

Studies on Oriental *Cydnidae*. VI. A contribution to the fauna of
Sulawesi (Celebes)
(*Heteroptera: Pentatomoidea*)

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ABSTRACT. Records of nine species of burrowing bugs from Sulawesi (Celebes) including *Parachilocoris minutus* (DISTANT), new for the island, are presented. *Chilocoris adelphus* HORVATH and *Macroscythus celebensis* BREDDIN are redescribed. *Chilocoris barbarae* n. sp., *Cydnopeltus sulawesicus* n. sp., *Macroscythus utaranus* n. sp., are described and illustrated. The *Cydnidae* recorded hitherto from Sulawesi are listed.

INTRODUCTION

Original data on burrowing bugs (*Cydnidae*) of Sulawesi (Celebes) are mostly scattered in old papers (WALKER, 1867; SIGNORET, 1881; BREDDIN, 1906; HORVATH, 1919; SCHOUTEDEN, 1933; LIS, 1990, 1991). Seven species of *Cydnidae* were recorded from Sulawesi, so far (see the list at the end of paper). The present study is based on the material collected on Sulawesi mainly by R. BOSMANS and J. VAN STALLE during the "Project WALLACE" expedition.

Abbreviations. IRSNB - Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium; HNHM - Hungarian Natural History Museum, Budapest, Hungary; JAL - the author's collection; Project WALLACE - Project WALLACE, leg. R. BOSMANS and J. VAN STALLE, J. G. n 26. 977, Coll. R. I. Sc. N. B.

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A REVIEW OF SPECIES

Chilocoris adelphus HORVATH
(Figs 1-2)*Chilocoris adelphus* HORVATH, 1919: 260

DIAGNOSIS

The species belongs to the group with no postmedian, transverse impression on pronotum (fig. 1). It is closely allied to *Ch. ritzemae* (SIGNORET) from which it can be distinguished by the unicolor pronotum (in *Ch. ritzemae* anterior lobe is distinctly darker than the posterior) and the body size (*Ch. adelphus* - 3.2-3.4 mm; *Ch. ritzemae* - 2.3-2.7 mm).

DESCRIPTION

Head yellowish brown, slightly striated; clypeus somewhat shorter than paraclypei and with two subapical pegs; each paraclypeus with a submarginal row of setigerous punctures - 3 hair-like setae and 6-7 peg-like setae; eyes blackish brown, ocular index 2.4; ocelli pale yellow; antennae yellow, 2nd segment minute; rostrum pale yellow.

Pronotum yellowish brown, unicolor; anterior margin concave, posterior broadly convex; transverse discal impression absent; anterior lobe subapically with a distinct group of several punctures, posterior lobe with a distinct transverse band of punctures; lateral margins with a row of 6-7 submarginal setigerous punctures.

Scutellum brown, with distinct darker punctures; apex impunctate.

Corium pale yellow, more translucent than both pronotum and scutellum; clavus with two rows of punctures on basal half, mesocorium with two rows of punctures paralleling clavo-corial suture, and with numerous small punctures on apical half; costa without setigerous punctures. Membrane semihyaline, distinctly surpassing the apex of abdomen.

Propleuron polished, impunctate. Legs yellowish brown, not specifically modified. Sternites polished, impunctate, sides with numerous hair-like bristles. Paramere as in fig. 2.

Measurements (in mm) (lectotype male only): body length 3.32, body width 1.83, head length 0.52, head width 0.75, pronotum length 1.02, pronotum width 1.64, scutellum length 0.77, scutellum width 0.98, antennal segments 0.17 : 0.06 : 0.21 : 4th and 5th missing.

TYPE MATERIAL EXAMINED

Lectotype male (present designation) of *Chilocoris adelphus* HORVATH: S. Celebes, Bua-Kraeng, 5000', Febr. 1896, H. FRUHSTORFER; *adelphus* H., det. HORVATH;

Lectotype, *Chilocoris adelphus* HORV., labelled by R. C. FROESCHNER 59 (HNHM).

REMARKS

The species is known only from the type-specimen from Sulawesi.

