# NEW GENERA AND SPECIES OE REDUVIIDAE FROM INDONESIA AND THE DESCRIPTION OF A NEW SUB-FAMILY (HEMIPTERA-HETEROPTERA)

BY

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The Reduviidae described and figured here were received from Dr. L. G. E. KALSHOVEN, Amsterdam, to whom I am indebted for the privilege of studying them.

Paratypes of the following new species have been presented to the British Museum (Natural History), London: Sminthus buruanus sp.n., Euagoras buruensis sp.n., Cydnocoris tessellatus sp.n., and Pasiropsis vidua sp.n.

The types and the remainder of the paratypes from the collection of Dr. KALS-HOVEN are in the collection of the Leiden Museum and those from Dr. MAC GILLAVRY's collection in the Zoological Museum of the University of Amsterdam. In the last-mentioned collection are specimens collected by the late Dr. L. J. TOXOPEUS during his expedition to the island of Buru.



Fig. 1. Polytoxus debilis spec. nov. A. Head & pronotum, dorsal view. B. Head, pronotum, scutellum, postscutellum & anterior leg, lateral view. C. Apex of pygophore, lateral view.

#### SAICINAE

## Polytoxus debilis spec. nov. (fig. 1)

Colour. Antennae missing. Eyes black. Rostrum testaceous. Head and posterior lobe of pronotum vinaceous, the latter with a wide, median, suffused blackish stripe; anterior lobe of pronotum testaceous. Propleura, except epimeron posteriorly with piceous suffusion; meso and metapleura, abdomen ventrally reddish piceous. Connexivum vinaceous. Corium pale testaceous infumate with base and apical margin narrowly vinaceous. Legs testaceous; femora narrowly apically, tibiae narrowly basally vinaceous; apical half of femora reddish piceous.

Total length 11.50 mm. Hemelytra 8.50 mm. Greatest pronotal width 1.50 mm. (excluding spines).

1 & (holotype), Java? 21.II.1929. P. VAN DER GOOT.

Allied to Polytoxus pedestris Miller (1940, Journ. Fed. Mal. St. Mus., vol. 18, p. 423), but differs in larger size, colouration and genitalia.

#### TRIBELOCEPHALINAE

# Opistoplatys ineptus spec. nov. (fig. 2)

Colour. Testaceous. Tomentose clothing greyish fulvous. Membrane infumate; venation darker.

Structure. Basal segment of antennae a little longer than head, feebly curved basally; segment 2 a little shorter than 1. Anterior lobe of pronotum half as long as posterior lobe, smooth, with feeble, oblique sulci; medially deeply sulcate; posterior lobe smooth; lateral sulci feeble. Scutellum transversely depressed, with a median rounded carina apically. Hemelytra extending to apex of abdomen.

Total length 9.00 mm. Hemelytra 5.70 mm. Greatest pronotal width 2.00 mm.

1 3 (holotype), West Java, Mount Salak, 800 m. L. G. E. KALSHOVEN.

Allied to Opistoplatys dre-



Fig. 2. Opistoplatys ineptus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore. D. Hemelytron, dorsal view.

scheri Miller (1940, Journ. Fed. Mal. St. Mus., vol. 18, p. 438) from which it differs in the somewhat smaller size, relatively shorter hemelytra, more deeply depressed disc of scutellum and in the genitalia.

# Opistoplatys mustela spec. nov. (fig. 3)

Colour. Dark testaceous with pale fulvous pubescence. Corium and membrane infumate; venation of corium testaceous.

Structure. Antennae with 9 segments; basal segment somewhat shorter than head; segment 2 feebly curved, somewhat longer than segment 1. Eyes very feebly prominent. Hemelytra very broadly rounded apically and extending just beyond apex of abdomen.



Fig. 3. Opistoplatys mustela spec. nov. A.Whole insect, dorsal view (legs omitted).B. Head & pronotum, lateral view (higher magnification than A)

Fig. 4. Opistoplatys humeralis spec. nov.
A. Whole insect, dorsal view (legs omitted).
B. Head & pronotum, lateral view. (higher magnification than A)

Total length 10.00 mm. Hemelytra 7.00 mm. Greatest pronotal width 2.20 mm.

1 φ (holotype), Central Java, Baturraden, Mount Slamat, 1000 m, II. 1927. F. C. DRESCHER (MAC GILLAVRY Collection).

Allied to *Opistoplatys vulpes* Miller (1940, *Journ. Fed. Mal. St. Mus.*, vol. 18, p. 436) from which it differs in colouration (in *vulpes* the legs and antennae are piceous), in somewhat smaller size, in the more narrow vertex, thicker rostrum and relatively shorter basal segment of antennae.

# Opistoplatys humeralis spec. nov. (fig. 4)

Colour. Antennae and legs, except tarsi, piceous; tarsi light brown. Head, body, venation of corium, testaceous; corium testaceous infumate; membrane infumate. Pubescence and setae on head and body fulvous; on antennae and legs piceous.

Structure. Basal segment of antennae sub-equal in length to head; segment 2 equal in length to 1. Vertex half as wide as an eye with obscure oblique sulci close to inner margin of eyes and almost meeting at transverse sulcus which is strongly

arcuate medially. Anterior lobe of pronotum with diagonal sulci; lateral angles of posterior lobe of pronotum subconically rounded. Hemelytra extending just beyond apex of abdomen.

Total length 10.00 mm. Hemelytra 7.50 mm. Greatest pronotal width 2.40 mm.

1 ♀ (holotype), Central Java, Nusa Kambangan (region of the South Coast), 12.XII.1926. F. C. DRESCHER.

Similar to *Opistoplatys vulpes* Miller (loc. cit.), differing mainly in the shape of the lateral angles of the posterior lobe of the pronotum, which present the apparently unusual features of being sub-conically rounded.

# Opistoplatys satyrus spec. nov. (fig. 5)

Colour. Testaceous; legs and venation of corium somewhat paler; membrane brownish infumate. Pubescence fulvous.

Structure. Basal segment of antennae twice as long as postocular; segment 2 a little longer than 1. Anteocular sub-equal to postocular in length; vertex half as wide as an eye and with a very feeble median, longitudinal sulcus; transverse sulcus very feeble. Anterior lobe of pronotum medially broadly sulcate and with a median trans-



Fig. 5. *Opistoplatys satyrus* spec. nov. A. Whole insect, dorsal view (legs omitted). B. Head & pronotum, lateral view (higher magnification than A) verse and a short, oblique sulcus laterally. Hemelytra extending just beyond apex of abdomen.

Total length 8.50 mm. Hemelytra 6.50 mm. Greatest pronotal width 2.75 mm. 1 9 (holotype), Java, L. G. E. KALSHOVEN.

Allied to Opistoplatys vulpes Miller (loc. cit.) but is smaller and differently coloured.

#### Stenopodinae

# Oncocephalus buruensis spec. nov. (fig. 6)

Colour. Testaceous. Basal segment of antennae with a little more than half apically suffused with brown. Vertex with two parallel, feebly arcuate brown stripes somewhat darker on inner margin; anteocular laterally with dark brown suffusion, darker or piceous at upper margin; ocellar area black; postocular laterally piceous. Basal segment of rostrum with a median, irregular brownish suffusion; a little less than half apically of segment 2, segment 3, piceous. Anterior lobe of pronotum with longitudinal piceous stripes as in fig. 6; posterior lobe with wide, longitudinal suffused brownish stripes; lateral angles of collar, posterior angles and postero-lateral margin of posterior lobe pale testaceous. Disc of scutellum piceous with faint testaceous suffusion apically; spine light brown with apex narrowly testaceous. Propleura with wide piceous stripe along upper and lower margins; remainder suffused with brown; stridulatory furrow piceous; meso and metapleura suffused with brown; median acetabula with a pale testaceous spot and margin pale stramineous; posterior acetabula brown, marginally narrowly testaceous; mesosternum brownish with a wide piceous stripe laterally. Connexivum with a small, narrow piceous spot apically on each segment; abdomen midventrally and ventro-laterally pale stramineous with suffused brown spots along apical margin of each segment; pygophore with large, suffused brown spot. Tibiae with an interrupted annulation basally, anterior tibiae with a median and apical annulation, median tibiae with a sub-median and apical annulation, posteror tibiae with an annulation in basal half and an apical annulation, piceous; anterior femora with piceous and brown suffusion and spots; median femora broadly piceous apically with a short, stramineous stripe on upper surface; posterior femora piceous with two short, stramineous stripes on upper surface apically; tarsi light brown; coxae with brown suffusion. Hemelytra with fuscous pattern as in fig. 6.

Structure. Basal segment of antennae feebly curved, thicker in apical two-thirds, with very short, forwards directed setae; segment 2 with abundant, short, suberect setae. Inter-antennal projections short, triangular; space between lower margin of eyes equal in width to segment 2 of rostrum; ocelli large, directed obliquely forwards. Pronotum a little wider than long; anterior lobe with a short tubercle sub-basally laterally. Prosternal spines very short, acute; lateral margin of prosternum feebly tuberculate. Scutellum minutely tuberculate with shallow, median and lateral sulci; spine relatively short, oblique, rounded apically. Midventral carina strongly developed, extending to apex of 6th segment. Anterior femora with more or less regularly spaced, moderately long spines, constricted



Fig. 6. Oncocephalus buruensis spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Hemelytron. D. Anterior femur. E. Pygophore, terminal view.

apically and with very short tubercles between them. Head and body with low, setigerous tubercles, the setae on the dorsal surface mostly spatulate and on lateral and ventral surfaces of thorax flattened and tomentose.

