly hair. The pronotum is brown, and has a yellow pubescence and long upstanding dark hair. The sides, including the small anterior bulge and the deep broad horizontal gouge, are black and the area is wrinkly, dotted, and bulged with very rounded sides and a dark center line

(which does not pass through). The scutellum is dark brown to black with short yellow hair . The hemelytra are dark brown with a yellow shine, which is a result of theshort yellow pubescence. The hemelytra are dotted, with straight sides, the veins are black, and the membrane is dark brown. The legs are black with dark bristly hair. The dorsal side is dark with yellow sides; the lower side of the head and thorax are blackish brown covered with thick, long yellow hair. The abdomen is light yellow and long and covered with long yellow hair as well. The rostrum is black and reaches the posterior coxae.

Size: Males are unknown to me, Females: 19.2mm–20.0mm

Genital segments: a) Males: unknown to me.

b) Females: There is an enlargement of the 2nd valvifer which is, compared to other African species, small and less obvious. The entire area is covered with long bristles and hair; the long bristles are in the middle of the area. The end of the 2nd valvula is blunt, triangular, and covered with long bristles.

Distribution: The specimens I had at hand originated from Kaimosa (roughly 35 ” eastern longitude, 0.5 ”” northern latitude) and the Bogote Jungle, Central Africa (I could not find the exact location). The type was found in Let-Marefià, close to Addis-Abeb (about 39.30 eastern longitude)[4].

11. lata sp.n. (Fig.23- 24)

Leptocoris lata **sp.n.**

Among the material of the Museum in Tervuren, a few very broad insects with big heads caught my attention. Unfortunately, there was only one male specimen which showed a certain similarity to *griseiventris*, but showed different genital segments. For this reason, but mostly due to their very broad appearance, I added a new species to the genus *Leptocoris.*

Types: Chinchoxo, FALKENSTEIN S.; holotype: female, Mus. Tervuren. --- Paratypes: 2 female as holotype, one of them female, Mus. Berlin.

Description: These stout insects are yellowish red with a broad head and a broad pronotum.

[4] I looked up the location of Addis Abeba, it is 9.03° N 38.74° E. *VH.*

The head is reddish brown, short, broad, slightly rounded, and has a broad tip. The ocelli are relatively far apart. The antennae are brown to dark brown and the pronotum is yellowish red. The horizontal gouge is more brown colored, finely dotted, relatively short, and broad with a distinct center line that diminishes at the end. The scutellum forms a long triangular shape. The hemelytra are yellowish red with relatively broad brown sides. The veins are reddish, very fine and lightly dotted, and the membrane is black. The legs are brown and the femurs are partially finely speckled. The dorsal side is red, the lower side is reddish yellow, and the rostrum reaches the 3rd sternite.

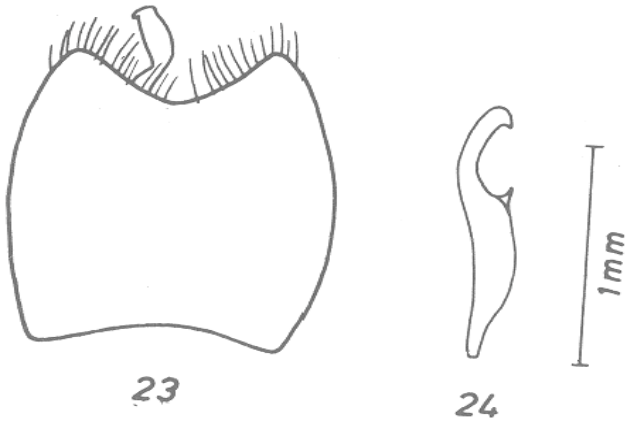
Size: Males 10.7mm (wing damaged), females: 11.8mm–12.5 mm.

Genital segments: a) Males: Ventral rear end of the pygophore is shifted to the front and is widely rounded toward the front. The paramere has a small spout and a small spur on the side.

b) Females: not examined.

Distribution: The small amount of material of this species that is known to me originated from Chinchoxo, Gabun, West Africa (type series), from Dibaya and Luisa and Kasai, i.e. from a region between 10°- 23° eastern longitude and 0°-- about 8° southern latitude.

Fig. 23-24 *Leptocoris lata* sp.n. –23. Pygophore ventral, 24 Paramere.



12. mutilatus GERSTAECKER, **1873** (Fig. 25- 26)

Astacops mutilatus GERSTAECKER, 1873: in DECKEN's Travels, East Africa, **3**,2, Abt., Ins. 412, Taf. XVII.3.

Leptocoris mutilatus: SCHOUTEDEN, 1938, Ann. Mus. Congo Belg., (3)**1,** 306.

Serinetha oreias LINNAVUORI, 1978: Acta zool. Fenn., Nr. 153, 44, Fig.—**syn. nov.**

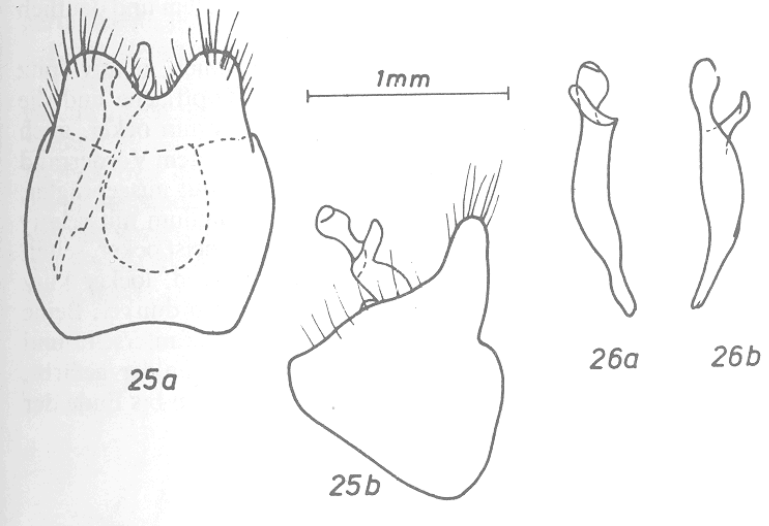
Leptocoris mutilatus was described by GERSTAECKER in 1873, according to material which had been collected by VON DER DECKEN in September of 1862 close to Mombas in East Africa. The type, a brachypterous female could be compared; it corresponds to the drawing. Since the species varies in size and color, it could potentially be mistaken for *chevreuxi.* The comparison of the type *oreias,* which LINNAVUOURI described in 1978, showed that it is synonymous to *mutilatus.*

Types: *mutilatus* GERST.: b. Mombas, East Africa, V.D. DECK.; lectotype _(brachypter), Mus. Berlin. –Paralectotype: 1 _ (as lectotype).

Oreias LINNAV.: nr. Damazin blue Nile, Sudan, 17.-22.XI. 62, LINNAVUORI; holotype female, Coll. LINNAVUOURI, paratypes: 1 _ (brachtyper) exactly as the holotype; 1 _ exactly as the holotype= *hexophthalmus* THUNB. Both Mus. Tervuren.

Description: Scarlet red and partially brownish red insects (generally darker than *chevreuxi* and more red than *hexophthalmus*) with a distinctely bulged, rather wide and black colored head. The pronotum is relatively long, and slightly broadened; it is red on the sides and has a distinct center line. The sides of the corium are mostly dark.

The head is red, often dark colored next to the center line, and distinctly bulged (this can be seen very well with the brachypterous insects). The head is relatively short and wide, and covered with bristly dark hair. The antennae are brown and the 1st member overlaps the head distinctly. The pronotum is red and often an ochre color, but the sides and the posterior portion are always red. There is a slight protrusion in the front, which is darker in the middle. The horizontal gouge is generally dark and very wide. The center line is very distinct in the center and becomes finer posteriorly as it passes through the length of the pronotum. The pronotum is relatively slender and long with relatively straight sides (a bit broader and shorter with the brachtyperous types). The hemelytraare red, reddish-brown, or ochre, and are thinly dotted. The sides of the corium are small and dark and the rear end is red. The membrane is dark, and the front wing is very long with straight sides. The legs are brownish black. The dorsal side is red. The lower side is red, the thorax segments are dark colored in the upper sections, and the rostrum barely overlaps the posterior coxae.



Leptocoris mutilatus (GERST.)—25a Pygophore ventral, 25b Pygophore lateral, 26a Paramere from above *Paramere more laterally.*

Size: Males 11.1–13.9 mm, females 12.9mm–15.7mm (brachtyperous about 11–12 mm)

Genital segments: a) Males: ventral rear end of the pygophore is relatively broadly shifted to the back and in the middle it has a bulge towards the front, which leads to two rounded lappets on the sides. The paramere has a broad round end part, and a very elongated spur on the side, which points upwards.

b) Females: The enlargement of the second valvifer is pear shaped and mostly thorned and the end of the second valvula is very pointy. The ninth tergite has a few bristles on the rear side.

Distribution: The material at hand originated mostly from the central and eastern part of Central Africa; the most southern finding was from Southern Rhodesia (about 22° southern latitude)and the most western finding is from Gambia (without any further information) and Bamako (8° western longitude, 12 ° northern latitude). Some insects that were more red and relatively small were found in Madagascar and Reunion, a small series of monochromatic red ones were found around Lake Chad (14° eastern longitude, 14° northern latitude). The insects from Lake Chad had a flatter dent at the pygophore than the rest of the material.

13. nigrofasciatus DISTANT, **1914** (Fig. 27-28)

Serinetha nigrofasciata DISTANT, 1914: Ann. Mag. Nat. Hist., (8) **13**, 178: *Leptocoris nigrosfasciatus* SCHOUTEDEN, 1938, Anm. Mus. Congo Belg. Zool., (3) **1**, 306.

Leptocoris nigrosfasciatus was described by DISTANT in 1914 according to material from Nandi Escarpment, East Africa, which had been collected by S.A. NAEVE on the 29th of May 1911, in 5800 ft. elevation. The type could be compared.

Type: Nandi Escarpment, East Africa, 29. V. 1911, lef. S.A. NAEVE, lectotype _, Mus. London (# 1912-193)

Description: Mostly yellowish brown, partially red, medium-sized, to large insects with dark heads. They are shiny with a distinctly bulged and dotted pronotum.

The head is mostly dark, except next to and behind the eyes where it is red or yellow. The head is also relatively pointed and a bit bulged between the ocelli. The clypeus is lighter than the rest of the head area. The paraclepea are slightly elevated, and the antennae are dark brown to black. The pronotum is ochre or sometimes red. It is broad and has a bulge in front, which is pointed. There is a dark horizontal gouge, and the area is more or less distinctly bulged and dotted with a very pronounced center line that pass through the length of the entire pronotum. The sides and the rear edges are rounded and the scutellum has a relatively red and yellow tip but is dark colored otherwise. The hemelytra are mostly ochre and sometimes red; they have elevated veins that are lighter and bent up. The membrane is dark, the legs are brownish-black, and the lower side is red or brown with a dark lower side of the head. The upper sections of the thorax are dark, the abdomen is partially darker colored, the sides of the segments are red, and the rostrum reaches the end of the posterior coxae.