***Chilocoris barbarae* n. sp.**
(figs 3-5, 13)

DIAGNOSIS

Among species of the genus with uninterrupted transverse impression on the pronotum the new species is recognizable by punctures on pronotum, scutellum and corium bearing hair-like bristles (fig. 13).

DESCRIPTION

Body brown or dark brown, polished, with blackish brown punctures bearing hair-like bristles.

Head (fig. 3) striated, with several darker punctures between eyes; clypeus as long as paraclypei and with two subapical pegs; each paraclypeus with a submarginal row of setigerous punctures - 3 hair-like setae and 3 peg-like setae; eyes blackish brown, ocular index 2.20-2.25; ocelli reddish brown; antennae yellowish brown, 2nd segment minute; rostrum yellowish brown.

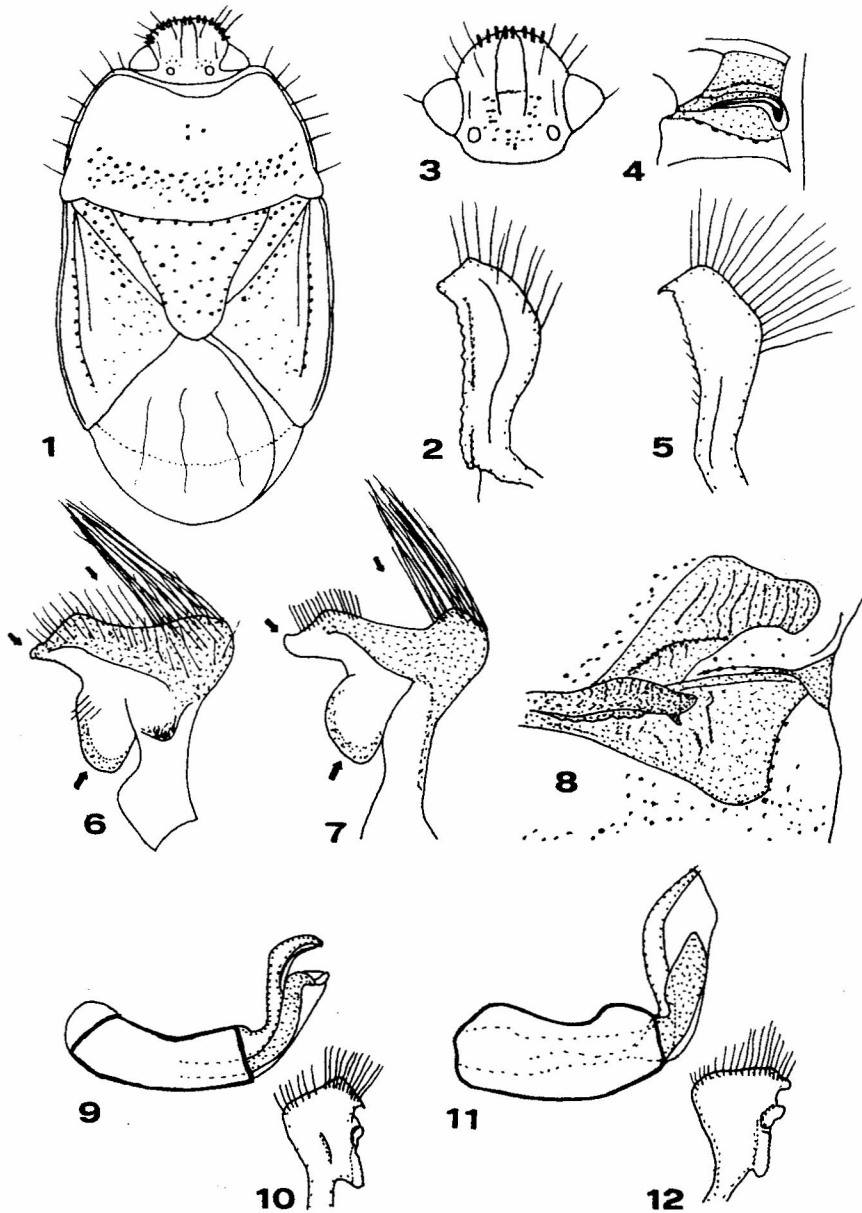
Pronotum polished; transverse discal impression uninterrupted; anterior lobe convex (with distinct shallow, median subapical impression in male), laterally and subapically on median line with distinct blackish brown punctures; posterior lobe with irregularly scattered, blackish brown punctures; umbones swollen, especially in male; lateral margins with 3 submarginal setigerous punctures - 2 on anterior lobe, 1 on posterior lobe.

