

(Noona Dan Papers No. 52.)

**Some Aradidae (Hemiptera-Heteroptera) from  
the Philippine, Bismarck and  
Solomon Islands.**

By

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By the kind offices of Dr. Børge Petersen of the Zoological Museum in Copenhagen, to whom I express my sincere gratitude, I have had a privilege to study Aradidae collected by the Noona Dan Expedition in the years 1961—62 in the Philippines and Bismarck Archipelago (Petersen, 1966).

The relatively small lot of 102 specimens contained representatives of two subfamilies, eight genera, eighteen species and one subspecies, of which four species are new and are described elsewhere in this paper. Besides four new species, of which three belong to the subfamily Carventinae, and one to Mezirinae, one specimen of *Daulocoris auritomentosa* (Kormilev), 1955, represents a particular interest being collected on New Britain I., so far from its original distribution in Indonesia (Borneo).

All measurements indicated in this paper were taken by a micro-millimeter eyepiece, 25 units representing 1 mm. Length of the head, pronotum, scutellum, and abdomen, was taken on median line; for convenience, length of abdomen was taken from the tip of scutellum to the tip of hypopygium, or segment IX in the female, respectively. Postero-exterior angles of connexiva are called PE-angles. In measurements the first figure in ratio represents the length, and the second the width of measured portion.

Subfam. CARVENTINAE Usinger.

This subfamily was represented in the lot by a single macropterous genus *Carventus* Stål, 1865, and four species, of which three are new, and are described here with.

Gen. *Carventus* Stål, 1865.1. *Carventus biroi* Kormilev.

*Carventus biroi* Kormilev, 1954, Philipp. Jour. Sc., 83:125.

Bismarck Isls. — MUSSAU: Talumalaus, 1 ♀, 24.I.1962.

Distribution: New Guinea.

2. *Carventus longiventris* n. sp. Figs. 1—2.

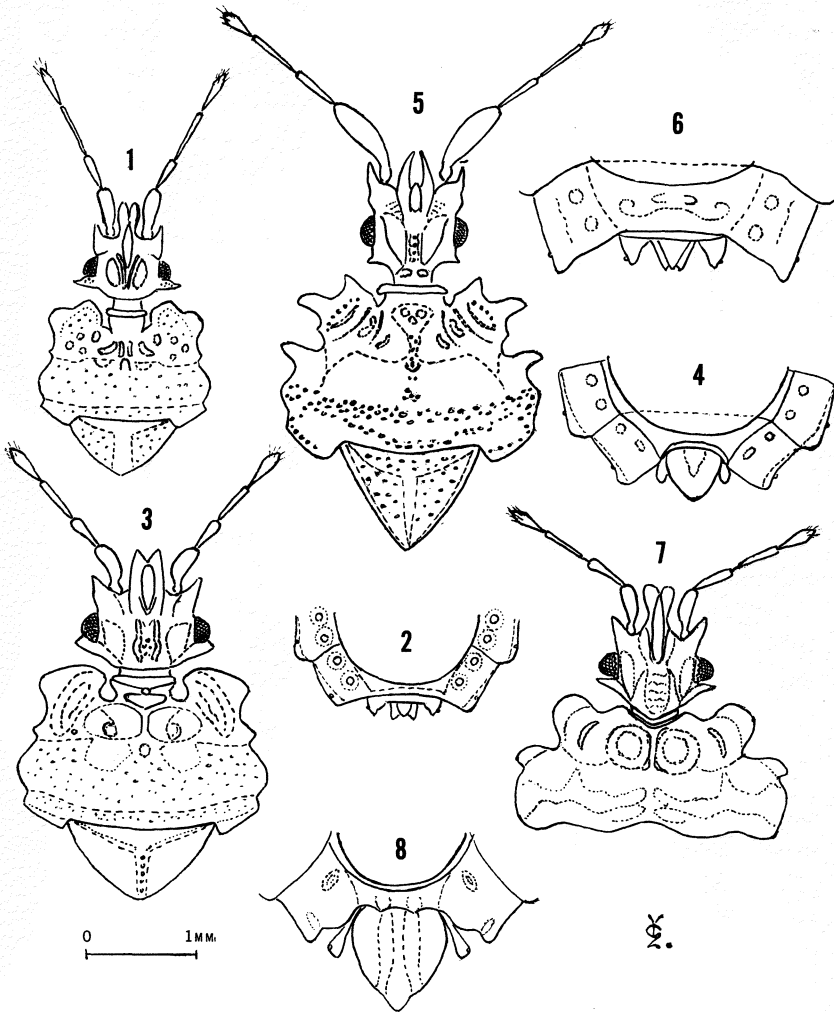
**F e m a l e.** Elongate ovate, partially covered with a thin layer of whitish incrustation.

