

## Nabidae (Heteroptera) from Sulawesi Island

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### Abstract

Two species of *Nabidae* were known from Sulawesi before this study. 17 additional species, 10 of them new, are found in the material collected by Belgian and British entomologists in 1985 during the Wallace Project. Of the new species, 5 belong to *Alloeorhynchus*, 3 to *Phorticus*, 1 to *Rhamphocoris* and 1 to *Stenonabis*.

**Key-words:** Heteroptera, Nabidae, Sulawesi, fauna, new species.

### Introduction

Till now two species of Nabidae were recorded from Sulawesi Island, namely *Phorticus parvulus* (SIGNORET) and *Ph. vitticollis* REUTER (SIGNORET, 1880; REUTER & POPPIUS, 1909).

The material used in this study (except one specimen) is obtained from the Institut Royal des Sciences Naturelles de Belgique, Bruxelles (later abbreviated to IRSNB) and from the British Museum (Natural History), London (BMNH). All material from IRSNB and most material from BMNH is collected in 1985 under Project Wallace by R. BOSMANS & J. VAN STALLE and by mostly unnamed collectors of the Royal Entomological Society of London correspondingly. Besides, the BMNH material includes specimens collected by W. DOHERTY, A.H.G. ALSTON and M.J.D. BRENDELL. Some paratypes are retained in the Zoological Institute, Academy of Sciences of the USSR, Leningrad (ZIL).

In total 17 species were found, all of them new to the island fauna, with 10 species and 1 subspecies new to science (most of the new species belong to the genera *Alloeorhynchus* and *Phorticus*). The nabids fauna of the island is typically oriental, all species of the subfamily Nabinae are found also outside of Sulawesi, whereas in the subfamily Prostemmatinae most species are endemics of the island (at least in the present state of our knowledge). It can be supposed that the real number of Sulawesi nabids is at least twice higher than indicated in this paper.

### Subfamily NABINAE

#### *Gorpis albicans* REUTER

(Fig. 1a, b)

*Gorpis albicans* REUTER, 1909, *Ann. Soc. ent. Belg.* 53: 425, 426; KERZHNER, 1970, *Acta ent. Mus. natn. Prae* 38: 293.

#### Material examined:

Utara Prov.: 1 ♀, Dumoga-Bone Nat. Park, 660/1400 m, IV/V-1985, at light (R. Ent. Soc. Lond., leg. J.H. MARTIN; BMNH); 1 ♀, Dumoga-Bone Nat. Park, Gunung Mogogonipa, 1008 m, V-1985 (same collector; BMNH).

#### Distribution:

Sumatra, Nias and Java islands.

Note. — In both specimens: outer side of antennal segment I, hind side of fore femora and apex of hind femora suffused with red, dorsal side of abdomen with a red longitudinal stripe. Vagina and especially its parietal gland (Fig. 1a) smaller than in western populations (Fig. 1b). Body length 11-11.5 mm.

#### *Arbela telomi* (DISTANT)

*Nabis telomi* DISTANT, 1903, *Fasc. Malay. Zool.* 1: 268.  
*Arbela telomi*: KERZHNER, 1970, *Acta ent. Mus. natn. Prae* 38: 296; *Ent. Meddr.* 38: 182.

#### Material examined:

Utara Prov.: 1 ♀, Dumoga-Bone Nat. Park, base camp, 200 m, X-1985, station 002 (leg. R. BOSMANS & J. VAN STALLE; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, river Tumpah, X-1985, station 052 (same collectors; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, Toraut, base camp, X-1985, station 054 (same collectors; IB); 1 ♀, Gunung Moat, 1100 m, 29-X-1985, station 063 (same collectors; IRSNB); 1 ♂, 1 ♀, 1 larve, Dumoga-Bone Nat. Park, 200/300 m, II-1985, lowland forest (R. Ent. Soc. Lond.; BMNH).

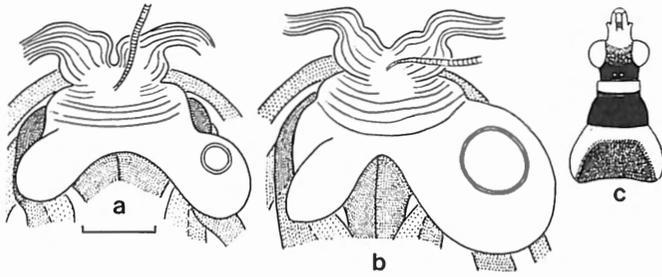


Fig. 1 - a, b. - *Gorpis albicans* REUTER, vagina, dorsal view: a. - Specimen from Sulawesi; b. - Specimen from Sumatra. c. - *Arbela peterseni* KERZHNER, specimen from Sulawesi, head and pronotum.

Note: throughout in the paper scale lines equal 0.25 mm for figures of genitalia and 0.50 mm for all other figures; each scale line refers to all figures of the same detail in the plate.

*Distribution:*

From Malayan Peninsula to Solomon Islands and Queensland.

***Arbela peterseni* KERZHNER**  
(Fig. 1c)

*Arbela peterseni* KERZHNER, 1970, *Ent. Meddr.* 38: 188.

*Material examined:*

Utara Prov.: 1 ♂, 1 larve, Gunung Moat, 1050 m, X-1985, station 062 (leg. R. BOSMANS & J. VAN STALLE; IRSNB); 1 ♂, 2 ♀♀, Danau Alia, 1300 m, 30-X-1985, station 069 (same collectors; IRSNB); 1 ♀, Gunung Ambang Forest Reserve, nr. Kotamobagu, 1200/1400 m, II-1985, lower montane forest (R. Ent. Soc. Lond.; BMNH).

*Distribution:*

Philippines and Manus Island.

Note. — In all the Sulawesi specimens, the hind lobe of the pronotum has instead of two dark longitudinal stripes a subtrapezoidal blackish spot in the hind half, this spot is not subdivided by a longitudinal yellow stripe. Apex of femora blackish. The yellow lateral stripe of corium widened in its distal third, the inner corner of corium with a yellow spot. No differences in the structure of male genitalia are found.

***Arbela nitidula* (STÅL)**

*Nabis nitidula* STÅL, 1860, *Freg. Eug. Resa, Zool.* 4: 261. *Arbela nitidula*: STÅL, 1866, *Hem. Afr.* 3: 43; HARRIS, 1939, *Ann. Mag. nat. Hist.* (11) 1: 567; KERZHNER, 1981, *Fauna SSSR, Nabidae*: 134.