Scutellum brown or dark brown, basal transverse impression and lateral submarginal grooves with distinct blackish brown punctures; disc with numerous scattered blackish brown punctures.

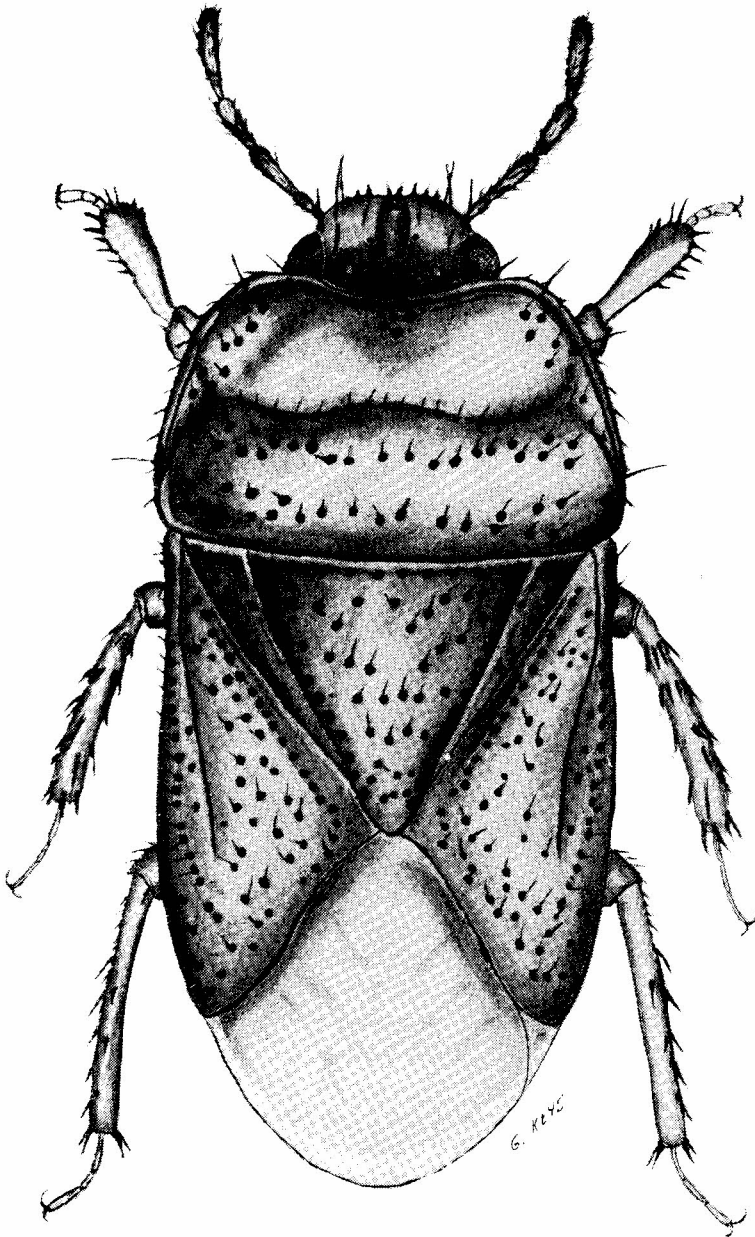
Corium of the same colour as pronotum and scutellum; clavus with two rows of punctures on basal half; mesocorium with a distinctly punctate, impressed line paralleling clavo-corial suture and with numerous, somewhat smaller punctures on the rest of surface; costa without setigerous punctures. Membrane hyaline, slightly browned, extending well beyond posterior extremity of abdomen.