Head as long as width across the eyes (21.5:21.5). Anterior process strong, with parallel sides at the base, but tapering apically, apex deeply incised, genae being much longer than clypeus, reaching to  $\frac{3}{4}$  of antennal segment I. Antenniferous tubercles subparallel, short, acute, with convex exterior borders, reach to  $\frac{1}{4}$  of ant. segment I. Eyes moderately large, semi-globose. Postocular tubercles acute, produced far beyond outer borders of eyes. Vertex slightly raised medially, and with two (1 + 1) ovate, callous spots mesad of eyes. Antennae slender, twice as long as head (42:21.5); proportions of antennal segments, I to IV, are: 12:7:12:11. Rostrum reaches to hind border of rostral groove, which is closed posteriorly.

Pronotum much shorter than its maximal width across humeri (26:40); fore lobe narrower than hind lobe (36:40). Collar large, long and wide, separated from the disc by deep incisures laterally. Antero-lateral angles form large lobes, rounded anteriorly and produced beyond collar; lateral borders of fore lobe rounded anteriorly, and sinuate posteriorly, terminating with a tooth. Fore disc with a short, median sulcus, flanked by two (1 + 1), short carinae, and more laterad by four (2+2) crescent-shaped callosities. Lateral borders of hind lobe convex in the middle, sinuate anteriorly and posteriorly. Posterior border straight in the middle, angularly produced backward laterad of scutellum. Hind disc with a thin, transverse sulcus along hind border.

Scutellum subtriangular, shorter than width at the base (13:25); lateral borders rounded; apex angularly rounded; disc flat, slightly raised along basal border.

Hemelytra reach slightly over the middle of tergum VII; corium reaches to  $\frac{1}{3}$  of scutellum. Baso-lateral borders of corium expanded, rounded, and incised behind expansion; membrane large, with a few wrinkles.



Figs. 1—2. *Carventus longiventris* n. sp., ♀. (1) Head, pronotum and scutellum. (2) Apex of abdomen dorsal view.

Figs. 3—4. *Carventus oviventris* n. sp., ♂. (3) Head, pronotum and scutellum. (4) Apex of abdomen dorsal view.

Figs. 5—6. *Carventus peterseni* n. sp., ♀. (5) Head, pronotum and scutellum. (6) Apex of abdomen dorsal view.

Figs. 7—8. *Usingerida parva* n. sp., ♂. (7) Head and pronotum. (8) Apex of abdomen dorsal view.

Abdomen ovate, longer than maximal width across segment V (68:57). Connexivum wide and flat; exterior borders of connexiva slightly convex; PE-angles distinctly protruding; PE-VII forms a right angle, produced as far as paratergites; the latter triangular, slightly shorter than rectangular segment IX. Spiracles II to III ventral, and not visible from above, IV to VIII lateral, or slightly dorso-lateral, and visible from above.

Legs unarmed; trochanters free; arolia present.

Color: yellow brown, but on the dorsal surface partially concealed by whitish incrustation; tibiae, tarsi, rostrum, and antennal segments I to IV at the base, are paler.

Total length 5.16 mm.; width of pronotum 1.60 mm.; width of abdomen 2.28 mm.