Total length 16.00 mm. Hemelytra 11.00 mm. Greatest pronotal width 3.50 mm.

1 & (holotype), Buru, Station 9, 20.VI.—10.VII.1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).

Resembles Oncocephalus impudicus Reuter (1883, Act. Soc. Sci. Fenn., p. 715), but is larger and differently coloured.

#### SALYAVATINAE

# Lisarda planata spec. nov. (fig. 7)

Colour. Basal segment of antennae brown; remaining segments testaceous. Head, except base, thorax, except posterior lobe of pronotum, piceous. Tylus,



Fig. 7. Lisarda planata spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Anterior leg. D. Pygophore, dorsal view.

base of head, anterior acetabula marginally, posterior lobe of pronotum testaceous; spine at posterior lateral angles of pronotum piceous. Rostrum brown. Abdomen testaceous; ventrally with piceous and dark testaceous suffusion; connexival segments dorsally with piceous suffusion in apical half. Corium and membrane testaceous with piceous suffusion and confluent spots. Legs testaceous, except tarsi, brown; anterior and median tibiae with a sub-basal annulation, a short narrow stripe on outer surface basally and suffusion in apical half, brownish; posterior tibiae with a short, narrow stripe on outer surface basally, brownish; femora suffused with brown; spines piceous. Setae and pubescence pale fulvous.

Structure. Basal segment of antennae almost straight, thick, a little shorter than head. Inter-antennal projection broadly triangular, rounded apically. Ocelli small; interspace about twice as wide as an ocellus. Sub-apical spine on femora moderately long, erect, slender, acute; adjacent spine on anterior and median femora short, oblique. Hemelytra extending very little beyond apex of abdomen.

Total length 11.50 mm. Hemelytra 8.50 mm. Greatest pronotal width 3.00 mm.

1 & (holotype), Java, Banjuwangi, coastal region, (MAC GILLAVRY Collection).

Allied to Lisarda abscondita Miller (1940, Journ. Fed. Mal. St. Mus., vol. 18, p. 515). Differs in colouration as follows: the pale testaceous areas are absent from the postocular and the hemelytra are mottled and not unicolourous, and the brown suffusion and annulations on the legs are less intense. In structure

it differs in having the inter-antennal projection more broadly triangular and broader basally, the postocular more rounded, the lateral angles of the collar directed outwards and not obliquely forwards, the posterior lobe of the pronotum without a median sulcus, the postero-lateral margin of the pronotum less deeply depressed, the scutellar spine thicker and the external apical angles of the connexival segments hardly at all produced. The genitalia are also different; in *abscondita* the pygophore from above is angularly rounded and the harpagones are relatively longer, more slender and more acute apically.

# PHYSODERINAE subfam. nov.

# Physoderes (Westwood) (1844, Journ. Proc. ent. Soc. Lond., p. 115)

The genus *Physoderes* comprises somewhat small and obscurely coloured insects, most of them, so far as is known, selecting as a habitat damp localities such as accumulations of decaying vegetable debris, likely places for coleopterous and dipterous larvae which are possibly their principal prey.

Up to the present, thirty-eight species (including the four new species described herein) are known, of which thirty-three are from the Oriental Region, two from the Australian Region and three from the Mascarene Region.

Critical examination of this genus has revealed characters which, in my opinion, provide a justification for its removal from the Reduviinae and for the erection of a new sub-family to receive it.

I therefore propose a new sub-family Physoderinae, the genotype of which to be *Physoderes notata* (Westwood) (loc. cit.) (Fig. 8 A, D, E). The diagnostic characters are as follows.

Head and body tuberculate, the tubercles low and with spatulate setae. Head elongate with transverse sulcus behind eyes. Ocelli present. Rostrum with 2nd segment straight. Both lobes of pronotum more or less transverse. Scutellum with apex produced, spatulate. Hemelytra complete, extending to apex of abdomen with 1st anal vein, forming part of the internal cell of membrane, extended to about middle of claval suture and also produced towards apex of membrane; vein Cu of corium obsolescent; Sc not coalescing with R; M not connected with R; R + M diverging at apical margin of corium; membrane extended backwards along costal margin of corium for the greater part of the length of corium; base of costal margin of corium sinuate and deflexed, the lower margin curved inwards to engage with metathorax; processes for linking together hemelytron and metathoracic wing composed of a minutely spinose elevation at apex of claval vein, (A2) and a sub-elliptical elevation, the external area of which more highly sclerotised, with flattened, imbricate spines, near external margin of clavus; costal margin of metathoracic wing corresponding with these elevations, thickened and minutely spinose. Metathoracic wings coloured. Dorsal gland apertures on segments 3, 4 and 5 of abdomen. Anterior and median femora spined on lower surface. Fossula spongiosa absent.

From the foregoing description a clear distinction may be made between this new sub-family and the Reduviinae in which *Physoderes* is placed at present, but it does not provide an indication of the possible relationship between it and



Fig. 8. Physoderes notata (Westw.). A. Hemelytron. B. Physoderes spec., linking process of hemelytron. C. idem, of metathoracic wing. D. & E., Physoderes notata, aedeagus; end. endosoma; ph. phallosoma; bp. basal plate. F. Physoderes patagiata Miller, ova.

other sub-families, except in so far as the shape of the head and rostrum is concerned. This has some features in common with that of the Phonolibinae Miller (1952, *Eos*, 28, p. 86) but in other respects the differences are considerable.

With regard to the shape and venation of the hemelytra, in a typical Reduviine hemelytron the first anal vein coalesces with Cu, forming the apical margin of the internal cell of the membrane, but, in *Physoderes*, it is produced beyond the apex of the internal cell and a short cross-vein connects it with Cu at about the middle of the external cell. The claval vein (A1) in *Physoderes* extends to about the middle of the claval suture which divides it from A2 (Fig. 8 A).

Further differences from the typical Reduviine hemelytron comprise the noncoalescence of Sc with R which again is not connected apically with M, R + Mdiverges at the apical margin of the corium and not at its middle and the basal part of Cu is obsolescent. An extraordinary feature providing a further difference is in the structure of the membrane which is extended backwards along the costal margin of the corium.

I have not examined the linking processes of the hemelytron of *Physoderes* notata. Those of an undetermined species, however, appear to agree substantially with the *Graphosoma* type as designated by G. TEODORO (1924, Nuove richerche sull' apparato di uncinamento fra elitre ed ali negli Eterotteri; Atti Memorie R. Acad. Sci. Lett. ed. Arti, Padova, p. 10).

The coloured metathoracic wings which may be entirely yellow, dark infumate with the basal half yellow or entirely dark infumate are not found in other Reduviinae and, incidentally, are rare in the Reduviidae as a whole.

In the metathoracic wing the vein Sc is free for the greater part of its apical length and coalesces with R much nearer the base than in a typical Reduviine wing and the costa is distinctly angulate.

I have examined the male genitalia of *Physoderes notata* the type of which is in the collection of the British Museum (Natural History), London, and have found that the structure of the phallosoma does not present any apparently unusual features, but, on the other hand, the basal plates lack the extension which forms part of them in representatives of other Reduviid sub-families.

It has been considered that the ova of sub-families of Reduviidae, as indeed of sub-families of other groups, have a characteristic form. Investigations which I have made recently, however, show that this is not entirely accurate. It would perhaps be more correct to state that the form of the ovum is characteristic for related genera, although in unrelated genera of the sub-family Harpactorinae there may be seen a somewhat close similarity both in the shape of the chorion and of its differentiated portion. This is apparent principally in those species which deposit their ova in agglutinated groups.

It is obvious that much more extensive studies of ova will have to be made before a satisfactory conclusion may be reached.

The ova of *Physoderes patagiata* Miller (1941, *Journ. Fed. Mal. St. Mus.*, vol. 18, p. 783) (fig. 8 F) which I have obtained by dissection are cylindrical, somewhat narrower at each end with one side shorter than the other and straight. The operculum has, in the centre, a truncate, rounded, cylindrical elevation, and the differentiated portion of the chorion is narrow.

In colour they are brownish yellow, the operculum and the differentiated portion of the chorion whitish. The total length is approximately 1.00 mm.

They differ from those Reduviine ova which I have examined mainly in the shape of the operculum which, incidentally, is not unlike that of ova of certain Harpactorinae, e.g., *Coranus* spp.

The ova of relatively few representatives of the Reduviinae have been described and figured. Some are regularly ovate, smooth and with a feebly convex operculum. This type of ovum is characteristic of *Reduvius* and of the closely related sub-family Triatominae.

Other Reduviine ova are cylindrical, sometimes smooth or granulose, and the operculum may be rugose or have short, erect, spine-like processes.

