

ARADIDAE FROM THE ORIENTAL REGION AND SOUTH PACIFIC (Hemiptera-Heteroptera)¹

By Nicholas A. Kormilev²

Abstract: Twelve new species and one new subspecies in the subfamilies Carventinae and Mezirinae are described: *Carventus malekulensis* (New Hebrides), *C. parvus* (New Guinea), *Artabanus sumatrensis* (Sumatra), *A. vietnamensis* (Viet Nam), *Chrysodaspis grandis* (India), *Ctenoneurus malayensis* (Malaya), *C. sumatrensis* (Sumatra), *Glochocoris montanus* (New Guinea), *Mezira (Zemira) crenata* (Java), *M. (Z.) quadrispinosa* (Sumatra), *M. (Z.) funebra sumbaensis* (Sumba), *Neuroctenus sumbaensis* (Sumba), and *N. sundaicus* (Lesser Sunda Is.). The ♀ of *Artabanus excelsus* Bergroth, 1892, is redescribed and the previously unknown ♀ of *Chrysodaspis angulatus* Kormilev, 1971, is described. New records are given for *Aradus erraticus* Kormilev, 1967 (New Hebrides), *Dimorphacantha distincta* Usinger & Matusda, 1959 (Malaya), *Mezira (M.) montana* (Bergroth), 1892 (China), and *Neuroctenus taiwanicus* Kormilev, 1955 (Viet Nam).

I have received an additional material of unidentified Aradidae from the Oriental Region and the South Pacific from the B. P. Bishop Museum, Honolulu, Hawaii (BISHOP), and Zoological Institute, Polish Academy of Sciences, Warsaw, Poland (ZIPAS). Among them were 12 new species and 1 new subspecies, described elsewhere in this paper.

The genus *Carventus* Stål, 1865, is recorded for the first time from New Hebrides, and *Chrysodaspis* Kormilev, 1971, from India.

In the genus *Mezira* A. S., 1843, legs are generally unarmed, but in some species from the Oriental Region they are armed with teeth, or spines. We have three variations: 1. all femora having a double row of teeth of various sizes, 2. the middle and hind femora having a single spine, and 3. only hind femora armed with a single spine. In this lot we have one new species with a double row of teeth on all six femora, and one with a single spine on middle and hind femora.

In the ratios in the descriptions the first figure represents the length, and the second the width of measured portion; 25 units = 1 mm. The length of the abdomen, for convenience, was taken from the tip of scutellum to the tip of the hypopygium, ♂, or segment IX, ♀, respectively.

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1. Material examined from the Bishop Museum is a result of fieldwork supported by grants from the National Science Foundation and National Institutes of Health.
2. Research Associate in Entomology, B. P. Bishop Museum, Honolulu, and Los Angeles County Museum of Natural History, Los Angeles. Present address: 102-34 93rd Ave., Richmond Hill, N. Y. 11418.

unidentified Aradidae from the collections of the Zoological Institute, Polish Academy of Sciences, Warsaw. Thanks are also extended to Dr Gordon F. Gross, Acting Director, The South Australian Museum, Adelaide, for sending additional data on *Aradus erraticus* Kormilev.

SUBFAMILY ARADINAE

Genus *Aradus* Fabricius, 1803

Aradus erraticus Kormilev, 1966, *Rec. S. Austr. Mus.* **15** (2): 280.

1 ♀, NEW HEBRIDES, Epi I., Vaemali, 150 m; 18.VIII.1967, J. & M. Sedlacek coll. (BISHOP). It is the first record from New Hebrides.

SUBFAMILY CARVENTINAE

Genus *Carventus* Stål, 1865

Carventus malekulensis Kormilev, new species Fig. 1, A.

♀. Ovate, mostly covered with whitish incrustation.

Head shorter than its width across eyes (20:23); anterior process moderately robust, slightly tapering toward base, incised anteriorly, reaching 3/5 of antennal segment I; antenniferous tubercles dentiform, slightly divaricating. Eyes semiglobose, protruding. Postocular tubercles dentiform, produced far beyond outer borders of eyes (width across eyes -23, width across postocular tubercles -28). Vertex raised and granulate, infraocular callosities narrow, ovate. Antennae thin; relative length of antennal segments I to IV are: 9:6:9:8.5. Labium reaching hind border of labial groove, which is closed posteriorly.

Pronotum much shorter than its maximum width (26:48); fore lobe narrower than hind lobe (41:48); collar slightly sinuate anteriorly and produced sideways, separated from anterior borders by deep, rounded incision; antero-lateral angles rounded, produced forward as far as collar and sideways; lateral tooth strong, produced beyond outer border of fore lobe; lateral borders sinuate in front and behind lateral tooth, convex at humeri, again sinuate behind them. Fore disc with a triangular plate behind collar and a round tubercle in interlobal depression medially; laterad of triangular plate are placed 2 (1+1) oblique ridges, and mesad of fore lateral sinus 2 (1+1) curved, higher ridges. Antero-lateral angles with 2 (1+1) oblique, curved ridges. Hind disc with 2 (1+1) black square spots, and raised at humeri.

Scutellum subtriangular, shorter than its basal width (15:25); lateral borders convex, rounded; disc with T-shaped median ridge, and obliquely rugose posteriorly.

Hemelytra reaching over fore border of tergum VII; corium reaching 1/2 of scutellum, truncate posteriorly.

Abdomen ovate, longer than its maximum width across segment IV (66:63); PE-angles of connexiva II to VI slightly protruding; PE-VII angularly rounded, reaching 1/2 of paratergites; the latter obliquely truncate, reaching 3/4 of segment IX, which is incised posteriorly. Spiracles II ventral, III to VIII lateral and visible from above.

Legs unarmed.

Color: ferruginous; hind disc of pronotum medially, scutellum posteriorly, corium, a few spots on membrane, and tergum VII medially, are black; connexivum buff.

Total length 5.12 mm; width of pronotum 1.04 mm; width of abdomen 2.52 mm.