Holotype: ♀, Philippines, PALAWAN: Mantalingajan, Tagembung, 1150 m., 20.IX.1961; deposited in the Zoological Museum, Copenhagen.

Paratype: 1 ♀, collected with holotype; in the collection of the author.

*Carventus longiventris* n. sp. is related to *C. horvathi* Kormilev, 1954, from New Guinea, but is smaller, proportions of antennal segments are different, and spiracles III are ventral.

### 3. *Carventus oviventris* n. sp. Figs. 3—4.

Male. Ovate, partially covered with brownish incrustation. Closely related to *C. robustus* Kormilev, 1966, from Fiji, but much larger; head as long as width across eyes; anterior process reaching (♂), or almost reaching (♀), to tip of antennal segment I; antennal segment III relatively longer, almost as long as I. Sculpture of pronotum less protruding. In other characters is similar to *C. robustus*.

Measurements: head as long as width across eyes (♂-27.5:27.5, ♀-30:30), but shorter than width across postocular tubercles (♂-27.5:30, ♀-30:32). Proportions of antennal segments, I to IV, are ♂-12:8:11:10, ♀-14:9:12.5:10. Pronotum much shorter than maximal width (♂-33:57, ♀-36:64), fore lobe narrower than hind lobe (♂-47:57, ♀-52:64). Scutellum shorter than width at the base (♂-16:34, ♀-19:35). Abdomen longer than maximal width across segment IV (♂-81:72.5, ♀-100:94). Spiracles II ventral, and not visible from above; III to VIII lateral and visible. PE-angles distinctly protruding, blunt; PE-VII form a right angle, in the

male they are slightly produced beyond tip of paratergites; in the female they do not reach to these tips. Hypopygium subcordate, raised medially on the fore half; segment IX in the female trapezoidal, incised at the tip. Paratergites ( $\sigma^7$ ) reach to  $3/5$  of hypopygium; in the female, reach to  $2/3$  of segment IX.

Color: brown; round callous spots on connexivum, antennae, rostrum, and legs, are lighter, yellow brown.

Total length:  $\sigma^7$ -6.50,  $\text{f}$ -7.40 mm.; width of pronotum:  $\sigma^7$ -2.28,  $\text{f}$ -2.56 mm.; width of abdomen:  $\sigma^7$ -2.90,  $\text{f}$ -3.76 mm.

Holotype:  $\sigma^7$ , Bismarck Isls., NEW BRITAIN: Yalom, 1000 m., 21.V.1962; deposited in the Zoological Museum, Copenhagen.

Allotype:  $\text{f}$ , collected with holotype; in the same collection. 2  $\text{f}$ , both without head, collected with holotype.

#### 4. *Carventus peterseni* n. sp. Figs. 5—6.

**F e m a l e.** Elongate ovate, covered with brownish incrustation, and dirt; lateral borders of pronotum and abdomen with short, pale, spaced bristles, protruding through incrustation.

Related to *Carventus kirkaldyi* China, 1930, from Samoa, of the same size, and shape, but the head is longer than width across eyes; anterior process relatively shorter, reaching only to  $2/5$  of antennal segment I; antennal segment I relatively longer, one and a half times as long as III; postocular tubercles smaller, do not reach to outer border of eyes, and directed obliquely backward; exterior borders of connexiva less convex; PE-VII produced as acute lobes as far as paratergites, and segment IX. Short, pale bristles on lateral borders of pronotum and abdomen are absent in *C. kirkaldyi* China.

Measurements: head longer than width across eyes (30:26); proportions of antennal segments, I to IV, are: 22:12.5:15:8.5; pronotum much shorter than maximal width (37:60); fore lobe narrower than hind lobe (52:60); scutellum shorter than width at the base (20:33); abdomen longer than maximal width across segment IV (105:90). Spiracles II ventral, and not visible from above, III to VIII lateral and visible.

Color: brown, partially concealed by brownish incrustation.

Total length 7.8 mm.; width of pronotum 2.4 mm.; width of abdomen 3.6 mm.