In discussing the relationship of Reduviid genera, USINGER, (1943, A revised classification of the Reduvioidea, with a new sub-family from South America, *Annals Ent. Soc. Amer.*, vol. 36, part. 4) referring to *Physoderes* states, "Similarly the genus *Physoderes* with a long cylindrical head and a *Triatoma*-like rostrum may require a separate sub-family, although relationship is suggested with *Stachyogenys* Stål and *Sphedanocoris* Stål.

The suggestion, however, cannot be maintained since *Physoderes* has few characters in common with these genera. So far as I have been able to ascertain, the only genus with characters similar to those of *Physoderes* is the South Ame-

rican genus Aradomorpha Champion (1899, Insects, Rhynchota, Hemiptera-Heteroptera 2, Biologia Centrali-Americana, pp. 196–197). Its general habitus is similar to that of Physoderes and it also has spined anterior and median femora, and tuberculate tibiae from which a fossula spongiosa is absent.

Other points of agreement are the presence of tubercles bearing short, spatulate setae, the extension backwards (although to a lesser degree) of the costal margin of the membrane, the prolongation of vein A1 towards the apex of the membrane and the location of dorsal abdominal gland orifices on segments 3, 4 and 5.

The principal differences are the relatively shorter head of *Aradomorpha* the juga of which are greatly enlarged, the shorter and thicker rostrum, the tarsi with 2 segments and, in the hemelytron, vein A1 meets the claval suture close to the apex of the suture. The scutellar spine is not dorso-ventrally compressed.

#### Physoderes buruensis spec. nov. (fig. 9)

Colour. Piceous. Acetabula with a pale testaceous spot. Apex of 4th antennal segment testaceous. Segments 2 and 3 of rostrum testaceous. Abdomen dorsally yellowish; ventrally piceous with suffused testaceous spots laterally on segments 2—6, a yellowish spot sub-laterally on segments 3—7 and a yellowish spot mid-ventrally on segment 3; connexivum piceous with a small testaceous spot on segments 3—6 apically; segment 7 with a larger testaceous spot apically. Corium brown; clavus with suffusion and a narrow stripe apically fuscous. Wings yellow in basal half, remainder infumate. Femora and tibiae basally, tibiae with a sub-apical annulation, femora with a sub-median annulation, testaceous.

Structure. Basal segment of antennae not extending to apex of head. Ocelli small; interspace a little wider than distance between an ocellus and an eye. Head a little shorter than pronotum; transverse sulcus distinct and behind eyes; antennal tubercles very feebly prominent. Disc of scutellum deeply depressed; spine deeply sulnarrowly cate, rounded apically. Anterior lobe of



Fig. 9. Physoderes buruensis spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Anterior leg. D. Pygophore, dorsal view.

pronotum as wide as posterior lobe with a deep, median depression; transverse sulcus deep and with wide foveoles; posterior lobe with a wide and deep depression anteriorly, with obscure, transverse sulci within it; postero-lateral margin deeply and narrowly depressed; lateral angles of collar produced, transversely truncate apically. Hemelytra extending to apex of abdomen.

Total length,  $\delta$ , 11.00 mm,  $\varphi$ , 10.50 mm. Hemelytra,  $\delta$ , 6.20 mm,  $\varphi$ , 7.00 mm. Greatest pronotal width,  $\delta$ , 3.20 mm,  $\varphi$ , 3.00 mm.

1 & (type), Buru, Station 9, 1—9.VII.1921; 1 ♀ Station 8, February, 1922. L. J. TOXOPEUS (MAC GILLAVRY Collection).

The female paratype differs from the male in colouration in having the abdomen ventrally testaceous with longitudinal, piceous stripes. Structurally the female differs in being somewhat shorter and in having the anterior lobe of the pronotum much narrower than the posterior lobe.

In the shape of the pronotum, which, however, is relatively wider and shorter, this species resembles *Physoderes minor* Usinger (1946, Insects of Guam, *Bernice P. Bishop Museum Bulletin* 189, p. 50), but it differs in larger size and colouration.

# Physoderes kalshoveni spec. nov. (fig. 10)

Colour. Antennae and legs testaceous. Head and thorax piceous; apex of scutellum and spine testaceous. Anterior lobe of pronotum with pale areas as in fig. 10. Abdomen dorsally brown; connexivum paler with a piceous spot basally on segments 3—7; ventrally brown with longitudinal testaceous stripes laterally. Corium piceous; membrane and wings infumate. Femora basally and apically brownish; tibiae with a sub-median brownish annulation.



Fig. 10. Physoderes kalshoveni spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Anterior leg. D. Pygophore, dorsal view.

Structure. Basal segment of antennae not extending to apex of head; antennal tubercles moderately prominent; head sub-equal in length to pronotum; transverse sulcus distinct; postocular somewhat transversely globose; ocelli small; interspace nearly twice as wide as distance between an ocellus and an eye. Anterior lobe of pronotum equal in width to posterior lobe with lateral margins tuberculate and with a very deep, median depression; transverse sulcus very deep and wide; posterior lobe with a foveole medially and transverse sulci anteriorly; posterior margin feebly rounded; parascutellar lobes with external margin much longer than internal margin. Disc of scutellum very feebly depressed; spine rounded apically and longitudinally sulcate. Hemelytra extending to apex of abdomen.

Total length 8.50 mm. Hemelytra 5.00 mm. Greatest pronotal width 2.50 mm.

1 & (holotype), West Java, Buitenzorg, 250 m, I. 1926. L. G. E. KALSHOVEN. Apparently allied to *Physoderes minor* Usinger (*loc. cit.*) but differs in larger size, shape and sculpture of the pronotum, narrower internal cell of membrane and in the disc of the scutellum being hardly at all depressed. The armature of the anterior femora is also different.

# Physoderes rugosa spec. nov. (fig. 11)

Colour. Testaceous. Posterior lobe of pronotum, pleura, sterna suffused with piceous. Clavus basally yellowish, remainder and a spot adjacent to claval suture apically, infumate. Abdomen dorsally reddish yellow; connexivum testaceous with a piceous spot in basal half; ventrally with two irregular, longitudinal brownish



Fig. 11. Physoderes rugosa spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Anterior leg. D. Pygophore, dorsal view.

stripes sub-laterally. Wings infumate. Femora with a sub-apical and median annulation; tibiae with base and a median annulation brownish.

Structure. Basal segment of antennae extending a little beyond apex of head. Ocelli small, directed more or less outwards; interspace less than distance between an ocellus and an eye. Head a little shorter than pronotum; antennal tubercles not prominent; transverse sulcus wide, deep, situated well behind eyes. Lateral margin of scutellum tuberculate; scutellar spine rounded apically and deeply sulcate. Anterior lobe of pronotum a little narrower than posterior lobe with a deep, median depression, two short tubercles anteriorly and with wide shallow sulci; lateral angles of collar produced, acute; lobes separated by a broad, foveolate sulcus; posterior lobe strongly, medially depressed with a short carina on each side of depression; postero-lateral margins moderately deeply depressed. Hemelytra extending a little beyond apex of abdomen.

Total length 10.70 mm. Hemelytra 6.00 mm. Greatest pronotal width 3.50 mm. 1 & (holotype), West Java, Tjiwidei, 1000 m, 14.XII.1918. L. G. E. KALS-HOVEN.

Allied to *Physoderes notata* (Westwood) (1847, *Trans. ent. Soc. Lond.* vol. 4, p. 247). Differs in colouration, in the sculpture of the anterior pronotal lobe, the longer basal segment of the rostrum which extends to the apex of the antennal tubercles, the wider parascutellar lobes and in the shorter, narrower internal cell of the membrane. The shape of the 7th segment of the abdomen ventrally is also different, the lobately produced median part of the basal margin being much narrower.

Physoderes corporaali spec. nov. (fig. 12)

Colour. Pale testaceous. Eyes red. Posterior lobe of head, except base ventrally and gular region black. Anterior lobe of pronotum and propleura with pattern as in Fig. 12, meso and metapleura with stripes, meso and metasternum,

blackish piceous; prosternum laterally suffused with brown; posterior lobe of pronotum with a wide, me-



Fig. 12. *Physoderes corporaali* spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Anterior leg. D. Pygophore, dorsal view.

dian brownish suffusion; disc of scutellum black; spine testaceous. Abdomen testaceous; dorsally yellow; ventrally with interrupted brown stripes; connexival segments 4—7 with a black spot basally. Corium with a brownish suffusion apically; membrane infumate with fuscous suffusion at internal basal angle. Wings yellow. Femora with a sub-median and an apical suffused annulations, tibiae with faint, sub-median annulation, brownish.

Structure. Basal segment of antennae not extending to apex of head. Ocelli moderately large; interspace a little wider than distance between an ocellus and an eye. Head a little less than half as wide as long; transverse sulcus well-developed, behind eyes; antennal tubercles not prominent; posterior lobe globose. Pronotum longer than head and about one third wider than long; anterior lobe a little wider than posterior lobe, laterally tuberculate, with a moderately deep depression; transverse sulcus very deep laterally; posterior lobe moderately depressed medially with a narrow, longitudinal, sub-foveolate sulcus within depression; posterolateral margins very deeply depressed; posterior margin broadly angulate. Parascutellar lobes moderately long, rounded apically with sides sub-parallel. Hemelytra extending just beyond apex of abdomen.