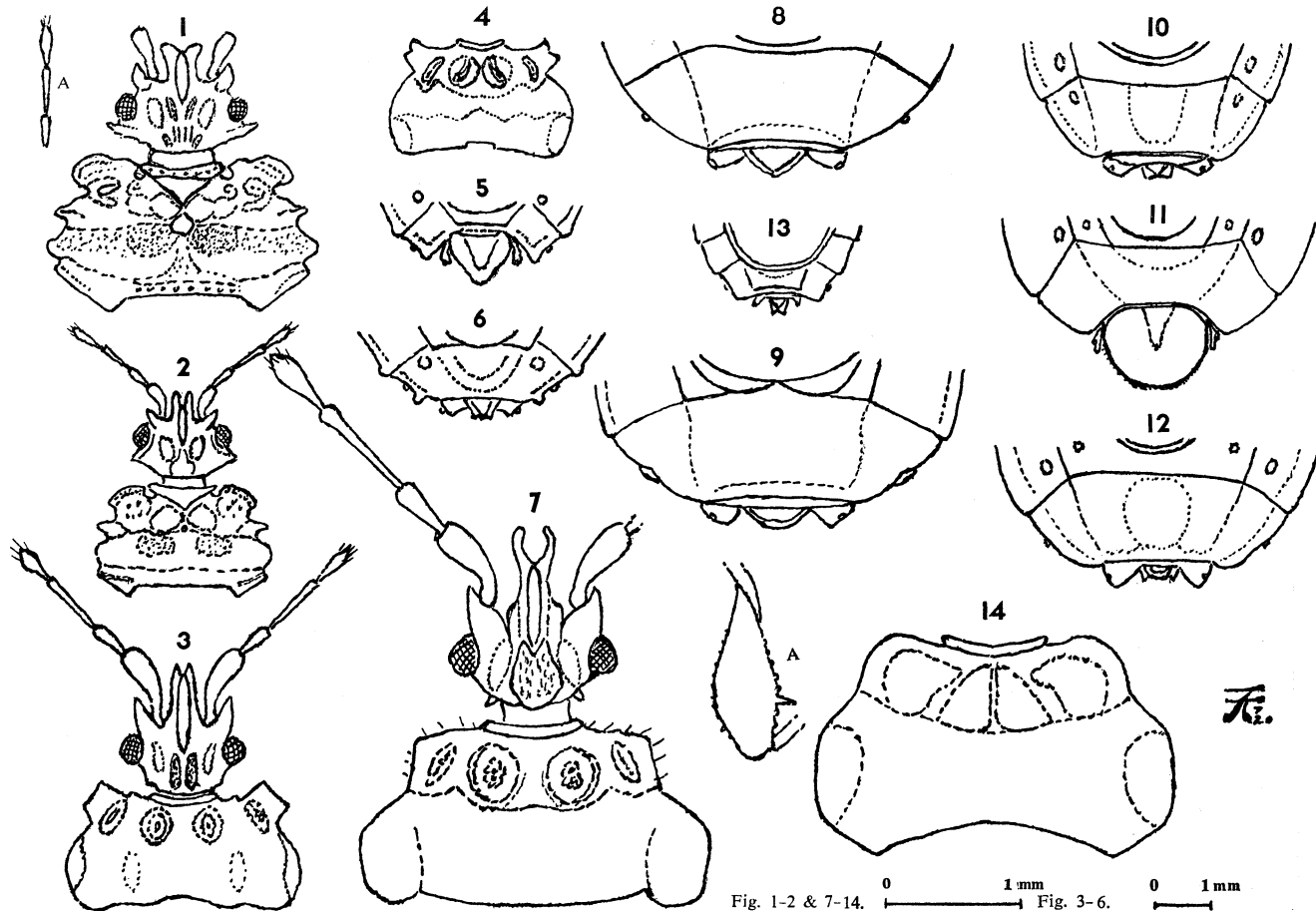


Fig. 1-14. 1. *Carventus malekulensis* n. sp., ♀, head and pronotum; A. same, antenna; 2. *Carventus parvus* n. sp., ♂, head and pronotum; 3. *Artabanus excelsus* Bergroth, ♀, head and pronotum; 4. *Artabanus vietnamsis* n. sp., ♂, pronotum; 5. same, tip of abdomen from above; 6. same, ♀, tip of abdomen from above; 7. *Artabanus sumatrensis* n. sp., ♂, head and pronotum; 8. *Ctenoneurus malayensis* n. sp., ♀, tip of abdomen from above; 9. *Ctenoneurus sumatrensis* n. sp., ♀, tip of abdomen from above; 10. *Neuroctenus sundaicus* n. sp., ♀, tip of abdomen from above; 11. same, ♂, tip of abdomen from above; 12. *Neuroctenus sumbaensis* n. sp., ♀, tip of abdomen from above; 13. *Glochocoris montanus* n. sp., ♀, tip of abdomen from above; 14. *Mezira (Zemira) quadrispinosa* n. sp., ♀, pronotum; A. same, right hind femur.

Holotype ♀ (BISHOP 9847), NEW HEBRIDES, Malekula I., Lamap; 19-21.IX.1967, J. & M. Sedlacek coll.

Carventus malekulensis n. sp. runs in my key for *Carventus* species (1969 : 52) to *C. biroi* Kormilev, 1954, from New Guinea, but may be separated from it by the subglobose anterior angles of the pronotum which are not produced beyond the collar, by the anterior borders not receding, and by the antero-lateral angles of pronotum and humeri produced sideways and rounded. The size is slightly larger.

This is the first record of the genus *Carventus* Stål from New Hebrides.

Carventus parvus Kormilev, new species Fig. 2.

♂. Elongate ovate, partially covered with white incrustation.

Head shorter than its width across eyes (15: 18); anterior process with parallel sides, deeply cleft, genae being much longer than clypeus, reaching 3/4 of antennal segment I; antenniferous tubercles dentiform, strongly divaricating. Eyes semiglobose, placed somewhat obliquely, protruding. Postocular tubercles slightly produced beyond outer border of eyes. Vertex raised, infraocular callosities elongate ovate. Antennae thin; relative length of antennal segments I to IV are: 7:5:6.5:7. Labium not reaching hind border of labial groove, which is closed posteriorly.

Pronotum shorter than its maximum width (19: 32.5); fore lobe narrower than hind lobe (28: 32.5); collar truncate anteriorly, produced sideways and separated from anterior borders by 2 (1+1) rounded incisures. Anterior borders rounded and receding laterally, antero-lateral angles bluntly produced sideways; lateral tooth strong; lateral borders in front and behind tooth, and behind humeri, sinuate; humeri produced, rounded; hind border straight between hind angles. Fore disc with Y-shaped median sulcus, laterad of it with a pattern of larger and smaller elevations; hind disc punctured.

Scutellum subtriangular, shorter than its basal width (11.5: 17.5); lateral borders rounded, tip angularly rounded; disc raised along basal border; median carina thin.

Hemelytra reaching 2/3 of tergum VII; corium reaching 2/3 of scutellum.

Abdomen ovate, longer than its maximum width across segment IV (56: 43); connexivum wide and flat; discs of connexiva granulate, lateral borders crenulate; PE-angles protruding, PE-VII rounded, reaching 2/3 of paratergites; paratergites long, flat, clavate, reaching 4/5 of hypopygium; the latter in the shape of an acorn, with a median ridge almost reaching 1/2 of disc. Spiracles II ventral, III to VIII lateral and visible from above. Tubercles of sternum VII small, rounded, placed mesad of interior border of connexivum VII.