Holotype:  $\text{f}$ , Bismarck Isls., NEW BRITAIN: Yalom, 1000 m., 21.V.1962; deposited in the Zoological Museum, Copenhagen.

It is a pleasure to dedicate this curious species to Dr. Børge Petersen, by whose kind offices I have had a privilege to study this lot of Aradidae.

*Carventus peterseni* n. sp. belongs to the group previously separated into a genus *Camerarius* Distant, 1902. I have considered *Camerarius* Distant, and *Burgeonia* Schouteden, 1919, as subgenera of *Carventus* Stål. Usinger and Matsuda synonymized both with *Carventus* (1959:120) motivating, that their distribution do not follow separated geographical areas (*Burgeonia* is Ethiopical, and *Carventus* and *Camerarius* are Oriental and Pacific, with one species of the former Central American), but we surely have three different, though related, groups in *Carventus*, which split just along these three former genera, so maybe it would be better to retain them as subgenera.

Subfam. MEZIRINAE Oshanin.

Gen. **Artabanus** Stål, 1865.

*Artabanus* is a rather heterogenous genus, but all its species have in common a curious stridulatory apparatus: a knife-like carina on sternum IV, and file-like upper-inner surface of hind tibia as a counter part.

1. **Artabanus sinuatus** Stål.

*Artabanus sinuatus* Stål, 1873, Enum. Hem., 3:141.

*Crimia doreica* Walker, 1873, Cat. Hem. Het. Brit. Mus., 7:17.

Bismarck Isls. — NEW BRITAIN: Yalom, 1000 m., 1 ♂, 21.V.1962.

Distribution: New Guinea.

*Artabanus sinuatus* Stål is identical with *Crimia doreica* Walker, both were published in 1873, but I was unable to find out which name has the priority.

2. **Artabanus bilobiceps** (Lethierry).

*Brachyrhynchus bilobiceps* Lethierry, 1888, Ann. Mus. Civ. Stor. Nat., Genova; 26:464.

*Artabanus atkinsoni* Bergroth, 1889, Ann. Mus. Civ. Stor. Nat., Genova; 27:734.

*Artabanus bilobiceps* Bergroth, 1892, Ann. Mus. Civ. Stor. Nat., Genova; 31:715.

Philippines. — PALAWAN: Mantalingajan, Pinigisan, 1 ♀, 6.IX.1961. — BALABAC: Dalawan Bay, 1 ♀, 12.X.1961.

Distribution: Indonesia, Philippines.

2a. **Artabanus bilobiceps papuasicus** Kormilev (in press).

Solomon Isls. — GUADALCANAL: 17 km W. of Honiara, Rain Forest, 1 ♂, 28-29.VII.1962.

Distribution: New Guinea (Papua).

Gen. **Glochocoris** Usinger and Matsuda, 1959.1. **Glochocoris biroi** Kormilev.

*Glochocoris biroi* Kormilev, 1960, Quart. Jour. Taiwan Mus., 13:170.

Bismarck Isls. — DYAUL: Sumuna, 1 ♂, 3 nymphs, 11.III.1962.

Distribution: New Guinea.

Gen. **Neuroctenus** Fieber, 1861.1. **Neuroctenus antennatus** Banks.

*Neuroctenus antennatus* Banks, 1909, Philipp. Jour. Sc., 4:582.

Philippines. — PALAWAN: Mantalingajan, Pinigisan, 600 m., 1 ♂, 19.IX.1961. — TAWI TAWI: Tarawakan, 1 ♀, 7.XI.1961.

Distribution: Philippines.

2. **Neuroctenus mayri** Stål.

*Neuroctenus mayri* Stål, 1870, Öfv. Vet. Ak. Förh., 27:674.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♂, 1 ♀, 20. and 25.VIII.1961. — MINDANAO: Sapaturo, Curuan Distr., 1 ♀, 19.XII.1961.

Distribution: Philippines, Borneo.

3. **Neuroctenus vicinus** Signoret.