Propleuron polished, with a short row of darker punctures medially. Evaporatoria as in fig. 4.

Sternites polished, with no punctures; laterally and posteriorly with long hair-like bristles. Legs yellow or yellowish brown, not specifically modified. Paramere as illustrated (fig. 5).



1-2. *Chilocoris adelphus* HORV., 3-5. *Chilocoris barbarae* n. sp., 6. *Cydnopeltus sulawesicus* n. sp., 7. *Cydnopeltus incisus* DIST., 8. *Macroscythus celebensis* BREDD., 9-10. *Macroscythus utaranus* n. sp., 11-12. *Macroscythus noonadanae* FROESCH.: 1 - dorsal view; 2, 5-7, 10, 12 - paramere; 3 - head; 4, 8 - evaporatoria; 9, 11 - penis



13. *Chilocoris barbarae* n. sp., dorsal view

Measurements (in mm) (male and female respectively): body length 2.65, 2.56; body width 1.38, 1.33; head length 0.45, 0.43; head width 0.61, 0.60; pronotum length 0.80, 0.79; pronotum width 1.38, 1.31; scutellum length 0.73, 0.73; scutellum width 0.88, 0.81; antennal segments 0.15 : 0.10 : 0.26 : 0.25 : 0.38; 0.15 : 0.08 : 0.23 : 0.23 : 0.34.

TYPE MATERIAL

Holotype male: Sulawesi Utara, Dumoga-Bone Nat. Park, Base Camp (200m), 20-X-1985, Station: 039, Project WALLACE (IRSNB). Paratype female: Sulawesi Utara, Tangkoko Nat. Park, Danau Mooat, 18-XI-1985, Station: 098, Project WALLACE (JAL).

ETYMOLOGY

To my wife Barbara.

Cydnopterus sulawesicus n. sp. (figs 6, 14)

DIAGNOSIS

The new species is closely allied to *Cydnopterus incisus* DISTANT, from which it can be easily distinguished by having 2-3 setigerous punctures on costal margin (*C. incisus* - only 1 setigerous puncture), by weaker puncturation of pronotum and scutellum and different shape of paramere (figs 6-7).