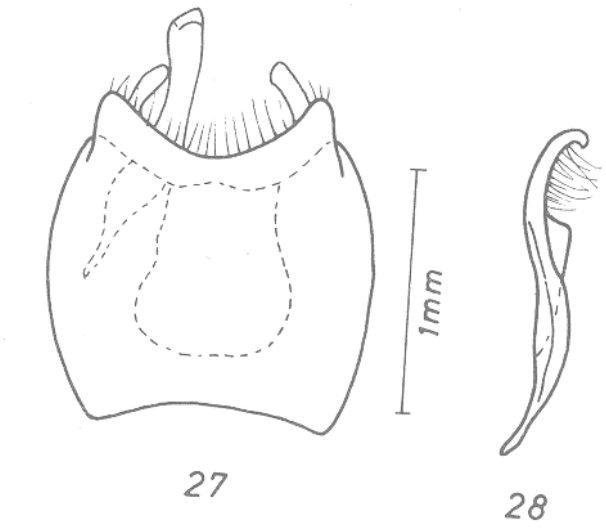


Fig. 27-28 *Leptocoris nigrofasciatus* (DIST.). ---27 Pygophre ventral, 28 Paramere

Size: Males 11.4–14.7 mm, females 14.7–15.2 mm

Genital segments: a) Males: The ventral side of the pygophore is elongated toward the back and roundly emarginate toward the front side. The tips at the side are strongly elongated and can be seen from the back. The paramere is slender in the upper section, bent at the end, and is broadened at the side and in the lower section.

b) Females: the enlargement of the 2nd valvifer has the form if a fig, and is spined in the upper section; the 2nd valvula has a small pointy tip.

Distribution: The material at hand originated from the central and eastern part of Africa (the most western location was Kinshasa in the Congo, 15° eastern longitude and 5° southern latitude.

14. obscura sp.n. (Fig. 29- 30)

Leptocoris obscura sp.n.

Among the material of the museums in Tervuren and London I found in each museum one insect that caught my attention because of the strongly rounded sides of the pronotum. An examination of the material showed that the insects were an African species. Both insects came from the high mountains of Central East Africa.

Types: Kalonge in Tshibinda, Kivi, holotype male, Mus. Tervuren—paratype: Namwamba Valley, 6500ft., Ruwenzori Range, Uganda; 1 _, Mus. London.

Description: The insects are medium sized and relatively slender and short. The eyes and the ocelli are red, the antennae are dark, the first member is relatively slender. The pronotum is brownish black, distinctely dotted, with slightly curved sides, and rounded posterior corners. The central gouge is dark, the center line passes through the length of the pronotum, and the sides are covered with bristly dark hair. The scutellum is brownish-black and finely grated. The hemelytra are dark, distinctly dotted, covered with short white hair, and the sides are only slightly bulged. The membrane is dark. The legs are dark and covered with hair that sticks out. The dorsal side is yellow, the lower side of the head is black, and the thorax is red with darker sections in the back. The abdomen is yellowish orange, and the rostrum reaches the 3rd sternite.

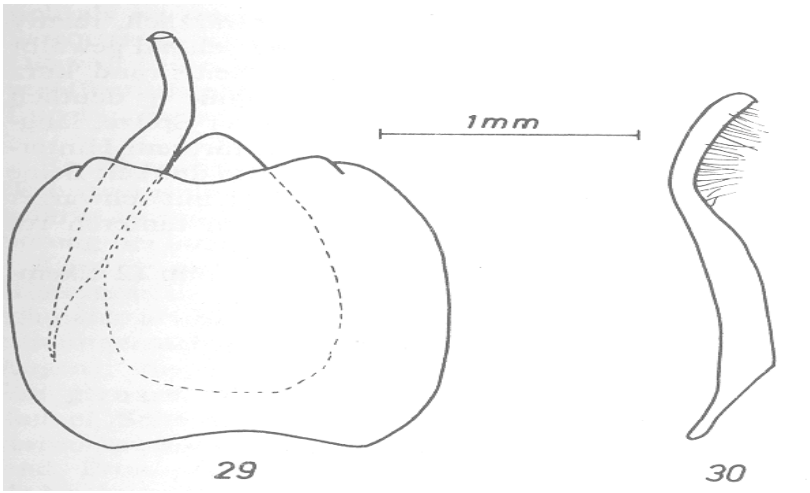


Fig. 29- 30 *Leptocoris obscura* sp.n. 29 pygophore ventral, 30 paramere

Size: Males: 12.2mm, Females: 15.0mm

Genital segments: a) Males: The ventral rear end of the pygophore is slightly elongated to the back and relatively broadly and flatly rounded. The parameres become very long with a small spout at the end, which becomes slightly stronger in the middle.

b) Females: not examined.

Distribution: So far only the two types originate from Kivu and Uganda, from an area between 28.5° and 30° eastern longitude and 0.5°- 2.5° southern latitude.

15. paramictus sp. n. (Fig. 31-32)

Leptocoris paramictus **sp.n.**

There were some compact specimens among the material of the species *amictus* at the Berlin museum and the Tervuren museum which caught my attention. Compared to the species *amictus* they had very broad heads and the pronotum had less rounded sides. The examination of the genital segments showed that the insects belonged to a different species.

Types: north of Lake Kiwu, Niragongo, 2700m, 10 07, Exped. Duke ADOLF FRIEDRICH z. MECKLENBURG, holotype _, Mus. Berlin. –Paratypes: Tanganyika:Mbeya Mountain, 7000ft., 33°25’ E.8°48’S., 5. VIII.1959, Cambridge E. African Exped. B.M. 1960—50, 1 male Mus. London, Tanganyika: Ngozi Crater, 1 female Mus. London; Kivu: contr. S. Kahuzi, km, 27,2200m, 28.III.53, P. BASILEWSKY, 1 _, Mus. Tervuren.

Description: Black brown colored insects with fine white hair; they resemble *amictus* s.str. They can be distinguished by the broad red sides of the head, strongly bent pronotum, and male genital segments.

The head is black with relatively broad red colored sides (the ocelli are red and stand on the red area);). The antennae are black, the pronotum is brown or black, relatively finely dotted and slightly more bulged than *amictus* s.str., and the front side is thinly bulged and elongated in the middle. The horizontal gouge is always black, the sides are covered by short hair, the rear side is generally red, sometimes reddish-yellow, and the center line extends over the entire pronotum. The scutellum is brown with a red or yellow tip, it has the shape of a long triangle. The hemelytra are brownish black with a relatively broad yellow posterior end, the sides are relatively straight, and the membrane is dark. The legs are brownish black and the dorsal side is yellowish orange. The lower side of the head is red with a black area in the middle, the thorax segments in the front section are black, and in the rear section red. The abdomen is yellow and the rostrum reaches the posterior coxae.

Size: Males: 12.2–13.3mm (3 specimen), Females: 15.1mm–15.8mm (2 specimen)

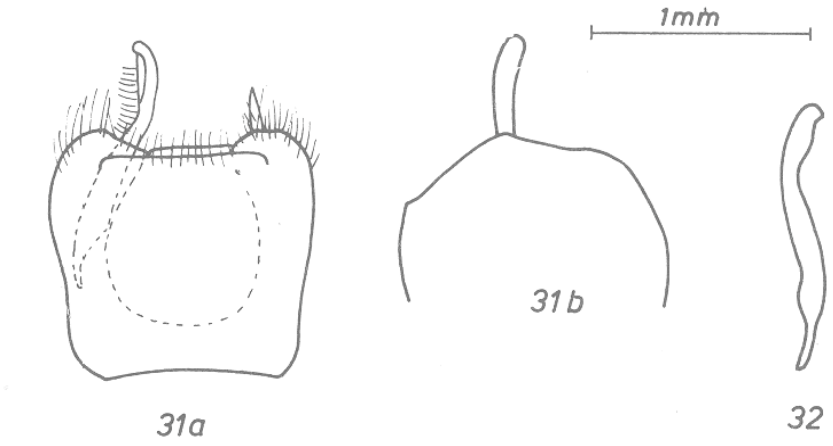


Fig. 31- 32 *Leptocoris paramictus* sp.n. –31a Pygophore ventral, 31b pygophore lateral, 32 paramere

Genital segments: a) Males: ventral rear end of the pygophore is not elongated, the lateral tips of the capsule go past the posterior end and they are covered with small white elongations. The parameres are slender, and rounded at the endwith a small spout and with a small bulge.

Females: not examined.

Distribution: The few specimens at hand originated from East Africa and the eastern part of central Africa (Tanganyika, Kivu, Lake Kivu and Narossura)

16a. pectoralis pectoralis SCHOUTEDEN,**1948** (Fig. 33-34)

Leptocoris intermedia var.*pectoralis* SCHOUTEDEN, 1948; Expl. Parc. Nat. ALBERT, MISS. DE WITTE, fasc. 56, 36.

Serinetha intermedia: LINNAVUOURI,1978, Acta. Zool. Fenn., Nr.153, 44, Fig.

Leptocoris pectoralis s.str. was described by SCHOUTEDEN in 1948 as a variety of *Leptocoris intermedia* from Rwindi and the camp Rwindi (1000m) in Belgian- Congo. SCHOUTEDEN was inspecting very many insects, but unfortunately there is no exact number. I examined part of his material from the museum Tervuren (some of the insects are supposed to be at the museum in Bruxelles, but could not be found, or were suspected to still be in Africa). However, it turned out to be a mix-up of several different species. Thus, the biggest part of the examined insects turned out to be *hexophthalmus hexophthalmus* , another part turned out to be *intermedia*, and only one male in this series corresponded to SCHOUTEDEN's description; it turned out to be a new species and was determined as *lectotype*. The species *Leptocoris intermedia*, determined by LINNAVUOURI is identical with *pectoralis pectoralis.*

Type: Camp Ruindi (1000), 20. XI. 1934, G.F. DE WITTE, Parc Nat. ALBERT; Lectotype _, Mus. Tervuren.

Description: The insects are small to mid-sized, brown, and are slightly shiny due to the density of the pubescence. They are darker than *intermedia.* The pronotum more strongly bulged than *intermedia,* and finely dotted.

The head is broad and black, not shiny, and is light ochre or light red next to the eyes and behind the eyes. The clypeus is mostly red or yellow and slightly smaller than *intermedia.* The area of the head is less bulged and the ocelli are closer together than *intermedia*, (the distance between the ocelli is twice the distance between the ocelli and eyes). The antennae are reddish brown, the pronotum is light brownish-grey and very finely and wrinkly dotted. The front bulge is longer than *intermedia,* the horizontal gouge is dark, the sides are generally of a dark color and broadened to the back with barely rounded rear ends. The fine center line passes through to the back; the pronotum is slightly longer than *intermedia* and more bulged and in the back it is broader than *hexophthalmus.* The scutellum has light sides and is horizontally wrinkled. The hemelytraare brownish grey with a black membrane and the sides of the corium are darker than the area next to it. All in all, the area is darker than that of *intermedia*, densely covered with white hair, and due to this only has a dull shine. The veins emerge slightly, the legs are brown, the head has two vertical lines, the edges of the coxae are partially red, the abdomen and sternites are (with the darker insects) each light on the back, and the rostrum reaches the end of the posterior coxae.

Size: Males 10.0 mm–12.9mm, Females 11.8mm–13.9mm.

Genital segments: a) Males: The ventral rear end of the pygophore is broadly rounded and elongated to the back (the elongations are of different lengths), the elongations of the lateral tips are very strong and long, and they jut a little over the elongated middle; the paramere in the upper section is slender and then broadened to the side.

b) Females: The 7th sternite is straight in the back, the enlargement of the 2nd valvifer is slightly slanted and covered with very strong bristles in the upper part, the end of the 2nd valvula is produced and rounded, and the 8th and the 9th tergites are covered with relatively fine hair.

Distribution: The material I had at hand originated from eastern central Africa from, Katanga, Ituri, Lukafu, Rwanda and other places (27°-30° eastern longitude, 2° northern -12° southern latitude).

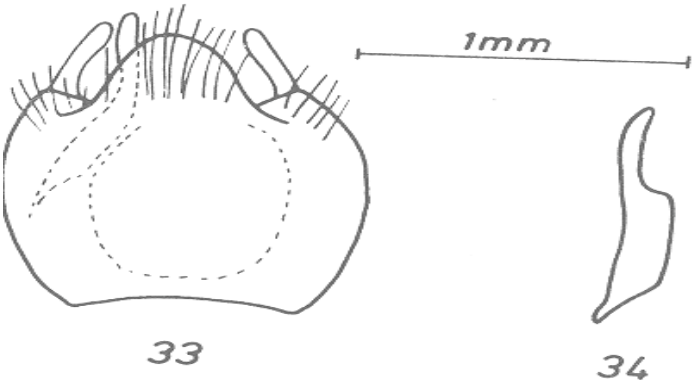


Fig.33-34 *Leptocoris pectorialis pectoralis* SCHOUTEDEN—33 Pygophore ventral, 34 Paramere.