*Neuroctenus vicinus* Signoret, 1880, Ann. Mus. Civ. Stor. Nat., Genova, 15:542.

Bismarck Isls. — DUKE OF YORK: Manuan, 1 ♀, 20.VII.1962.

Distribution: New Guinea, New Ireland, North Australia (?).

Gen. **Usingerida** Kormilev, 1955.

Species belonging to this genus previously were attributed to the genus *Mezira* A.S., 1843. Distribution of this genus is from Russian Far East (Amur), and Ceylon, to New Guinea.

1. **Usingerida parva** n. sp. Figs. 7—8.

Male. Closely related to *Usingerida walshi* Kormilev, 1955, from Java, but smaller; lobes of pronotum differently shaped, the second pair (on hind lobe) is much smaller, and narrower; pro-

portions of antennal segments are also different, segment II is as long as I (much longer in *U. walshi*); PE-VII in the female are less produced backward.

Measurements: head as long as width across eyes ( $\sigma^7$ -28:27.5,  $\text{♀}$ -32:32); proportions of antennal segments, I to IV, are:  $\sigma^7$ -11:11:12:10.5,  $\text{♀}$ -14:14:15:12; pronotum less than half as long as its maximal width ( $\sigma^7$ -25:62,  $\text{♀}$ -34:79); scutellum shorter than width at the base ( $\sigma^7$ -25:36,  $\text{♀}$ -35:48); abdomen longer than maximal width across segment IV in the male, but shorter in the female ( $\sigma^7$ -85:73,  $\text{♀}$ -96:100); hypopygium longer than maximal width (25:23).

Spiracles II to VII ventral, placed far from the border, VIII lateral and visible from above.

Color: brown to dark brown, partially ferrugineous; antennae, tips of antenniferous tubercles, lobes of pronotum, rostrum, and legs, are yellow brown. Connexivum yellow brown mottled with brown. One female was lighter, with yellow patches on the head, pronotum, and scutellum; connexivum was mostly yellow.

Total length:  $\sigma^7$ -6.60,  $\text{♀}$ -8.00 mm.; width of pronotum:  $\sigma^7$ -2.48,  $\text{♀}$ -3.16 mm.; width of abdomen:  $\sigma^7$ -2.92,  $\text{♀}$ -4.00 mm.

Holotype:  $\sigma^7$ , Bismarck Isls. — NEW BRITAIN: Yalom, 1000 m., 10.V.1962; deposited in the Zoological Museum, Copenhagen.

Allotype:  $\text{♀}$ , collected with holotype; in the same collection.

Paratypes: 5  $\sigma^7$  & 2  $\text{♀}$ , collected with holotype; in the same collection, and collection of author.

## Gen. *Arictus* Stål, 1865.

### 1. *Arictus tagalicus* Stål.

*Arictus tagalicus* Stål, 1870, Öfv. Vet. Ak. Förh., 27:672.

*Brachyrhynchus tagalicus* Bergroth, 1886, Verh. Zool. Bot. Ges., Wien, 36:59.

*Arictus tagalicus* Usinger and Matsuda, 1959, Class. Aradidae, p. 314.

Philippines. — BALABAC: Dalawan Bay, 1  $\sigma^7$ , 1  $\text{♀}$ , 13.X.1961.

Distribution: Philippines.

### 2. *Arictus lobuliventris* (Kormilev).

*Mezira lobuliventris* Kormilev, 1953, Verh. Naturf. Ges. Basel, 64:340.

*Arictus lobuliventris* Usinger and Matsuda, 1959, Class. Aradidae, p. 314.

Bismarck Isls. — MUSSAU: Talumalaus, 1  $\text{♀}$ , 9.II.1962.

Distribution: Bougainville; New Guinea.



### 3. *Arictus thoracoceras* (Montrouzier).

*Aradus thoracoceras* Montrouzier, 1855, Ann. Soc. Phys. Lion, (2) 7:107.

*Arictus thoracoceras* Stål, 1870, Öfv. Vet. Ak. Forh. 27:672.