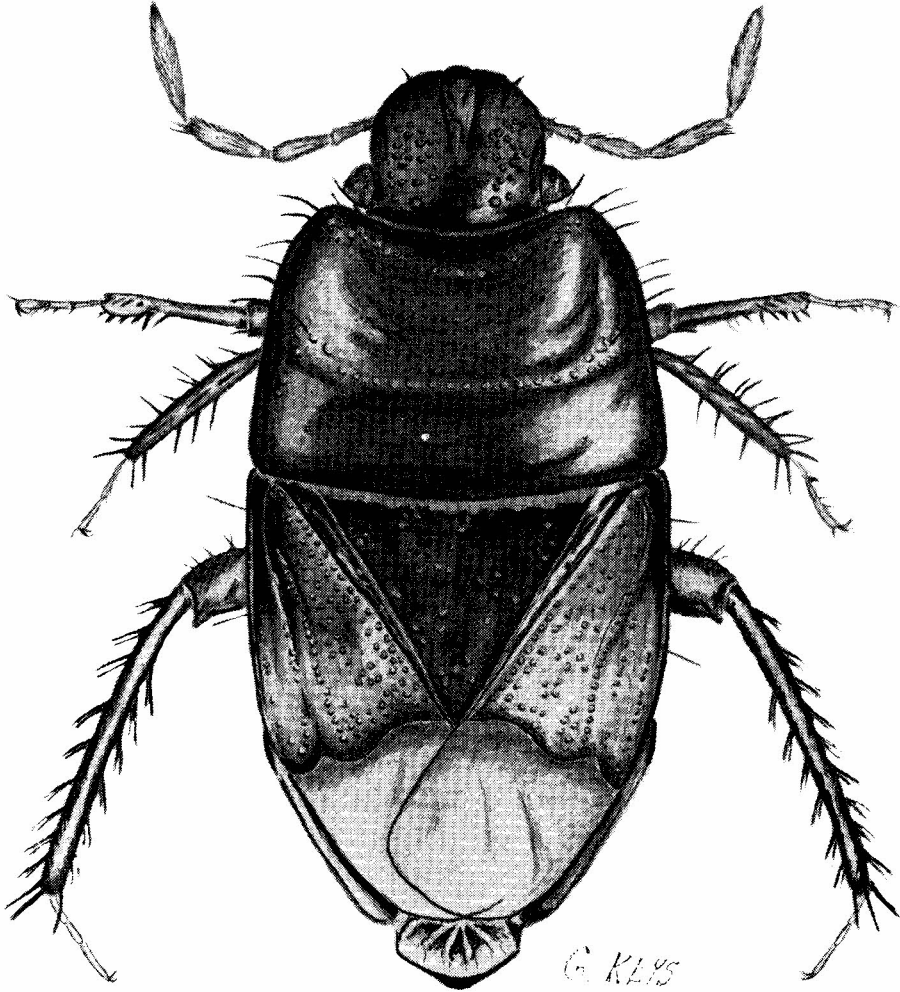
DESCRIPTION

Head black, with distinct punctures on paraclypei; clypeus equal in length to paraclypei and with two short setae at one third of its length from the apex; lateral margins of paraclypei with two setigerous punctures anteriorly to eyes; the latter reddish brown, ocular index 3.95; ocelli small, greyish, interocellar distance 2.4 times a distance of ocellus from eye; antennae dark castaneous, the apices of joints somewhat paler, 2nd segment shorter than the 3rd; rostrum brown, reaching middle coxae, 3rd rostral segment longer than the 4th.

Pronotum black, shining, glabrous with a weak discal transverse impression; a few punctures present also close to the anterior margin, the rest of disc impunctate; lateral margins with a submarginal row of 8 setigerous punctures.

Scutellum black, with basal series of punctures; lateral margins lineately punctate from a little beyond base; the disc with a few scattered deep punctures.

Corium black, distinctly punctured, with lateral margins parallel; costa with 2-3 setigerous punctures; membranal sutures insinuated. Membrane fuscous, semihyaline, shorter and narrower than abdomen.



14. *Cydnopeltus sulawesicus* n. sp., dorsal view

Propleuron and evaporatoria as in *C. incisus* Dist. Venter black, glossy in the middle, sides punctate; posterior margins of segments with reddish brown hair-like bristles. Legs blackish brown, tarsi brown. Paramere as in fig. 7.

Measurements (in mm)(holotype male only): body length 6.35, body width 2.99, head length 1.33, head width 1.58, pronotum length 2.07, pronotum width 2.96, scutellum length 1.51, scutellum width 1.78, antennal segments 0.36 : 0.38 : 0.53 : 0.70 : 0.98.

TYPE MATERIAL

Holotype male: Sulawesi Utara, Tangkoko Nat. Park, Danau Mooat, 29-X-1985, Station: 067, Project WALLACE (IRSNB).

Parachilocoris minutus (DISTANT)

Cydnopterus minutus DISTANT, 1901: 105

Parachilocoris minutus: LIS, 1991: 173

MATERIAL EXAMINED

Sulawesi Utara, Dumoga-Bone Nat. Park, Base Camp (200m), 13-X-1985, Station: 024, 1F, Project WALLACE (IRSNB).

REMARKS

This is the first record of this species from Sulawesi. Hitherto recorded only from Burma (DISTANT, 1901; LIS, 1991).

Aethus indicus (WESTWOOD)

MATERIAL EXAMINED

Sulawesi Utara: Tangkoko Nat. Park, between P.P.R. bung. and Batuputi, 9-XI-1985, Station: 087, 1M, Project WALLACE; Dumoga-Bone Nat. Park, Base Camp (200m), 20-X-1985, Station: 039, 43FF 18MM, Project WALLACE (IRSNB, JAL); Iles Moluques, Celebes, Mandar, 7FF 4MM, Coll. R.I.Sc.N.B. (IRSNB).