Total length 9.50 mm. Hemelytra 6.00 mm. Greatest pronotal width 3.00 mm. 1 & (holotype), West Java, Preanger, Pelabuan, (region of the South coast) VII.1919. J. B. CORPORAAL (MAC GILLAVRY Collection).

Allied to *Physoderes notata* (Westwood) (loc. cit.), differs in more intense colour of the pronotal pattern, in the shape of the head, larger eyes, shape of the pronotum, the anterior lobe being much more deeply foveolate and the median sulcus on the posterior lobe strongly defined, and in the shape of the external cell of the membrane which is more narrowly rounded.

#### REDUVIINAE

# Pasiropsis vidua spec. nov. (fig. 13)

Colour. Piceous; legs and rostrum paler. Connexivum with a narrow, yellow intersegmental spot. Corium fuscous; membrane dark infumate. Setae pale fulvous.

Structure. Ocelli small; interspace a little wider than an ocellus. Vertex with a moderately deep, median longitudinal sulcus in basal half. Anterior lobe of pronotum with shallow, curved, diagonal sulci; posterior lobe with a median, lon-gitudinal sulcus, feeble anteriorly and wider posteriorly. Scutellar spine very feebly curved, oblique, acute. Hemelytra extending to apex of abdomen. Spine on prosternum posteriorly at right angles to sternum.

Total length, 3, 9.50 mm, 9, 10.00 mm. Hemelytra, 3, 5.50 mm, 9, 6.00 mm. Greatest pronotal width, 3, 2.50 mm, 9, 2.50 mm.

1 & (type), Central Java, Mount Slamat, Baturraden, 1000 m, 29.VII.1928; 1 ♀; same locality I.1928. F. C. Drescher; 1 ♀ West Java, Preanger, Tjigembong. J. B. CORPORAAL.

Agrees in colouration with *Pasiropsis maculata* Distant (1903, Ann. Soc. Ent. Belg., p. 56) but from all other known species it differs in colouration, shape of pronotum and genitalia.



Fig. 13. Pasiropsis vidua spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Pygophore, ventral view.



Fig. 14. Sminthus buruanus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, dorsal view. D. idem, ventral view. E. Harpago. F. Apex of abdomen, ♀, ventral view.

#### Sminthus buruanus spec. nov. (fig. 14)

Colour. Basal segment of antennae piceous; remaining segments testaceous; segment 2 with blackish suffusion apically. Head and thorax, except meso and metasternum, black; postocular with a spot at external margin of ocelli; rostrum, pale testaceous. Abdomen dorsally dark testaceous with piceous suffusion; connexivum red; mid-ventrally dark testaceous with blackish suffusion inter-segmentally; laterally black. Meso and metasternum dark testaceous. Scutellum basally laterally, greater part of corium basally, dark testaceous; remainder of corium piceous; membrane dark testaceous infumate, somewhat paler apically and with a dark infumate elongate spot sub-costally. Femora and tibiae reddish yellow; femora broadly apically piceous and with a piceous stripe on lower surface on anterior and median pair; tarsi testaceous.

Structure. Head sub-equal in length to posterior lobe of pronotum; vertex with a feeble V-shaped sulcus and with transverse striae. Ocellar interspace about twice as wide as an ocellus. Anterior lobe of pronotum somewhat feebly sculptured, deeply medially longitudinally sulcate in basal half; posterior lobe with a deep, and wide foveolate median longitudinal sulcus extending almost to base and progressively narrowed posteriorly; lateral sulci with deep, moderately large foveoles. Hemelytra extending just beyond apex of abdomen. Pro and mesosternum with moderately dense pubescence.

Total length, 3, 14.50—15.50 mm, 9, 15.00 mm. Hemelytra, 3, 10.00 mm, 9, 10.00 mm. Greatest pronotal width, 3, 3.80 mm, 9, 3.80 mm.

1 δ, (type), Buru, Station 9, 26.IV—1.VI.1921; 1 δ, 1 φ, Station 4, 15.IV. 1921; 1 δ, Station 6, 21—24.IV.1921; 1 φ, Station 8, 25—26.IV.1921; 1 φ, Station 9, 1—9.VIII.1921. L. J. TOXOPEUS. (MAC GILLAVRY Collection).

Resembles *Sminthus limbaticollis* Stål, but is larger and also differs in the shape of the pronotum, the posterior lobe of which is flattened, more narrowly rounded posteriorly and more deeply sulcate. The main differences in colouration are in the anterior and median femora which have a black stripe on the lower surface in this new species. The genitalia in both sexes also are different.

#### Kalshovenia gen. nov.

Size moderate. Basal segment of antennae longer than anteocular. Antennal tubercles situated close to eyes. Pre-antennal elevations narrowly separated, divergent apically, the sulcus between them wider basally. Vertex medially longitudinally sulcate, sub-equal in width to an eye. Ocelli moderately large, elevated, directed more or less outwards. Postocular gradually narrowed to base and constricted sub-basally. Basal segment of rostrum sub-equal in length to remaining segments together. Anterior lobe of pronotum shorter than posterior lobe, medially anteriorly elevated and with low rounded carinae and sulci; posterior lobe laterally produced and with two discal tubercles. Scutellum with a long, oblique spine. Internal cell of membrane less than half as wide as external cell at base. Abdomen with segment 6 mid-ventrally very narrow and segment 7 very wide; segment 8 considerably exposed; harpagones strongly curved, flattened apically. Fossula spongiosa on anterior and median tibiae.

Type species, Kalshovenia javanica spec. nov. (fig. 15).

Colour. Piceous, except vertex, area surrounding ocelli, carinae and elevations on anterior lobe of pronotum, spots, tubercles, lateral spines on posterior lobe of pronotum, connexival spots, annulations on femora, reddish yellow. Basal and apical spot on corium yellow.

Structure. Basal segment of antennae with sparse, short, forwards directed setae. Head and anterior lobe of pronotum smooth; posterior lobe transversely rugose, the rugosities somewhat feeble on pale areas. Median sulcus on vertex considerably wider anteriorly. Lateral spines on posterior lobe of pronotum acute. *Fossula spongiosa* on anterior and median tibiae a little less than half as long as tibia.



Fig. 15. Kalshovenia javanica gen. et spec. nov. A. Whole insect, dorsal view. B. Head, pronotum, scutellum & anterior coxa, lateral view. C. Segments 5-9 of abdomen, lateral view. D. Pygophore, terminal view. E. Harpago.

Total length 18.00 mm. Hemelytra 12.00 mm. Greatest pronotal width 5.50 mm.

1 3 (holotype), Central Java, Gedangan near Telawa, 50 m, teak forest, 11.I.1923.

Very closely allied to *Acanthaspis* Amyot et Serville (1843, Hist. Nat. Ins. Hém. p. 336), from which it is separated by the segmentation of the abdomen, the atypical morphology of the harpagones and pygophore, and the relatively longer basal rostral segment. The segmentation of the abdomen is not unlike that of *Paredocla* Jeannel (1914, *Bull. Soc. ent. Fr.*, p. 175), but in this genus the harpagones are typical of the Reduviinae.

It has been obvious for a long time that the genus *Acanthaspis* requires revision. From a preliminary examination of the Oriental species, I have arrived at the conclusion that it is highly probable that relatively few species actually belong to this genus. The most striking differences are to be seen in the genitalia and segmentation of the abdomen, and, furthermore, a superficial examination only is required to show quite clearly that many of the species should have not been placed in this genus.

The task of revision will present very important difficulties on account of the fact that the genotype, *Acanthaspis flavovaria* Hahn according to information received from Dr. STEVAN VON KéLER of the Zoologisches Museum, Humboldt Universität, Berlin (in litt.), as well as the types of other species have been lost or destroyed.

I also believe that when a revision of the species distributed in the Ethiopian Region is carried out a similar conclusion will be reached.

# PIRATINAE

#### Pirates buruanus spec. nov. (fig. 16)

Colour. Antennae brown. Head, except rostrum, body, black. Pronotum with a faint lustre. greenish Rostrum and legs piceous. Connexival segment 2 piceremaining ous; segments pale stramineous with piceous suffusion apically. Corium dark yellow except apical half of clavus, greater part of area between claval suand Cu, ture



Fig. 16. Pirates buruanus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Median apical process of pygophore, lateral view. D. idem, terminal view. E. Right harpago. F. Left harpago.

brown, the dark area of clavus suffused with fuscous basally; corium apically with linear brownish suffusion; membrane infumate with a spot at base of internal cell, greater part of external cell fuscous; between fuscous areas a small yellowish white spot.

Structure. Head a little shorter than pronotum. Vertex sub-equal in width to an eye with a short, median sulcus basally; transverse sulcus angulate. Ocelli large; interspace sub-equal in width to an ocellus. Pronotum wider than long; anterior lobe feebly depressed medially basally with a very narrow, longitudinal sulcus within depression; posterior lobe obscurely transversely rugose. Disc of scutellum damaged; spine horizontal, rounded apically and feebly compressed laterally. Hemelytra extending a little beyond apex of abdomen. Whole insect with abundant fine, long and short setae, less abundant on corium. *Fossula spongiosa* on anterior tibiae, including produced portion, half as long as tibia; on median tibiae less than half as long.

