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A review of the genus *Cassida* L. of the Australian Region and Papuan Subregion (Coleoptera: Chrysomelidae: Cassidinae)

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ABSTRACT. Fifteen species of the genus *Cassida* L. occur in the Australian Region and Papuan Subregion. *C. lawrencei* from Northern Territory and Queensland in Australia is described as new to the science. Following new synonyms are proposed: *Cassida mera* GERMAR, 1848 (= *C. perpusilla* BOHEMAN, 1862 = *C. profundestriata* SPAETH, 1899), *C. sappho* (BOHEMAN, 1862) (= *C. prothoracica* BLACKBURN, 1896), *C. navicella* BOHEMAN, 1862 (= *C. adelaidae* BLACKBURN, 1896), *C. diomma* BOISDUVAL, 1835 (= *C. strigula* MONTROUZIER, 1855 = *Metriona strigula sudibunda* SPAETH, 1915 = *M. callosipennis* SPAETH, 1903 = *M. callosipennis dispar* SPAETH, 1903 = *Chirida simplaria* BLACKBURN, 1896), *C. sexguttata* BOISDUVAL, 1835 (= *Coctocycla holmgreni* BOHEMAN, 1862 = *Metriona holmgreni tessellata* SPAETH, 1903 = *M. holmgreni translapsa* SPAETH, 1915 = *Chirida multicolor* BLACKBURN, 1896), *C. biguttata* (SPAETH, 1903) (= *Metriona personata* SPAETH, 1903 = *M. personata loriae* SPAETH, 1903), *Charidotella purpurata* (BOHEMAN, 1855) (= *Chirida lacunata* BLACKBURN, 1896), *Lacoptera permodica* (BOHEMAN, 1862) (= *L. insulana* WEISE, 1910), *Crepidaspis* SPAETH, 1912 (= *Taiwania* SPAETH, 1913 = *Cyclocassida* CHEN et ZIA 1961 = *Yunocassis* CHEN et ZIA, 1961), and *Rhytidocassis* SPAETH, 1941 (= *Chloocassis* SPAETH, 1952). New combinations are given for 9 species. A key to the species, descriptions and figures for each species have also been included.

INTRODUCTION

The Australian species of the genus *Cassida* L. have never been revised. The first two species — *C. diomma* and *C. sexguttata* were described from New Guinea by BOISDUVAL (1835). Before the monograph of the World *Cassidinae* published by BOHEMAN (1855, 1856, 1862) only two other species were described from this zoogeographical region: *C. mera* GERMAR, 1848 from Australia and *C. strigula* MONTROUZIER, 1855 from Woodlark Is. near New Guinea. BOHEMAN (1855, 1856, 1862) recorded 11 species from the Australian Region — four mentioned above and seven new to the science: *C. denticulata* BOH., 1856, *C. perpusilla* BOH., 1862, *C. navicella* BOH., 1862, *C. permodica* BOH., 1862, *Coptocycla compuncta* BOH., 1855, *C. sappho* BOH., 1862, and *C. holmgreni* BOH., 1862, all from Australia except *C. permodica* recorded from New Guinea. BLACKBURN (1896) described from Australia five species (partly in *Chirida* sensu CHAPUIS): *C. adelaidae*, *C. prothoracica*, *Chirida multicolor*, *Ch. simplaria* and *Ch. lacunata*. SPAETH (1899) described from Australia *Cassida profundestriata*. Important work on Papuan species was published by SPAETH (1903). He described 9 new taxa of species rank (all in *Metriona* sensu WEISE), and discussed previously known species. A supplement to this work was SPAETH's paper of 1915, in which he established some synonyms and described *Metriona aureola* from Australia. At last, in 1936, SPAETH described two new species from Solomon Is. — *Metriona solomonina* and *M. cristobalensis*. In addition to above mentioned papers only a few faunistic works were published on Australian Region hitherto (SPAETH, 1906, 1909, 1913; KIMOTO et al., 1984).

STUDY AREA AND MATERIALS

In this paper, the Australian Region comprises Australia and adjacent islands, New Guinea and adjacent islands, Solomon Is. and Samoa Is. Other Pacific Islands have not been included because of the lack of cassids. The islands west of Australia and New Guinea (Timor, Molukkas etc.) have also been excluded because their cassids have no connections with Australian fauna, and refer more to the Oriental fauna or have endemic species.

Types of only 24 nominal species and subspecies, out of the 35 discussed in the paper, were available for examination. In the remaining

ones, taxonomic interpretation by SPAETH (unpublished key to world *Cassidinae*, preserved in the Manchester Museum) has been adopted.

I have examined specimens from the following institutions or persons (in brackets names of curators):

- BM — Bishop Museum, Honolulu (G. A. SAMUELSON),
- BMNH — British Museum, Natural History, London (S. SHUTE),
- BRC — Biosystematics Research Centre, Ottawa (L. LESAGE),
- CAS — California Academy of Sciences, San Francisco (D. KAVANAUGH),
- DEI — former Deutsches Entomologisches Institut, now Institut für Pflanzenschutzforschung, Eberswalde (L. DIECKMANN),
- DZPAS — Department of Systematic and Experimental Zoology, Polish Academy of Sciences, Cracow (J. PAWŁOWSKI),
- HNHM — Hungarian Natural History Museum, Budapest (O. MERKL),
- IZPAS — Institute of Zoology, Polish Academy of Sciences, Warsaw (S. A. ŚLIPIŃSKI),
- LB — author's coll.
- MCSNG — Museo Civico di Storia Naturale, Genova (R. POGGI),
- MCSNV — Museo Civico di Storia Naturale, Verona (M. DACCORDI),
- MCZ — Museum of Comparative Zoology, Harvard University, Cambridge (A. NEWTON),
- MHNG — Muséum d'Histoire Naturelle, Genève (I. LÖBL),
- MLM — Macleay Museum, Sydney (D. S. (WOODY) HORNING),
- MM — Manchester Museum (C. JOHNSON),
- PMNH — Peabody Museum of Natural History, Yale University, New Haven (D. FURTH),
- QM — Queensland Museum, Brisbane (G. MONTEITH and J. SEDLACEK),
- SAM — South Australian Museum, Adelaide (E. MATTHEWS),
- VRB — V. R. BEJSAK's coll., Sydney
- ZMHU — Zoologisches Museum, Humboldt Universität, Berlin (F. HIEKE),
- ZMK — Zoologisk Museum, Kopenhagen (O. LOMHOLDT).