*Material examined:*

Utara Prov.: 1 ♀, Dumoga-Bone Nat. Park, Picnic Site, 250 m, X-1985, station 009 (leg. R. BOSMANS & J. VAN STALLE; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, river Toraut, 200 m, 21-X-1985, station 042 (same collectors; IRSNB); 4 ♂♂, 2 ♀♀, Dumoga-Bone Nat. Park, river Tumpah, 200 m, X-1985, station 045 (same collectors; IRSNB); 1 ♂, Dumoga-Bone Nat. Park, subcamp Edwards, 1140 m, X-1985, station 049 (same collectors; IRSNB); 2 ♂♂, 2 ♀♀, Dumoga-Bone Nat. Park, river Tumpah, X-1985, station 052 (same collectors; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, Maze Area, 210 m, 27-X-1985, station 057 (same collectors; IRSNB); 1 ♂, Danau Mooat (The Lakes), 28-X-1985, station 059 (same collectors; IRSNB); 2 ♂♂, P.P.R. bungalow, 1000 m, X-1985, station 061 (same collectors; IRSNB); 4 ♀♀, Dumoga-Bone Nat. Park, Gunung Poniki, 1810 m, 2-XI-1985, station 074 (same collectors; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, I-1985 (R. Ent. Soc. Lond.; BMNH); 1 ♂, Dumoga-Bone Nat. Park, site 2, Toraut bank, 200 m, II-1985 (R. Ent. Soc. Lond.; BMNH); 1 ♂, 1 ♀, Gunung Ambang Forest Reserve, nr. Kotamobagu, 1200/1400 m, II-1985 (R. Ent. Soc. Lond.; BMNH).

*Distribution:*

From India to Vanuatu.

Note. — Three females from subcamp Edwards collected with a typical dark male of *A. nitidula* apparently belong to a separate species. They differ in distinctly shorter antennae and legs, yellow rostral segment I and very dark colouration (whole pronotum, except the medial stripe on the hind lobe, black; lateral margin of corium yellow in distal third only). More material is necessary to conclude on the identity of these specimens.

***Stenonabis bussyi* (POPPIUS)**

*Reduviolus (Stenonabis) bussyi* POPPIUS, 1914, *Tijdschr. Ent.* 56, suppl.: 180.

*Material examined:*

Utara Prov.: 1 ♀, Dumoga-Bone Nat. Park, Picnic Site, 12-X-1985, station 023 (leg. R. BOSMANS & J. VAN STALLE; IRSNB); 1 ♀, Dumoga-Bone Nat. Park, site 1, New Base Camp, 200 m, 4-II-1985, at light (R. Ent. Soc. Lond.; BMNH); 1 ♀, Dumoga-Bone Nat. Park, site 2, Toraut bank, 200 m, 6/10-II-1985 (R. Ent. Soc. Lond.; BMNH).

Described from Sumatra. Synonymy and distribution will be discussed in another paper.

***Stenonabis vanstallei* sp. n.**  
(Figs. 2, 3)

Holotype: ♂, Sulawesi Island, Utara Prov., Dumoga-Bone Nat. Park, river Toraut, 200 m, 21-X-1985, station 040 (leg. R. BOSMANS & J. VAN STALLE; IRSNB).

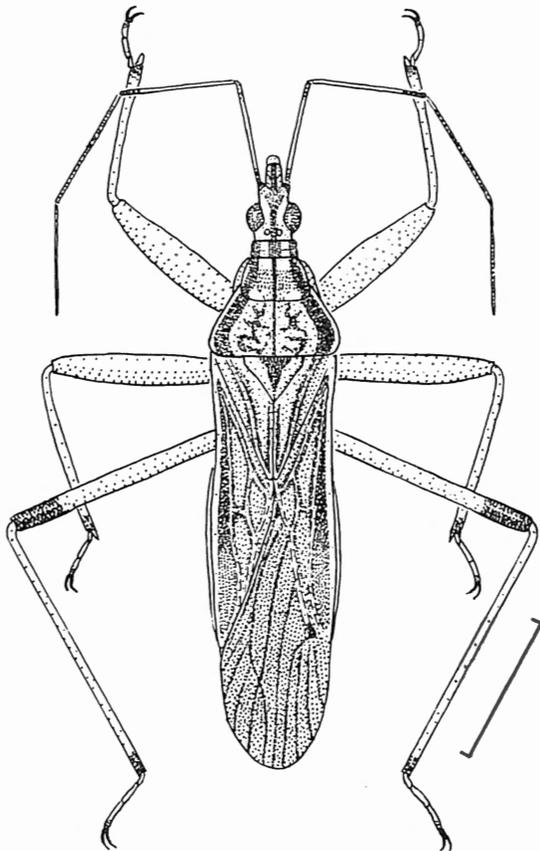


Fig. 2 – *Stenonabis vanstallei* sp. n., holotype.

Paratype: ♀, Borneo [now Kalimantan Island, its part belonging to Malaysia], Sandakan (leg. BAKER; U.S. National Museum of Natural History, Washington, D.C.).

*Description:*

Clypeus and membrane shining, all other parts of the upper surface (including collar and hind lobe of pronotum) dull. Hair cover of the upper surface very short and sparse. Collar and hind lobe of pronotum densely and very finely punctured.

Head dirty yellow, apical half of clypeus and a longitudinal stripe at frons and vertex brown, lateral sides and fore third of the underside dark brown. Antennae yellow, segment I with apex brown and base blackish, segment II in the apical fifth dark brown, segments III and IV (except base of III) brownish black. Rostrum yellow. Pronotum dirty yellow, a narrow medial stripe and two sublateral stripes (one at each side) brown, the sublateral stripes are darker than the medial one and angulately bent at the hind lobe. Fore lobe in the middle third with a brownish transverse stripe connecting the sublateral stripes. Hind lobe of pronotum with a brown pattern between the stripes. Scutellum yellow, with a dark brown stripe narrowed and lightened to the apex. Clavus and corium brownish yellow, lateral margin of corium and apex of the inner vein of clavus yellow, all veins dirty yellow, narrowly margined by brown, space between the vein R+M and yellow lateral stripe of corium dark brown. Membrane brownish gray,

with dark brown veins. Legs yellow, apex of hind femora, apices of all tibiae and of all tarsal segments dark brown to black. Underside of thorax dark brown, with some spots and all acetabulae yellow. Abdomen dirty yellow, two longitudinal stripes at its ventral side and the genital segment of male brown.

The above description is made from the male (holotype). The female (paratype), which is possibly teneral, is more light coloured, e.g. pronotum with longitudinal stripes narrow and less dark, without brown spots between them, antennal segment I not brown at apex, veins of corium and clavus not margined by dark brown, also the space between the lateral yellow stripe of corium and the vein R+M feebly differs in the intensity of dark colour from the intervals between veins.

Length of head 1.00, of its praecocular part 0.50, of the eye 0.37, of the postocular part 0.13-0.14 mm. Width of head 0.73-0.74, before eyes 0.40, between eyes 0.29-0.30, behind eyes 0.56 mm. Length of antennal segments (I-IV) in holotype 1.25, 1.57, 1.71, 1.47, in paratype 1.09, 1.43, 1.57, 1.47 mm. Length of rostral segments (II-IV) 0.90, 0.77, 0.42 mm. Length of pronotum 1.51-1.57, of collar 0.24-0.26, of fore lobe 0.54-0.59, of hind lobe 0.71-0.73, width at fore margin 0.64, at hind margin 1.70-1.77 mm.