Legs unarmed.

Color: buff; 2 (1+1) square spots on hind disc of pronotum, and tip of scutellum, black.

Total length 4.08 mm; width of pronotum 1.30 mm; width of abdomen 1.72 mm.

Holotype ♂ (BISHOP 9848), SE NEW GUINEA (Papua), Keparra-Songi near Kokoda, 550 m, 27.III.1956, J. L. Gressitt coll.

Carventus parvus n. sp. runs in my key for *Carventus* species (1969 : 52), to *C. minusculus* Kormilev, 1969, but is slightly larger, anterior process of head is deeply cleft, PE-VII rounded posteriorly, and tubercles of sternum VII are rounded, convex, not flattened.

SUBFAMILY MEZIRINAE

Genus *Artabanus* Stål, 1865*Artabanus excelsus* Bergroth Fig. 3.

Artabanus excelsus Bergroth, 1892, *Ann. Mus. Civ. Stor. Nat., Genova* 32: 713.

Bergroth's description is rather short and his drawing too schematized, so I am giving a redescription.

♀. Ovate; covered with short, curled hairs; head, pronotum and scutellum granulate, granulation inconspicuous.

Head as long as its width across eyes (57: 57); anterior process strong, slightly constricted near middle, incised anteriorly, reaching 2/3 of antennal segment I; antenniferous tubercles dentiform, blunt apically. Eyes large, almost globose but not pedunculate, protruding. Postocular borders sinuate, posterior border truncate laterally, convex medially. Vertex raised, provided with 2 (1+1) rows of granules. Antennae strong; relative length of antennal segments I to IV are: 28: 17.5: 31: 18. Labium reaching hind border of labial groove, which is closed posteriorly; 3 pairs of small tubercles at fore end of bucculae and at the beginning and end of labial groove.

Pronotum half as long as its maximum width (50: 103); fore lobe narrower than hind lobe (90: 103); collar sinuate anteriorly; anterior borders, laterad of collar, twice shallowly sinuate; antero-lateral angles rectangular, oblique, produced forward and sideways; lateral notch sinuate, subangular; humeri rounded; hind border thrice sinuate. Fore disc with 4 (2+2) ridges; hind disc raised at humeri and 4 (2+2) times depressed.

Scutellum shorter than its basal width (48: 60); lateral borders carinate, straight; median ridge stout.

Hemelytra reaching hind border of tergum VI; baso-lateral borders of corium straight, reflexed; apical angle acute, apical border almost straight.

Abdomen longer than its maximum width across segment IV (144: 140); PE-angles of connexiva protruding and rounded; PE-VII forming small, angular, diverging lobes; hind borders of connexiva II to VI raised; from these ridges extends a thin carina, dividing disc into endo- and exoconnexivum. Tergum VII with a semicircular, high ridge; deeply depressed inside this ridge anteriorly. Spiracles II to VI ventral, placed far from border; VII and VIII lateral and visible from above. Paratergites triangular, produced as far as truncate segment IX. Stridulation apparatus consisting of 4 long, and mesad of them 3 short, carinae.

Legs femora with a few sharp granules on exterior side, but without larger spines.

Color: very dark ferruginous to piceous; labium and tarsi yellow brown.

Total length 11.6 mm; width of pronotum 4.12 mm; width of abdomen 5.60 mm.

♀, (ZIPAS). INDONESIA, Sumatra, Shinabong; Dohrn coll.

Artabanus vietnamensis Kormilev, new species Fig. 4-6.

♂. Elongate ovate; head, antennae, pronotum, scutellum and legs, granulate; connexivum punctured; covered with short, curled, rusty hairs.

Head as long as its width across eyes (♂-41: 41, ♀-45: 45); anterior process robust, tapering and incised anteriorly, genae slightly longer than clypeus, reaching slightly beyond 1/2 of antennal segment I. Antenniferous tubercles strong, blunt, slightly divaricating. Eyes semi-

globose, protruding. Postocular borders sinuate; vertex raised and provided with 2 (1+1) rows of setiferous tubercles; infraocular callosities very narrow and semiobliterated. Antennae strong, almost twice as long as head across eyes (σ -80:41, φ -84:45); relative length of antennal segments I to IV are: σ -23:15:26:16, φ -23:15:28:18. Labium reaching hind border of labial groove, which is closed posteriorly. Ventral side of head without tubercles.

Pronotum much shorter than its maximum width (σ -35:80, φ -45:89); fore lobe narrower than hind lobe (σ -65:80, φ -72:89); collar thin, sinuate anteriorly; anterior borders laterad of collar sinuate; antero-lateral angles flat, bilobate, produced obliquely forward; lateral notch deep, subangular; humeri convex, rounded; hind border notched medially for reception of median ridge of scutellum. Fore disc with 4 (2+2) high ridges; hind disc granulate.

Scutellum shorter than its basal width (σ -38:45, φ -43:52); all borders carinate; lateral borders straight, tip angularly rounded; disc with tapering median ridge, which is produced anteriorly beyond basal border and truncate; disc transversely rugose laterad of median ridge.

Hemelytra reaching 1/2 of tergum VII (σ), or hind border of tergum VI (φ); corium reaching hind border of connexivum II exteriorly, not reaching tip of scutellum interiorly; apical angle of corium acute, apical border sinuate; membrane with anastomosed veins.

Abdomen longer than its maximum width across segment IV (σ -113:95, φ -132:115); connexivum wide; PE-angles of connexiva II to VI protruding, PE-VII produced into small angular lobe in both sexes. Paratergites (σ) small, clavate, reaching 1/2 of cordate hypopygium; the latter shorter than its maximum width (20:25), with a stout, triangular, median ridge, reaching 3/4 of disc. Paratergites (φ) angular, shorter than tricuspidate segment IX, which is declivous. Spiracles II to VI ventral; VII and VIII lateral and visible from above. Stridulation apparatus with 2 long carinae flanked by 1 thin long carina exteriorly, and 6 short carinae interiorly.

Legs: hind femora with a small tooth.

Color: ferruginous; membrane black, tarsi yellow brown.

Total length: σ -9.40, φ -10.48 mm; width of pronotum: σ -3.20, φ -3.56 mm; width of abdomen: σ -3.80, φ -4.60 mm.

Holotype σ (ZIPAS), VIET NAM, Cuo-phong, prov. Ninh Binh, 7.VI.1966, R. Bieganski and S. Pisarski coll.

Allotype φ (ZIPAS) collected with holotype.