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DESCRIPTION OF THE GENUS

Cassida LINNAEUS, 1758*

Cassida LINNAEUS, 1758: 362.

Deloyala REDTENBACHER, 1858: 952 not CHEVROLAT, 1837.

Cassidula WEISE, 1889: 260 not DE BLAINVILLE, 1830.

Pseudocassida DESBROCHERS, 1891: 15, subgenus.

Mionycha WEISE, 1891: 204, subgenus.

Odontionycha WEISE, 1891: 204, subgenus.

Crepidaspis SPAETH, 1912: 119, subgenus.

Taiwania SPAETH, 1913b: 48, n. syn. of *Crepidaspis*.

Lordicassis REITTER in SPAETH et REITTER, 1926: 23, 27, subgenus.

Tylocentra REITTER in SPAETH et REITTER, 1926: 24, 57, subgenus.

Lordiconia REITTER in SPAETH et REITTER, 1926: 23, 26, subgenus.

Onychocassis SPAETH in SPAETH et REITTER, 1926: 23, 26, subgenus.

Cassidulella STRAND, 1928: 2, new name for *Cassidula* WEISE not DE BLAINVILLE, subgenus.

Alledoya HINCKS, 1950: 508, new name for *Deloyala* REDTENBACHER not CHEVROLAT, subgenus.

Lasiocassis GRESSITT, 1952: 485, new name for *Deloyala* REDTENBACHER not CHEVROLAT.

Mionychella SPAETH in HINCKS, 1952: 346, subgenus.

Dolichocassida GÜNTHER, 1958: 568, subgenus.

Cyclocassida CHEN et ZIA, 1961: 448, n. syn. of *Crepidaspis* SPAETH.

Yunocassis CHEN et ZIA, 1961: 448, n. syn. of *Crepidaspis* SPAETH.

Chirida auct., part.

Coptocycla auct., part.

Mettriona auct., part.

Excluded subgenera: *Pilemostoma* DESBROCHERS, 1891, *Hypocassida* WEISE, 1893, *Bassamia* SPAETH, 1924, *Erbolaspis* SPAETH, 1924, *Rhytidocassis* SPAETH, 1941 (= *Chloocassis* SPAETH in HINCKS, 1952 n. syn.) and *Trigonocassis* HINCKS, 1950.

Small to moderately large cassids, body length 3.5–7.5 mm. Body varying from elongate-oval (fig. 1) to almost circular (figs 32–75), regularly convex (figs 14, 21) to slightly gibbous in profile (fig. 65). Pronotum ellipsoidal with broadly rounded sides (most species), or sometimes pronotal sides subangulate (fig. 1); the maximum width of pronotum in the middle, or slightly in front of, or behind, the middle. Pronotal disc distinctly bordered from explanate margin, regularly convex, without gibbositities, unpunctured (most species), or with fine pricks (three species), occasionally distinctly punctured (one species). Explanate margin of pronotum broad, steeply declivous to subhorizontal,

* The description of this large and very heterogenous genus is based only on the Australian specimens.

unpunctured, with honeycomb structure. Base of elytra more or less wider than pronotum, humeral angles rounded to subangulate, distinctly projecting anterad. Punctuation of disc regular, but in several species rows broken or disordered by elytral relief. Disc bordered from explanate margin by distinct marginal row. Explanate margin in anterior half broad, more or less declivous, in posterior half narrow to moderately broad, subhorizontal, unpunctured, with honeycomb structure. Head with large eyes (figs 84–93), clypeus 1.2–1.6 times wider than long, its anterior edge not elevated, lateral grooves fine, no median groove or frontoclypeal sulci. Surface of clypeus flat, unpunctured (figs 84–93), finely punctured (figs 3, 15, 22), occasionally strongly punctured (fig. 6). Labrum always with median emargination. Prosternum with very short collar, without lateral emargination. Prosternal process broad, with strongly expanded, rhomboidal apex (figs 84–93). Surface of prosternal process flat, smooth (figs 94–93), or punctured on sides and with longitudinal or apical furrows (figs 3, 6, 22). Venter of pronotum with no antennal grooves laterally to eyes. Antennae short (figs 40–44) to moderately long (figs 30–34), segment 3 always longer than 2, segments 8–10 more or less elongate, always longer than wide. Six basal segments glabrous and slimm, five distal dull and stouter. Legs moderately elongate, midfemora without subapical tubercle. Tibiae slim, with no external, longitudinal channel. Tarsi broad, segment 4 not, or only slightly, longer than 3. Claws simple (fig. 47), or appearing appendiculate due to the distally projecting flanks of the claw segment (figs 45, 46).