Geotomus pygmaeus (DALLAS)

MATERIAL EXAMINED

Sulawesi Utara, Dumoga-Bone Nat. Park: Base Camp (200m), 20-X-1985, Station: 039, 57FF 55 MM; Picnic Site, 12-X-1985, Station: 023, 3FF 3MM; along river Tumpah, 7-X-1985, Station: 004, 2FF; Toraut Base Camp (200m), X-1985,

Station: 058, 1F 1M; river Tumpah (Picnic S.), X-1985, Station: 012, 1F; Toraut, X-1985, Station: 003, 1F, Project WALLACE (IRSNB, JAL); S. Celebes, Patunuang, Jan. 1896, 1F, H. FRUHSTORFER, Coll. R.I.Sc.N.B. (IRSNB).

Macroscytus celebensis BREDDIN
(figs 8, 15)

Macroscytus celebensis BREDDIN, 1906: 36

DIAGNOSIS

Among species of the genus with a single preocular, submarginal setigerous punctures on each paraclypeus the species differs from all except *M. papuanus* HORV. in having no setigerous punctures on costa. It differs from *M. papuanus* HORV. in having wide transverse yellowish brown band along the posterior margin of pronotum (fig. 15)

DESCRIPTION

Head black, paraclypei as long as clypeus, dorsally impunctate except for the three primary setigerous punctures; eyes large, brown, ocular index 3.3; ocelli small, interocellar distance about 3.7 times a distance of ocellus from eye; antennae brown, apices of the joints 1 to 4 somewhat paler, the last joint almost entirely yellowish brown; rostrum brown, reaching anterior margin of mid-coxae, 3rd rostral segment longer than the 4th one.

Pronotum black, except a transverse yellowish brown band at the posterior margin; lateral parts somewhat flattened, lateral margins with 2 submarginal setigerous punctures on anterior lobe and 1 in subbasal angle of posterior lobe; anterior lobe with distinct punctures forming an arcuate, subapical transverse band and irregular patch on each side; transverse discal impression absent; hind lobe with a transverse broad band of distinct punctures not reaching the posterior margin.

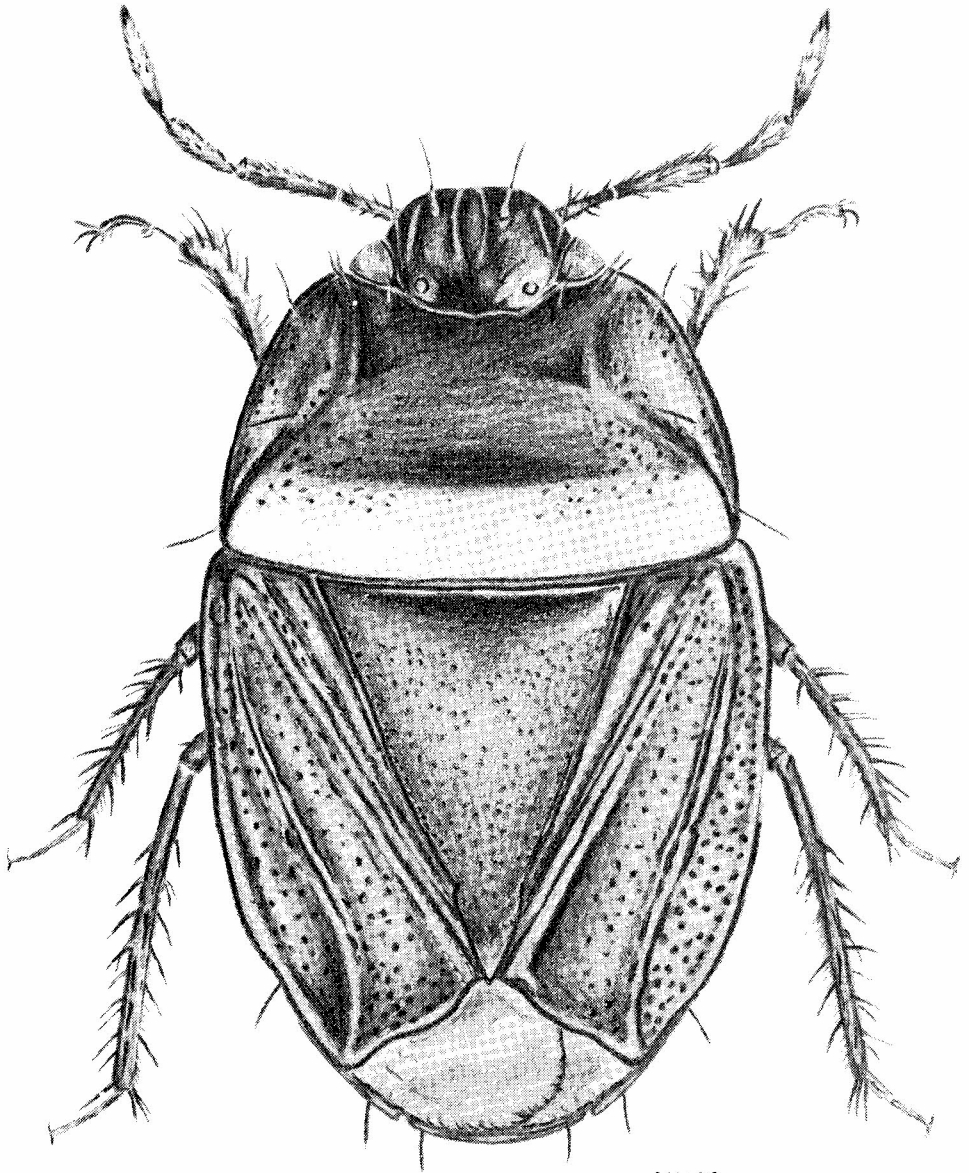
Scutellum dark castaneous, with numerous coarse punctures a little larger than those on pronotum; base and apex impunctate.