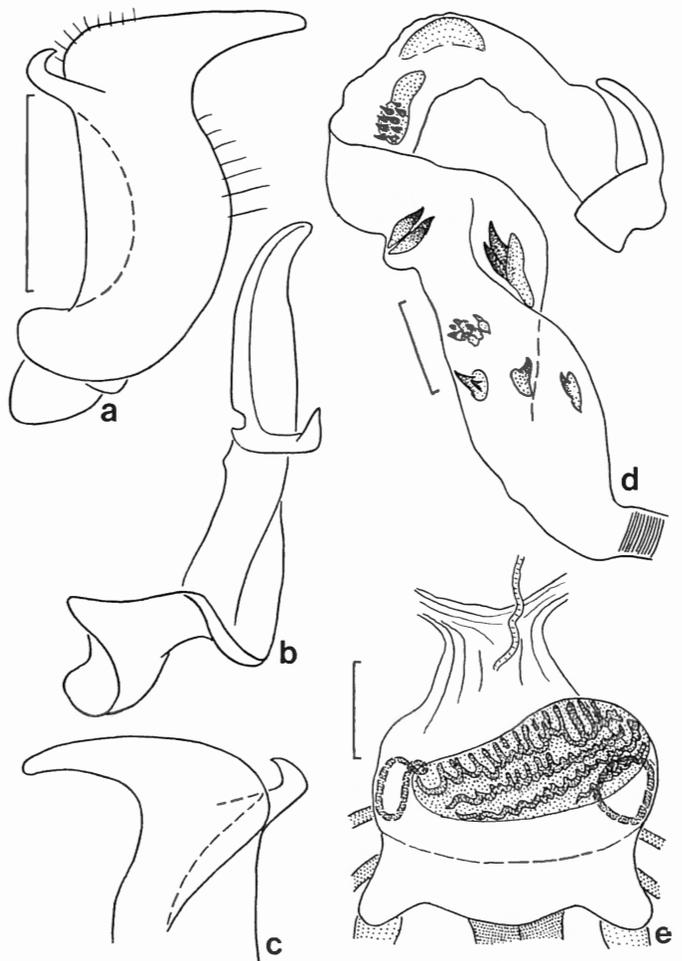


Fig. 3 – *Stenonabis vanstallei* sp. n., genitalia. a-c. - Paramere; d. - Aedeagus; e. - Vagina, dorsal view.

Length of the scutellum 0.56-0.60, width 0.73 mm. Hemelytra surpassing the apex of abdomen, membrane with one closed cell, length of the line of contact of clavuses 1.00 mm. Length of fore femora 2.25-2.57, of fore tibiae 2.00-2.25, of middle femora and tibiae 2.12-2.37, of hind femora 3.25-3.70, of hind tibiae 3.50-3.75 mm (all parts of legs are shorter in paratype).

Length 7.8 mm, width ♂ 1.65, ♀ 1.8 mm.

Paramere (Fig. 3a-c) somewhat resembling to that of *S. limbatellus* from New Guinea, differs in longer basal and narrower apical part. Aedeagus as in Fig. 3d. Vagina (Fig. 3e) in difference from *S. limbatellus* with wrinkled sclerotized structure asymmetrical.

**Diagnosis :**

Closely related to *S. limbatellus* KERZHNER, 1970, differs from it in more light colouration, dark stripe outside the vein R+M not interrupted by whitish spot at the transverse vein, different structure of male and female genitalia.

Subfamily PROSTEMMATINAE

**Prostemma fasciatum sulawesiense**  
KERZHNER & STROMMER (in press)

**Material examined :**

Selatan Prov. : 1 ♂, Macassar (now Ujung Pandang) (leg. W. DOHERTY; BMNH); 1 ♀, Lompoh Batang, 200 m (leg. H. LUCHT; Agricultural University, Wageningen, The Netherlands).

**Distribution :** The species is widely distributed in the Oriental Region, the subspecies is endemic of the Sulawesi Island.

**Alloeorhynchus (Psilistus) rubromaculatus sp. n.**  
Fig. 4a)

Holotype : ♀, Sulawesi Island, Utara Prov., Dumoga-Bone Nat. Park, Edwards' camp, 660 m, 1-V-1985, at light (R. Ent. Soc. Lond., leg. J.H. MARTIN; BMNH).

**Description :**

Body strongly depressed, strongly shining, scutellum, metapleura and hemelytra (except a narrow costal stripe in the basal half of corium) dull. The upper side of body covered by nearly erect black hairs.

Black, corium in the middle third of the outer half red, lateral margin of abdomen narrowly reddish in the basal half. Antennal segments I and II brownish black, III brownish yellow, IV whitish yellow with narrowly brownish base. Rostrum brown, segment IV yellow. Legs black, base of trochanters, apical half of tibiae and all tarsi yellow.

Width of head 1.19, of vertex 0.50 mm. Distance between large ocelli and eyes much less than diameter of ocellus. Antennae covered by short hairs, length of segments I

0.47, intercalar 0.11, II 1.48, III 1.11, IV 1.20 mm. Rostrum reaching the middle coxae, length of segments (I-IV) 0.36, 1.00, 0.86, 0.36 mm.

Length of pronotum 1.80, its width 2.60 mm, fore lobe longer (1.00 mm) than hind lobe (0.65 mm). Fore lobe and fore half of hind lobe with a median impression, hind lobe nearly flat. Scutellum flat, bifoveate on disc, its width 1.30, length 1.15 mm. Mesopleurae rugulose. Ostiolar canal directed outwards and somewhat caudad, slightly