Australian species of the genus *Cassida* L. form two distinct groups separated morphologically and geographically. First group, which includes *C. denticulata*, *C. mera*, *C. navicella* and *C. sappho*, occurs only in south-eastern part of Australia (fig. 94): in South Australia, Victoria, New South Wales, and south Queensland. Species of the group are the smallest Australian *Cassidinae*, not longer than 5.5 mm, with body strongly, regularly convex in profile, clypeus punctate, elytra regularly punctate, antenna short, and claws simple or last segment of tarsi with only slightly distally projecting flanks. All species have more or less darkened ventral part of body. This group is congeneric with no Palearctic or Oriental subgenus. At first glance it resembles some Palearctic *Cassidulella* STRAND or *Mionycha* WEISE, but they distinctly differ in deep lateral grooves of clypeus and presence of additional punctures on some elytral intervals.

I have not proposed a new subgenus for this group because, in my opinion, the subgenera of *Cassida* need revision on materials from the whole range of the genus, including Afrotropical species not revised hitherto. In my opinion, some Afrotropical and Palearctic groups considered as subgenera of *Cassida* by SEENO and WILCOX (1982), are in fact distinct genera, in addition, not very closely related to *Cassida*, and have been excluded from the review (see the list at the end of "synonyms").

On the other hand, Afrotropical *Cassida* is very heterogeneous and needs division into many subgenera (BOROWIEC in prep.).

The second group, which includes remaining species, occurs in eastern and northern part of Australia and in Papuan Subregion (figs 94–97), only one species extends its range to south-eastern part of Australia. This group comprises moderately large, rarely small cassids with broad, almost circular body, clypeus impunctate, ventrites always uniformly yellow, antennae moderately long and claws appearing distinctly appendiculate. Many species of this group have elytral relief in the form of elevated yellow spots or bands, or folds. This group is congeneric with Oriental *Crepidaspis* SPAETH. This genus was treated by SPAETH in HINCKS (1952) as synonym of *Thlaspidosoma* SPAETH, but in my opinion it is an independent subgenus of *Cassida* not related to *Thlaspidosoma*, but congeneric with *Taiwania* sensu GRESSITT. *Taiwania*, the large and heterogeneous subgenus was treated by CHEN and ZIA (1961) as a distinct genus with three subgenera: *s. str.*, *Cyclocassida* CHEN et ZIA and *Yunocassis* CHEN et ZIA, but in my opinion the division of *Taiwania* into subgenera is completely artificial. The characters used by CHEN and ZIA (1961) — structure of tarsal claws, width-length ratio of clypeus and shape of pronotal sides — vary often within the same species group, so they are not useful for the creation of subgenera. I have synonymized *Taiwania* SPAETH, 1913, *Cyclocassida* CHEN et ZIA, 1961 and *Yunocassis* CHEN et ZIA, 1961 with *Crepidaspis* SPAETH, 1912.

KEY TO THE SPECIES

1. Pronotal disc strongly punctate *C. mera*
- Pronotal disc impunctate or with fine pricks 2.
2. Ventral part of body partly black or brown. Explanate margin of elytra in anterior half strongly declivous. South and East Australia only 3

- Ventral part of body pale yellow. Explanate margin of elytra in anterior half moderately declivous to subhorizontal. East Australia and Papuan Subregion 5.
- 3. Elytral edge strongly emarginate at sutural apex, so suture extended into sharp spine (fig. 20). Explanate margin of elytra usually with posterolateral spot *C. denticulata*
- Elytral edge not, or only slightly, emarginate at sutural apex, suture not extended into spine (figs 1, 13). Explanate margin of elytra without spots 4.
- 4. Small: 3.5–4.2 mm. Body stout (fig. 13). Ground colour of elytra paler, yellowish-red *C. sappho*
- Larger: 4.5–5.5 mm. Body slimmer (fig. 1). Ground colour of elytra darker, brownish-red *C. navicella*
- 5. Body uniformly yellow 6.
- At least elytra with dark, black or red markings 7.
- 6. Surface of elytra with several folds, especially postscutellar area with X-shaped elevation. Rows of elytral punctures partly disordered *C. lawrencei*
- Surface of elytra without folds or X-shaped postscutellar elevation. Puncturation of elytra completely regular *C. aureola*
- 7. Pronotum immaculate (figs 48, 49, 53–60) 8.
- Pronotum with dark basal spot (figs. 72–83) 12.
- 8. Elytral pattern reddish (figs 57–60) 9.
- Elytral pattern black (figs 48, 49, 53–56) 11.
- 9. Yellow spots of elytral disc do not form a row or band along suture (fig. 75) *C. sexguttata* (pale forms)
- Yellow spots of elytral disc form a row or band along suture (figs 57–60) 10.
- 10. External border of reddish elytral pattern regular, it runs to eighth row of punctures (figs 59, 60). East Australia only *C. compuncta*
- External border of reddish elytral pattern uneven, in humeral and posterolateral parts of disc often runs to ninth row of punctures (figs 57, 58). East and North Australia, New Guinea *C. diomma* (pale forms)
- 11. Black pattern of elytra rather constant, it forms an elongate spot beyond scutellum and a band along sides of disc, external border of black band usually regular, it runs to ninth elytral row of punctures. Posterior half of elytral suture usually yellow (figs 48, 49) *C. astrolabiana*