Paratypes: 1 σ & 1 φ + 1 nymph, collected with holotype (ZIPAS & collection of the author).

Artabanus vietnamensis n. sp. runs in my key for *Artabanus* species (1971:13) to *A. montanus* Kormilev, 1971, from New Guinea, but may be separated from it by: relatively shorter antennal segment III, by the closed labial groove, by PE-VI angles of connexivum being slightly protruding, and by the median ridge of hypopygium being not constricted laterally.

Artabanus sumatrensis Kormilev, new species Fig. 7.

σ . Elongate ovate, granulate; partially covered with very short, curled, yellow hairs; borders of pronotum, exterior borders of abdomen, and femora, with erect bristles longer than curled hairs.

Head longer than its width across eyes (34:30); anterior process long constricted laterally and deeply cleft anteriorly, genae much longer than clypeus and curved, reaching 5/6 of antennal segment I; antenniferous tubercles dentiform, blunt, slightly divaricating. Eyes large,

protruding. Postocular borders almost straight, strongly converging and with 2 (1+1) teeth, placed on lower level, but visible from above. Antennae long, more than twice as long as head width across eyes (63:30); relative length of antennal segments I to IV are: 17:11:20:15. Labium not reaching hind border of labial groove, which is open posteriorly. Ventral side of head with tubercles of various size, placed in pairs: 2 (1+1) laterad of labial atrium, which is slightly open; 2 (1+1) smaller ones, laterad of base of labial segment II, 2 (1+1) laterad of the end of labial groove, and 4 (2+2) at hind border of head, 2 of which were mentioned previously as visible from above but situated below postocular border. Ventral side of head rugose laterad of labial groove.

Pronotum much shorter than its maximum width (34:64); fore lobe narrower than hind lobe (45:64); collar truncate anteriorly, finely granulate; anterior borders laterad of collar slightly receding; antero-lateral angles forming a slightly obtuse angle, neither produced forward, nor sideways; lateral borders of fore lobe diverging posteriorly; lateral notch forming an obtuse angle; lateral borders of hind lobe converging anteriorly and posteriorly; hind border convex in middle and laterally. Fore disc with 4 (2+2) granulate ridges, of which the inner ones are higher. Hind disc granulate.

Scutellum shorter than its basal width (31:37); all borders carinate, tip not carinate; lateral borders slightly sinuate near apex. Disc with a high, narrow, median ridge, which is cleft anteriorly and produced forward, overlapping hind border of pronotum, transversely rugose laterad of median ridge.

Hemelytra reaching 3/4 of tergum VII; corium reaching tip of scutellum interiorly, 1/2 of connexivum III exteriorly; disc granulate between veins on basal half; apical angle of corium rounded, apical border barely sinuate; membrane with anastomosed veins.

Abdomen ovate, longer than its maximum width across segment IV (85:72); hind borders of connexiva carinate, PE-angles II to VI slightly protruding, PE-VII angular. Paratergites cylindrical, reaching 1/2 of a large, cordate hypopygium; disc of the latter with a stout, ovate ridge, not reaching tip of disc; hypopygium is much shorter than its maximum width (15:27.5). Spiracles II to VI ventral, VII and VIII lateral and visible from above. Stridulation apparatus consisting of 2 long and a few shorter carinae.

Legs: hind femora with a small tooth posteriorly near middle.

Color: ferruginous; membrane partially blackish, labium and tarsi yellow brown.

Total length 7.28 mm; width of pronotum 2.56 mm; width of abdomen 2.88 mm.

Holotype ♂ (ZIPAS), INDONESIA, Sumatra, Soekaranda, H. Dohrn coll.

Artabanus sumatrensis n. sp. is related to *A. geniculatus* Stål, 1870, from Philippines, but the long, curved genae, produced far beyond clypeus, may separate it at once.

Genus *Ctenoneurus* Bergroth, 1887

Ctenoneurus malayensis Kormilev, new species Fig. 8.

♀. Elongate ovate, with subparallel sides; head, pronotum, scutellum and connexivum, finely granulate.

Head slightly longer than its width across eyes (30:29); anterior process with parallel sides, rounded and barely incised anteriorly, reaching 4/5 of antennal segment I; antenniferous tubercles dentiform blunt, with parallel outer borders. Eyes semiglobose. Postocular tubercles minute, blunt, not reaching outer borders of eyes; vertex convex, finely granulate. Antennae strong; relative length of antennal segments I to IV are: 12.5:12.5:11:13. Labium produced behind hind border of head.

Pronotum shorter than its maximum width (32:63); fore lobe narrower than hind lobe (45:63); collar thin, sinuate anteriorly; antero-lateral angles rounded, neither produced forward, nor sideways; lateral borders slightly convex at humeri, converging anteriorly; lateral notch shallow; hind border widely sinuate. Fore disc with 4 (2+2) curved callosities; interlobal depression accentuated medially, evanescent laterally. Hind disc finely granulate.

Scutellum shorter than its basal width (32:40) lateral borders carinate, straight, converging apically; tip acute; disc with T-shaped median carina.

Hemelytra reaching hind border of tergum VI; corium reaching 1/2 of connexivum III, its apical angle acute, apical border sinuate interiorly, straight exteriorly.

Abdomen longer than its maximum width across segment IV (92.5:71); PE-angles of connexiva II to VI not protruding, PE-VII widely rounded. Paratergites subtriangular, diverging, not reaching tip of rounded posteriorly segment IX. Spiracles large, II to VI ventral, VII sub-lateral, but visible from above, VIII terminal. Venter with a fine carina along fore border of sterna IV to VI. Metathoracic scent-gland openings are open.

Legs unarmed.

Color: very dark ferruginous; labium and tarsi lighter, membrane black.

Total length 7.50 mm; width of pronotum 2.52 mm; width of abdomen 2.84 mm.

Holotype ♀ (BISHOP 9849), MALAYA, Gombak, 6-10.III.1971, J. & M. Sedlacek coll.

Ctenoneurus malayensis n. sp. is related to *C. longiceps* Kormilev, 1971, from the Philippines, but it is larger. The head is only slightly longer than its width across eyes and antennal segment II is as long as I and longer than III.

***Ctenoneurus sumatrensis* Kormilev, new species** Fig. 9.

♀. Elongate ovate, slightly widening backward; head, pronotum, and scutellum, very finely granulate; connexivum very finely punctured; covered with extremely short, erect bristles.