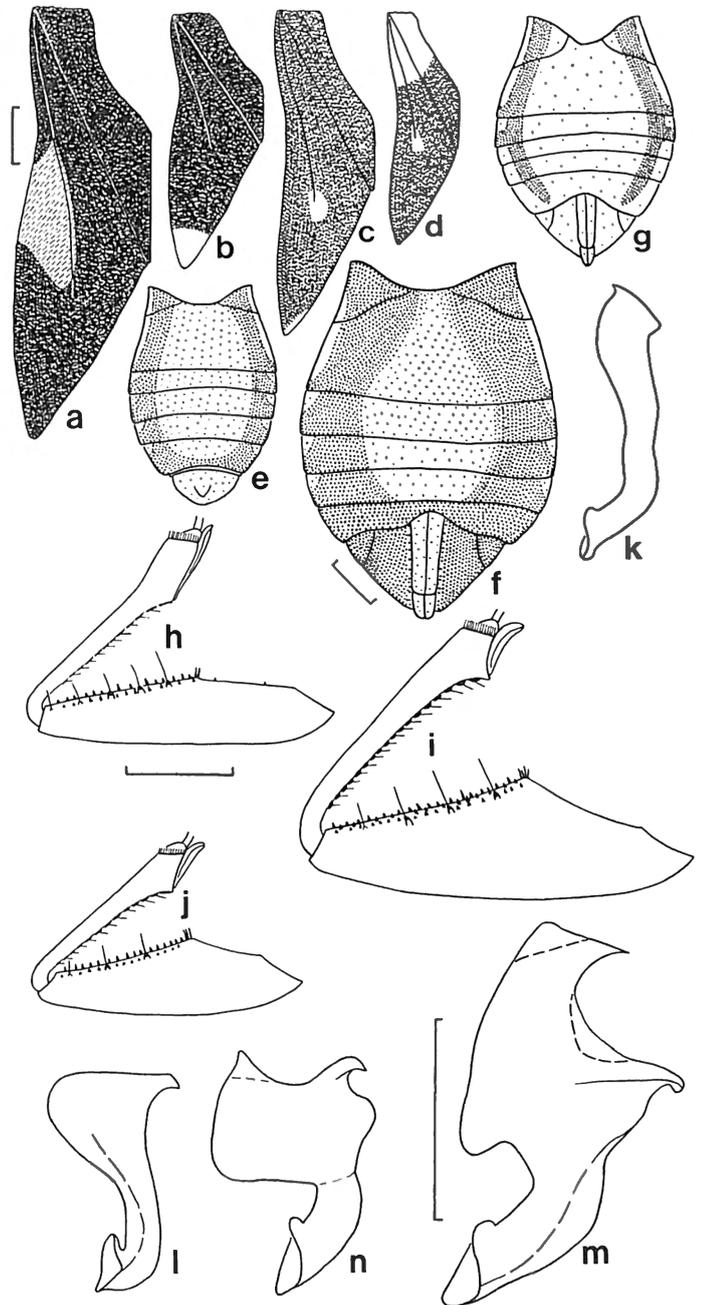


Fig. 4 - *Alloeorhynchus*. a-d. - Corium and clavus (shaded areas - red, white areas - yellow); e-g. - Abdomen, ventral view; h-j. - Fore femur and tibia; k-n. - Paramere. a. - *A. rubromaculatus* sp. n.; b, k. - *A. flavomaculatus* sp. n.; e, h, l. - *A. minahassa* sp. n.; c, f, i, m. - *A. dollingi* sp. n. d, g, j, n. - *A. brendelli* sp. n.

curved at apex, with a very narrow projection directed inwards and somewhat cephalad.

Hemelytra constricted before the middle, with four rows of punctures: one formed by about 7 punctures along the inner margin of clavus near to the apex of scutellum, two at both sides of the claval vein and one along the outer margin of the inner corial vein. Costal margin of corium not serrate. Membrane surpassing the apex of abdomen, with 3 closed cells.

Fore and middle femora with two subparallel rows of relatively long black spinelike teeth at the ventral side, each row formed by about 30 teeth of equal length. Hind femora with about 10 very small teeth. Fore tibiae not curved, gradually widened in the basal 4/5, fossa spongiosa surpass the apex of fore tibia by about a fourth of its length. Middle tibiae distinctly curved. Length of fore femora 2.07, of middle femora 2.30, of fore and middle tibiae 1.85, of hind femora 2.90, of hind tibiae 3.12 mm. Tarsi slender.

Length 8.7, width 3.1 mm.

*Diagnosis:*

Closely related to *A. tarsalis* (WALKER, 1873) (New Guinea) and especially to *A. bakeri* HARRIS, 1930 (Philippines, Vietnam) but larger and with smaller red spot at corium (in *A. tarsalis* and *A. bakeri* it extends inward up to the inner vein of corium). Besides in *A. tarsalis* the length of antennal segment II is less than width of head.

***Alloeorhynchus (Psilistus) flavomaculatus* sp. n.**  
(Fig. 4b, k)

Holotype: ♂, Sulawesi Island, Utara Prov., Dumoga-Bone Nat. Park, 200/300 m, II-1985, lowland forest (R. Ent. Soc. Lond.; BMNH).

Paratype: 1 larve at the same pin as holotype.

*Description:*

Body somewhat depressed, strongly shining, scutellum, metapleura and hemelytra (except a narrow costal stripe in the basal 2/3 of corium) dull. The upper side of body covered by nearly erect brown hairs.

Brownish black, apex of corium (about 1/5 of its length) dirty yellow, abdominal laterotergites III-V with a yellow spot at the basal outer corner. Antennal segment I brown, II brownish yellow with dark brown apex, III brownish yellow, IV light yellow with brownish base. Segment I of rostrum dark brown, II yellowish brown, III and IV yellow. Legs dark brown, trochanters, tarsi and base of middle and hind femora yellow.

Width of head 0.93, of vertex 0.34 mm. Distance between ocelli and eyes subequal to diameter of ocellus. Antennae covered by short hairs, length of segments I 0.31, intercalary 0.09, II 0.86, III 0.94, IV 0.79 mm. Rostrum reaching the middle coxae, length of segments (I-IV) 0.30, 0.86, 0.71, 0.36 mm.

Length of pronotum 1.30, its width 1.80 mm, fore and hind lobe of equal length (0.62 mm), both with a median

impression. Hind lobe slightly arched. Scutellum bifoveate on disc, with slightly swollen sides, without median carina, its length 0.62, width 0.92 mm. Mesopleurae rugulose. Ostiolar canal directed outwards and caudad, slightly curved at apex, without projection directed cephalad.

Hemelytra constricted before the middle, with three rows of punctures: two at both sides of the claval vein and one along the outer margin of the inner corial vein. Costal margin of corium not serrate in imago (although clearly serrate in the larve!). Membrane barely attaining tip of abdomen, with longitudinal veins not forming closed cells. Fore and middle femora with two rows of black teeth at ventral side, the fore row is formed by about 15 teeth, the hind row is formed by 6-8 smaller teeth and does not reach the apical 1/4 of femur. Hind femora without teeth. Fore and middle tibiae not curved. Fore tibiae gradually widened in the basal 5/6, fossa spongiosa surpass the apex of fore tibia by about a third of its length. Length of fore femora and tibiae 1.30, of middle femora and tibiae 1.45, of hind femora 1.85, of hind tibiae 2.30 mm. Tarsi relatively long and slender.

Length 5.5, width 1.9 mm.

Hind margin of the male genital segment concave. Paramere small and slender.

Larve (5th instar) black, only tarsi and apex of rostrum yellow.

*Diagnosis:*

Similar in colouration and form of male genital segment to *A. chinai* HARRIS, 1937 (New Guinea), but the last is much larger (10.5-12.7 mm), abdomen without yellow spots, scutellum with a fine median carina in the apical half, costal margin of corium serrate along basal third, clavus with a few obsolete punctures along inner margin, fore and middle tibiae curved.

***Alloeorhynchus (Alloeorhynchus) minahassa* sp. n.**  
(Fig. 4a, h, l, 6a)

Holotype: ♂, Sulawesi Island, Utara Prov., Minahassa, Tomohon, 30-V/2-VI-1954 (leg. A.H.G. ALSTON; BMNH).

Paratype: ♂, same label, but 12-VII-1954 (BMNH).

*Description:*

Body strongly shining, scutellum, metapleura (except their outer margin) and hemelytra (except a narrow costal stripe in the whole length of corium) dull. Hemelytra covered by nearly erect brown hairs.

Dark brown, head and pronotum somewhat darker than scutellum and hemelytra, extreme apex of scutellum, antennae, rostrum, legs, the middle of the ventral side of abdomen (at segments III-VII), genital segment of male, lateral margin of abdominal segment II, of segment III in its fore 4/5 and of segments IV-VII in their fore 1/2 to 3/4 yellow.

Width of head 0.71, of vertex 0.25 mm. Eyes covered by short hairs. Ocelli placed on a common elevation, distance

between ocelli and eyes subequal to diameter of ocellus and slightly less than distance between ocelli. Antennae covered by short hairs, length of antennal segments I 0.57, intercalar 0.07, II 0.93, III about 1 mm (segment IV broken in specimens examined). Rostrum reaching the middle coxae, length of segments (I-IV) 0.27, 0.86, 0.57, 0.21 mm. Length of pronotum 1.20-1.23 mm (collar 0.14, fore lobe 0.61-0.63, hind lobe 0.46-0.47 mm), its width 1.36-1.46 mm. All three parts separated by deep furrows, fore lobe with a very indistinct median furrow, with a small distinct pit at the median line in its hind fourth. Scutellum with two pits on disc, slightly longer (0.71 mm) than wide (0.69 mm), lateral swellings very feeble, apex somewhat attenuate and raised.