16b. pectoralis camerunesis ssp.n.

Leptocoris pectoralis camerunesis **ssp.n.**

A small series of red colored, slightly bigger insects from Bénoué, Cameroon, from the Museum in Paris caught my attention. They differed from the Congo series with respect to size, color, and location, but were very similar with respect to the form of the genital capsule and the parameres of the male specimens. Thus, I consider them as a western subspecies of *pectoralis.*

Types: Cameroon, B.de Miré, Bénoué, Grand Capitaine, 29. X.1977 ; holotype _ Mus. Paris, --Paratypes: 3 __ as in the holotype, 1 _ and one _, location same as the holotype, Mus. Berlin.

Description: The insects are mainly red or reddish brown and are slightly bigger than *pectoralis*, s.str. The main differences are as follows:The head is black, and the vertices and the sides are broad and red as well as the paraclypea. The antennae are black, the pronotum is red, and partially reddishbrown with a small dark side, the center line passes through the length of the whole pronotum, the hemelytra are red or reddish brown. The dorsal side is red, the thorax segments are dark in the anterior segments of the thorax, and the rostrum reaches the posterior coxae.

Size: Males 11.8mm–12.5mm (2 specimen), Females 13.7mm–15.1 mm (4 specimen).

Genital segments: a) Males: The ventral rear end of the pygophore has more slanted sides than the *pectoralis* s.str. form and the parameres are the same.

Distribution: So far only the type series from Cameroon is known.

17. productus sp.n. (Fig. 35- 36)

Leptocoris productus **sp.n.**

Among the material from the different museums, which had been determined as *griseiventris,* some insects caught my attention. They were bright red, with a relatively long head and a relatively long, finely dotted pronotum. The examination of the male genital segments showed that they differed not only from *griseiventris,* but also from *chevreuxi.* The differences from *chevreuxi* were very small though, but the insects are easily distinguished since they have a longer head and a finely dotted pronotum. My first assumption, that it could be a western subspecies of *chevreuxi* was proven as wrong, since both species have a similar distribution. It would be possible that the new species *productus* is the *leptocoris griseiventris* var. *bayoni,* which was described by MANCINI in 1953, according to material from Uganda. Unfortunately my research concerning the whereabouts of the *bayoni* type was unsuccessful. MANCINI however, describes the variety to be yellow, which generally corresponds to *griseiventris. Leptocoris productus* is also very similar to the species *Leptocoris augur,* which is prevalent in India and Asia. Therefore *productus* could be a subspecies of the species with distribution in Africa.

Types: Libenge, Congo Belge, 20. XI. 1974, R. CREMER—M.NEUMANN, MissionMawuya; holotype _, Mus.Bruxelles,-- paratypes: 6__ and 6__ as the holotype, two of them __ and two of them__ Mus. Berlin.

Description: Mainly slender, monochrome reddish orange colored insects (rarely more yellow). The head is relatively long and has a longer, finely dotted pronotum; the rostrum reaches the 5th or 6th sternite.

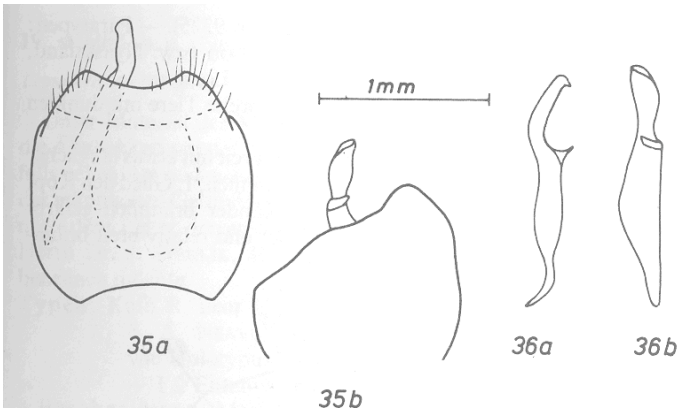


Fig. 35-36 *Leptocoris productus* sp.n.—35 a. Pygophore ventral, 35 b. Pygophore lateral, 36a. Paramere lateral, 36b. Paramere from above.

The head is reddish orange with a relatively long tip; it is slightly bulged and the ocelli are farther apart than in *griseiventris.* The head is also covered with short bristly hair. The antennae are brown and the 1st member is red colored and slightly juts over the tip of the head. The pronotum is reddish orange, finely dotted (*chevreuxi,* which is similarily colored, is much more coarsely dotted); the sides are a bit slanted, but the pronotum is still longer and less slanted than in *griseiventris*. The scutellum is triangular, the hemelytra are reddish orange, finely dotted, covered with short white hair, have less bulged sides, and have a brownish-black membrane; they are sometimes brachypterous. The legs are brown. The lower part is generally monochromatic reddish orange and the thoracic sternites sometimes are black. The rostrum reaches to the end of the 5th or 6th sternite on females, and the end of the 5th sternite on males.

Size: Males 10.7–12.5mm, Females 11.3–13.7mm

Genital segments: a) Males: The ventral rear side of the pygophore is elongated to the back, flatly rounded in the middle, and bulged in the front. The lateral tips are broadly rounded and in lateral view the posterior side is slanted. The parameres are relatively long with a small spout at the end and a distinct lateral spur.

b) Females: not examined.

Distribution: The insects originated from the entire region of Central Africa from Cameroon to East Africa.

18. seidenstueckeri sp.n. (Fig. 37-39)

Leptocoris seidenstueckeri **sp. n.**

Among the material of the Museum Berlin, which originated in Zanzibar, I found some rather big and broad insects that reminded me of bigger specimens, but differed from them mainly with respect to their rather large pronotums. They are also very similar to

the new species *Leptocoris stehliki* and can only be distinguished by the genital segments. The examination of the pygophore and the parameres showed that the insects from Zanzibar are a new species, and I would like to name after a very helpful member of the administrative board G. SEIDENSTÜCKER, in Eichstätt, Bavaria, West Germany.

Types: Ins. Zanzibar, HILDEBRANDT, holotype _, Mus. Berlin (#9325)—paratypes: 1_ as the holotype, 2__ Nyassaland Cholo, R.C WOOD, resp. Nyassaland, Mlanje, 17 Mrch. 1913, S.A. NAEVE (1913—140), Mus. London.

Description: These mostly red insects are big and broad with dark sides of the pronotum and corium.

The head is red, darkly spotted, and broad with a long tip, however, it is a bit shorter than *stehliki.* The antennae are brown and the first element juts over the head with half of its length. The pronotum is red, the sides are brown (including the horizontal gouge), the rear edges are rounded, relatively broad and brown, covered with fine hair, relatively finely dotted, and the center line is elevated and passes through the length of the pronotum. It is generally broader and a bit longer than *stehliki* .

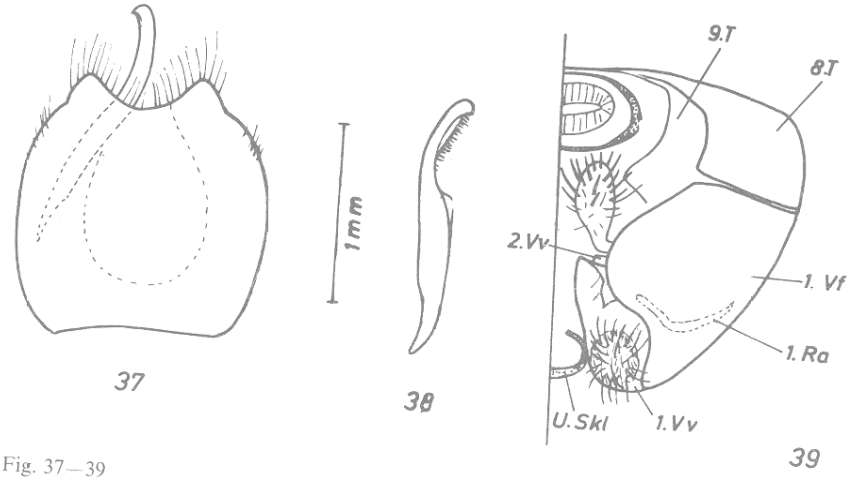


Fig. 37—39

Fig.37- 39 *Leptocoris seidenstueckeri* sp.n.—37 pygophore ventral, 38 Paramere, 39 genital segments of the female, looked at from the backside (1.Ra= Ramus, 10. Segm.= 10th segment, 8th T = 8th tergite, 9 T= 9th tergite, U-skl= U- sclerite, 1st or 2ns vf=1st resp. 2nd Valvifer, 1st resp. 2nd vv= 1st resp. 2nd valvula)

Size: Males 11.5–13.3mm, Females 12.9–15.3mm.

Genital segments: a) Males: The ventral posterior end of the pygophore is elongated toward the back and relatively broadly rounded, forming two short and slightly rounded sides. The parameres are slender with a little spout at the end, and a slight bulge in the middle.

b) Females: The 7th sternite at the end is broadly rounded and has a small bulge in the middle, pointing toward anteriorly.

Distribution: The material I examined originated from Zanzibar, Nyassaland, Nyangwe, Mayumbe, Chinchoxo, Southern Cameroon, and Togo, i.e. from a very wide area between 8° northern and 16° southern latitude and 39° western and 0.5° eastern longitude.

19. stehliki sp.n. (Fig. 40- 41)

Leptocoris stehliki **sp.n.**

Among the material of the museum in Berlin, the museum in London, and the museum in Tervuren, some insects caught my attention. They were similar to the new species *teyrovskyi,* and to the new species *seidenstueckeri,* but their genital segments differed from both species. Therefore, I consider them a new species, which I would like to name after the head of the entomological department of the Moravske Museum in Brno, _SSR, Dr. J. Stehlik, as a token of my gratitude for all his help and support.

Types: Kafu R. near Hoima, Kampala Rd. 3500ft., Uganda Prot. 29—31 Dec, 1911, S.A. NEAVE; holotype_, Mus. London (1912—193).—Paratypes: 1_ as the holotype, Mus. Berlin; 1 _ Entebbe, Uganda, Aug. 1912, C.A. WIGGINS+ 1_Entebe, Uganda, C.C. GOWDEY (both Mus. London).

Description: Generally they are mostly red, sometimes brown and they are strong and broad insects. The sides of the pronotum are dark and the sides of the corium are relatively broad and dark as well. The insects have, all in all, a more elongated and slightly bigger head than *teyrovskyi,* but it is smaller than *seidenstueckeri*.

The head is black with a relatively long tip, which is distinctly longer than *teyrovskyi,* and slightly longer than *seidenstueckeri.* The clypeus and the sides of the head are partially red; the antennae are dark, the pronotum is red, and the frontal bulge, horizontal gauge, sides, and the rear end are black. The frontal bulge is shorter in the middle than *teyrovskyi* and the area is short and relatively dense. The side is covered with dense, black hair, and is finely dotted; the center line is relatively fine, and does not completely pass through its length. All in all the pronotum has relatively slanted sides, and lightly rounded rear edges (slightly longer and more rounded than *teyrovskyi*). The scutellum is dark with a small red tip that is finely horizontally wrinkled and relatively broad. The hemelytra are red, and covered with fine, black hair, and are finely dotted. The sides of the hemelytra are broad and dark and have an oval form. The membrane is dark, the legs are brownish black, the dorsal side is red, and the ventral side is red (except for the dark head and the dark colored upper thoracic segments). The rostrum reaches the fourth sternite.