Head as long as its width across eyes (32:32); anterior process long, slightly tapering and incised anteriorly, reaching 4/5 of antennal segment I; antenniferous tubercles blunt, slightly divaricating. Eyes semiglobose, moderately protruding. Postocular tubercles minute, not reaching outer borders of eyes; vertex raised and very finely granulate. Infraocular callosities narrow and somewhat blurred. Antennae strong, relative length of antennal segments I to IV are: 15:14:12.5:15. Labium produced beyond hind border of head, labial groove open posteriorly.

Pronotum half as long as its maximum width (35:69) collar thin, truncate anteriorly; antero-lateral angles angularly rounded, forming an obtuse angle, neither produced forward nor sideways; lateral borders subparallel at humeri, converging anteriorly; lateral notch absent, but lateral borders of fore lobe are slightly sinuate; hind border evenly sinuate. Fore disc inflated and slightly depressed behind collar; all ridges obsolete; interlobal depression separated by 2 (1+1) inflations into 3 sectors; hind disc twice, slightly depressed.

Scutellum shorter than its basal width (31:41); all borders carinate, lateral borders slightly sinuate; tip rounded; disc with a thin, somewhat blurred, median carina; granulate laterally of it; on hind half granules are arranged into transverse rows.

Hemelytra not reaching hind border of tergum VI; corium reaching 2/3 of connexivum III; apical angle of corium acute, apical border weakly sinuate interiorly; membrane with anastomosed veins.

Abdomen ovate longer than its maximum width across segment IV (98: 83); lateral borders evenly rounded, PE-angles of connexiva II to IV not protruding, PE-VII rounded; connexiva with a carina along outer border. Paratergites subtriangular, as long as segment IX, which is rounded posteriorly. Spiracles large, II to VI ventral, VII sublateral and VIII lateral and visible from above.

Legs unarmed.

Color: light ferrugineous, membrane darker; labium and tarsi yellow.

Total length 7.92 mm; width of pronotum 2.76 mm; width of abdomen 3.32 mm.

Holotype ♀ (ZIPAS), INDONESIA, Sumatra, Soekaranda; H. Dohrn coll.

Ctenoneurus sumatrensis n. sp. runs in my key for *Ctenoneurus* species (1971: 49) to *C. lugubris* Kormilev, 1971, from New Guinea, but may be separated from it by the different relative lengths of the antennal segments, by the characteristic swollen pronotum, and by the sublateral spiracles VII which are visible from above.

Genus *Neuroctenus* Fieber, 1861

Neuroctenus taiwanicus Kormilev, 1955, *Mushi* 28 (4): 39.

This species was originally described from Taiwan, later also recorded from Main China (Fukien, Chingan), and now from Viet Nam.

1 ♀, VIET NAM, Cuo Phuong, prov. Ninh Binh; 4.VI.1966, R. Bieglawski & S. Piskarski coll. (ZIPAS).

Neuroctenus sundaicus Kormilev, new species Fig. 10-11.

♀. Elongate ovate; female with subparallel sides, male widening posteriorly, then rounded; head, pronotum and scutellum roughly granulate, connexivum densely punctured.

Head as long, or about as long, as its width across eyes (♀-24: 24, ♂-23: 24); anterior process strong, constricted at base, rounded and incised apically, reaching beyond tip of antennal segment I; antenniferous tubercles dentiform, acute, slightly divaricating. Eyes semi-globose, protruding. Postocular tubercles minute, acute, reaching outer border of eyes; vertex granulate, infraocular callosities long and narrow. Antennae moderately strong; relative length of antennal segments I to IV are: ♀-7.5: 7.5: 9: 9, ♂-8: 8: -: - (2 apical segments are missing). Labium reaching hind border of labial groove, which is open posteriorly.

Pronotum trapezoidal, shorter than its maximum width (♀-21: 46, ♂-22: 47); collar truncate anteriorly; antero-lateral angles rounded and rimmed, neither produced forward, nor sideways; lateral borders convex, rounded at humeri, converging anteriorly; lateral notch practically absent. Fore disc with 4 (2+2) very low elevations, and between them with 4 (2+2) curved callosities. Hind disc densely granulate.

Scutellum shorter than its basal width (♀-22.5: 29, ♂-21: 30); all borders carinate, lateral borders weakly sinuate medially, more converging apically; tip angular, disc with a thin and low median carina.

Hemelytra not reaching (♀), or reaching (♂) hind border of tergum VI; apical angle of corium acute, apical border sinuate interiorly, convex exteriorly.

Abdomen longer than its maximum width across segment IV (♀-76: 53, ♂-76: 59); PE-angles of connexiva II to VI not protruding, PE-VII rounded (♀), or angularly rounded (♂). Paratergites (♀) angular, reaching tip of slightly incised segment IX. Paratergites (♂) small,

narrow, clavate, reaching 1/2 of a subcordate hypopygium; the latter with triangular depression at base medially, reaching 1/2 of disc. Spiracles II to VI ventral, placed far from border; VII sublateral, but not visible from above; VIII lateral and visible from above.

Legs unarmed.

Color: dark ferrugineous to black; membrane black, yellowish at base.

Total length: ♀-5.92, ♂-5.96 mm; width of pronotum: ♀-1.84, ♂-1.88 mm; width of abdomen: ♀-2.12, ♂-2.36 mm.

Holotype ♀ (BOGOR Museum), INDONESIA, Lesser Sunda Is., Komodo I., 16.VIII. 1965, J. Winkler coll.

Allotype ♂ (BISHOP 9850), collected with holotype.

Paratypes: 6 ♀♀, collected with holotype (BISHOP & collection of the author).

Neuroctenus sundaicus n. sp. is closely related to *N. pacificus* Usinger, 1946, from Guam, but may be separated from it by: pronotum generally less converging anteriorly, and by hypopygium with a triangular depression on basal half medially.

Neuroctenus parus Hsiao

Neuroctenus parus Hsiao, 1964, *Acta. Ent. Sinica* 13(4): 589 (601).

1 ♀, CHINA, Yunnan, near Simao, 11.V.1957, D. Panfilov coll. (ZIPAS).

This species, known only from Yunnan, is probably a geographical subspecies of *Neuroctenus par* Bergroth, 1887, which is widely distributed in the Oriental Region, but it is difficult to judge on the basis of a single ♀.

Neuroctenus sumbaensis Kormilev, new species Fig. 12.

♀. Elongate ovate, widening backward, then rounded; head, pronotum, scutellum and corium, with sharp granulation; connexivum punctured.