Hemelytra constricted before the middle, clavus with two rows of punctures at both sides of the vein in its basal half, no punctures at corium ant at inner margin of clavus. Hemelytra do not cover the lateral sides of abdomen. Membrane surpassing the apex of abdomen, with 3 closed cells.

Fore coxae long (0.70 mm). Fore and middle femora widest at the end of the basal third, from the widest part up to apex with two somewhat irregular rows of black teeth, most of them are small, but some, especially at the widest part of femur, are much longer, the number of teeth in each row is about 15-20, before the fore row of teeth at fore femora are placed 3 black tubercles ending in a long bristle. Fore tibiae widened apically, the sides of the widened part subparallel. Middle tibiae straight. Hind femora without black teeth. Length of fore femora 1.43, of middle femora 1.36, of fore and middle tibiae 1.29, of hind femora 1.70, of hind tibiae 1.93 mm.

Length 4.3-4.8, width 1.4-1.5 mm.

Male genital segment slightly asymmetrical (larger at the left side), parameres symmetrical, with a semicircular apical part. Aedeagus with a hook at base, with a row of small teeth near to it and with two groups of larger teeth distally.

#### Diagnosis :

Very similar to *A. piceus* BREDDIN, 1905 from Java. Lectotype (hereby designated!) of *A. piceus*, a male labelled "Tjompea, Java. K. KRAEPELIN leg. 11.III.1904, ded. 8.VI.1904", "*Alloeorrhynchus piceus* BREDD. Type!" (Zool. Mus. Hamburg) is examined by me. It differs from *A. minahassa* in larger size (length 5.5, width 1.6 mm), longer extremities (antennal segment II 1.11, segment II of rostrum 1.10, fore femur 1.59, hind femur 2.00 hind tibia 2.15 mm), larger yellow spots at connexivum, presence of 6 small black teeth at fore femur between its widest part and base (only two such teeth in *A. minahassa*), narrow paramere, very long hook and absence of teeth in aedeagus (Fig. 5a-c).

#### *Alloeorrhynchus (Alloeorrhynchus) dollingi* sp. n.

(Fig. 4c, f, i, m, 6b)

Holotype : ♂, Sulawesi Island, Tengah Prov., Solato R.,

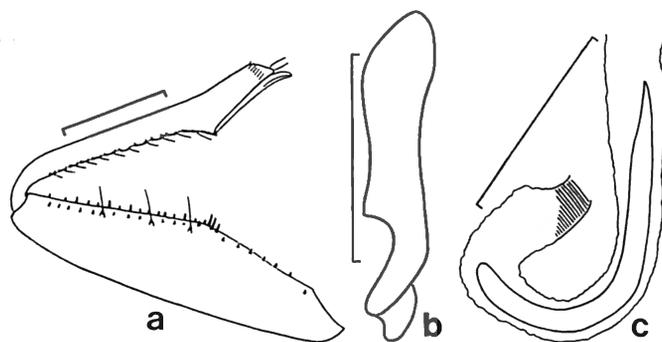


Fig. 5 - *Alloeorrhynchus piceus* BREDDIN, lectotype. a. - Fore femur and tibia; b. - Paramere; c. - Base of aedeagus.

Taronggo, 1°45'S-121°40'E, 27/30-III-1980, lowland rain forest, forest floor litter (leg. M.J.D. BRENDILL; BMNH). Paratypes : 2 ♀♀, same labels (BMNH, ZIL).

#### Description :

Body strongly shining, scutellum, metapleura (except their outer margin) and hemelytra (except a narrow costal stripe in the fore 2/3 to about 9/10 of corium) dull. Hemelytra covered by nearly erect brown hairs.

Dark brown, a small triangular spot at fore margin of the fore lobe of pronotum, extreme apex of scutellum, a small rounded spot at corium behind the apex of medial fracture, a more or less distinct stripe at the extreme apex of corium, antennae, segments II-IV of rostrum, legs (except fore margin of fore coxae), middle part of ventral side of abdomen at segments III to VI, lateral margin of segments II in its hind half, of segment III in its fore 8/9 and of segments IV-VI in their fore 3/4 yellow.

Width of head in ♂ 0.90, in ♀ 0.96-0.97, width of vertex 0.33 (♂) to 0.34 (♀) mm. Eyes covered by short hairs. Ocelli placed on a common elevation, distance between ocelli and eyes subequal to diameter of ocellus and slightly less than distance between ocelli. Antennae covered by short hairs, segment I with 3-4 longer setae in apical half, length of segments I 0.63, intercalar 0.10, II 1.20, III, 1.00, IV 1.50 mm. Rostrum reaching the middle coxae, length of segments (I-IV) 0.35, 1.10, 0.93, 0.21 mm.

Length of pronotum in ♂ 1.50 mm (collar 0.20, fore lobe 0.70, hind lobe 0.60 mm), in ♀ 1.65 mm (collar 0.20, fore lobe 0.80, hind lobe 0.65 mm), its width in ♂ 1.80, in ♀ 2.15 mm. All three parts separated by deep furrows, fore lobe with a very indistinct median longitudinal furrow. Scutellum with 2 pits on disc, slightly longer (1.07 mm) than wide (1.00 mm), its sides slightly swollen, swellings meet before the apex, which is somewhat attenuate and raised.

Hemelytra constricted before the middle, clavus with two rows of punctures at both sides of the basal half of its vein, no punctures at corium and at inner margin of clavus. Membrane surpassing the apex of abdomen, with 3 closed cells.

Fore coxae long (1.10 mm). Fore and middle femora widest before the middle, from the widest part up to apex

with two and at some places even three irregular rows of black teeth. The number of teeth at each femur equals 40-50, most of them are small, but some, especially at the widest part of femur and in the hind row are much longer; before the fore row of teeth at fore femora are placed 3 or 4 black tubercles ending in a long seta. Fore tibiae widened at apex, middle tibiae straight in ♂, curved in ♀. Hind femora without black teeth. Length of fore and middle femora in ♂ 1.70, in ♀ 1.85, of fore tibiae in ♂ 1.43, in ♀ 1.50, of middle tibiae in ♂ 1.57, in ♀ 1.65, of hind femora in ♂ 2.07, in ♀ 2.20, of hind tibiae in ♂ 2.20, in ♀ 2.37 mm.

Length ♂ 5.5, ♀ 6.5, width ♂ 1.9, ♀ 2.4 mm.

Male genital segment slightly asymmetrical (larger at the left side). Parameres do not differ in form and size, large, of complex form. Aedeagus with a large field of small spines at base.

#### Diagnosis :

Similar to *A. minahassa*, differs in larger size, presence of yellow spots at pronotum and hemelytra, higher number of teeth at fore and middle femora, structure of fore tibiae, paramere and aedeagus.