Corium paler in shade than scutellum, especially along the rows of punctures and costal area; entire surface with coarse punctures; costa somewhat flattened with no setigerous punctures. Membrane brown, semihyaline, shorter and narrower than abdomen.

Propleuron with numerous small punctures anteriorly; impression strong, with crowded, coarse punctures which become finer and sparser posteriorly; hind margin impunctate. Evaporatoria as in fig. 8.

Venter blackish brown, glossy; each segment with a patch of punctures posterior and anterior to spiracle. Legs blackish brown, tarsi brown, hind femora without teeth.

Measurements (in mm)(female only): body length 8.05, body width 4.75, head length 1.25, head width 1.97, pronotum length 2.44, pronotum width 4.19, scutellum



KEYS G.

15. *Macroscytus celebensis* BREDDIN, dorsal view

length 3.24, scutellum width 2.71, antennal segments: 0.49 : 0.56 : 0.66 : 0.81 : 0.98.

MATERIAL EXAMINED

Sulawesi Utara, Dumoga-Bone Nat. Park, Poniki trail (1600m), X-1985, Station: 029, 1F, Project WALLACE (IRSNB).

REMARKS

The type-material of *M. celebensis* could not be traced despite repeated efforts.

***Macroscytus transversus* (BURMEISTER)**

MATERIAL EXAMINED

Sulawesi Utara, Dumoga-Bone Nat. Park, subcamp Hogg's Back (660m), X-1985, Station: 048, 2FF 4MM, Project WALLACE (IRSNB, JAL).

***Macroscytus utaranus* n. sp.**

(figs 9-10)

DIAGNOSIS

The new species is closely allied to *M. noonadanae* FROESCHNER but can be separated from it by the number of submarginal setigerous punctures on lateral margins of pronotum (*M. utaranus* - 5-6, *M. noonadanae* - 4), smaller body size (*M. utaranus* - 6.85-7.81, *M. noonadanae* - 7.65-8.40), and a shallow transverse impression on pronotum (in *M. noonadanae* it is deeply and abruptly impressed). Besides, males differ distinctly in genital structures (figs 9-12).