Total length 11.00 mm. Hemelytra 7.50 mm. Greatest pronotal width 2.70 mm.

1 3 (holotype), Buru, Station 6, 21-24.IV.1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).

Allied to *Pirates excelsus* Miller (1948, *Trans. R. ent. Soc. Lond.*, vol. 99, part 13, p. 442) from which it differs in the somewhat narrower pronotum, shorter hemelytra and genitalia.



Fig. 17. Pirates immaculatus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Pygophore, lateral view. D. Median apical process of pygophore. E. Right harpago. F. Left harpago.

## Pirates immaculatus spec. nov. (fig. 17)

Colour. Basal segment of antennae piceous; remaining segments brown. Head, thorax, legs piceous; pronotum and pleura somewhat darker. Scutellar spine brown. Abdomen brown, connexivum paler. Corium brown with an irregular, median, longitudinal stripe, dark yellow; membrane infumate.

Structure. Vertex sub-equal in width to an eye with a short, median sulcus basally; transverse sulcus broadly arcuate. Ocelli moderately large; interspace somewhat wider than an ocellus. Pronotum wider than long; anterior lobe with a shallow depression basally with a very narrow sulcus not quite half as long as lobe, within it. Disc of scutellum somewhat deeply depressed, the depression with short, irregular sulci; spine horizontal, rounded apically and feebly constricted basally. Hemelytra extending just beyond apex of abdomen. Whole insect with short and long fine setae and pubescence.

Total length,  $\delta$ , 12.00 mm,  $\varphi$ , 13.00 mm. Hemelytra,  $\delta$ , 9.00 mm,  $\varphi$ , 9.00 mm. Greatest pronotal width,  $\delta$ , 3.50 mm,  $\varphi$ , 3.50 mm.

1 3 (type), Sumatra, Palembang (coastal region), 1916. DOUGLAS; 1 9, Bindjei Medan (coastal region). C. R. PFISTER (MAC GILLAVRY Collection).

Allied to *Pirates atromaculatus* Stål (1870, *Oef. Vet. Ak. Förb.*, p. 692), but differs in colouration, the hemelytra being without fuscous spots and in the genitalia.

## Pirates nanus spec. nov. (fig. 18)

Colour. Antennae brown. Head, anterior lobe of pronotum, pleura, sterna, black; anterior acetabula, rostrum, posterior lobe of pronotum, piceous. Legs piceous, somewhat pale. Corium brown with fuscous suffusion; base of clavus and



Fig. 18. Pirates nanus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Pygophore, lateral view. D. Median apical process of pygophore. E. Right harpago. F. Left harpago.

a stripe along claval suture pale stramineous; membrane infumate; cells fuscous except apex of external cell and a transverse whitish yellow spot in internal cell. Abdomen piceous; connexivum pale stramineous.

Structure. Vertex across base wider than an eye, basally medially with a very short sulcus or foveole; transverse sulcus broadly angulate. Ocelli moderately large; interspace a little wider than an ocellus. Pronotum as long as wide; anterior lobe with a shallow median depression with a very narrow sulcus within it. Disc of scutellum somewhat deeply depressed; spine horizontal, rounded apically. Hemelytra extending beyond apex of abdomen by one fourth of their length. Whole insect with abundant, fine long and short setae, less abundant on corium. *Fossula spongiosa* on anterior tibiae, including produced portion, half as long as tibia.

Total length 7.50 mm. Hemelytra 6.00 mm. Greatest pronotal width 2.00 mm. 1 & (holotype), West Java, Preanger, Bandung, Dago, 16.IX.1929. F. C. DRESCHER (MAC GILLAVRY Collection).

Differs from all other known species in size and colouration.

# Ectomocoris infuscatus spec. nov. (fig. 19)

Colour. Antennae light brown. Head, anterior lobe of pronotum, pleura, sterna, scutellum, except spine, black. Rostrum, posterior lobe of pronotum, scutellar spine, piceous. Abdomen dorsally dark brown; ventrally piceous; connexivum with a pale stramineous spot basally on each segment, the inner margin of which not reaching its internal margin; harpagones and median apical process of pygophore light brown. Corium brown with fuscous suffusion along Cu; membrane infumate with the cells fuscous and with a faint testaceous stripe basally near costal margin; internal cell with a quadrate yellowish spot sub-basally. Tarsi light brown; anterior and median femora and tibiae, posterior femora piceous; tibiae apically, all femora basally narrowly pale testaceous; posterior tibiae brown.

Structure. Head about twice as long as posterior lobe of pronotum; vertex about one-third wider than an eye with a short, median longitudinal sulcus basally; ocelli moderately large, elevated; interspace sub-equal in width to an ocellus. Anterior lobe of pronotum much narrower than posterior lobe with a short, shallow depression medially sub-basally and elongate, sub-parallel sulci sub-dorsally and sub-laterally, the sub-lateral sulci wider and deeper; transverse sulcus with transverse carinulae; posterior lobe very feebly depressed medially. Disc of scutellum deeply excavate and with a short, longitudinal sulcus laterally; spine subhorizontal, rounded and feebly laterally compressed apically. Hemelytra extending just beyond apex of abdomen. *Fossula spongiosa* on tibiae not much shorter than tibia.

Total length 14.00 mm. Hemelytra 9.50 mm. Greatest pronotal width 3.20 mm.

1 & (holotype), West Java, Preanger, Mount Tangkuban Prahu, 4000-5000 feet, 5.IX.1928. F. C. DRESCHER (MAC GILLAVRY Collection).

Allied to Ectomocoris cheribonensis Miller (1940, Journ. Fed. Mal. St. Mus., vol. 18, p. 593). Differs in somewhat larger size, colouration. In cheribonensis the femora are broadly pale testaceous basally, the corium has a suffused yel-

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Fig. 19. Ectomocoris infuscatus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Pygophore, terminal view. D. idem, lateral view. E. Right harpago. F. Left harpago.

lowish stripe along inner margin of Cu, the spot on the membrane is sub-pyriform and the pale stramineous spots on connexivum are sub-triangular. The main structural differences are as follows: in *cheribonensis* the ocelli are relatively much larger, the pronotum longer and narrower, the posterior lobe being not much wider than the anterior lobe on which the sulci are feeble and the scutellum is less deeply excavate. The genitalia are also different.

#### ECTRICHODIINAE

## Toxopeusiana gen. nov.

Size small. Antennae with 8 segments; all segments setose. Head longer than pronotum, smooth with irregular sculpture; anteocular shorter than postocular; ocelli vestigial, widely separated. Basal segment of rostrum longer than remaining segments together. Pronotum smooth; anterior lobe longer than posterior lobe, medially longitudinally sulcate throughout; posterior lobe medially longitudinally sulcate in anterior half, the sulcus foveolate; transverse sulcus feeble and with feeble carinulae; lateral sulci foveolate; posterior lobe with punctures below surface. Scutellum transverse with lateral projections apically. Hemelytra extending to base of abdomen. Dorsal surface of abdomen transversely striate; intersegmentally between segments 1 and 2, 2 and 3 carinulate; segment 5 with indications of larval dorsal gland orifice. Mesosternum with 3, metasternum with 1, sulci. Anterior and median legs moderately incrassate; anterior and median tibiae with a *fossula spongiosa*; posterior femora nodulose sub-apically; apical segment of tarsi equal in length to remaining segments together.

Type species, Toxopeusiana nuda spec. nov. (fig. 20).

Colour. Piceous. Segment 3 of antennae, except base, lateral angles of posterior lobe of pronotum, hemelytra, annulations on tibiae, connexival spots, abdomen ventro-laterally, segments 1 and 2 of tarsi pale stramineous.

Structure. Anterior lobe of pronotum with feeble depressions sub-laterally; foveoles on posterior lobe of pronotum narrow, transverse. Apical projections on



foveoles on posterior lobe of pronotum narrow, trans-Fig. 20. *Toxopeusiana nuda* gen. et spec. nov. A. Whole insect, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, dorsal view.

scutellum widely separated, very short; disc deeply foveolate. Segment 1 of abdomen dorsally rugose and with a transverse carina; segment 2 mid-dorsally with short, irregular, longitudinal carinulae.

Total length 10.00 mm. Greatest pronotal width 2.50 mm.

1 & (type), Buru, Station 7, September, 1921. 1 ♀, same locality, Station 13, Mount Efrarat, 1300 m, III.1922. L. J. TOXOPEUS.

The relationship of this new genus is not apparent. Possibly allied to Scadra Stål (1859, Oef. Vet. Ak. Förb. p. 176 and 182).

#### Neoscadroides gen. nov.

Size moderate. Basal segment of antennae shorter than head but longer than anteocular. Head shorter than pronotum; anteocular longer than postocular, the latter transversely globose immediately behind eyes; vertex laterally diagonally flattened; medially and laterally transversely striate; ocelli narrowly separated; genae produced, the produced portion not concealing site of insertion of antennae. Basal segment of rostrum sub-equal in length to segment 2; segment 3 shorter



Fig. 21. Neoscadroides monticola gen. et spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, dorsal view. D. Harpago.

than 2. Anterior lobe of pronotum transverse, shorter than posterior lobe, smooth with obscure carinae; posterior margin undulate; posterior lobe strongly rugose with a deep median, longitudinal foveolate sulcus. Scutellum with two apical spines and a projection basally laterally; disc foveolate. Base of external cell of membrane very narrow. Meso and metasternum fused, the former with 3, the latter with 1, transversely striate sulci. Abdomen with transverse carinulae between segments 2 and 3. Legs slender; anterior and median tibiae with *fossula spongiosa*.