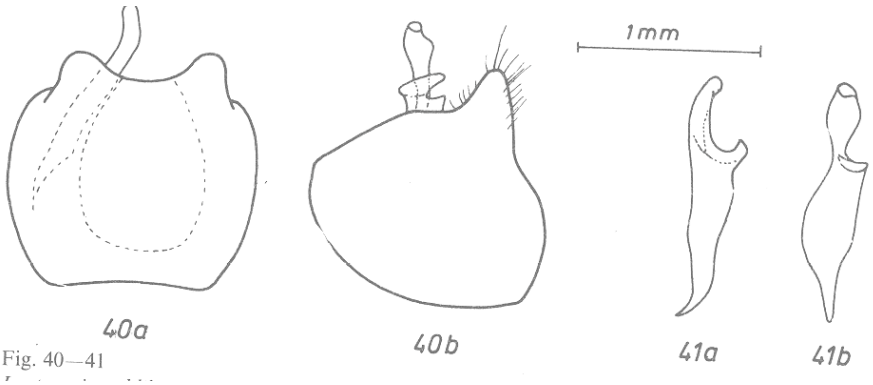


Fig. 40—41 Fig. 40-41 *Leptocoris stheliki* sp.n. –40a. Pygophore ventral, 40.bPygophore lateral, 41a. Paramere, 41b Paramere from above.

Size: Males: 10.7–13.0mm, Females: 11.4–14.00mm

Genital segments: a) Males: The ventral rear end of the pygophore is broadly elongated toward the back and is bulged toward the front (the bulge is definitely deeper than *teyrovskyi* and the tips on the side are longer). The tips on the side are rounded at the end, and they stick out a bit. In lateral view, the tips at the side are distinctly longer than *teyrovskyi* , the parameres are relatively broad with a small spout at the upper end, with a relatively broad spur at the side.

b) Females: The first valvifer is laterally bulged, but slightly more pointed than *teyrovskyi.* The end of the 2nd valvifer is also longer and stronger, and has long bristles on the upper third part. The 2nd valvula is also slightly more pointed than *teyrovskyi* and the 8th and 9th tergites are densely covered with relatively long hair.

Distribution: The material at hand originated from the central area of Africa, about 10° northern and 8° southern latitude, from Togo, to Cameroon to Lake Victoria (about 0°-34° eastern longitude), a mainly tropical region.

20. teyrovskyi sp.n. (Fig. 42-43)

Leptocoris teyrovskyi **sp.n**

Among the material from the museum in Berlin, Bruxelles, and London, and later on Tervuren, were insects that I considered at first to be *chevreuxi (*a species which often is confused with *haematica),* they, however, were broader in shape, and had a darker coloring. The examination of the male genital segments showed that it was a new species, which is easily confused with neighboring species. I therefore want to name it after my long and revered friend, Prof. em. V. Teyrovsky, in Brno/ _SSR, for his help and advice over the years.

Types: Lulua, Kapanga, XI. 1932, G.F. OVERLAET; holotype _, Mus, Tervurem. –Paratypes: 1_ as holotype, but II. 1933, + 2 __ Bambesa, 14. XI. 1932, resp. 12.VIII. 1937, J. VRYDAGH, Mus. Tervuren; 1 _as holotype, but XII. 1932,+ _Bambesa, Congo Belge, 29.VI. resp. 11. –12. VIII. 1937,J. VRYDAGH, Mus. Bruxelles.

Description: Broad insects that are mostly brownish ochre, or sometimes red. They have a broad head and the sides of the pronotum and corium are dark brown.

The head is dark brown to black. The protuberance of the antennae and the posterior end are lightly colored and broad with a broad tip. The vertex is only slightly bulged. The antennae are dark brown to black and the 2nd element is distinctly shorter and thicker than it is in *chevreuxi* or *griseiventris.* The pronotum is ochre or reddish brown with dark colored sides. The frontal bulge is relatively long and has a broad tip in the middle, a dark horizontal gouge that is broad with a more or less distinct horizontal dent. The area and the sides of the bulge are covered by short coarse hair. The pronotum is relatively short, broadened to the back (broader and flatter than *cinnamomensis* and slightly shorter than that of *stehliki*), distinctely dotted, and has a center line that passes through its length. The scutellum is dark and noticeably broad with a light tip; and the sides are partially lightly colored as well. The hemelytra are relatively broad and short and are brownish-ochre or reddish-brown with a dark brown side (the dark color takes up roughly half of the space between the side and the membrane). The area of the hemelytra is finely dotted, and the membrane is dark brown and relatively short (often brachypterous with a slight remainder of the membrane). The dorsal side is brownish ochre, the ventral side is ochre (except for the darker head and the dark thoracic segments. The rostrum reaches to the 3rd sternite.

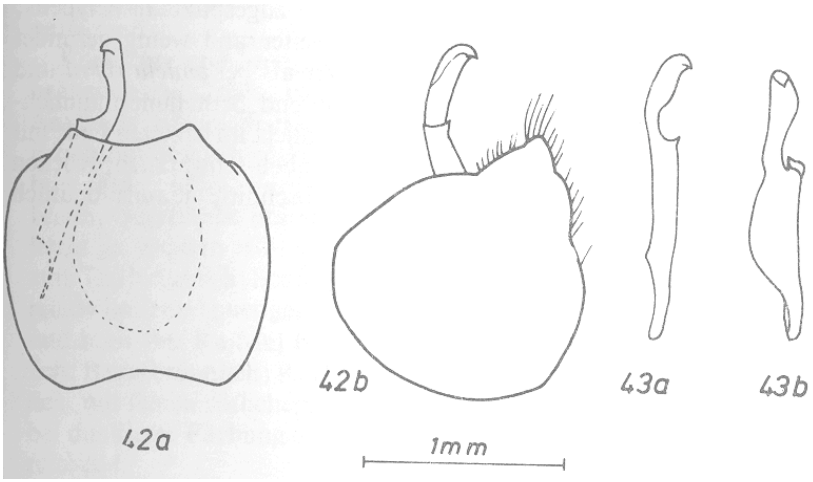


Fig.42—43 *Leptocoris teyrovskyi* **sp.n. –**42a Pygophore ventral, 42b pygophore lateral, 43a Paramere 43b Paramere from above

Size: Males 8.5–9.6mm, Females 10.9–11.8mm.

Genital segments: a) Males: The ventral posterior end of the pygophore is slightly elongated toward the back, flatly rounded in the middle, and bulged towards the front. The tips of the sides are rounded and stick out, the pygophore is more or less round, and the dorsal rear segment is relatively deep. The parameres look similarly to *chevreuxi*, they are slender with a small spout at the upper end and they have a small spur on the side (smaller than *chevreuxi*), when looked at from above, the paramere is shorter and broader than *chevreuxi.*

b) Females: The 7th sternite is bulged slightly in the middle. The first valvifer is rounded at the end. The enlargement of the 2nd valvifer is relatively small, more round with a few spines in the upper segment and otherwise covered in hair. The end of the 2nd valvula is relatively broad with an obtuse angled end and a sclerotised side. The 9th tergite is covered with strong hair.

Distribution: The examined material originated from the eastern and central part of the Central African Republic, from an area between 20°-34° eastern longitude, and 8°-3° northern latitude. Interestingly, the red insects originated mainly from the western part of the area, and the brown insects from the eastern part.

21. toricollis BERGROTH, **1893** (Fig. 44-45)

*Serinetha toricollis,*BERGROTH, 1893: Rev. Ent. Franç., **12,** 200; *Lepocoris toricollis*-**comb. nov.**

The species was described by BERGROTH in 1893, according to insects which had been found on the island Mahé, which belongs to the Seychelles. The type cannot be found, but the species is very easy to identify with BERGROTH's description. It has very many similarities to *amictus rubra*, but in spite of the little and mostly not examined material, I would like to consider it a species of its own, especially since the Vesica of the male sexual organs are different from *amictus.*

Type: Mahé, Seychelles, no information on its whereabouts.

Description: Large reddish brown colored insects. They are very similar to *amictus rubra,* but they can be distinguished by the more elevated paraclypees, the more coarsely dotted pronotum, and by the less curvy sides of the pronotum.

The head is yellowish red, the paraclypees are more elevated and more elongated and pointy than the clypeus. The antennae are blackish brown, the pronotum is densely dotted, and the side runs slightly round and slanted to the back. The bulge in the front is a bit more substantial than *amictus rubra* and it is dotted in the middle. The center line is relatively flat and does not pass through the entire length of the pronotum. The scutellum is brownishredwith a red tip, and the hemelytra are red or reddish brown. If they are reddish brown, the sides are red. The membrane is dark, the legs brownish black, the dorsal side is reddish yellow; the ventral side is yellowish red, the frontal thoracic segments are each of a darker color, and the rostrum reaches the posterior coxae.

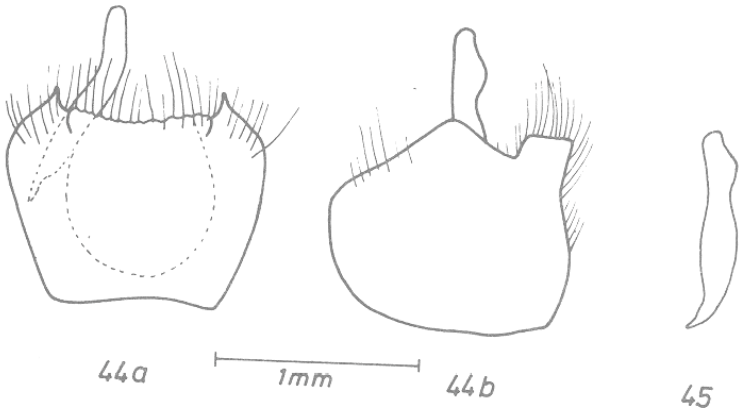


Fig. 44-45 *Leptocoris toricollis*, 44a. Pygophore ventral, 44b. Pygophore lateral, 45.Paramere

Size: Males: 12.5mm, Females: 12.9mm

Genital segments:a) Males: The ventral posterior end of the pygophore is not elongated to the back, but the sides of the genital capsule are peaked. The parameres are similar to the ones of *amictus amictus* and *amictus rubra,* but the bulge at the side is bigger than *amictus amictus,* and smaller than *amictus rubra.* There is a flat lateral dent and the parameres are all in all shorter than those of the named subspecies. The vesica is more strongly curved than in *amictus* and has a rounded tip at the end.

b) Females: not examined.

Distribution: I only had two specimens at hand: one male from the museum in Bruxelles (originating from Silhouette, Felicite Island), and one female from the museum in London (originating from the Aldabra Island), both from the Seychelles.

22. wagneri (fig. 46-47)

Leptocoris wagneri **sp.n.**

Among the material of the museum in Copenhagen were some insects from Guinea, which were reddish yellow. After a careful examination of the male genital segments, they turned out to be a new species. They are 3 ___, and 3 __, collected by THONNING. I would like to name this species after the great Hepterologist Dr. h.c. E. Wagner, in memory of his merits in the field of heteropterology.

Types: Guinea, leg. THONNING; holotype _, Mus. Copenhagen.---paratypes; 2 __ and 3__ as holotype, one of them __, Mus. Berlin.

Description: Medium sized, broad, slightly shiny, yellowish red insects. They have a broad head, a coarsely dotted pronotum, and the sides of the corium are partially brown.