#### *Alloeorhynchus (Alloeorhynchus) brendelli* sp. n.

(Fig. 4d, g, j, n, 6c)

Holotype : ♂, Sulawesi Island, Tengah Prov., Solato R., Taronggo, 1°45'S-121°40'E, 27/30-III-1980, lowland rain forest, forest floor litter (leg. M.J.D. BRENDALL; BMNH). Paratypes : 3 ♂♂, 2 ♀♀, same labels (BMNH, ZIL).

#### Description :

Body strongly shining, scutellum, metapleura (except their outer margin) and hemelytra (except a narrow costal stripe in the whole length of corium) dull.

Dark brown (head and pronotum darker than scutellum and hemelytra, nearly black), extreme apex of scutellum, base of corium and clavus, a more or less distinct spot at corium behind the apex of the medial fracture, sometimes extreme apex of corium yellow. Antennal segment I yellow, segments II-IV light brown. Rostral segment I light brown, segments II-IV yellow. Legs yellow, apex of hind femora embrowned. Ventral side of head and of thorax dark brown. Abdomen yellow, underside of segments II-VII with a brown stripe parallel to outer margin of abdomen, connexivum yellow with hind margin of segments III and IV brown.

Width of head 0.69-0.74, of vertex 0.23-0.26 mm (here and in other measurements data for smallest male and largest female are given). Eyes, ocelli and hair cover of antennae as in *A. dollingi*. Length of antennal segments I 0.37-0.43, intercalary 0.06-0.09, II 0.69-0.77, III 0.60-0.71, IV about 1.10 mm. Rostrum reaching or slightly surpassing the middle coxae, length of segments 0.21-0.26, 0.89-0.91, 0.57-0.60, 0.14 mm.

Length of pronotum 0.97-1.14 mm (collar 0.09-0.11, fore lobe 0.53-0.56, hind lobe 0.36-0.47 mm), its width 1.26-

1.47 mm. All parts separated by deep furrows, fore lobe with a very indistinct median furrow. Scutellum as in *A. dollingi*, but the lateral swellings are much less distinct. Length of scutellum is slightly more or subequal to its width. Hemelytra as in *A. dollingi*.

Fore coxae long (about 0.7 mm). Legs as in *A. dollingi*, but the teeth at fore and middle femora form two rows slightly divergent towards their apex, each row is formed by about 17 teeth, and middle tibiae are straight in both sexes. Length of fore and middle femora 1.07-1.23, of fore and middle tibiae 0.93-1.07, of hind femora 1.36-1.57, of hind tibiae 1.50-1.61.

Length ♂ 3.8-4.0, ♀ 4.2-4.5, width ♂ 1.35-1.45, ♀ 1.6-1.7 mm.

Male genital segment slightly asymmetrical (larger at the left side), parameres do not differ in form and size, with subquadrangular apical part. Aedeagus with the field of dark spines much smaller than in *A. dollingi* and placed more distally.

#### Diagnosis :

Related to *A. piceus*, *A. minahassa* and *A. dollingi*, differs in yellow base of hemelytra, colouration of abdominal connexivum, structure of male genitalia and other characters.

#### *Rhamphocoris rubroniger* sp. n.

(Figs. 6d)

Holotype : ♀, Sulawesi Island, Utara Prov., Dumoga-Bone Nat. Park. ca 200 m, III-1985, lowland forest edge (R. Ent. Soc. Lond.; BMNH).

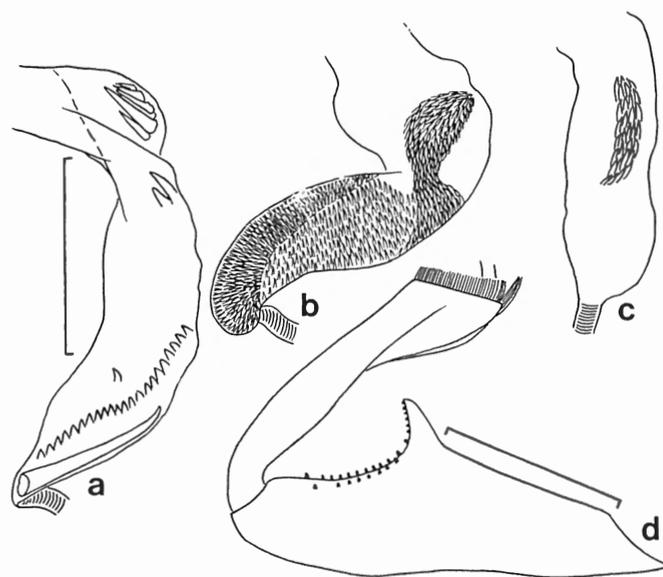


Fig. 6 - a-c. - *Alloeorhynchus*, base of aedeagus : a. - *A. minahassa* sp. n. ; b. - *A. dollingi* sp. n. ; c. - *A. brendelli* sp. n. ; d. - *Rhamphocoris rubroniger* sp. n., fore femur and tibia.

*Description :*

Head, pronotum and abdomen strongly shining, other parts of body dull or feebly shining. Dorsal side of body (except membrane) covered by dense short black hairs, abdomen by dense short silvery hairs.

Head, pronotum, hemelytra, ventral side of thorax, abdominal segments VIII and IX and a longitudinal stripe at segments IV-VII inwards from ventral laterotergites black. Ventral side of neck yellow. Scutellum and abdomen (except the mentioned black parts) scarlet red. Antennal segment I yellow, embrowned towards apex, segment II dark brown, III brownish, IV yellow with narrowly brown base. Rostrum yellow, segment I dark brown. Coxae yellowish brown. Trochanters yellow. Fore femora yellow, embrowned in the apical half. Middle and hind femora brownish black, yellowish at base. Fore tibiae brownish, middle and hind tibiae dark brown. Tarsi brownish yellow. Width of head 0.69, of vertex 0.31 mm. Eyes with sparse short hairs. Ocelli large, distance between them about 3 times more than distance between ocellus and eye. Vertex between eyes and ocelli with two longer bristles, two similar bristles are placed near the inner margin of eyes before their middle. Length of antennal segments I 0.29, intercalary 0.06, II 0.60, III 0.60, IV 0.57 mm, segment II relatively thick, most hairs at it about as long as the segment thick, segments III and IV thin, longest hairs at segment III and at base of segment IV about 5-7 times longer than the thickness of these segments. Rostrum reaching the middle of mesothorax, length of segments (I-IV) 0.35, 0.80, 0.57, 0.20 mm.

Length of pronotum 1.21 mm (collar 0.20, fore lobe 0.50, hind lobe 0.51 mm), width at fore margin 0.80, at hind margin 2.00 mm. All three parts of pronotum unpunctured, separated by deep furrows, the furrow between the fore and hind lobe with some deep punctures, fore lobe with a longitudinal furrow. Hind margin of pronotum straight. Scutellum bifoveate at disc, its length 0.65, width 1.00 mm. Orificial canal long, straight, directed obliquely caudad.

Hemelytra nearly reaching the apex of abdomen. Corium and clavus with raised veins. Membrane with longitudinal veins, not forming closed cells. Length of corium (0.20 mm) less than length of membrane (0.24 mm).

Fore femora with a sharp dentiform projection near the middle, with two divergent rows of very small black teeth between this projection and apex. Fore tibiae somewhat curved, in the apical third widened and with a longitudinal sharp keel at inner (ventral) margin, without teeth and apparently without fossa spongiosa.