Type species, Neoscadroides monticola spec. nov. (fig. 21)

Colour. Piceous. Tarsi testaceous with apical segment suffused with piceous. Segment 2 of antennae with a pale stramineous annulation. Corium black; veins Cu, M, R basally testaceous. Abdomen mid-ventrally light brown. Setae pale fulvous.

Structure. Segment 2 of antennae one third longer than 1. Ocellar interspace less than width of an ocellus. Apical scutellar spines curved inwards and downwards, very narrowly separated; foveole on disc very deep and irregularly rugose. Base of external cell of membrane about one-fourth as long as base of internal cell; hemelytra extending almost to apex of abdomen. Abdomen ventro-laterally aciculate. *Fossula spongiosa* on tibiae very short.

Total length 22.00 mm. Hemelytra 16.00 mm. Greatest pronotal width 6.00 mm.

1 & (holotype), West Java, Mount Tangkuban Prahu, 4000-5000 feet. F. C. DRESCHER.

In general habitus this new genus resembles Neoscadra Miller (1941, Journ. Fed. Mal. St. Mus., vol. 18, p. 789), but differs in the shape of the head, relative lengths of ante and postocular, relative lengths of rostral segments, sculpture of head and pronotum, shape of scutellum which has also a sub-basal lateral pro-

jection and in the relative basal width of the internal and external cells of membrane; in *Neoscadra* the base of the external cell is more than half as wide as the base of the internal cell. The structure of the meso and metasternum of *Neoscadra* is similar to that of this new genus and these segments appear to be fused. In *Neoscadroides* there is no mesopleural tubercle.

# Preangerocoris gen. nov.

Antennae with 8 segments; basal segment shorter than head but extending considerably beyond apex; all segments with moderately long erect setae. Head sub-equal in length to pronotum; postocular transversely globose and sub-equal in length to restricted portion; vertex on each side of base of tylus carinately produced. Ocelli small. Basal segment of rostrum longer than remaining segments together. Anterior lobe of pronotum longer than posterior lobe; lateral angles of collar produced; transverse sulcus without carinulae; both lobes medially longitudinally sulcate, the sulcus on posterior lobe foveolate; anterior lobe laterally sulcate; lateral sulci on posterior lobe foveolate and not extending to transverse sulcus. Scutellum with two apical spines. Hemelytra not extending to apex of abdomen. Meso and metasternum medially longitudinally sulcate. External apical angle of segment 2 of abdomen produced; intersegmentally ventrally between segments 2 and 3 with carinulae; abdomen dorsally and ventrally obscurely transversely striate. Anterior and median femora incrassate, unarmed; posterior femora incrassate sub-apically; anterior and median tibiae with a *fossula spongiosa*.

Type species Preangerocoris limbatus spec. nov. (fig. 22)

Colour. Piceous. Postero-lateral angles of pronotum, abdomen dorsally paler;



Fig. 22. Preangerocoris limbatus gen. et. spec. nov. A. Head, pronotum, & scutellum, dorsal view. B. idem, lateral view. C. Median apical process of pygophore. D. Harpago. E. Apex of abdomen, ♀ ventral view.

connexivum light red. Corium fuscous with a pale reddish costal stripe not extending to apex.

Structure. Head and pronotum smooth; vertex with obscure transverse striae. Anterior lobe of pronotum with obscure depressions; posterior lobe obscurely rugose. Ocellar interspace sub-equal in width to an ocellus. Scutellar spines subacute, curved downwards. Hemelytra extending to middle of 6th abdominal segment; lateral margins of 7th abdominal segment sinuate; apical margin medially excised. *Fossula spongiosa* very short.

Total length, 3, 9.50 mm, 9, 10.50 mm. Hemelytra, 3, 4.00 mm, 9, 7.00 mm. Greatest pronotal width, 3, 2.50 mm, 9, 3.00 mm.

1 & (type), West Java, Preanger, Mont Patuha, 5000 feet, II.1937; 1 ♀, Central Java, Mount Slamat, Baturraden, 1000 m, X—XII.1926. F. C. DRESCHER (MAC GILLAVRY Collection).

Closely allied to Scadra Stål (1859, Oef. Vet. Ak. Förb., p. 182), from which it differs in having the basal segment of the rostrum longer than the remaining segments together, the vertex carinately produced, the transverse sulcus of the pronotum, the anterior lobe of which is longer than the posterior lobe, non-carinulate.

Schottus buruensis spec. nov. (fig. 23)

Colour. Basal segment of antennae stramineous suffused with piceous on upper surface; segment 2 stramineous with a little less than half apically piceous; seg-



Fig. 23. Schottus buruensis spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Abdomen, ventro-lateral view. ments 3 and 4 piceous, segment 4 with a median, stramineous annulation. Head, sterna, meso and metapleura piceous; pronotum, propleura, scutellum yellow; propleura anteriorly, posterior lobe of pronotum with transverse irregular stripe, piceous. Abdomen pale yellow; connexival segments 2 and 3 laterally, base of segment 4, greater part of segment 5, segment 6 in apical half, apex of segment 7, piceous; ventrally with irregular piceous pattern as in fig. 23. Hemelytra fuscous; corium with faint yellowish suffusion basally. Legs stramineous; tibiae broadly piceous basally and apically; femora with apex basally and a wide subbasal annulation piceous; tarsi brown.

Structure. Antennal tubercles and vertex laterally somewhat flattened and transversely striate. Ocelli small; interspace twice as wide as an ocellus. Anterior lobe of pronotum transverse with a foveole medially basally. Disc of scutellum with a deep, circular depression. Hemelytra extending to apex of abdomen.

Total length 15.00 mm. Hemelytra 10.00 mm. Greatest pronotal width 3.50 mm.

1 9 (holotype), Buru, Station 5, April 1921. L. J. TOXOPEUS (MAC GILLA-VRY Collection).

Differs from all other known species in colouration.

# Scadra consimilis spec. nov. (fig. 24)

Colour. Antennae, head, thorax and legs piceous; abdomen red with segment 2 ventrally, a large spot laterally on segment 3, transverse stripes on segments 4—6 interrupted and narrowed mid-ventrally, segment 7, except mid-ventrally, segment 9, piceous; connexivum pale yellow. Corium fuscous with costal area in basal half pale stramineous; membrane infumate.



Fig. 24. Scadra consimilis spec. nov. A. Head, pronotum & scutellum dorsal view. B. idem, lateral view. C. Pygophore, ventral view. D. Scadra munda Miller, pygophore, ventral view.

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Structure. Vertex transversely striate and with a very narrow, median, longitudinal sulcus not extending to transverse sulcus and diagonally laterally sulcate. Ocelli small; interspace nearly three times as wide as an ocellus. Anterior lobe of pronotum with a wide, deep, median, longitudinal depression and a depression sub-laterally; posterior lobe obscurely transversely rugose; lateral sulci foveolate, the foveoles large and transverse. Hemelytra extending to apex of abdomen.

Total length 12.00 mm. Hemelytra 8.00 mm. Greatest pronotal width 3.40 mm. 1 & (holotype), Sumatra, Medan, (coastal region), 1909, VAN LOGHEM (MAC GILLAVRY Collection).

Allied to Scadra munda Miller (Journ. Fed. Mal. St. Mus., vol. 18, p. 629). Differs in smaller size, colouration and genitalia.

#### Scadra amoenula spec. nov. (fig. 25)

Colour. Piceous. Scutellar spines, spots on connexival segments 2—4 dorsally reddish yellow. Abdomen ventrally with red stripes and spots as in fig. 25. Hemelytra testaceous, laterally narrowly yellowish; corium with elongate triangular infumate spot. Tarsi brown.



Fig. 25. Scadra amoenula spec. nov. A. Head, pronotum & scutellum, dorsal view. B. idem, lateral view. C. Abdomen, ventro-lateral view. D. Pygophore, ventral view.

Structure. Antennae with abundant, moderately long, erect setae. Antennal tubercles dorsally and vertex laterally somewhat flattened and transversely striate; vertex transversely striate and with a very narrow median longitudinal sulcus not extending to transverse sulcus. Ocelli small; ocellar interspace nearly three times as wide as an ocellus. Anterior lobe of pronotum very deeply medially, longitudinally sulcate for about two-thirds of its anterior length and with obscure rugosities and depressions; posterior lobe strongly transversely rugose, somewhat broadly depressed medially with narrow transverse foveoles within depression; posterior margin convexly excised medially but this is probably pathological and not the actual form of the margin. Scutellar spines short, thick, curved downwards; disc of scutellum with a deep foveole with transverse sulci within it. Hemelytra extending to apex of abdomen.