The head is short, broad, ochre, and the paraclypeus is brown, as is the following long strip, and it surrounds the ocelli. The paraclypeus is slightly elevated to the mostly yellow clypeus. The antennae are brown with very short, and bristly hair; the 1st element is distinctly stretched. The pronotum is yellowish red, and partially brown, coarsely dotted, and relatively broad and bulged. The front bulge is elongated in the middle and dark brown on each end. The horizontal gouge is brown, as are the sides (which are relatively slanted), and the slightly rounded rear edges. The center line is slightly elevated, and distinctly passes through the length of the pronotum. The scutellum is partially brown hand has a lighter center line and light sides. It is also relatively broad and horizontally wrinkled. The hemelytra are yellowish red, the sides are slightly bulged and broadly brown colored. The area is relatively coarsely dotted. The membrane is brown, the legs are brown, the dorsal side is yellowish brown, and the ventral side is brownish ochre with fine red dots. The thoracic segments are darker in the front section, the 7th sternite is reddish yellow, and the rostrum reaches the posterior coxae.

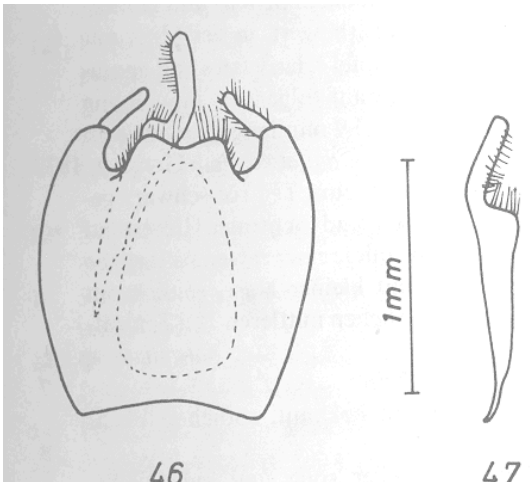


Fig. 46-47 *Leptocoris wagneri* sp.n – 46 pygophore ventral, 47. Paramere

Size: Males 11.1–12.2mm, females 12.3–13.9mm

Genital segments: a) Males: The middle part of the ventral rear end of the pygophore is slightly elongated toward the back and has a small dent in the middle pointing toward the front. There are rounded tips on the sides, which have the same length, and have relatively substantial processes pointing towards the inside. The parameres are slender in the upper section and laterally very broadened.

b) Females: The enlargement of the 2nd valvifer is medium sized and covered with relatively short bristles and fine hair in the lower section. The end of the 2nd valvula is triangular and the tergites are covered in hair.

Key to the African Species of the genus Leptocoris

1	Insects mainly blackish brown	2
1*	Insects light: yellow, ochre, red, or brown	6

2	The paraclypea are distinctly elongated, they are partially elevated and they meet in the middle. Big, dark insects with yellow paraclypea and a yellow pronotum. The ventral rear end of the pygophore of the male specimen is only elongated in the middle, the parameres are slender and relatively thickly covered in hair, and at the end there is a little spout. Length : 13.7–18.1mm. Distributed in the central and the western part of the Republic of Central Africa.	aethiops (DISTANT, 1901)
2*	Paraclypea not elongated or not at all or only slightly elevated	3
3	The sides of the pronotum are strongly rounded. The area of the pronotum is more or less strongly bulged and the rear end of the pronotum is dark.	4
3*	The sides of the pronotum are slightly rounded, the area of the pronotum is relatively lightly bulged and flatter, and the rear end of the pronotum is generally yellow or red	5
4	The pronotum is covered in yellow tomentum, and covered in long, straight standing hair. The lower side of the head and the thorax are covered with stringy yellow hair; the biggest species of*Leptocoris* in Africa of 19.2- 20 mm size (females). Distribution is in the eastern part of the Republic of Central Africa, very rare.	*lanuginosa* (LETHIERRY;1881)
4*	The pronotum is not covered in yellow tomentum, and has only a few short hairs. They are dark, slightly shiny, and monochromatic. The ventral posterior end of the pygophore is elongated toward the back, flatly rounded, and has a bulge in the front. The parameres are very long and slender with a small spout at the end, which is a little thickened in the middle. Size: 12.2– 15mm). Distribution is in the eastern part of the Republic of Central Africa; they are very rare	*obscura*, sp.n
5	The sides of the head are slightly red, the lower side is mostly yellow, and partially covered in white hair, the sides of the pronotum are slightly rounded, the corium is dark, but yellow on both sides as well as the posterior end. The ventral rear end of the pygophore of the males is elongated in the back, bulged toward the front, due to slanted sides. The lappet at the side is relatively long and wrinkled. The parameres are broad with a rounded end, laterally bulged, and the following emargination is not very deep; the lower bulge is about as big as the upper one. Size: 11.8mm–15.9mm. Distributed in the eastern part of Central and South Africa.	*amictus amictus* (GERMAR,1837)
5*	The sides of the head are red, the ventral side is dark, and partially reddish–black colored. The sides of the pronotum are strongly rounded, the corium is dark but light on the sides. The ventral posterior end of the pygophore of the male specimen is not elongated.	*paramictus* sp.n
6	So far only known from Madagascar, reddish-yellow, or red	7

6*	So far only known from Africa (with one exception) or the Seychelles; reddish-yellow, red, or brown.	8
7	The sides of the pronotum are broadly bent up and are strongly rounded. The protuberance of the antenna are pointy and bent up as well. The sides of the corium are relatively broad and are only bent up slightly. The insects are reddish yellow. The ventral posterior end of the pygophore of the males is slightly elongated in the middle, pointing toward the back, with a slight emargination on the side. Size: 12.9–16.6mm. They are only known to be found in Madagascar and very rare	*Alsbisoleatus* (BERGROTH, 1912)
7*	The sides of the pronotum are not bent up and are less rounded. The protuberance of the antennae is not bent up, The sides of the corium are smaller. The insects are reddish orange and the antennae and the legs are brown black. One member of the antennae is always red and the femurs are red too. The ventral posterior end of the pygophore is elongated straight to the back and has some emarginations in the middle, which are pointing toward the front. The parameres are slender with a little spout at the end and a lateral emargination in the middle. Size: 12.2–15.00mm. They are only known to be found in Madagascar.	*Hexophhtalmus lateralis* (SIGNORET, 1861)
8	They are only found in the Seychelles so far. The insects are reddish brown and the paraclypeus is slightly elevatedand elongated (they are very similar *amictus rubra* which has a less elevated paraclypeus which is not elongated). The pronotum is relatively coarsely dotted with slanted, but not rounded, sides that are only slightly bent up. The ventral posterior end of the pygophore of the male specimen is not elongated toward the back and ends laterally in one peak. The parameres are round at the end and have a relatively strong bulge, but it is less strong than that of *amictus rubra.* Size: 12.5–12.9mm. They are only known to be found on the Seychelles islands and are very rare.	*Toricollis* (BERGROTH,1893)
8*	They are only known to be found in Africa, with one exception.	9
9	The area of the pronotum is relatively flat and barely bulged. The pronotum itself is rather broad and lightly and flatly dotted; the sides of the pronotum are slightly bent up. The insects are reddish orange and the head and the scutellum are darker. The ventral posterior end of the pygophore of the male specimen is elongated toward the back, triangular in the middle, and points toward the front. The lateral tips in the elongation are the same length as the lateral tips of the pygophore. The parameres are rounded at the end, with strong bulges at the sides (the bulges are stronger than *amictus amictus* and *toricollis*). Size: 11.8–14.4mm. They are only known from Central Africa are very rare.	*Amictus rubra* ssp.n.
9*	The area of the pronotum is more or less strongly bulgedand the sides of the pronotum are not bent up	10

10	The head, pronotum, and the corium are monochrome bright red and rarely a bit more yellow.	11
10*	Head, pronotum, and the corium are not monochrome and bright, and in exceptional cases monochrome red. The center line of the pronotum is very strongly developed and the insects are bigger and more slender.	12
11	The head is relatively short, and the vertex is more bulged (which can mostly be seen in the female specimen) and the ocelli are very far apart. The pronotum is coarsely dotted, with relatively straight sides, and only slightly rounded rear ends. The sides of the hemelytra are distinctly ovally bulged. The ventral rear end of the pygophore of the male specimen is elongated toward the back, and bulged in the middle, pointing toward the front. The parameres are very slender with a distinct spout at the end; laterally they are slightly bulged with a distinct spur. Size: 10.5–13.33mm. These insects are known to be found in the Senegal, Gambia, northern Nigeria, the Sudan, and Erythrea.	*Chevreuxi*
11*	The head is longer, the vertex is less bulged, the pronotum is more finely dotted and has slanted sides. The sides of the hemelytra are only slightly bulged. The ventral posterior end of the pygophore is flatly rounded and bulged in the middle pointing toward the front. The parameres are relatively long with a small spout at the end and a lateral spur. The emargination in the middle of the pygophore is more slender and smaller than *chevreuxi* , otherwise very similar. Size: 10.7–13.7mm. Distributed in Central Africa (from West Africa to East Africa).	*Productus* sp. n
12	Light yellow strong and broad insects with a light dark pubescence on a dark head. The pronotum is coarsely dotted and the sides of the corium are blackish brown. The ventral rear end of the pygophore of the male specimen is slightly elongated posteriorly , and bulged in the middle pointing anteriorlyThe parameres are elongate with a small spout at the rounded end, broadened from the middle on. Size: 15.0mm–16.6mm. Until now, they are only known to be found in South Africa (Kakaoveld) and are rare	*Cinnamomensis* (IZZARD, 1960)
12*	The insects are not bright yellow, but dark (yellowish red, red, or brown). The head generally is dark.	13
13	Slender, mostly bigger insects; but if they are smaller in size, the sides of the corium are more or less straight, or barely bulged.	14
13*	Broader and somewhat bigger insects that are rarely smallerand narrower. They have more or less convex sidesof the corium.	20
14	The pronotum is more bulged.	15
14*	The pronotum is less bulged.	17

15	The pronotum is broader with more rounded sides and is coarsely dotted. These insects are bigger, relatively slender, shiny, and mostly ochre (very rarely red), with a dark head and a dark scutellum that has a red or yellow tip. The ventral posterior end of the pygophore of the male specimen is elongated toward the back and has strong elongations of the tips at the side. The parameres are slender, and bent at the end, and in lateral view they show a rectangular broadening. Size: 11.4–15.2mm. So far they are only known to be found in the central and the eastern part of the Republic of Central Africa.	*Nigrofasciatus* (DISTANT,1914)
15*	The pronotum is less broad, has more slanted sides, and is very finely dotted.	16
16	Brown, slender, and rather small insects that are barely shiny. The pronotum is relatively long with a slender dark side and it is very finely dotted. The scutellum is wrinkly and dark with light sides. The corium is relatively dark and has an indistinguishable side border. It is covered with thick, white hair. The ventral posterior end of the pygophore of the male specimen is broadly rounded and very elongated toward the back. There are relatively strong and long elongations of the tips at the side (longer than the elongation in the middle). The parameres are slender in the upper section and laterally broadened. Size: 10.0–13.9mm. So far, they are only known to be found in the eastern part of Central Africa.	*Pectoralis pectoralis* (SCHOUTEDEN, 1948)
16*	Strong, red, rather big and slender insects. All other traits are the same as *Pectoralis pectoralis.* However, the ventral posterior end of the pygophore of the male specimen has more slanted sides and the parameres are slightly more slender in the lower section than *Pectoralis pectoralis.* Size:11.8–15.1mm. So far, they are only known to be found in Cameroon.	*Pectoralis camerunensis* ssp.n
17	The sides of the corium are only slightly darker than the adjacent area. Generally they are brown (rarely more red). They are slender insects with relatively broad heads. The pronotum has reddish orange sides, is finely dotted, and the sides are slightly rounded at the back. The corium is lighter in color posteriorly. The ventral rear end of the pygophore of the male specimen is more or less elongated straight toward the back. The parameres are slender with a small spout at the end and a small emargination at the side. Size: 11.8–15.5mm. So far, this is the most common of the *Leptocoris* species, known to be found in Central Africa and South Africa.	*Hexophthalmus hexophthalmus* (THUNBERG,1784)
17*	The sides of the corium are more broad and dark; the dark color is distinct from the color of the adjacent area. They are rarely monochrome and the head is more bulged. The central line of the pronotum is very strong.	18
18	Lighter or more strongly brown insects, that are smaller on average.	19