- Black pattern of elytra varying, usually it forms a large spot occupying almost whole surface of elytra except marginal interval and yellow relief along suture (figs 54, 55), sometimes black being reduced to several spots at suture and an irregular band along sides of disc (fig. 56), the external border of black band irregular, it partly runs to ninth row of punctures partly to eight one, in darkest forms all disc of elytra black except marginal interval (fig. 53) *C. diomma* (dark forms)
- 12. Elytral disc uniformly black (fig. 53) *C. diomma* (darkest form)
- Elytral disc partly yellow 13.
- 13. Elytral disc yellow with an elongate spot beyond scutellum and a band along sides of disc (figs 51, 52), in dark forms the band sometimes connected with postscutellar spot (fig. 50) *C. papuana*
- Elytral disc mostly black or reddish with 1–13 yellow spots (figs 72–83) 14.
- 14. Each elytron with only one large yellow spot (fig. 78) *C. biguttata*
- Each elytron with more than one yellow spot (figs 72–74, 79–83) 15.
- 15. Each elytron with 7–13 spots, pronotal spot always with a pair of yellow spots at base (figs 80–83) *C. salomonina*
- Each elytron with 3–6 spots (figs 72–74, 76, 77, 79), if more than 6 spots present, then ground colour of elytral disc red (fig. 75). Pronotal spot usually without yellow basal spots 16.
- 16. Explanate margin of elytra with dark humeral and posterolateral spots (fig. 76) *C. albertisi* (darkest form)
- Explanate margin of elytra without dark spots (figs 72–75, 77, 79) 17.
- 17. Ground colour of elytral disc reddish (figs 74, 75) *C. sexguttata* (pale forms)
- Ground colour of elytral disc black (figs 72, 73, 77, 79) 18.
- 18. Last interval of elytral disc yellow. Three spots along sides of suture regular, only slightly convex (fig. 79). San Cristobal Is. only *C. cristobalensis*
- Last interval of elytral disc at least in posthumeral part black, if yellow then spots along sides of suture irregular, strongly convex (fig. 72). New Guinea and adjacent islands 19.
- 19. Basal spot of pronotum regularly triangular (fig. 77). Elytral spots

- more regular, only slightly convex, basal and postscutellar spots often connected (fig. 76) *C. albertisi*
- Basal spot of pronotum elongate (fig. 72), or square to trapezial (fig. 73), or bobbin-like. Elytral spots usually irregular, more convex. Postscutellar spots often form a more or less regular H-shaped relief (fig. 74), basal and postscutellar spots never connected, basal spot sometimes obsolete (fig. 73) *C. sexguttata* (dark forms)

REVIEW OF THE SPECIES

Cassida mera GERMAR, 1848

(figs. 4-6, 11, 12, 43, 46, 94)

Cassida mera GERMAR, 1848: 246; BOHEMAN, 1854: 494, 1862: 343; SPAETH, 1914: 115, 1915: 235.

Cassida perpusilla BOHEMAN, 1862: 335; SPAETH, 1914: 115, n. syn.

Cassida (*Cassidula*) *profundestriata* SPAETH, 1899: 216, 1901: 346 (as variety), 1914: 115, n. syn.

Length 3.9-4.5 mm, width 2.7-2.9 mm, length of pronotum 1.4-1.6 mm, width of pronotum 2.2-2.5 mm. Body oval (fig. 4).

Yellow, thoracic sterna and abdomen black except sides of abdominal sternites and apex of the last sternite, in dark forms also base of clypeus more or less infuscate. In pale forms thoracic sterna brownish. Elytra uniformly yellow (fig. 11) or in dark forms each elytron with a few brownish, more or less elongate spots and explanate margin of elytra with brownish posterolateral spot (fig. 12).

Pronotum about 1.6 times wider than long, with maximum width slightly behind middle, pronotal sides broadly rounded. Disc moderately convex, strongly punctured (fig. 4). Distance between punctures at sides of disc smaller than diameter of puncture, in the middle of disc nearly equals diameter of puncture. In some specimens punctures above the head distinctly smaller and scarcer than in sides of disc. Surface between punctures microreticulate, appearing alutaceous. Explanate margin broad, impunctate, microreticulate, dull.

Base of elytra distinctly wider than pronotum, anterior margin not crenulate. Disc regularly convex in profile (fig. 5), but less convex than in similar *C. navicella*, *C. sappho* and *C. denticulata*. Postscutellar depres-

sions absent. Punctuation of disc regular, punctures very large and dense (fig. 4), so intervals about twice narrower than diameter of punctures. Intervals at top of disc flat, on slope slightly convex. Surface of intervals smooth, shiny or slightly alutaceous. Marginal interval about twice wider than submarginal one. Punctures of marginal row only slightly larger than in submarginal row. Explanate margin in widest part about as wide as three rows together, in anterior half strongly declivous, shallowly punctate but with shiny surface. Humeral angles distinctly projecting anterad, subangulate (fig. 5). Apex of elytral epipleura without hairs or setae.

Clypeus about 1.5 times wider than long, strongly punctate, especially at top (fig. 6), its anterior edge regularly arcuately curved. Prosternal process broad, strongly expanded apically, its sides with row of punctures and apex with two oblique furrows (fig. 6).

Antennae short, reaching beyond hind margin of pronotum by last segment. Length ratio of antennal segments: 100:50:55:40:45:55:60:50:50:50:50:90 (fig. 43).

Last tarsal segment slightly longer than third one, claws simple, but appearing slightly appendiculate (fig. 46).

MATERIAL EXAMINED

AUSTRALIA. South Australia: Wodside, 2 (SAM); Mt Lofty, J.G.O. TEPPER, 1 (LB); 13 (12 MLM, 1 SAM); Australia, 1 (IZPAS).

Cassida denticulata BOHEMAN, 1856

(figs 20–26, 42, 94)

Cassida denticulata BOHEMAN, 1856: 137, 1862: 338; SPAETH, 1914: 115.

Length 3.8–4.6 mm, width 2.8–3.3 mm, length of pronotum 1.5–1.6 mm, width of pronotum 2.4–2.6 mm. Body short-oval (fig. 20).