Total length 12.00 mm. Hemelytra 7.50 mm. Greatest pronotal width 3.30 mm.

1 & (holotype), West Java, Gombong, 50 m, VI.1926. L. G. E. KALSHOVEN.

Allied to *Scadra aliena* Walker (1873, Cat. Het. vol. 8, p. 49), which it resembles in respect of the colouration of the hemelytra, but differs otherwise in colouration and in the genitalia.

The following three new species of *Ectrychotes* are allied to *Ectrychotes violaceus* Hahn (1831, *Wanz. Ins,* p. 32, *Loricerus*) from which they differ in colouration.

# Ectrychotes festivus spec. nov. (fig. 26)

Colour. Antennae and rostrum piceous. Head and thorax violaceous; anterior lobe of pronotum with small irregular spots of a metallic green colour. Hemelytra yellowish stramineous; corium with a narrow fuscous stripe on costa for two-thirds of its apical length; venation brownish; base of veins of membrane narrowly black. Abdomen dorsally red; base of segments 2—5 with transverse suffusion, segments 6 and 7 violaceous; connexivum with about half of each segment apically black with faint violaceous lustre; ventrally red with violaceous pattern as in fig. 26. Tarsi brown; tibiae piceous; anterior tibiae with faint testaceous stripe on outer surface; femora red with apical half violaceous; trochanters red.

Structure. Vertex about twice as wide as an eye, smooth with very faintly indicated parallel sulci basally. Ocelli large; interspace less wide than an ocellus and somewhat sulcate medially. Anterior lobe of pronotum with a deep, sub-pyriform foveole sub-medially and with obscure, short, longitudinal depressions anteriorly; posterior lobe with a deep, foveolate, elongate depression medially; lateral sulci deep, obscurely foveolate. Median apical scutellar spine very short, broadly conical. Hemelytra extending to apex of abdomen.

Total length 15.00 mm. Hemelytra 10.00 mm. Greatest pronotal width 4.00 mm.

1 & (holotype), West Java, Preanger, Mount Tangkuban Prahu, 4000-5000 feet, 12.XI.1929. F. C. DRESCHER (MAC GILLAVRY Collection).



Fig. 26. Ectrychotes festivus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Abdomen, ventro-lateral view. D. Pygophore ventral view.

Ectrychotes nebulosus spec. nov. (fig. 27)

Colour. Antennae, rostrum, coxae piceous. Head and thorax piceous with a violaceous lustre and faint metallic green spots. Abdomen light red, dorsally suffused with piceous particularly apically; connexivum piceous; segments 3—6 narrowly basally, segment 7 broadly yellowish; ventrally piceous apically and with piceous suffusion as in fig. 27. Corium yellow stramineous with fuscous suffusion laterally; membrane yellow stramineous. Tarsi brown; tibiae piceous; femora with base of anterior and median pair and basal half of posterior pair light red; trochanters light red.

Structure. Vertex about twice as wide as an eye, smooth with obscure, widely separated, parallel sulci basally. Ocelli large; interspace less wide than an ocellus. Anterior lobe of pronotum with a deep, wide impression sub-medially with irregular, shallow depressions on each side and with obscure depressions anteriorly and sub-laterally; posterior lobe with short carinulae and foveoles anteriorly, a

deep, wide, median depression with foveoles within it; lateral obscurely sulci foveolate. Segments 6 and 7 of abdomen dorsally rugose punctate; segments 2 - 5transversely striate; all segments with a carinulate sulcus sub-apically and transversely carinulate intersegmentally. Hemelytra extending very little beyond apex of abdomen.

Total length 12.50 mm. Hemelytra 9.00 mm. Greatest pronotal width 3.00 mm.



Fig. 27. Ectrychotes nebulosus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Abdomen, ventro-lateral view. D. Pygophore, ventral view.

1 & (type), West Java, South Preanger, Patimuan, 3—8.XI.1925. F. C. DRESCHER. 1 ♀ Buitenzorg, 250 m, ca. VI.1927, FRANQENHEIM (MAC GILLAVRY Collection).

# Ectrychotes vittiger spec. nov. (fig. 28)

Colour. Antennae and rostrum piceous. Head and thorax violaceous; abdomen red; segments 6 and 7 dorsally violaceous; connexivum with blackish violaceous spot apically; abdomen ventrally as in fig. 28. Corium fuscous, except clavus and base narrowly yellow stramineous; membrane yellow stramineous with a faint infumate suffusion at apex of cells and a dark infumate sub-costal stripe. Tarsi brown; tibiae piceous with faint violaceous lustre; anterior femora red with apical two-thirds piceous with a faint violaceous lustre; median and posterior femora red with apical half piceous with faint violaceous lustre; coxae violaceous; trochanters red.

Structure. Vertex about twice as wide as an eye with two very feeble, parallel sulci basally. Ocelli large; interspace a little less wide than an ocellus. Anterior lobe of pronotum with an elongate foveole medially and obscure, short, longitudi-

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Fig. 28. Ectrychotes vittiger spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Abdomen, ventro-lateral view. D. Pygophore, ventral view.

nal sulci anteriorly; posterior lobe with short carinulae anteriorly. Scutellum damaged; apical lateral spines moderately long, curved downwards and feebly inwards. External apical angle of segment 2 of connexivum produced somewhat, the produced portion incised; segments 6 and 7 dorsally punctate; segment 7 apically also transversely rugose; remaining segments almost smooth. Hemelytra extending very little beyond apex of abdomen.

Total length 14.00 mm. Hemelytra 10.50 mm. Greatest pronotal width 4.00 mm.

1 & (holotype), West Java, Mount Salak, 900 m, 20.IV. 1924, L. G. E. KALSHOVEN.

#### HARPACTORINAE

## Sphedanolestes discopygus spec. nov. (fig. 29)

Colour. Antennae, head, except base of vertex, an inter-ocellar spot, gular region and base reddish, legs, piceous. Body, coxae sanguineous; segment 7 of ab-



Fig. 29. Sphedanolestes discopygus spec. nov. A. Head, pronotum & scutellum, dorsal view, B. Head & pronotum, lateral view. C. Pygophore, dorsal view.

domen dorsally narrowly black apically; pygophore with piceous spot. Tarsi reddish brown.

Total length, 3, 7.50 mm, 9, 8.00 mm. Hemelytra, 3, 5.00 mm, 9, 6.00 mm. Greatest pronotal width, 3, 2.10 mm, 9, 2.30 mm.

1 ô (type), Central Java, Semarang, teak forest, 50 m, 15.XII.1925. L. G. E. KALSHOVEN; 1 ♀, Central Java, Residency Rembang, Kedingding, 50 m, 12.II. 1926. Fr. A. Th. H. VERBEEK.

Resembles Sphedanolestes rubecula Distant, (1909, Ann.Soc. ent. Belg., vol. 53, p. 370); differs in less globose postocular, distinctly depressed median area of posterior lobe of pronotum and the colouration of the head, the gular region being reddish and not luteous. The hemelytra are suffused with red basally and are not unicolourous and all the coxae are sanguineous while in *rubecula* the posterior coxae are piceous. Apparently also allied to Sphedanolestes bellus Stål (1874, Enum. Hem., vol. 4, p. 34) from which it differs in colouration; in bellus the anterior lobe of the pronotum is red (corallinus), the posterior lobe black and the abdomen has marginal black spots.

# Biasticus dilectus spec. nov. (fig. 30)

Colour. Basal segment of antennae testaceous suffused with piceous basally and apically; remaining segments piceous. Rostrum, anteocular, a suffused stripe along anterior margin of eyes, base of head, yellowish; gular region except base, luteous; remainder of head blackish piceous. Anterior lobe of pronotum dark yellow, except lateral angles of collar and a transverse basal stripe piceous; posterior lobe of pronotum, pleura, sterna, blackish piceous; prosternum anteriorly, mesopleura with an oblique, suffused stripe yellowish. Abdomen blackish piceous except

segments 7 and 8 yellow and segments 2 and 3 laterally suffused with dark yellow and apical margin of segments 2-4 narrowly dark yellow. Legs testaceous; tibiae apically and sub-basally with piceous suffusion. Corium black, apically yelmembrane low; hyaline, faintly yellowish with greater part of internal cell and base of external cell infumate.



Structure. Head shorter than pronotum. Median basal sulcus on anterior lobe of pronotum short, very deep; median anterior elevation on posterior lobe not very distinct.

Total length 9.80 mm. Hemelytra 7.50 mm. Greatest pronotal width 2.70 mm.

1 9 (holotype), West Java, Mount Gedé, 500 m, XII.1932. L. G. E. KALS-HOVEN.

Apparently allied to *Biasticus gagatinus* Breddin (1903, *Soc. Ent.*, vol. 18, p. 12) from which it differs in slightly smaller size and in colouration.

Euagoras buruensis spec. nov. (fig. 31)

Colour. Basal segment of antennae brown suffused with black basally and with a suffused testaceous annulation in apical half; segment 2 dark brown with a suffused testaceous median annulation; remaining segments dark testaceous. Eyes purplish. Head and thorax reddish testaceous; rostrum testaceous; apical segment piceous. Posterior lobe of pronotum with a median, triangular, suffused blackish spot; lateral spines on posterior lobe black; pleura, except acetabula, sterna suffused with black. Abdomen testaceous with a faint reddish suffusion; segments 4—6 and base of 7 mid-dorsally with a wide median black stripe; ventro-laterally with a longitudinal blackish stripe. Corium testaceous; clavus blackish. Femora and tibiae testaceous; apically and basally respectively suffused with red; tarsi piceous.