18*	The insects are mostly bright red (very rarely reddish brown), slender and generally bigger. They very rarely are of a lighter red; if they are lighter red, then they are distinguishable by the relatively small and longer pronotum (if the insects are brachypterous, it is slightly smaller and broader). The head generally is dark, relatively short and broad, and more or less distinctly bulged (the bulge is more apparent in the brachypterous specimen). The pronotum is generally red; rarely is it more ochre with red sides. The scutellum is red or brown with a pointy red tip. The corium is red to reddish brown and is darker on the sides and posteriorly. The ventral pygophore of the male specimen is broadly elongated toward the back and has a deep bulge in the middle, which forms two broad and rounded lappets. The parameres are broadly rounded at the end and have a spur, which is elongated, strong, and points upwards. Size: 11.1–15.7mm. So far, they are known to be found in the eastern and central part of the Republic of Central Africa, but less frequently are found in West Africa, the Sudan, and on the island of Madagascar.	*Mutilatus* (GERSTAECKER,1873)
19	The pronotum is smaller, longer, light brown, and is finely dotted. The head is broader and darker brown and the corium is light brown with a relatively broad side. These small insects appear silky and shiny. The ventral rear end of the pygophore of the male specimen is only slightly elongated posteriorly; the lateral tips are roughly the same length and the spiky elongations of the side tips are relatively long and thin. The parameres are slender with a small spout at the rounded end and they have a lateral bulge. Size: 10.0–12.8mm. So far, they are only known to be found in the eastern and central part of the Republic of Central Africa.	*Intermedia* (DISTANT, 1914)
19*	The pronotum is broader, shorter, and relatively light ochre (the coloring is lighter than that of the corium), and finely dotted. The head is more pointy and black. The corium is light brown with a distinct dark side. The ventral posterior end of the pygophore of the male specimen is slightly elongated posteriorly, with rounded sides and a bulge in the middle. The parameres are slender with a small spout at the end. Size: 10.7 (male). So far only the type series from Abyssinia and Butandigo is known.	*Affinis* sp.n.
20	These insects are generally brown, (very rarely red) and are relatively broad insects. They have a dark head, a dark and broad scutellum, a dark pronotum, and a corium with dark sides. The insects relatively often are brachtyperous. The ventral posterior end of the pygophore of the male species is elongated toward the back, and flatly and relatively small and bulged. The side tips are rounded with a small spur on the front side. The spur is slightly smaller than the one in the similarly looking paramere of *chevreuxi.*, Also, the middle emargination of the capsule is smaller. Size: 8.5–11.8mm. Distributed in the eastern and central part of Central Africa.	*Teyrovskyi* sp.n.
20*	The scutellum is smaller.	21

21	These are predominantly strongly red (very rarely rather brown), oval shaped, broad insects. They are two species that are very hard to distinguish, mainly by looking at the male genital segments.	22
21*	These are predominantly yellowish red insects (rarely more brown), smaller on average, with a relatively pointed head.	23
22	These are generally bigger and broader insects. The head is red with a black coloration that varies in its dimensions, and is slightly smaller and broader than *stehliki*, the broad pronotum is red with black sides and is generally a bit longer than *stehliki.* The hemelytra are laterally convex and the corium is red with a broad dark side that is bent up slightly. The ventral posterior end of the pygophore of the male specimen is elongated posteriorly and is relatively broadly bulged anteriorly. This forms two rounded tips on the side. The parameres are slender with a small spout at the end and a small bulge in the middle. Size: 11.5–15.3mm. Distributed in Central Africa, from Cameroon to Togo.	*Seidenstueckeri* sp.n.
22*	Generally smaller insects of similar coloration as *seidenstueckeri*, but very rarely are they brown. The head is slightly longer and the pronotum is slightly shorter with more rounded posterior ends. The ventral rear end of the pygophore of the male specimen is elongated posteriorly, and rounded flatly in the middle with a bulge to the front, with two rounded tips at the sides. The parameres are relatively broad and have a small spout at the side, and a strong spur. Size: 10.7–14.00mm	*stehliki* sp.n
23	These are bigger and broader insects; head is the same color as the rest of the body.	24
23*	The insects are on average smaller and more slender. They have variable colorations: mostly reddish yellow or brown. They can be distinguished by the relatively short and pointed head, and the relatively short and broad pronotum. The hemelytra are rounded ovally at the sides and the corium has partially dark sides. The ventral posterior end of the pygophore of the male specimen is elongated posteriorly, and has a relatively small bulge in the middle which points anteriorly. The sides are widely rounded. The parameres are relatively short with a small spout at the end and a very well developed strong lateral spur. Size: 9.2–13.1mm. Distributed in the entire area of West Africa	*griseiventris* (WESTWOOD, 1842)
24	The pronotum is more coarsely dotted, slightly bulged, and very broad posteriorly, with a small brown strip at the side. The head is broad with elevated paraclypea and the sides of the corium are brown. The ventral rear end of the pygophore of the male specimen is only slightly elongated posteriorly, and bulged in the middle pointing anteriorly. It also has tips that are laterally rounded, are the same length, and have processes that turn toward the inside. The parameres in the upper section are slender, but then very broadened. 11.1–13.9mm. So far, they are only known to be found in Guinea.	*wagneri* sp.n.

24*	The pronotum is more finely dotted, flatter, and less broadened. Therefore the pronotum is more slender posteriorly than *wagneri*. The head is broad, the sides of the pronotum are small and orange, and the sides of the corium are light brown. The ventral posterior end of the pygophore of the male specimen is elongated posteriorly, widely rounded, and cut out to the front. The parameres have a small spout and a small lateral spur. Size: 10.7–12.5mm. They are known to be found in the western and central part of Central Africa.	*lata* sp.n

Notes on a few Southeast Asian and Pacific species of the genus Leptocoris

As mentioned before, there has been a revision of the Australian and Pacific species of the genus *Leptocoris,* by GROSS in 1960, and on the Asian species by HSIAO in 1963 and CHOPRA in 1971. When I examined the material of the different species, which partially belong to the *hexophthalmus* and partially to the *abdominalis* group, some changes, or addenda had to be made.

a) Hexophthalmus group

1. *Augur* FABRICIUS, **1781**

Cimex augur FABRICIUS, 1781: Spec. Ins., **2,** 366. *Leptocoris augur* BURMEISTER, 1835, Handb. Ent. **2,** 305.

This species, which had only been known to be found in Southeast Asia, can be found in Muscat, Arabia as well, according to the material from the museum in London (2__). Moreover, a female of the species from the Hope Department Oxford also shows a distribution on the island of Mauritius. Even though it is very hard to determine which species the females are, in my opinion, these insects are *Leptocoris augur*. Another possibility would be the new species *Leptocoris productus,* which is very similar to this species, or the species *Leptocoris chevreuxi,* even though it is distributed in West Africa.

2. *Capitis* HSIAO, **1963**

Serinetha capitis HSIAO, 1963: Acta ent. Sin., **12,** 314 u.a. S.; *Leptocoris capitis* –**comb nov.**

In addition to the material found in Yunnan, South China, this species could also be found on the island of Hainan (1 _ and 1_ from the museum in Bruxelles).

3. *Dispar* HSIAO, **1963**

Serinetha dispar, HSIAOm 1963: Acta ent.Sin., **12,**314 u.a. S.; *Leptocoris dispar,* ---**comb. nov.** *Leptocoris arorai,* CHOPRA, 1971: Orient. Ins.**5**, 507,Fig. --- **syn.nov.**

The species, which has been described by HSIAO in 1963 as from Yunnan,South China, also occurs in India. It can be mistaken for *Leptocoris augur,* but it can be distinguished from *augur* by the extremely enlarged protuberance of the antennae, or by the different parameres. As the examinations of the description, as well as the comparison by Dr. REN SHU-ZUI and Dr. ZHENG LE-YI (University of the People's Republic China in Tianjin Nankai) of the types *dispar* and the information published by

CHOPRA, show, the new species *arorai,* which was found in India in 1971, is conspecific with *dispar.*

b) Abominalis group

1. *Insularis*, KIRKALDY, **1908** (Fig. 48- 49)

Leptocoris insularis KIRKALDY, 1908: Proc. Linn.Soc. N.S. Wales,**33,** 353.

Leptocoris rufomarginata: GROSS, 1960: Rec. S. Austr. Mus.,**13,** 432.

Leptocoris insularis was considered synonymous to *rufomarginatus* FABRICUS, 1794, by GROSS in 1960. However, in my opinion, it is a species of its own, which can be found on the Fiji Islands and on Samoa. The specimen I had at hand (2 __ and 2__) could be easily distinguished by certain characteristics.

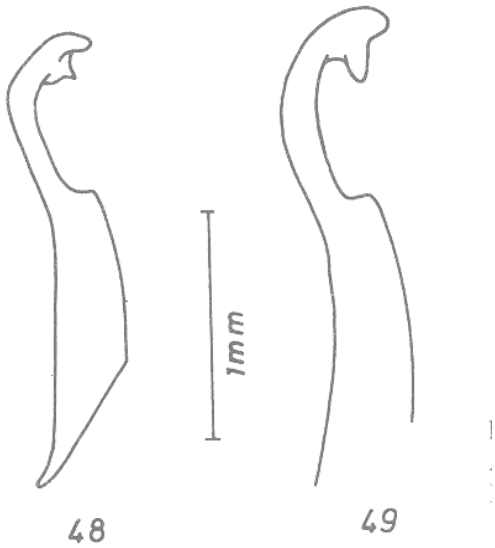


Fig. 48 *Leptocoris insularis* KIRK.—Paramere

Fig. 49 *Leptocoris rufomarginatus* (F.)—Paramere

Therefore the reddish brown *insularis* is smaller than *rufomaginatus*, the distinctly bulged pronotum is less broadened posteriorly, and the anterior protrusion is relatively slender and slightly elongated in the middle. The ventral lateral tips of the pygophore are more rounded at the end than *rufomarginatus* and the parameres have a relatively short, but pointed, spout at the end. However, the parameres of *rufomarginatus* are longer, broader, and point downward.

2. ***Lariversi*** USINGER, **1952**

*Leptocoris lariversi,*USINGER, 1952: Proc. Hawaii, ent. Soc., **14,** 520, Fig.

Leptocoris isolatus, GROSS,1960, Rec. S. Austr. Mus., **13,** 443.

Leptocoris isolatus lariversi—**comb.nov.**

Leptocoris lariversi was considered synonymous to *Leptocoris isolatus* DISTANT, 1914, by GROSS in 1960. However, an examination of the types showed that there were differences in the insects. *Lariversi,* which so far had only been known to be from the Marshall Islands (the material I had at hand however originated from the Jaluit Islands and the Arno atoll), differed with respect to the form of the pygophore and the parameres. They differed from the species *isolatus,* which can be found in New Guinea, the Salomon Islands, and the Louisiade archipelago (and the Marshall Islands?). The middle tip of the ventral posterior end of the genital capsule was longer, more pointed, more slender, and the tip did not protrude as much as it does in *isolatus.* Therefore, I am of the opinion that *lariversi* is a subspecies of *isolatus.*

3. **Subrufescens** KIRBY, **1888**

Lyaeus subruferens KIRBY, 1888: Proc. Zool. Soc. Lond.,553, *Leptocoris subrufescens:*GROSS, 1960, Rec. S. Austr. Mus., **13,** 426.