Brownish yellow, thoracic sterna brown to black, abdomen to a lesser or greater degree infuscate in the middle. Distal four antennal segments brown to black. Elytra with dark, brown to black pattern (figs 23–26). In pale forms only apex of suture and posterolateral spot of explanate margin of elytra darkened (fig. 23), in the darkest form each elytron with 12 dark spots (fig. 26).

Pronotum about 1.6 times wider than long, with maximum width at the middle, pronotal sides broadly rounded. Disc moderately convex,

unpunctured, its surface microreticulate, alutaceous. At sides of disc, in front of hind margin of pronotum, two small longitudinal furrows, first at border of disc and explanate margin, second in front of elytral row 5; also at each side of head a small pit. Explanate margin broad, impunctate, microreticulate, dull.

Base of elytra distinctly wider than pronotum, anterior margin not crenulate. Disc strongly, regularly convex in profile, with maximum of the convexity distinctly beyond the middle (fig. 21). Puncturation of disc regular, moderately large (fig. 20), intervals about as wide as diameter of punctures or slightly wider. Intervals at top of disc flat, in slope slightly convex. Surface of intervals distinctly microreticulate, alutaceous. Marginal interval about thrice wider than submarginal one. Punctures of marginal row as large as to twice larger than in sub marginal row. Explanate margin moderately broad, slightly wider than in *C. mera*, in anterior half strongly declivous, in posterior half subhorizontal, its surface shallowly punctate. Humeral angles distinctly protruding anterad, subangulate (fig. 21). Apex of elytral epipleura without hairs or setae.

Clypeus about 1.4 times wider than long, flat, with several small punctures in anterior half (fig. 22), its anterior edge regularly curved into arch. Prosternal process broad, strongly expanded apically, with or without median furrow, and usually shallowly punctate along sides (fig. 22).

Antenna short, reaching beyond hind margin of pronotum by last segment. Length ratio of antennal segments: 100:50:52:50:55:45:50:45:40:50:100 (fig. 42).

Last tarsal segment slightly longer than third one. Claws simple but appearing slightly appendiculate (fig. 46).

MATERIAL EXAMINED

AUSTRALIA. South Australia: Kangaroo Is., J.G.O. TEPPER, 1 (SAM); Lucindale, 1 (LB); Georgetown, 1 (SAM); New South Wales: Windsor, LEA, 1 (SAM); Mt Kosciusko, 1, J. SEDLACEK (QM); Gerroa, 28 XII 1974, 2, H. and A. HOWDEN (BRC); Benandarah, 30 I 1979, 1 (LB); Sydney, 2 (MLM); Blue Mts, 1 (MLM); Rope's Ck., 2 (MLM); South Queensland, Tambourine Mts, H. HACKER, 1 (LB); Nova Holland, 1 (holotype, BMNH).

Cassida sappho (BOHEMAN, 1862) n. comb.

(figs 13-19, 44, 94)

Coptocyclus Sappho BOHEMAN, 1862: 427; SPAETH, 1914: 130.

Cassida prothoracica BLACKBURN, 1896: 107; SPAETH, 1914: 115, n. syn.

Length 3.5-4.2 mm, width 2.6-2.9 mm, length of pronotum 1.4-1.5 mm, width of pronotum 2.2-2.4 mm. Body short-oval, slightly slimmer than in *C. denticulata* (fig. 13).

Straw-yellow, ventrites in pale forms only in the middle of abdomen brownish, in dark forms thoracic sterna and abdomen black except sides of abdominal sternites and apex of the last sternite. Three to four distal segments of antenna to a lesser or greater degree infusate. Elytra varying from uniformly yellowish (fig. 16) to almost black on whole disc (fig. 19), often elytral disc with several, more or less elongate spots (figs 17, 18). Sutural apex and explanate margin of elytra always without dark spots.

Pronotum about 1.6 times wider than long, with maximum width slightly beyond the middle, pronotal sides rounded, but not as broad as in *C. denticulata* and *C. mera* (fig. 13). Disc moderately convex, impunctate, microreticulate with very fine pricks, alutaceous. At sides of disc, in front of humerus and elytral row 5 short furrows. Explanate margin broad, impunctate, microreticulate, dull.

Base of elytra wider than pronotum, anterior margin not crenulate. Disc strongly, regularly convex in profile, with maximum of the convexity at the middle (fig. 14). Punctuation of disc regular, smaller than in preceding species, dense, intervals 1.2-2.0 times wider than diameter of punctures. Intervals flat on the whole length or only slightly elevated on slope. Surface of intervals microreticulate, alutaceous. Marginal interval two or three times wider than submarginal one. Punctures of marginal row about twice larger than in submarginal row. Explanate margin in anterior half strongly declivous, in posterior half subhorizontal, its surface shallowly punctate. Humeral angles distinctly protruding anterad, subangulate (fig. 14). Apex of elytral epipleura without hairs or setae.

Clypeus 1.5 times wider than long, flat, with several small punctures in anterior half (fig. 15), its anterior edge regularly curved into arch. Prosternal process broad, strongly expanded apically, without special sculpture, or with shallow punctures along sides (fig. 15).

Antenne short, reaching beyond hind margin of pronotum by last segment. Length ratio of antennal segments: 100:44:50:55:44:55:55:50:60:60:95 (fig. 44).

Last tarsal segment slightly longer than third one. Claws simple (fig. 47).

MATERIAL EXAMINED

AUSTRALIA, South Queensland, Moreton Bay, 1 (holotype of *C. sappho*, BMNH); New South Wales: Mukuala, 1 (syntype of *C. prothoracica*, SAM); Tamworth, LEA, 4 (3 SAM, 1 MLM); Clarence R., LEA, 2 (LB); Windsor, LEA, 1 (SAM); 1 (MLM); South Australia: Adelaide, 1 (SAM); Lucindale, 1 (SAM); Australia, 1 (syntype of *C. prothoracica*, BMNH).