Length 5.2, width 2.2. mm.

*Diagnosis :*

Besides *Rh. rubroniger*, completely black head, pronotum and hemelytra are known in two *Rhamphocoris*-species only, namely *Rh. humeralis* (CHINA et MILLER, 1953) (Malayan Peninsula) and *Rh. dorothea* KIRKALDY, 1901 (Laoet Island near Kalimantan). *Rh. humeralis* differs in red rostrum and legs, wide triangular projection of fore femora. The original description of *Rh. dorothea* is too

short, the colour of the scutellum is even not mentioned. Judging from the original description *Rh. dorothea* differs from *Rh. rubroniger* in having basal 2/3 of all femora yellow, base of abdomen black and projection of fore femora small.

**Phorticus pallax** sp. n.

(Fig. 7a, e)

Holotype : ♂, Sulawesi Island, Tengah Prov., Solato R., Tarongga, 1°45'S-121°40'E, 27/30-III-1980, lowland rain forest, forest floor litter (leg. M.J.D. BRENDLELL; BMNH). Paratypes : 1 ♂, 2 ♀♀, same labels (BMNH, ZIL).

*Description :*

Head and abdomen slightly shining, the remaining parts of body dull. Head, pronotum, scutellum, veins of hemelytra and outer part of corium covered by dense short golden hairs, head besides with longer hairs.

Head dark brown, apex narrowly yellow. Antennae and rostrum yellow. Pronotum brown, with a yellow (in males brownish yellow) triangular spot at fore margin. Scutellum brown, the raised part sometimes slightly less dark. Base of clavus and corium up to the level of the middle of scutellum yellow, the remaining part light brown with all veins and the outer part of corium dark brown. Membrane brownish black. Legs yellow, fore femora and apex of hind and middle femora sometimes suffused with orange or light red. Underside of thorax dark brown, ostiolar canal yellow. Abdomen yellow.

Head of equal length and width (0.40-0.46 mm), width of vertex 0.14-0.16 mm. Eyes covered by short hairs. Ocelli large (diameter about 0.05 mm), distance between ocellus and eye less than diameter of ocellus. Length of antennal segments (I-IV; intercalary segment added to II) 0.19-0.26, 0.30-0.46, 0.29-0.44, 0.34-0.50, of rostral segments (I-IV) 0.19-0.26, 0.43-0.57, 0.29-0.36, 0.14-0.17 mm.

Length of pronotum 0.74-1.00 mm (collar at sides 0.14, in the middle 0.21-0.24, fore lobe 0.36-0.50, hind lobe 0.24-0.36 mm), its width at fore margin 0.36-0.43, at hind margin 0.83-1.17 mm. Collar angulately produced caudad, fore lobe with a medial furrow, hind margin of hind lobe straight. Scutellum shorter (0.34-0.50 mm) than wide (0.41-0.57 mm). Hemelytra reaching to apex of abdomen in male, slightly shorter than abdomen in female. Veins of clavus and corium raised.

Fore femora with a triangular projection in the middle, between this projection and apex with a row of about 13 small black teeth. Fore tibiae with 8-9 black teeth, the apical one is the largest. Length of fore femora 0.60-0.79, of fore tibiae 0.50-0.66, of middle femora 0.57-0.77, of middle tibiae 0.50-0.74, of hind femora and tibiae 0.71-1.01 mm.

Length ♂ 2.3-2.65, ♀ 3.0-3.4, width ♂ 0.8-0.9, ♀ 1.1-1.2 mm.

*Diagnosis :*

Very closely related to *Ph. fasciatus* REUTER, 1909 from

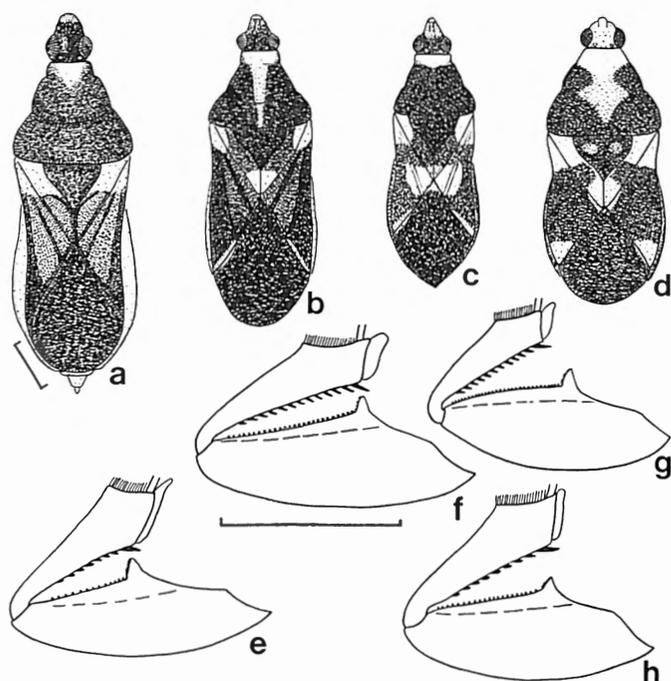


Fig. 7 - *Phorticus*. a-d. - Body; e-h. - Fore femur and tibia. a, e. - *Ph. pellax* sp. n.; b, f. - *Ph. sulawesiensis* sp. n.; e, g. - *Ph. variegatus* HARRIS; d, h. - *Ph. rotundatus* sp. n.

Papua New Guinea, the last differs in having the collar completely yellow (also at sides), fore femur with about 20 black teeth, vertex 1.1 times narrower than eye, the darker coloured part of hemelytra with a transverse dark brown stripe at the fore margin, intervals between veins behind this stripe dark yellow.

***Phorticus sulawesiensis* sp. n.**  
(Fig. 7b, f)

Holotype: ♂, Sulawesi Island, Utara Prov., Gunung Ambang Forest Reserve, nr. Kotamobagu, I-1985, leaf litter (R. Ent. Soc. Lond.; BMNH).

Paratype: ♂, same labels (BMNH).

**Description:**

Head and abdomen shining, the remaining parts dull. Head, pronotum, scutellum, veins of hemelytra and outer part of corium covered by dense short golden hairs, head besides with longer hairs.

Head brown, gradually lightened to brownish yellow at apex. Antennae brownish yellow, segment IV and apex of segment III pale yellow. Rostrum yellow. Pronotum dark brown, collar yellow (except lateral margins), fore lobe with a yellow medial stripe narrowed to behind, hind lobe in holotype with a narrow brownish yellow medial stripe, in paratype without such stripe. Scutellum dark brown. Hemelytra brown, base of corium and clavus with a yellow spot, extending to the level of the middle of scutellum but not reaching the inner margin of clavus, apex of clavus

(from the level of the apex of scutellum) yellow, hind margin of corium in its outer half with a yellow stripe widened to behind (this stripe is indistinct in the paratype). In the brown part of hemelytra the veins and the outer part of corium are darker than intervals between veins. Membrane black. Legs yellow, fore coxae and fore femora except base and apex brownish. Underside of thorax dark brown, ostiolar canal yellowish. Abdomen dark yellow to light brown.