Leptocoris subrufescens subrufescens

Leptocoris subrufescens flava, **ssp.n.**

Leptocoris subrufescens is only known to be found on the Christmas Islands in the Indian Ocean (105° eastern longitude, 10° southern latitude). It is a reddish brown species. In the collection of the Berlin Museum, there is a series of insects originating from Yap, on the Western Caroline Islands (138° eastern longitude, 10° northern latitude), which is very similar to *subrufescens* s.str., but which differs slightly in some characteristics. I therefore consider them to be a subspecies of *subrufescens*, which is distributed on the Caroline Islands, and I would like to name them *subrufescens flava*, with respect to their color. The species is light yellowish ochre, with a brown clavus and a dark brown membrane. The pygophore of the males is a bit broader than *subrufescens* s.str. and the lateral tips of the ventral posteior end are slightly shorter and stronger, also the lateral bulge of the parameres is a bit more strongly developed. The size of the males that I examined ranged from 10.3–13.0 mm, and the females ranged from 14.4–15.0 mm. Since GROSS determines the length of the nominal subspecies from 11–16 mm, the two species do not differ in this respect.

Types: Yap, West- Caroline Islands, SENFT S. ; HOLOTYPE _, Mus., Berlin.—Paratypes: 4__, 3__ as holotype, of these however 1_ and 1_ Mus. Adelaide, 1_, Inst. Eberswalde (former DEI).

4. ***Tagalicus*** BURMEISTER,**1834**

Leptocoris tagalicus, BURMEISTER, 1834: N. Acta Ac. Leop., **16**,Suppl. 299 (printed in: MEYEN, F.J.F, 1834, 423); GROSS, 1960;Rec. S. Austr. Mus., **13**, 439.

This species was described by BURMEISTER in 1834, as *Ceptoris tagalicus,* according to insects from the island of Luzon. BURMEISTER specifically mentioned in his paper that *tagalicus* is a new species to the genus, which was determined by HAHN, and he even lists some species of *Leptocoris*. He obviously refers with his genus name *Ceptoris tagalicus* to a sign of the plate XXXII in HAHN's paper from 1833 which, by mistake, read "*Ceptoris rufus"* instead of the correct *Leptocoris rufus.*

GROSS' statement that the type of *tagalicus* could not be found is incorrect. In the collection of the Berlin Museum there are two insects that are types of the BURMEISTERian species. The male, thus the lectotype, has a label that seems to be written by BURMEISTER with the note *"Ceptocoris tagaloricus"* (another spelling mistake!), as well as a label on the origin: "Manila, ESCHSCHOLTZ" and the number 1647. The female, the paralectotype only has the label on the origin and the number. According to the title of the work, most insects were collected by MEYEN, but BURMEISTER never mentions the name in his description of *tagalicus*, contrary to the other described or mentioned species.

List of the Species of the Genus Leptocoris, including their synonyms and their distribution (x= valid names)

a) hexophtalma Group

x	*aethiops* (DISTANT,1901)	Africa
x	*affinis* sp.n.	Africa
x	*albisoleatus* (BERGROTH, 1912)	Madagascar
x	*amictus amictus* (GERMAR, 1837)	Africa
x	*amicus rubra* ssp.n.	Africa
	arorai (CHOPRA, 1971)= *dispar* (HSIAO,1963)	
x	*augur* (FABRICIUS, 1781)	South East Asia
x	*capitis* (HSIAO, 1963)	South China
	chalocecephalus (FABRICIUS, 1803)=*augur* (FABRICIUS,1781)	
x	*chevreuxi* (NOUALHIER,1898)	Africa
x	*cinnamomensis* (IZZARD, 1960)	Africa
x	*corniculatus* (STAL)	India
	dallasi (DOHRN,1860)= *augur* (FABRICIUS,1781)	
x	*dispar* (HSIAO,1963)	South China, India
	fraterna (WESTWOOD, 1842)= *hexophthalmus*(THUNBERG, 1784)	
	fraterna var.(DALLAS,1852)=*aethiops* (DISTANT,	

	1901)	
x	*griseiventris* (WESTWOOD,1842)	Africa
	haematica (GERMAR, 1837)= *hexophhalmus* (THUNBERG, 1784)	
x	*hexophhalmus hexophthalmus* (THUNBERG,1784)	Africa
x	*hexophthalmus lateralis* (SIGNORET, 1861)	Madagascar
x	*intermedia* (DISTANT, 1914)	Africa
x	*lanuginosa* (LETHIERRY, 1881)	Africa
x	*lata* sp.n.	Africa
	lateralis (SIGNORET, 1861)= *hexophthalmus lateralis* (SIGNORET, 1861)	
x	*minusculus* BLÖTE, 1934	South East Asia
	moesta (STAL,1855)= *amictus amictus* (GERMAR, 1837)	
x	*mutilatus* (GERSTAECKER, 1873)	Africa
x	*nigrofasciatus* (DISTANT, 1914)	Africa
x	*obscura* sp.n.	Africa
	oreias (LINNAVUORI,1978)= *mutilata* (GERSTAECKER, 1873)	
	orodemnias (LINNAVUORI,1978)= *hexophtalma* (THUNBERG,1784)	
x	*paramictus* sp.n.	Africa
x	*pectorialis pectorialis* SCHOUTEDEN, 1948	Africa
x	*pectorialis camerunensis* ssp.n	Africa
x	*productus* sp.n.	Africa
x	*seidenstueckeri* sp.n.	Africa
x	*stehliki sp.n*	*Africa*
x	*teyrovskyi* sp.n.	Africa
x	*toricollis* (BERGROTH, 1893)	Seychelles
	vittatta (AMYOT/SERVILLE, 1843)= *amicta* (GERMAR, 1837)	
x	*wagneri* sp.n.	Africa

b) abdominalis Group

x	*abdominalis abdominalis* (FABRICUS, 1803)	South East Asia, Indo-Pacific
x	*abdominalis blötei* GROSS 1960	New Guinea
x	*abdominalis taprobanensis* (DALLAS, 1852)	South East Asia, New Guinea

	ahnei CHEESMAN, 1927= *tagalicus*(BURMEISTER,1834)	
	augur (FABRICIUS, 1781) pt.= *abdominalis* (FABRICUS, 1803)	
	bahram KIRKALDY, 1908= *abdominalis* (FABRICUS, 1803)	
	carnivorus USINGER, 1946= *vicinus* (DALLAS,1852)	
x	*coxalis* (KIRBY, 1891)	South East Asia
	fimbriata (DALLAS,1852) =*rufomarginatus* (FABRICIUS,1794)	
	flavomarginatus (MATSUMURA, 1913)= *rufomarginatus* (FABRICIUS,1794)	
x	*insularis* (KIRKALDY, 1908)	Indo- Pacific
x	*isolatus isolatus* (DISTANT,1914)	Indo- Pacific
x	*isolatus lariversi* USINGER, 1952	Indo- Pacific
	lariversi USINGER, 1952= *isolatus lariversi* USINGER, 1952	
	longirostris (DALLAS, 1852)= *vicinus* (DALLAS,1852)	
x	*longisculus* (WALKER, 1872)	Indo- Pacific
	lurida (DALLAS,1852) = *tagalicus*(BURMEISTER,1834)	
	marginata BLÖTE,1934= *abdominalis* (FABRICUS, 1803)	
x	*marquesensis* CHEESMAN,1926	Indo- Pacific
x	*mitellatus* BERGROTH, 1916	Australia, New Zealand
	nigricornis (WALKER,1872) = *vicinus* (DALLAS,1852)	
x	*rufomarginatus* (FABRICIUS, 1794)	South East Asia, Australia, South Pacific
x	*rufus* (HAHN, 1833) = *abdominalis* (FABRICUS, 1803)	
	spectabilis BREDDIN, 1901 = *rufomarginatus* (FABRICIUS, 1794)	
x	*subrufescens subrufescens* (KIRBY, 1888)	Indo- Pacific
x	*subrufescens flava* ssp.n.	Indo- Pacific
x	*tagalicus* BURMEISTER, 1834	South East Asia, Indo-Pacific, Australia
	taprobanensis (DALLAS, 1852)= *abdominalis taprobanensis* (DALLAS, 1852)	
	taitense (GUÉRIN, 1830)= *rufomarginatus* (FABRICIUS, 1794)	
	taitensis CHEESMAN, 1926= *tagalicus* BURMEISTER, 1834	

x	*vicinus* (DALLAS, 1852)	South East Asia, Indo-Pacific
	---pt.= *coxalis* (KIRBY, 1891)	
	vulgaris BERGROTH, 1916= *tagalicus* BURMEISTER, 1834	

General Characterization of the Genus Boisea

Leptocoris Boisea KIRKALDY,1910:Proc. Hawaii.ent. Soc., **2,** 123.

Boisea **comb.nov.**

In 1910, KIRKALDY determined the subgenus *Boisea* for the American species *L.[eptocoris] vittatta*. The determination of the new subgenus was questionable in so far that KIRKALDY only offered the fact that the species occurs in America as a reason to classify the subgenus. He did not include any descriptions of distinctive characteristics relative to other species of *Leptocoris*. Furthermore, a species of that name was not known from America, but only in Africa, where AMYOT/SERVILLE had, in 1843, described a species *Tynotomata vittatta* (which today is a synonym to *Leptocoris amictus)*. Based on KIRKALDY'S descriptions of *vittatta's* characteristics, and on their occurrence in America, I assume this to be a misapprehension of KIRKALDY, and deduce that he meant the species *trivittatta,* which is distributed in America. This assumption has already been made by other authors. The name *Boisea* lends itself to the new genus, whose type therefore is *trivittata* (SAY, 1925).

The genus *Boisea* is distinguished from *Leptocoris* by a more stretched, slender, and bulged head, and by a less visible center line on the vertex than the *Leptocoris* species. The frontal bulge of the pronotum is more flat and merges directly or almost directly into the slightly elevated line in the center. The species are overall slightly shiny, short, and sparsely haired. Generally, the insects are smaller than those of the genus *Leptocoris.* The ventral posterior end of the pygophore of the male specimen has two tips in addition to the two lateral, slender tips. They are separated from the lateral tips, are rounded, and are more in the middle; all in all there are four lateral tips. The central tip of the pygophore is relatively short and only slightly shifted dorsally into the inside of the capsule, so that the curve of the parameres is to be found almost ventrally. The part of the lateral septum which protrudes into the inside of the capsule is more triangular in *Boisea,* whereas it is smaller and spur shaped in all other species of the genus *Leptocoris.* The parameres are shorter and wider with a strong, detached end, and a laterally angled leg part. The 7th sternite of the females is smaller at the end than it is in female specimens of *Leptocoris*, and they are also distinctly carinate and visibly ±notched. The enlargements of the 2nd valvifers are more posteriorly directed (in lateral view very visible) and are only very spiny on the upper edge. Contrary to the smaller 2nd valvulae of *Leptocoris*, these are enlarged, lobe shaped, more sclerotised, have very long hairs at the end, and may be covered with distinct spines (cf. also fig. 54). The loop of the seminal receptacle, which is behind the bursa, is thicker than in *Leptocoris.* The genus consists of five species today, two of which are very similar to one another. The species *rubrolineata* and *trivittata* are found in the northern part of America; two other very similar species, *flava* and *fulcrata,* in Africa, and the fifth species, *Boisea*

coimbatorensis is found in India. The strange distribution of the relict/remnant group is hard to explain. It could possibly be the remainder of a formerly widely distributed group. It is also possible that the center of origin can be found, as it is the case with a large part of the *Leptocoris* species, in Africa. The connection to India had been there until only recently, the American specimen of the Genus could have immigrated to America via Asia.

General Characteristics

1. ***Coimbatorensis*** GROSS, **1960**

   Leptocoris coimbatorensis GROSS, 1960: Rec.S. Aust. Mus., **13,** 417, Fig. –*Boisea coimbatorensis* – **comb.nov.**

The species was described by GROSS in 1960 according to insects from South India. Based on the examined material, it only occurs in India. All further information is to be found in GROSS' work.