Cassida navicella BOHEMAN, 1862

(figs. 1-3, 7-10, 41, 47, 94)

Cassida navicella BOHEMAN, 1862: 331; SPAETH, 1914: 115.

Cassida Adelaidae BLACKBURN, 1896: 106; SPAETH, 1914: 115, n. syn.

Length 4.5-5.5 mm, width 3.2-3.7 mm, length of pronotum 1.7-2.0 mm, width of pronotum 2.6-3.1 mm. Body elongate-oval, slimmer and less rounded on sides than in *C. sappho* and *C. denticulata* (fig. 1).

Brownish-yellow, ventrites in pale forms only in the middle of abdomen brown, in dark forms black except clypeus, sides of abdominal sterna and apex of the last sternite. Two to four distal segments of antennae more or less infuscate. Elytra uniformly brownish-yellow (fig. 7), or with dark spots or/and stripes (figs 8-10), but never as black as in *C. sappho*. Sutural apex and explanate margin of elytra always without dark spots.

Pronotum about 1.5 times wider than long, with maximum width at the middle, pronotal sides rounded but not as regular as in three preceding species (fig. 1). Disc moderately convex, impunctate, microreticulate with very fine pricks, alutaceous but with tendency to be shiny. Explanate margin broad, impunctate, microreticulate, dull.

Base of elytra wider than pronotum, anterior margin slightly crenulate. Disc strongly, regularly convex in profile, with maximum of the

convexity slightly beyond the middle (fig. 2). Puncturation of disc regular, dense, moderately large, similar as in *C. sappho*, intervals 1.5–2.5 times wider than diameter of punctures. Intervals in anterior half flat, in posterior half slightly elevated, their surface microreticulate, alutaceous with tendency to be shiny. Marginal interval about twice wider than submarginal one. Punctures of marginal row about twice larger than in submarginal row. Explanate margin narrow, in anterior half strongly declivous, in posterior half subhorizontal, its surface shallowly punctate. Humeral angles distinctly protruding anterad, subangulate (fig. 2). Apex of elytral epipleura without hairs or setae.

Clypeus 1.8 times wider than long, flat, with several small punctures (fig. 3), its anterior edge broadly rounded into arch. Prosternal process broad, strongly expanded apically, without special sculpture, or with shallowly punctate sides and with median furrow (fig. 3).

Antennae short, reaching beyond hind margin of pronotum by last segment. Length ratio of antennal segments: 100:40:64:45:60:40:45:45:45:100 (fig. 41).

Last tarsal segment slightly longer than third one. Claws simple (fig. 47).

MATERIAL. EXAMINED

AUSTRALIA. New South Wales: Captains Flat, 6 (5 SAM, 1 LB); Forest Reefs, LEA, 1 (SAM); Bereima, 4 (MLM); Victoria, Timboon, H. W. DAVEY, 2 (SAM); Victoria, 1 (holotype of *C. navicella*, BMNH); South Australia, BLACKBURN, 1 (SAM); Australia, 3 (syntypes of *C. adelaidae*, 2 SAM, 1 BMNH).

Cassida aureola (SPAETH, 1915) n. comb.

(figs 27–29, 40, 94)

Mettriona aureola SPAETH, 1915: 239.

Length 4.4–4.5 mm, width 3.2–3.3 mm, length of pronotum 1.5–1.6 mm, width of pronotum 2.4–2.6 mm. Body short-oval (fig. 27).

Uniformly pale yellow, only distal four antennal segments slightly infusate.

Pronotum about 1.6 times wider than long, with maximum width at the middle, sides rounded (fig. 27). Disc moderately convex, impunctate, microreticulate, shiny. Explanate margin broad, impunctate, microreticulate, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc strongly, regularly convex, with maximum of the convexity in anterior third (fig. 28). Postscutellar depressions hardly marked. Punctuation of disc regular, moderately large and dense, intervals about as wide as puncture diameter. Intervals flat on whole length, their surface glabrous, shiny. Marginal interval about twice wider than submarginal one. Punctures of marginal row about as large as in submarginal row. Explanate margin moderately broad, on whole length moderately declivous, impunctate, shiny. Humeral angles distinctly protruding anterad, subangulate (fig. 28). Apex of elytral epipleura bare.

Clypeus 1.2 times wider than long, flat, impunctate, microreticulate but shiny, its anterior edge broadly rounded into arch (fig. 29). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 29).

Antennae moderately long, reaching beyond hind margin of pronotum by last 2.5 segments. Length ratio of antennal segments: 100:40:59:64:64:45:50:50:59:59:95 (fig. 40).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

AUSTRALIA. North Queensland: Somerset, 1875, ALBERTIS, 1 (syntype, MCSNG); Cooktown, 3 (2 SAM, 1 LB); Chillagoe, 1 (syntype, DEI); Cape York, 2 (MLM); Australia, 1 (syntype, MM).

Cassida lawrencei n. sp.

(figs 39, 61, 71, 89, 94)

This species is dedicated to J. F. LAWRENCE, an excellent Australian coleopterist.

Length 5.0–5.5 mm, width 3.9–4.3 mm, length of pronotum 1.9–2.2 mm, width of pronotum 2.9–3.1 mm. Body oval in female, short-oval in male (fig. 61).

Uniformly pale-yellow.

Pronotum 1.4–1.5 times wider than long, with maximum width slightly in front of the middle, sides broadly rounded (fig. 61). Disc moderately convex, impunctate, microreticulate, shiny. Explanate margin broad, impunctate, microreticulate, shiny.