Closely related to *Neuroctenus granuliger* Kormilev, 1971, from New Guinea, but labial groove is open posteriorly, ventral side of head laterad of labial groove and vertex are granulate, but not transversely rugose; antero-lateral angles of pronotum produced forward as far as, or slightly beyond, collar; fore lobe of pronotum with 4 (2+2) crescent-shaped callosities; lateral borders of scutellum carinate only on basal 4/5, and tip is acute; granulation on basal half of scutellum in concentric rows; apical angle of corium acute and apical border weakly sinuate; PE-angles of connexiva II to VI not protruding and PE-VII rounded; connexiva II and III separated by fine sulcus, not fused. Paratergites subtriangular, slightly longer than incised segment IX. Spiracles II to VI ventral, VII and VIII lateral and visible from above.

Color: ferrugineous, partially darker; hind borders of connexiva reddish brown; membrane brown, lighter at base.

Total length 6.24 mm; width of pronotum 2.00 mm; width of abdomen 2.70 mm.

Holotype ♀ (ZIPAS), INDONESIA, Sumba I., Grelak coll.

Paratype: 1 ♀, collected with holotype (collection of the author).

Genus **Dimorphacantha** Usinger and Matsuda, 1959

Dimorphacantha distincta Usinger & Matsuda, 1959, Class. Aradidae, p. 256.

1 ♂, MALAYA, Ulu Gombak, 6-10.III.1971, J. & S. Sedlacek coll. (BISHOP).

This striking species is rare in collections. It was described from Borneo. Usinger & Matsuda also mentioned 2 ♀♀ from Sumatra and Philippines respectively, but did not include them among the paratypes. This is the first record from Malaya.

Genus **Glochocoris** Usinger and Matsuda, 1959

Glochocoris montanus Kormilev, new species Fig. 13.

♀. Elongate ovate, slightly widening posteriorly; head, pronotum and scutellum granulate; connexivum finely and densely punctured.

Head almost as long as its width across eyes (12.5:12); anterior process conical, rounded anteriorly, reaching beyond 1/2 of antennal segment I; antenniferous tubercles short, blunt, with slightly convex outer borders. Eyes moderately protruding. Postocular borders rounded, vertex raised and finely granulate. Antennae strong, antennal segment I clavate, II fusiform, III tapering toward base, IV clavate; relative length of antennal segments I to IV are: 6.5:4.5:5:6. Labium reaching base of head.

Pronotum shorter than its maximum width (15:28); collar thin, granulate; antero-lateral angles rimmed, rounded and produced forward beyond collar; lateral borders convex at humeri, slightly sinuate and converging anteriorly; hind border slightly convex medially. Fore disc with 2 (1+1) oblique, slightly curved and backward diverging ridges, and laterad of them with 2 (1+1) thinner and lower ridges; median depression deep, interlobal depression also deep; hind disc granulate, depressed medially on fore half.

Scutellum shorter than its basal width (12.5:16); lateral borders carinate, straight; tip acute; disc with a transverse ridge along basal border; median carina granulate, not reaching tip of disc.

Hemelytra reaching border of tergum VI; corium reaching 1/2 of connexivum III, its baso-lateral border carinate, apical angle rounded, and apical border sinuate interiorly and convex exteriorly.

Abdomen ovate, longer than its maximum width across segment IV (41:32); connexiva II and III fused; PE-angles of connexiva III to VI thickened and barely protruding, PE-VII angularly rounded; exterior borders of connexiva II to VI straight, VII slightly sinuate. Paratergites small, conical diverging, reaching 1/2 of posteriorly incised segment IX. Spiracles II to VI very small, ventral, placed near the border; VII sublateral and visible from above, VIII terminal. Metathoracic scent-gland openings open.

Legs unarmed.

Color: dark brown; antennae, connexivum and legs are reddish brown.

Total length 3.32 mm; width of pronotum 1.12 mm; width of abdomen 1.28 mm.

Holotype ♀ (BISHOP 9851), NEW GUINEA, NE, Mt Kaindi, 2350 m; 14.VI.1971, M. Sedlacek coll.

Glochocoris montanus n. sp. is related to *G. pusillus* Kormilev, 1971, from New Britain, Bismark Arch., but it is larger, the antennae are relatively shorter, antennal segment I is longer than III or IV; the pronotum has the inner ridges higher and thicker than

the outer ones; the basal, transverse ridge of the scutellum is also relatively higher and more robust.

Genus *Mezira* Amyot & Serville, 1843

Subgenus *Mezira* A. S., sensu strictu.

Mezira montana (Bergroth), 1889

Brachyrrhynchus montanus Bergroth, 1889, *Ann. Mus. Civ. Stor. Nat., Genova* 27: 738.

Described from Burma, recorded from Indo-China, and now from China.

1 ♀, CHINA, Yunnan, near Simao, 27.III.1957, D. Panfilov coll. (ZIPAS).

Subgenus *Zemira* Kormilev, 1971

Mezira (*Zemira*) *quadrispinosa* Kormilev, new species Fig. 14, A.

♀. Elongate ovate; head and particularly pronotum, scutellum and corium granulate; connexivum punctured. Body covered with extremely short, curled, yellow hairs.

Head shorter than its width across eyes (30:37); anterior process thin, slightly tapering, incised anteriorly, reaching 2/3 of antennal segment I; antenniferous tubercles short, with parallel outer borders. Eyes large, semiglobose, strongly protruding. Postocular tubercles acute, not reaching outer borders of eyes. Vertex raised and granulate; infraocular carinae low, crenulate. Antennae long, almost twice as long as head's width across eyes (68.5:35); relative length of antennal segments I to IV are: 15.5:15.5:20:17.5. Labium almost reaching hind border of labial groove, which is open posteriorly.

Pronotum less than half as long as its maximum width (33:72); fore lobe narrower than hind lobe (53:72). Collar produced forward and sinuate anteriorly; antero-lateral angles expanded, rounded and produced forward as far as collar; anterior borders between collar and anterolateral angles sinuate; lateral notch forming an obtuse angle; lateral borders of hind lobe subparallel, slightly rounded; hind border deeply, evenly sinuate, subangularly produced laterally. Fore disc with a thin median sulcus flanked by 4 (2+2) low elevations fused anteriorly in pairs; interlobal depression deep and narrow; hind disc granulate anteriorly and postero-laterally, granulation is blurred in the middle.

Scutellum shorter than its basal width (? : 45, tip of scutellum is broken by pin); borders finely carinate, disc granulate, median ridge crushed by pin.

Hemelytra reaching 1/2 of tergum VII; apical angle of corium blunt, apical border straight, membrane with anastomosed veins.

Abdomen longer than its maximum width across segment V (105:87.5); lateral borders slightly convex, converging in an arc posteriorly; PE-angles of connexiva II to VI not protruding, PE-VII rounded. Paratergites rounded posteriorly, reaching 1/2 of slightly incised posteriorly segment IX. All spiracles ventral, placed far from border.

Legs: middle and hind femora with a spine.