2. ***Flava*** BERGROTH, **1912** (Fig. 50-51)

   Serinetha flava BERGROTH, 1912: Ann. Soc. Ent. Belg., **56,** 90; - 1913, Mém. Soc. Ent. Belg., **22,**164.

   Boisea flava—**comb.nov.**

The species was described by BERGROTH in 1912 according to insects from Porto Novo, Dahomey, West Africa. There is, as with many species described by BERGROTH, no information on the whereabouts of the type. *Boisea flava* often was not considered a species of its own, but instead synonomous to *fulcatra.* Both species are very similar, but there are consistent differences which, in my opinion, justify considering them as two different species. *Boisea flava* is distributed more in the northern regions of West Africa and *fulcrata* occurs more south and only in East and South Africa.

Type: Porto Novo, Dahomey; no information on the whereabouts.

Description: Yellowish orange colored, slightly shiny medium sized insects with orange and sometimes yellow veins on the wings.

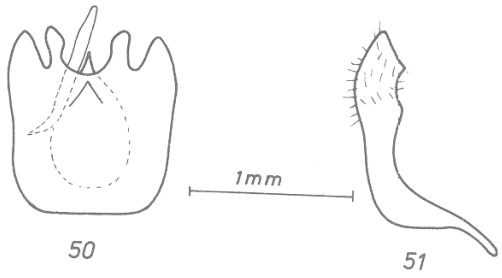


Fig. 50- 51 *Boisea flava* (BERGR.). – 50. Pygophore ventral, 51. Paramere.

The head is yellowish orange, but slightly lighter next to the eyes, bulged, and slightly longer than that of *fulcrata* . The distance between the antennal protuberances and the eyes is longer than in this species. The antennae are bright brown, with a very light dotting (lighter than *fulcata)*, and the front and lateral sides are slightly lighter than the surrounding area, as is the slightly elevated, not thorough line in the center. The lateral gouge is ochre to light brown. The scutellum is ochre with a yellow side. The hemelytra are yellowish orange with strong orange or yellow veins, relatively thick hair, and a dark brown membrane. The legs are ochre to light brown with small brown spots and brown tarses, the tarses are thickly covered in hair, the back is red and has a small lateral dark spot on each side of the tergites, and the lower side is ochre. The abdomen is spotted red and the rostrum reaches to the 4th sternite.

Size: Males: 9.4–11.1mm, Females: 11.1–12.9mm

Genital segments: a) Males: The ventral rear end of the pygophore has four lateral tips. The outer tips are sharper, the inner more slender, rounded, and distinctly longer, and the middle tip is pointy and shorter than the other tips. The paramere has an elongated head part, a shorter lateral spout than *fulcrata*, and it is also more laterally bulged.

Distribution: The material at hand originated from Guinea, Sierra Leona, Lara Banca/ Gold Coast, the river Lome/ Togo, Porto Novo/Dahomey, and Ibadan/ Nigeria, also only from West Africa from a region between 17° western -6° eastern longitude, and 12°-5° northern latitude. The insects were found on Grewia seed and on Phialiodiscus unijucalus.

3. ***Fulcrata*** GERMAR, **1837** (Fig. 52-54)

   Corizus fulcratus, GERMAR, 1837: SILBERM., Rev. Ent., **5**, 144,; *Serinetha fulcrata*: DALLAS, 1852, List. Hem., II, 462.

Cimex Hexophthalmus: STÅL, 1865, Hem, Afr., **2,** 112.

Boisea fulcrata - **com.nov.**

Boisea fulcrata was described in 1837 by GERMAR according to insects that were caught by DRÈGE on the Cape of Good Hope in South Africa. There is a male specimen, marked as a type in the museum in London, with the note "Coll. DRÈGE, det. GERMAR", however it lacks the original label by GERMAR. Unfortunately it is not noted who did the determination of the types. Moreover, the museum in Berlin possesses a female *fulcrata* of GERMAR's collection, with a note on the type, but without the original label by GERMAR. Since this insect does not carry the note, was collected by DRÈGE, does not correspond to the description of GERMAR, and is light brown, the specimen from London was determined as avlectotype of *fulcrata,* and the specimen from Berlin as paralectotype. In 1865 STÅL considered *fulcrata* synonymous to *hexophthalmus* which was described in 1784 by THUNBERG. However, *fulcrata*, according to a type comparison has nothing to do with it. The synonymisation has been taken up by all further researchers of the species, but is completely unclear to me, since *fulcrata* is a typical species. I only had one specimen *hexophthalmus* to examine the type, and more material was not to be found at the University of Uppsala. THUNBERG does not give a number of the insects he had at hand. It is possible, of course, that it was a mixture of species and STÅL considered another insect as the now determined type. THUNBERG's description of *hexophthalmus* however does not correspond with the description of *fulcrata.*

Types: Prom. Bonae spei, South Africa, leg. DRÈGE; Lectotype _, Mus. London. – Paralectotype:1_, same origin as Lectotype, without collector, Mus. Berlin.

Description: Black-brown, seldom light brown, medium sized and shiny insects with yellow sides of the pronotum and yellow veins on the wings.

The head is blackish brown and the paraclypea are yellow. The antennal protuberances are yellow next to and behind the eyes, slightly bulged (less than *flava*), wider than long, relatively pointy, and distinctly shorter than *flava.* The antennae are blackish brown and the 1st member is partially red. The pronotum is brown with relatively straight sides, the sides are slightly wider, and all other sides are small yellow. The line in the center does not pass through the entire length of the pronotum. The pronotum is loosely dotted (thicker than *flava*) and slightly bulged. The scutellum is brown with yellow sides, the hemelytra are brown with tallow sides and partially yellow veins, the rear end is more broadly yellow, and the membrane is brown. The legs are brownish black. The back is red with lateral dark tergite spots and the lower side of the head is dark with yellow

bucculae and a yellow frame around the eyes. The thorax is brown, with light posterior sides of the segments, yellowish red coxae, the abdomen is yellowish red with yellow posterior ends of the sternites. The rostrum extends past the posterior coxae (slightly shorter than *flava*).

Size: Males: 9.2–11.6mm, Females 11.1–12.4mm.

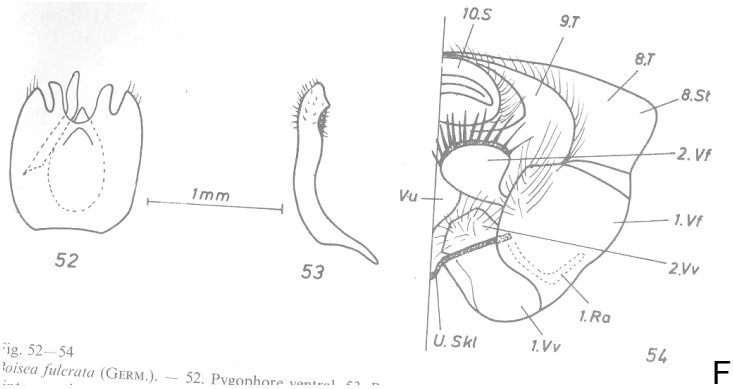


Fig. 52-54 *Boisea fulcrata* (GERM.). –52. Pygophore ventral, 53. Paramere, 54. Female genital segments from behind, (8st= 8. Stigma, Vu= vulva).

Genital segments: a) Males: The ventral rear end of the pygophore has four lateral tips. Each middle one is relatively strong, slightly rounded, and slightly longer than the pointier outer tips. The tip in the center is short and rounded at the end. The parameres have a less elongated head part than *flava,* a pointier lateral spout, and the lateral bulge is small.

b) Females: The genital segments are pointed posteriorly. The 1st valvifer is relatively long, pointy, and bulged. The 1st valvula is relatively flat and long (more bulged with *Leptocoris* sp.). The enlargement of the 2nd valvifer is long, oval, and directed posteriorly (completely visible from a lateral view). Only the dorsal margin is covered with thick spines (ca. 10). The 2nd valvula is enlarged ventrally, wide, lappet-shaped, enlarged, has a blunt tip at the bottom, is visibly sclerotized, and the lower half is covered in long hair. The vulva is long, beak shaped, and visibly under the 2nd valvifer (shorter in *Leptocoris* species).

Distribution: The material at hand originated from Central, East and South Africa, in central Africa north to Uganda (about 4° northern latitude), western to Elisabethville (32° eastern longitude, 12° southern latitude), in South Africa, the insects were farther distributed, for example in Capeland (Willowmore, Mosselbay, Cape) (18° eastern

longitude, 34° southern latitude). According to literature (MANCINI 1954) *fulcrata* also has been found in Eritrea.

4. **rubrolineata** BARBER, **1956**

   SCHAEFER, 1975, Ann. Ent. Soc. Am., **68,** 537; *Boisea rubrolineata* –**comb. nov.**

Boisea rubrolineata was described in 1956 by BARBER according to material from Healdsburg in California. Until then, the species was considered the same as *trivittata.* The species however is easily to be distinguished by the strongly colored red veins of the corium, and by means of the genital segments. Also, it is, contrary to *trivitatta* to be found only in the Southwest of the US, in Arizona, California, Nevada and Texas.

Types: Healdsburg, CA; Holotype, Mus. Washington.

For further information I want to refer to the above named works.

5. ***trivitatta*** SAY, **1825**

   Lygaeus trivittatus SAY, 1825: J. Ac. Philad., **4,**322; *Leptocoris trivitatta ;* STÅL, 1870, Sv. Vet. Ak. Handl. , **9,**Nr. 1, 226; TORRE-BUENO, 1941,Ent. Am.,**21**, 100;SCHAEFER, 1975, Ann. Ent. Soc.Am. , **68,** 537; *Boisea trivittata*—**comb.nov.**

   Lygaeus califonicus, WALKER, 1872: Cat. Hem. Het. Brit. Mus., V, 42.

The species was described in 1825 by SAY according to material from Missouri. The type has been lost, as it has been the case with most species described by SAY. In 1956, as already mentioned, BARBER separated the species *rubrolineata* and *trivitatta*. The latter one is also easily distinguished by a lesser red coloration of the corium, by means of their genital segments, and their distribution. It is more common and further distributed in North America, but is completely missing in the Southwest of the United States. According to TORRE-BUENO the species occurs on *Acer negundo*.

Lygaeus californicus has been considered synonym to *trivittata* in 1956 by BARBER, however with the note that WALKER's indication of location, Santa Cruz in California

must be wrong, since the species does not occur there. KIRKALDY's published *vitattata* from 1910 in my opinion also must be *trivittata* (cf. above).

Types: *trivitatta* SAY: Missouri; Ac. California, lost.

californicus WALK. : Santa Cruz, Cal. (according to BARBER wrong); Mus. London.

For further information I want to refer to the above named works

List of Species of the Genus Boisea, including their synonyms

(x= valid names)

californica (WALKER, 1872) =*trivittata* (SAY, 1825)

x *coimbatorensis* GROSS, 1960—India

x *flava* (BERGROTH, 1912)—West Africa

x *fulcrata* (GERMAR, 1837)--- East and South Africa

hexophthalmus (STÅL, 1865) = *fulcrata* (GERMAR, 1837

x *rubrolineata* BARBER, 1956— the Southwest of the United States

x *trivitatta* (SAY, 1825) – U.S.A except for the Southwest.

Note: After the final print it turned out that I had accidentally used the original spelling of THUNBERG (1784) of *hexophthalmus* with "t". Since it most likely seems to be caused by inattentiveness of THUNBERG, the notation introduced by GMELIN in 1788 of *hexophthalmus* with "th" needs to keep its validity. The species thus needs to be called *hexophthalmus*THUNBERG,1784, which also corresponds with the principle of stability and universality of nomenclatures.

Address of Author:

DR.URSULA GÖLLNER- SCHEIDING

Museum für Naturkunde

An der Humboldt- Universität

Zu Berlin

Bereich Zoologisches Museum

DDR 104 Berlin

Invalidenstr. 43