Length and width of head 0.40, width of vertex 0.16 mm. Eyes covered by short hairs. Ocelli small (diameter about 0.03 mm), distance between ocelli and eyes less than diameter of ocellus. Length of antennal segments (I-IV) 0.21, 0.36, 0.37, 0.41 mm, of rostral segments (I-IV) 0.17, 0.37, 0.26, 0.17 mm. Rostral segment III feebly swollen.

Length of pronotum 0.79-0.81 mm (collar at sides 0.13, in the middle 0.17, fore lobe 0.36-0.37, hind lobe 0.29-0.33 mm), its width at fore margin 0.37-0.40, at hind margin 1.03-1.06 mm. Fore lobe with a shallow longitudinal furrow. Hind margin of the hind lobe very feebly incised in the middle. Scutellum shorter (0.43 mm) than wide (0.57 mm). Hemelytra slightly surpassing the apex of abdomen.

Fore femora with a triangular projection before the middle between this projection and apex with a row of about 25 small black teeth. Fore tibiae with 14 teeth, the apical one is the longest. Length of fore femora 0.80, of fore tibiae 0.63, of middle femora 0.73, of middle tibiae 0.64, of hind femora and tibiae 0.93 mm.

Length 2.8-2.9, width 1.05-1.1 mm.

**Diagnosis:**

In colouration somewhat resembling *Ph. vitticollis*, but the later is larger (length of female 3.75 mm), with scutellum (except margins) yellow, the yellow spot at base of hemelytra larger, apex of clavus not yellow.

***Phorticus vitticollis* REUTER**

*Phorticus vitticollis* REUTER in REUTER & POPPIUS, 1909, *Acta Soc. Sci. fenn.* 37 (2): 50, 52.

Described from Samanga, holotype not examined by me.

***Phorticus variegatus* HARRIS**  
(Fig. 7c, g)

*Phorticus variegatus* HARRIS, 1930, *Philipp. J. Sci.* 43 (3): 415.

**Material examined:**

Utara Prov.: 1 ♀, Dumoga-Bone Nat. Park, III-1985, on rotten log (R. Ent. Soc. Lond.; BMNH).

**Distribution:**

Philippines.

**Phorticus parvulus** (SIGNORET)

*Allaeorhynchus* [sic] *parvulus* SIGNORET, 1880, *Ann. Mus. civ. Stor. nat. Genova* 15 : 540.

*Phorticus parvulus* : REUTER, 1908, *Mém. Soc. ent. Belg.* 15 : 95; REUTER & POPPIUS, 1909, *Acta Soc. Sci. fenn.* 37 (2) : 50, 53.

The original description is based on material (apparently one female) from "Kandari" (Kendari) in south-eastern part of the Sulawesi Island (Tenggara Prov.). Later two other specimens, one from Sulawesi (Macassar, now Ujung Prabang), the other from Java (Batavia), both much darker than type, were identified as this species and described by REUTER & POPPIUS (1909). Only the specimen from Java (now in the Hungarian Museum of Natural History, Budapest) was examined by me. Judging from this specimen and from published descriptions the following differences from the later described *Ph. rotundatus* can be indicated : body more elongate (proportion length : width about 2.6, whereas in *Ph. rotundatus* 2.3), apex of clavus without yellow spot, apex of corium with only margins yellow, veins of corium well distinct and much darker than intervals between them, projection of the fore femur placed in its middle, fore tibia with only 6 teeth, besides in the type of *Ph. parvulus* (from Kendari) most of the pronotum and scutellum are yellow.

**Phorticus rotundatus** sp. n.

(Fig. 7d, h)

Holotype : ♂, Sulawesi Island, Utara Prov., Dumoga-Bone Nat. Park, 400/500 m, I-1985, lowland forest (R. Ent. Soc. Lond.; BMNH).

Paratypes : Utara Prov. : 4 ♀♀, as holotype (BMNH, ZIL); 1 ♀, Danau Mooat, nr. Kotamobagu, 1200 m, II-1985, in tissues of dry dead tree (R. Ent. Soc. Lond.; BMNH). Tengah Prov. : 1 ♀, nr. Morowali, Rannu River Area, 27-I/20-IV-1980 (M.J.D. BRENDLELL; BMNH).

*Description :*

Head and abdomen slightly shining, the remaining parts of body dull. Head, pronotum, scutellum, veins of hemelytra and outer part of corium with dense short golden hairs, head besides with some longer hairs especially at the hind margin of vertex.

Head honey yellow to light brown. Antennae brownish yellow. Rostrum yellow. Pronotum dark brown, collar completely yellow, fore lobe and fore 1/2 to 2/3 of the hind lobe with a medial yellow or reddish yellow stripe, which (except the female from Tengah Prov.) is more or less widened at the border of lobes. Scutellum dark brown, often with two round yellow spots. Hemelytra dark brown, base of corium and clavus yellow (clavus approximately up to the level of the middle of scutellum, corium up to the level of the hind third or even apex of scutellum), apex of clavus (as a rule also a narrow stripe at the adjacent part of corium) and apex of corium yellow. Legs yellow,

fore femora except base and apex brown. Underside of thorax dark brown to black, ostiolar canal light brown to brownish yellow. Abdomen dark brown, its medial part or at least genital segments light brown to yellow.

Length of head 0.40, its width 0.40-0.43, width of vertex 0.20-0.21 mm. Eyes covered by sparse short hairs. Ocelli small (diameter about 0.03 mm) distance between them and eye subequal to diameter of ocellus. Length of antennal segments (I-IV) 0.19-0.21, 0.31-0.34, 0.33-0.37, 0.36-0.40, of rostral segments (I-IV) 0.17, 0.36, 0.21, 0.14 mm. Length of pronotum 0.70-0.87 mm (collar at sides 0.09-0.11, in the middle 0.17-0.19, fore lobe 0.36-0.43, hind lobe 0.26-0.33 mm), its width at fore margin 0.40-0.43, at hind margin 0.96-1.10 mm. Collar angulately produced caudad, fore lobe with a shallow medial furrow, hind margin of pronotum slightly incised in the middle. Length of scutellum 0.37-0.47, its width 0.43-0.57 mm. Hemelytra not surpassing or even not reaching the apex of abdomen (most short are the hemelytra in the male from Danau Mooat in which they do not cover the apical two segments of abdomen). Veins at clavus and corium less distinct than in other Sulawesi species.

Fore femora with a triangular projection before the middle, between this projection and apex with a row of about 20 small black teeth. Fore tibiae with 9 black teeth, the apical one is the largest. Length of fore femora 0.70, of fore tibiae 0.57, of middle femora about 0.65, of middle tibiae 0.57-0.63, of hind femora 0.79-0.84, of hind tibiae 0.80-0.93 mm.

Length ♂ 2.3, ♀ 2.5-2.8, width ♂ 1.0, ♀ 1.1-1.2 mm.

*Diagnosis :*

Apparently related to *Ph. parvulus* (SIGNORET), differences are indicated under this species.

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I am thankful to Dr. J. VAN STALLE (Bruxelles) and Dr. W.R. DOLLING (London) for the main material, to the late Prof. R.H. COBBEN (Wageningen), Dr. Th.J. HENRY (Washington, D.C.), Prof. H. STRÜMPFEL (Hamburg) and Dr. T. VÁSÁRHELYI (Budapest) for some additional specimens and types used in this study.

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