Color: ferruginous; membrane grayish, labium and tarsi orange-yellow.

Total length 8.28 mm; width of pronotum 2.88 mm; width of abdomen 3.50 mm.

Holotype ♀ (ZIPAS), INDONESIA, Sumatra.

Mezira (*Zemira*) *quadrispinosa* n. sp. is related to *M. (Z.) armigera* Kormilev, 1971,

but differs by having the antero-lateral angles of pronotum expanded, rounded and produced forward as far as the collar.

Mezira (Zemira) crenata Kormilev, new species Fig. 15-17.

♀. Elongate ovate; lateral borders parallel; head, pronotum, scutellum and corium roughly granulate; body covered with short, curled, pale yellow hairs; antennae and borders of pronotum with stiff, erect bristles.

Head shorter than its width across eyes (40:43); anterior process tapering and incised anteriorly, reaching 2/3 of antennal segment I; antenniferous tubercles dentiform, divaricating. Eyes semiglobose, protruding. Postocular tubercles minute, acute, not reaching outer border of eyes; vertex raised and granulate, infraocular carinae low, crenulate. Antennae more than twice as long as head's width across eyes (92:43); relative length of antennal segments I to

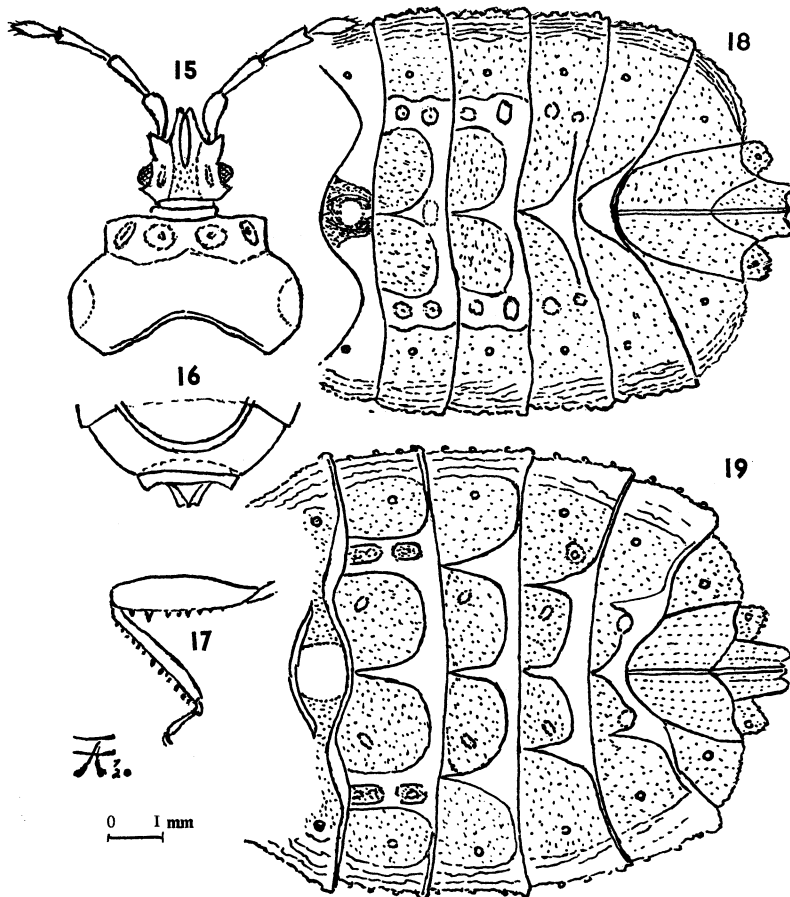


Fig. 15-19. 15. *Mezira (Zemira) crenata* n. sp., ♀, head and pronotum; 16. same, tip of abdomen from above; 17. same, right hind leg; 18. *Chrysodaspis grandis* n. sp., ♀, venter; 19. *Chrysodaspis angulatus* Kormilev, ♀, venter.

IV are : 20 : 24 : 26 : 22. Labium reaching hind border of labial groove, which is open posteriorly; ventral side of head laterad of labial groove is granulate.

Pronotum half as long as its maximum width (50 : 103); fore lobe narrower than hind lobe (71 : 103); collar produced forward, truncate anteriorly; antero-lateral angles rectangular, neither produced forward, nor sideways; lateral borders of fore lobe parallel, those of hind lobe convex, rounded, subparallel in middle; hind border deeply sinuate medially. Fore disc with 4 (2 + 2) granulate ridges, of which the inner ones are larger and higher; hind disc granulate, interlobal depression moderately deep.

Scutellum shorter than its basal width (55 : 60); lateral borders carinate, tip broken by pin; disc granulate, median ridge crushed by pin.

Hemelytra reaching 3/4 of tergum VII; baso-lateral borders of corium crenulate and slightly reflexed; apical angle of corium acute, apical border weakly sinuate interiorly and slightly convex exteriorly, almost straight.

Abdomen with parallel and crenulate sides, longer than its maximum width across segment IV (165 : 116); PE-angles of connexiva II to VI not, or barely protruding, PE-VII rounded; discs of connexiva scabrous, roughly punctured; hind borders of connexiva raised. Paratergites angular, acute, reaching basal 1/3 of a tricuspidate segment IX. Spiracles II to VIII ventral, placed far from border.

Legs : all femora with a double row of teeth of various sizes interiorly and roughly granulate on upper side; tibiae with a row of teeth on upper side diminishing in size from tip to base; tarsi without arolia.

Color : black to very dark ferruginous; membrane opaque, white, blackened on basal 1/3; labium and tarsi yellow brown.

Total length 12.16 mm; width of pronotum 4.12 mm; width of abdomen 4.64 mm.

Holotype ♀ (ZIPAS), INDONESIA, Java, K. Fruhstorfer coll.

Mezira (*Z.*) *crenata* n. sp. is related to *M. (Z.) hispida* Kormilev, 1971, from Borneo, but it has a shorter anterior process of head, a rectangular antero-lateral angles of the pronotum, and lacks stiff, erect bristles on the head, pronotum, scutellum, hemelytra and abdomen, with the exception of the infraocular carinae and the fore and lateral borders of the pronotum.

***Mezira* (*Zemira*) *funebra sumbaensis* Kormilev, new subspecies**

♀. Elongate ovate, with subparallel sides; granulate and covered with short, curled, rusty hairs.

Head as long as its width across eyes (53 : 53); anterior process slightly incised apically, reaching 3/4 of antennal segment I; antenniferous tubercles dentiform, acute, divaricating. Eyes semiglobose, protruding. Postocular tubercles acute, slightly produced beyond outer borders of eyes; vertex raised and granulate. Antennae twice as long as head's width across eyes (106.5 : 53); relative length of antennal segments I to IV are : 25 : 30 : 27.5 : 24. Labium almost reaching hind border of labial groove, which is open posteriorly; ventral side of head laterad of labial groove transversely rugose anteriorly, granulate posteriorly.