DESCRIPTION

Head brown or blackish brown, paraclypei as long as clypeus and dorsally impunctate with a single preocular, submarginal setigerous puncture; sides slightly wrinkled; eyes grey, ocular index about 2.1-2.3; ocelli yellowish, interocellar distance about 5.5-5.7x (M) or 7.0-7.1x (F) a distance of ocellus from eye; antennae brown or pale brown, 2nd segment slightly shorter than the 3rd; rostrum brown or pale brown, reaching mid-coxae.

Pronotum dark brown or blackish brown; anterior lobe with distinct punctures forming an arcuate, subapical transverse band and irregular patch on each side; transverse impression only slightly impressed, with a row of punctures, both interrupted medially; posterior lobe with several scattered punctures; lateral margins with a row of 5 (F) or 6 (M) submarginal setigerous punctures.

Scutellum dark brown or blackish brown, with numerous coarse punctures a little larger than those on corium and pronotum; apex and base impunctate.

Corium brown, dark castaneous or blackish brown, a little paler than scutellum; costa with 2 setigerous punctures. Membrane brown, semihyaline, distinctly surpassing the apex of abdomen.

Propleural impression strong with crowded, coarse punctures. Evaporatoria as in *M. noonadanae*, but posteriorly with more punctures on sclerite.

Venter dark brown or blackish brown, sternites weakly and irregularly wrinkled; each segment with a triangular patch of dense, fine punctures posterior to spiracles. Legs lighter in shade than abdomen; posterior femur of male with four short but distinct spines subapically on ventral margin. Paramere and penis as in figs 9-10.

Measurements (in mm)(male and female respectively): body length 6.85-7.81, 6.95-7.20; body width 3.68-4.05, 3.73-3.76; head length 1.13-1.16, 0.99-1.14; head width 1.75-1.83, 1.77-1.78; pronotum length 1.90-2.19, 1.95-2.05; pronotum width 3.46-3.66, 3.51-3.54; scutellum length 2.58-2.80, 2.68-2.69; scutellum width 2.32-2.39, 2.39-2.41; antennal segments: 0.30-0.40 : 0.39-0.46 : 0.50-0.53 : 0.63-0.67 : 0.77, 0.34-0.35 : 0.39-0.42 : 0.49-0.50 : 0.57-0.64 : 0.71-0.74.

TYPE MATERIAL

Holotype male: Sulawesi Utara, Dumoga-Bone Nat. Park, Base camp (200m), 20-X-1985, Station: 039. Project WALLACE (IRSNB). Paratypes 1 male and 2 females: Sulawesi Utara, Dumoga-Bone Nat. Park, Picnic Site, 12-X-1985, Station: 029, Project WALLACE (IRSNB, JAL).

THE LIST OF CYDNIDAE HITHERTO RECORDED FROM SULAWESI

Subfamily *Scaptocorinae*

1. *Stibaropus* sp. [SCHOUTEDEN, 1933];

Subfamily *Cydninae*

Tribe *Cydnini*

2. *Chilocoris adelphus* HORVATH [HORVATH, 1919];
3. *Chilocoris barbarae* n. sp. [LIS, present paper];
4. *Cydnopeltus sulawesicus* n. sp. [LIS, present paper];
5. *Parachilocoris minutus* (DISTANT) [LIS, present paper];

Tribe *Geotomini*

6. *Aethus indicus* (WESTWOOD) [WALKER, 1867; SIGNORET, 1881; ATKINSON, 1887; BREDDIN, 1906; LIS, 1991, present paper];
7. *Geotomus maurus* (DALLAS) [WALKER, 1867; BREDDIN, 1906];

8. *Geotomus pygmaeus* (DALLAS) [WALKER, 1867; SIGNORET, 1881; BREDDIN, 1906; LIS, 1991, present paper];
9. *Macroscytus celebensis* BREDDIN [BREDDIN, 1906; LIS, present paper];
10. *Macroscytus transversus* (BURMEISTER) [WALKER, 1867; DISTANT, 1902; BREDDIN, 1906; LIS, present paper];
11. *Macroscytus utaranus* n. sp. [LIS, present paper];
12. *Scoparipes (Euscoparipes) insignis* (WALKER) [WALKER, 1867; BREDDIN, 1906; LIS, 1990].

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