*Brachyrhynchus thoracoceras* Bergroth, 1886, Verh. Zool. Bot. Ges., Wien, 36:59.

*Mezira thoracocera* Kormilev, 1955, Rev. Ecuat. Ent. Paras., 2:500.

*Arictus thoracoceras* Usinger and Matsuda, 1959, Class. Aradidae, p. 314.

Bismarck Isls. — NEW BRITAIN: Cape Hoskins, Valoka, 2 ♂, 1 nymph, 10.VII.1962. — DUKE OF YORK: Manuan, 5 ♂, 4 ♀, 3 nymphs, 19—20.VII.1962. — NEW IRELAND: Danu, Kalili Bay, 8 ♂, 8 ♂, 30.IV.1962.

1 ♂ from the Philippines probably belongs to this species — TAWI TAWI: Tarawakan, 23.X.1961.

Distribution: originally described from New Caledonia, found also in New Guinea and Solomon Islands; it was mentioned also from Australia, but never I have seen specimens from there, and I think that it was confused with an Australian species, *Arictus monteithi* Kormilev, 1965, which is common in Queensland.

### Gen. *Daulocoris* Usinger and Matsuda, 1959.

#### 1. *Daulocoris auritomentosus* (Kormilev), 1955.

*Mezira auritomentosa* Kormilev, 1955, Rev. Ecuat. Ent. Paras., 2:488.

*Daulocoris auritomentosus* Usinger and Matsuda, 1959, Class. Aradidae, p. 324.

Bismarck Isls. — NEW BRITAIN: Yalom, 1000 m., 1 ♀, 21.V. 1962.

Distribution: Indonesia (Borneo).

### Gen. *Mezira* Amyot and Serville, 1843.

#### 1. *Mezira membranacea* Fabricius.

*Aradus membranaceus* Fabricius, 1803, Syst. Rhyng., p. 118.

*Brachyrhynchus membranaceus* Stål, 1868, Hem. Fabr., 1:96.

*Mezira membranacea* Kormilev, 1953, Verh. ent. Ges., Basel, 114:339.

Philippines. — MINDANAO: Sapamoro, Curuan District, 5 ♂, 7 ♀, 8 nymphs, 20.XII.1961.

Distribution: from Seichelles to Japan, and from Nepal to New Guinea; recently it was imported to Hawaii. It is a large super-species from which in last decade were separated various species, but it still waits for a thorough revision.

## 2. *Mezira micronesica* Esaki and Matsuda.

*Mezira micronesica* Esaki and Matsuda, 1951, Mushi, 22:77.

Solomon Isls. — GUADALCANAL: 17 km W. of Honiara, Rain Forest, 1 ♂, 28-29.VII.1962.

Distribution: Micronesia, New Guinea, Solomon Islands, Wallis Isl.

Closely related to *M. membranacea* F., and previously confused with it. Maybe only a geographical subspecies of the latter.

## 3. *Mezira subtriangula* Kormilev.

*Mezira subtriangula* Kormilev, 1957, Ann. Mag. Nat. Hist., (12) 10:269.

Bismarck Isls. — NEW BRITAIN: Cape Hoskins, Kwalakessi, 1 ♂, 1 ♀, 3.VII.1962; Yalom, 1000 m., 1 ♂, 2 ♀, 10. and 12.V.1962. — MUSSAU: Talumalaus, 1 ♂, 3 ♀, 9.II.1962. — MANUS: Lorengau, 1 ♂, 19.VI.1962.

Distribution: New Guinea, Solomon Islands.

Previously also confused with *M. membranacea* F. Males may be easily separated from the latter, but females are very similar.

## Summary.

The author has studied the Aradidae collected by the Noona Dan Expedition in 1961—62. Fourteen already known species are recorded; in several cases their distributional range is widened considerably. Four new species are described: *Carventus longiventris* n. sp. (Palawan), *Carventus oviventris* n. sp. (New Britain), *Carventus peterseni* n. sp. (New Britain), and *Usingerida parva* n. sp. (New Britain).

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