Pronotum less than half as long as its maximum width (60 : 125); fore lobe narrower than hind lobe (97 : 125); collar produced forward, granulate; antero-lateral angles slightly expanded, rounded and serrate; lateral notch rounded, forming an obtuse angle; lateral borders of hind lobe parallel, converging anteriorly, crenulate. Fore disc with a wide median sulcus flanked by 4 (2+2) semifused ridges and 4 (2+2) callosities of various shapes; interlobal depression

deep; hind disc granulate, hind border deeply sinuate medially and angularly produced laterally.

Scutellum shorter than its basal width (65:70); all borders carinate and granulate; disc with a low, granulate, median ridge on posterior 3/5; irregularly, transversely rugose and granulate laterad of it.

Hemelytra reaching beyond fore border of tergum VII; apical angle of corium acute, apical border almost straight.

Abdomen longer than its maximum width across segment V (190:145); lateral borders subparallel; exterior borders of connexiva VI and VII forming an obtuse angle; PE-angles of connexiva II to VI not protruding, PE-VII angular, but not produced. Paratergites rounded, reaching basal 1/3 of a rounded posteriorly segment IX. All spiracles ventral, placed far from border.

Legs: femora roughly granulate on inferior border, but not spinose.

Color: black; connexivum, venter, sternum and legs, very dark ferruginous; labium and tarsi yellow brown.

Total length 14.88 mm; width of pronotum 5.00 mm; width of abdomen 5.80 mm.

Holotype ♀ (ZIPAS), INDONESIA, Sumba I., Grelak coll.

Paratype: 1 ♀, collected with holotype, (collection of the author).

Mezira (*Z.*) *funebra sumbaensis* n. ssp. is one of the largest species in the genus *Mezira* A. S. It is closely related to *M. (Z.) funebra* Kormilev, 1971, from the Philippines and New Guinea, but it is much larger, the fore lobe of pronotum is relatively wider, and the vestitune, particularly of the antennae and legs, is more conspicuous.

Genus *Chrysodaspis* Kormilev, 1971

In this genus the venter has a curious pattern of shiny carinae, differing in the various species. The males have the surfaces between the carinae covered with a dense tomentum, lacking in females, but they have rough punctures between the shiny carinae.

Chrysodaspis grandis Kormilev, new species Fig. 18.

♀. Elongate ovate; roughly granulate with round, shiny granules; covered with moderately long, erect, rusty bristles.

Head shorter than its width across eyes (55:60); anterior process moderately strong, tapering, slightly incised anteriorly, reaching 1/2 of antennal segment I; antenniferous tubercles strong, subacute, slightly divaricating. Eyes large, semiglobose, protruding. Postocular tubercles minute, adherent to eyes and reaching 1/2 of their posterior border; vertex raised and granulate; infraocular carinae granulate; head between vertex and infraocular carinae deeply depressed. Antennae strong, 2.4 × as long as head's width across eyes (145:60); relative length of antennal segments I to IV are: 38:40:37:30. Labium reaching fore border of prosternum; labial groove open posteriorly.

Pronotum much shorter than its maximum width (75:136); fore lobe narrower than hind lobe (110:136); collar produced forward and sinuate anteriorly; anterior borders laterad of collar sinuate; antero-lateral angles expanded, rounded and crenulate, almost reaching fore border of collar; lateral notch angular, obtuse; lateral borders of hind lobe convex, rounded; hind border deeply sinuate medially and roundly convex laterally. Fore disc with 4 (2+2) stout, granulate ridges, separated by deep depressions and overhanging interlobal depression, which is deep. Hind disc roughly granulate.

Scutellum shorter than its maximum width (65:73); lateral borders carinate and granulate; median ridge strongly widening anteriorly, disc granulate.

Hemelytra reaching hind border of tergum VI; baso-lateral borders of corium slightly expanded, rounded and somewhat reflexed; disc granulate; apical angle of corium acute, apical border widely, but shallowly sinuate; membrane with ramified veins.

Abdomen much longer than its maximum width across segment IV (225:180); lateral borders rounded and crenulate; PE-angles of connexiva II to VI moderately produced, rounded; PE-VII evenly rounded, not produced; hind borders of connexiva raised, disc slightly depressed in middle, granulate. Tergum VII raised in the form of transverse rectangle and depressed in middle. Paratergites angular, reaching 1/2 of tricuspidate segment IX. Prosternum raised longitudinally, meso- and metasternum depressed in middle; all three granulate. Metathoracic scent-gland openings long, closed. All spiracles ventral, placed far from border. Venter on sterna II to VII roughly punctured between shiny carinae; genital plates granulate.

Legs: femora roughly granulate, but without teeth; tibiae granulate, tarsi without arolia.

Color: black; membrane greyish brown; labium and tarsi yellow brown; base of femora dark ferrugineous.

Total length 17.24 mm; width of pronotum 5.44 mm; width of abdomen 7.20 mm.

Holotype ♀ (ZIPAS), INDIA.

Chrysodaspis grandis n. sp. runs in my key for *Chrysodaspis* species (1971:101) to *C. maai* Kormilev, 1971, but the antero-lateral angles of pronotum are expanded forwards and sideways and are rounded; the PE-angles of connexiva are rounded, not angular; the exterior borders of connexiva VII are evenly rounded. The anterior lobe of pronotum is relatively wider, and the abdomen is relatively longer. The relative length of the antennal segments are slightly different.

***Chrysodaspis angulatus* Kormilev Fig. 19.**

Chrysodaspis angulatus Kormilev, 1971, *Pacif. Ins. Monogr.* 26: 101

The female was not previously known.

Head 55:58; relative length of antennal segments I to IV are: 40:42:37:28; pronotum 82:145, fore lobe narrower than hind lobe 104:145; scutellum 72:85, abdomen 215:196.

Partergites rounded, reaching basal 1/3 of tricuspidate segment IX. All femora with a double row of teeth on inferior side.

Color: black, membrane dark brown.

Total length 17.00 mm; width of pronotum 5.80 mm; width of abdomen 7.84 mm.

A second female and male had the following measurements respectively: total length ♀-16.28, ♂-14.84 mm; width of pronotum ♀-5.68, ♂-5.28 mm; width of abdomen ♀-7.20, ♂-7.20 mm.

1 ♂ and 2 ♀♀, INDONESIA, Sumatra, Liangagas; Dohrn Coll. (ZIPAS and collection of the author).

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