Base of elytra wider than pronotum, anterior margin indistinctly crenulate. Disc strongly convex, with maximum of the convexity in anterior third (fig. 71). Postscutellar depressions shallow but distinct. Puncturation of disc regular, large and dense, rows of punctures partly broken by elytral relief. Relief forms an indistinct X-shaped postscutellar elevation, and several transverse folds in anterior half of disc, except marginal intervals. Intervals narrow, as wide as diameter of punctures or slightly narrower, their surface uneven, shiny. Marginal interval about four times wider than submarginal one. Punctures of marginal row about 1.5–2.0 times larger than in submarginal row. Explanate margin moderately broad, moderately declivous, in posterior third subhorizontal. Humeral angles strongly protruding anterad, more elongate than in *C. aureola*, subacute (fig. 71). Apex of epipleura bare.

Clypeus about 1.3 times wider than long, flat, impunctate, microreticulate but shiny, its anterior edge subangulate (fig. 89). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 89).

Antennae moderately long, reaching beyond hind margin of pronotum by last two segments. Length ratio of antennal segments: 100:46:54:54:46:42:50:54:58:50:96 (fig. 39).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

AUSTRALIA. "Daly R. [iver], N. [orthern] T. [erritory], H. Weselman, holotype and paratype (SAM); N. [orth] Q. [ueensland], Bamaga, Dec. 1983, J. W. SEDLACEK, paratype (QM).

Cassida astrolabiana (SPAETH, 1903) n. comb.

(figs. 35, 48, 49, 67, 92, 97)

Mettriona astrolabiana SPAETH, 1903: 131, 1909: 28, 1914: 142.

Length 4.8–5.6 mm, width 4.0–4.5 mm, length of pronotum 1.7–1.9 mm, width of pronotum 2.8–3.2 mm. Body almost circular (figs 48, 49).

Pale yellow, last segment of antennae more or less infusate. Elytra with elongate black spot beyond scutellum, and black band along sides of disc. Last interval always yellow, penultimate interval often with yellow spot in the middle. Scutellum and posterior half of suture always yellow (figs 48, 49).

Pronotum 1.6–1.7 times wider than long, with maximum width at the middle, sides rounded (fig. 48). Disc moderately convex, impunctate, without or with indistinct microreticulation, shiny. Explanate margin broad, impunctate, glabrous, shiny.

Base of elytra distinctly wider than pronotum, anterior margin indistinctly crenulate. Disc strongly, regularly convex, with maximum of the convexity in anterior third (fig. 67). Postscutellar depressions distinct, suture between them distinctly elevated. Yellow area between suture and internal edge of lateral black band slightly elevated. Puncturation of disc on sides regular, on pale relief regular or rows partly broken or/and disordered. Intervals 1.5–2.0 times wider than diameter of punctures. Marginal interval about as wide as submarginal one. Punctures of marginal row about as large or slightly larger than in submarginal row. Explanate margin broad, moderately declivous, glabrous, shiny. Humeral angles moderately protruding anterad, subangulate. Apex of elytral epipleura bare.

Clypeus 1.4 times wider than long, flat, impunctate, microreticulate but shiny, its anterior edge regularly curved into arch (fig. 92). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 92).

Antennae long, reaching beyond hind margin of pronotum by last four segments. Length ratio of antennal segments: 100:35:70:70:62:58:62:62:108 (fig. 35).

Last tarsal segments as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

PAPUA NEW GUINEA, Madang, VII 1968, N. L. Krauss, 11 (BM), III 1979, 1 (MHNG); Madang Distr., Wanuma, 600–720 m, VIII 1968, N. L. KRAUSS, 2 (BM); Astrolabe Bay: Stephansort, 2 (syntype HNHM,

1 LB); Friedrich-Wilhelmshafen, BIRÓ, 1 (syntype HNHM); Erima, BIRÓ, 1 (syntype HNHM); Huon Golf, Sattelberg, 1900, BIRÓ, 1 (HNHM); New Guinea, Fenickel, 4 (syntypes, MM); New Britain: Olapuín, 800 m, VII 1979, R. EMERY, 1 (MHNG); Keravat, X 1949, N. L. KRAUSS, 2 (BM); Silanga, Nakana Mts, 31 VII 1956, E. J. FORD Jr., 1 (BM); Gazelle Pen., Gaulim, 100–150 m, 20–28 XI 1962, J. SEDLACEK, 1 (BM).

***Cassida papuana* (SPAETH, 1903)**

(figs 38, 50–52, 68, 93, 98)

Metriorhina papuana SPAETH, 1903: 130, 1914: 142, 1926: 309, 1932: 137.

Cassida papuana: KIMOTO et al., 1984: 56.

Length 5.2–5.8 mm, width 4.5–4.7 mm, length of pronotum 1.7–2.0 mm, width of pronotum 2.9–3.2 mm. Body almost circular (figs 50–52).

Pale yellow, last segment of antennae more or less infuscate. Pronotum with large basal spot, varying in size and shape (figs 50–52), in forms from New Guinea the spot usually is marked by small yellow spots on each side (figs 50, 51), in forms from New Britain and Solomon Is. the spot is usually narrower and longer with no yellow spots on sides (fig. 52). Scutellum black or with a small, yellow spot in the middle. Elytra with elongate spot beyond scutellum, similar as in *C. astrolabiana* but usually expanded apically, and with a black band along sides (fig. 52). In the palest forms the band occupying area between rows 4 to 9, last interval and apex of disc yellow (fig. 52), in the darkest forms only base of disc, anterior half of last interval, apex of disc and elongate spot in anterior third of disc between rows 1 to 4 yellow (fig. 50). Between these forms intermediate aberrations are present. Suture in posterior half partly black.