Structure. Basal segment of antennae equal in length to hemelytra; segment 2 slightly less than one fourth as long as 1. Elevation at base of antennal tubercles



Fig. 31. Euagoras buruensis spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, dorsal view.

very feebly rounded. Hemelytra extending just beyond apex of abdomen. Thorax, corium with dense, minute, adpressed pubescence.

Total length,  $\delta$ , 13.50 mm,  $\varphi$ , 15.00 mm. Hemelytra,  $\delta$ , 9.50 mm,  $\varphi$ , 9.50 mm. Greatest pronotal width,  $\delta$ , 2.50 mm,  $\varphi$ , 2.60 mm (excluding spines).

1 & (type), Buru, Station 3, 17—23.XI.1921; 1 &, Station 4, 29—31 January 1922; 1  $\circ$ , Station 1, 10.II—16.III.1921; 1  $\circ$ , Station 6, IV.1921; 1  $\circ$ , Station 9, 1—28 Juni, 1921; 1  $\circ$ , Station 13, 28.VIII—4.IX.1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).

Allied to *Euagoras plagiatus* Burmeister (1834 Nov. Act. Ac. Nat. Cur., vol. 16, suppl., 1 p. 303. Zelus). Differs in colouration, shape of pronotum, lateral spines and in genitalia.

# Cydnocoris tessellatus spec. nov. (fig. 32)

Colour. Basal segment of antennae black; remaining segments brown with lighter brown pubescence. Head, body and legs yellow. Vertex with a transverse stripe, anterior lateral angles of pronotum, spots on posterior lobe of pronotum, pleura, metasternum, scutellum, lateral and sub-lateral spots on abdomen ventrally, piceous. Corium with a black spot apically; membrane infumate. Base and apex of anterior and median tibiae, posterior tibiae, apex of femora, black; tarsi black.

Structure. Spine at base of antennal tubercles about twice as long as tubercle, moderately slender, feebly curved, acute. Ocelli strongly elevated, the elevation with a feeble tubercle posteriorly; interspace wider than distance between an ocellus and an eye. Pronotum smooth; anterior lobe with shallow depressions sublaterally; posterior lobe obscurely transversely rugose and strongly dorso-ventrally compressed laterally. Scutellum with a Y-shaped carina; disc feebly depressed. Hemelytra extending beyond apex of abdomen by about one third of their length; discal cell as long as wide.

Total length,  $\delta$ , 12.50 mm,  $\varphi$ , 15.00 mm. Hemelytra,  $\delta$ , 11.50 mm,  $\varphi$ , 12.00 mm. Greatest pronotal width,  $\delta$ , 4.00 mm,  $\varphi$ , 4.50 mm.

1 δ (type), Buru, Station 8, 25—26.IV.1921; 1 δ, Station 1, 10.II—16.III. 1921; 1 ♀, Station 6, 29.III—10.IV.1921; 1 ♀, Station 6, April 1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).



Fig. 32. Cydnocoris tessellatus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, lateral view. D. idem, dorsal view. E. Apex of abdomen,  $\varphi$ , ventral view.

The  $\circ$  paratypes differ from the  $\circ$  in colouration in having the collar, greater part of pleura black and the legs piceous. The spots on the abdomen ventrally and on the posterior lobe of the pronotum are much larger.

Allied to *Cydnocoris tabularis* Distant (1903, *Ann. Mag. Nat. Hist.*, vol. 2, p. 245). Differs in colouration, larger size, more slender and more acute spine on antennal tubercles, less narrowly rounded and less dorso-ventrally compressed lateral angles of posterior lobe of pronotum, larger discal cell of corium and genitalia. With regard to the colouration, in addition to other differences, all the tibiae in the male of *tabularis* are piceous.

Cydnocoris brevicornis spec. nov. (fig. 33)

Colour. Antennae black. Head, body, corium dark yellow. Corium with a black

spot sub-apically; membrane hyaline faintly yellowish. Anterior and median legs, posterior femora, yellow; tarsi, posterior tibiae, piceous; anterior and median tibiae suffused with piceous apically.

Structure. Spine at base of antennal tubercles very short. Ocelli moderately large, prominent; interspace sub-equal to distance between an ocellus and an eye; ocellar elevations with a rounded prominence posteriorly. Pronotum smooth; anterior lobe with a deep, median longitudinal sulcus with a short transverse sulcus at base; lateral angles of posterior lobe moderately narrowly rounded and narrowly dorso-ventrally compressed. Disc of scutellum very feebly depressed. Discal cell of corium a little more than twice as long as wide; hemelytra extending beyond apex of abdomen by about one third of their length.



Fig. 33. Cydnocoris brevicornis spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, dorsal view. D. idem, lateral view.

Total length 10.00 mm. Hemelytra 8.00 mm. Greatest pronotal width 3.00 mm. 1 & (holotype), Buru, Station 1, 10.II—16.III.1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).

Differs from all other known species in colouration, very short spine on antennal tubercles and in the genitalia.

# Cydnocoris pustulatus spec. nov. (fig. 34)

Colour. Antennae black. Head, except base, greyish testaceous; base of head, thorax and abdomen testaceous; anterior lobe of pronotum paler and with brown maculation. Corium dark yellow with a transverse black spot sub-apically. Legs dark stramineous, except coxae greyish testaceous with brown maculation; tarsi and posterior tibiae piceous. Membrane infumate, narrowly black basally and with



Fig. 34. Cydnocoris pustulatus spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Pygophore, lateral view. D. idem, dorsal view.

an elongate sub-costal blackish suffusion. Pleura greyish testaceous with brown maculation.

Structure. Spine at base of antennal tubercles moderately long, slender, more than twice as long as tubercle. Ocelli moderately large, elevated; interspace wider than distance between an ocellus and an eye. Anterior lobe of pronotum with a deep, moderately wide median depression, wider posteriorly; posterior lobe with lateral angles somewhat narrowly rounded and narrowly dorso-ventrally compressed. Disc of scutellum shallowly, transversely depressed basally. Hemelytra extending beyond apex of abdomen by a little more than one third their length.

Total length 11.00 mm. Hemelytra 10.00 mm. Greatest pronotal width 3.00 mm.

1 & (holotype), Central Java, Kedungdjati, 50 m, 1932. L. G. E. KALSHOVEN. Differs from all other known species in colouration and in genitalia.

# Scipinia simulans spec. nov. (fig. 35)

Colour. Antennae reddish brown; basal segment suffused with piceous basally. Vertex, postocular dorsally, except a pale testaceous inter-ocellar spot, and laterally, except basally, meso and metapleura, meso and metasternum blackish piceous; anteocular laterally, gular region, rostrum, posterior lobe of pronotum, propleura, prosternum, abdomen, pale reddish testaceous; apical half of third rostral segment piceous; propleura suffused with piceous in upper half. Scutellum piceous, apically whitish. Corium, except clavus, reddish testaceous; clavus and membrane faintly infumate. Femora and tibiae reddish brown; median and posterior femora with pale testaceous suffusion on lower surface; tarsi light brown. Structure. Vertex with four long, slender, acute spines and two shorter spines; postocular with two moderately long spines at inner margin of ocelli, four spines of about the same length sub-basally and some very short spines between them and ocelli. Anterior lobe of pronotum with moderately long and short spines, some of the latter bifurcate. Posterior lobe of pronotum strongly rugose reticulate; posterior margin rounded and tuberculate; posterior angles sub-acute. Hemelytra extending to apex of abdomen.



Fig. 35. Scipinia simulans spec. nov. A. Head, pronotum & scutellum, dorsal view. B. Head & pronotum, lateral view. C. Anterior femur. D. Pygophore, lateral view. E. idem, dorsal view.

Total length, 3, 10.50 mm, 9, 11.00 mm. Hemelytra, 3, 6.50 mm, 9, 7.00 mm. Greatest pronotal width, 3, 2.50 mm, 9, 3.00 mm.

1 & (holotype), Buru, Station 8, February 1922; 1 ♀, Station 5, April 1921; 1 ♀, Station 9, 1—28 June, 1921. L. J. TOXOPEUS (MAC GILLAVRY Collection).

Allied to Scipinia spinigera Reuter (1881, Act. Soc. Sci. Fenn., vol. 12, p. 4); differs in having the spines on the head longer, acute and more abundant, the posterior lobe of the pronotum relatively narrower and much less coarsely rugose, reticulate and the discal cell of the corium much smaller. It also differs in the genitalia and in the colouration, the legs being reddish brown and not yellowish testaceous. The female paratypes have the posterior lobe of the pronotum and the corium more reddish and the abdomen dorsally and laterally suffused with piceous.



Miller, N C E. 1954. "New genera and species of Reduviidae from Indonesia and the description of a new subfamily (Hemiptera-Heteroptera)." *Tijdschrift voor entomologie* 97, 75–114.

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