Pronotum 1.6–1.7 times wider than long, with maximum width at the middle or slightly in front of the middle, sides rounded. Disc moderately convex, impunctate, indistinctly microreticulate, shiny. Explanate margin broad, impunctate, shiny.

Base of elytra distinctly wider than pronotum, anterior margin indistinctly crenulate. Disc strongly, regularly convex, with maximum of the convexity in anterior third (fig. 68). Postscutellar depressions distinct, suture between them elevated. Yellow area between suture and internal

edge of lateral band slightly elevated. Punctuation of disc regular, but in yellow parts of elytra rows sometimes broken or disordered. Intervals 1.5–2.0 times wider than diameter of punctures, their surface glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row slightly larger than in submarginal row. Explanate margin broad, moderately declivous, glabrous, shiny. Humeral angles moderately protruding anterad, subangulate. Apex of elytral epipleura bare.

Clypeus about 1.3 times wider than long, flat, impunctate, microreticulate but shiny, its anterior edge regularly curved into arch (fig. 93). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 93).

Antennae elongate, reaching beyond hind margin of pronotum by four last segments. Length ratio of antennal segments: 100:32:43:57:57:36:50:50:50:57:110 (fig. 38).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

INDONESIA. Ambon Is.: Waai, 7 IX 1961, A. M. WEGNER, 1 (BM); Morcala, 31 I 1979, HELON, 1 (MCSNV); West Irian: Biak Is., Biak Airport, 19–24 V 1959, T. C. MAA, 1 (BM); Geelvink Bay, Nabire, 2–9 VIII 1962, light trap, J. L. GRESSITT, 1 (BM); Geelvink Bay, Andai, VII 1872, ALBERTIS, 1 (syntype, MCSNG).

PAPUA NEW GUINEA. NE New Guinea: Mt Lamington, C. T. McNAMARA, 3 (SAM); Torricelli Mts, I 1939, E. L. CHEESMAN, 2 (SAM); Garaina, 830 m, 13–15 I 1968, 800 m, 16 I 1968, J. SEDLACEK, 2 (BM); Kokoda, 400 m, 22 III 1956, J. L. GRESSITT, 2 (1 BM, 1 LB), 14–16 XI 1965, J. SEDLACEK, 1 (BM); Northern Distr., Buka Bara, 23 IX 1963, P. SHANAHAN, 1 (BM); SE New Guinea: Popondetta, IV 1966, G. LIPPERT, 1 (BM), V 1966, P. SHANAHAN, 1 (BM), VI 1966, P. SHANAHAN and G. LIPPERT, 1 (BM), 13 V 1967, R. STRAATMAN, 3 (2 BM, 1 LB); Jumbora, 26 X 1963, 3 (2 BM, 1 LB); Cape Killerton, 17–20 X 1963, 1 (BM); New Britain: Oiaipuu, 800 m, VIII 1979, R. EMERY, 11 (8 MHNG, 3 LB); Gazelle Pen., Gaulim, 140 m, 21–26 X 1962, 20–28 XI 1962, J. SEDLACEK, 2 (1 BM, 1 LB); Gazelle Pen., Upper Warangoi, Araburn, 250 m, 28 XI 1962, J. SEDLACEK, 1 (BM); New Ireland, Kandan, 24 XII 1959, W. W. BRANDT, 1 (BM); Solomon Is.: Bougainville, Kieta Distr., Buka,

HANAHAN, 26 XII 1969, 28 XII 1969, J. E. TOBLER, 3 (CAS); Bougainville, Bush E of Buin, 7 I 1970, J. E. Tobler, 1 (CAS); Bougainville, NE Mutahi, 18 km SE Tinputz, 70 m, 1-7 III 1968, R. STRAATMAN, 2 (BM); Bougainville, Kokuro, near Crown, 900 m, 9 VI 1956, E. J. FORD Jr., 1 (BM).

SOLOMON IS. Kolombangara Is.: Ringi Cove, 14 I 1970, J. E. TOBLER, 5 (CAS); road to Airport, 18 I 1970, J. E. TOBLER, 4 (CAS); Malaita Is., Auki, 24 I 1970, J. E. TOBLER, 4 (CAS); Rendova Is., Hopongo, 12 IX 1967, E. SCHEFFLER, 3 (2 PMNH, 1 LB).

Cassida diomma BOISDUVAL, 1835

(figs. 32, 53-58, 69, 90, 95)

Cassida diomma BOISDUVAL, 1835: 540; KIMOTO et al., 1984: 55, 56.

Coptocyclus Diomma: BOHEMAN, 1855: 213, 1862: 425.

Metriona diomma: SPAETH, 1903: 113, 1906: 38, 1913: 448, 1914: 142, 1932: 137.

Cassida strigula MONTROUZIER, 1855: 67; KIMOTO et al., 1984: 54, 56, **n. syn.**

Coptocyclus strigula: BOHEMAN, 1862: 435.

Metriona strigula: SPAETH, 1915: 237.

Metriona diomma strigula: SPAETH, 1903: 133, 1914: 142.

Metriona strigula sudibunda SPAETH, 1915: 238, **n. syn.**

Metriona callosipennis SPAETH, 1903: 135, 1914: 142, **n. syn.**

Metriona callosipennis dispar SPAETH, 1903: 135, 1914: 142 (as variety), **n. syn.**

Metriona strigula callosipennis: SPAETH, 1915: 237.

Chirida simplaria BLACKBURN, 1896: 106, **n. syn.**

Metriona simplaria: SPAETH, 1914: 142.

Length 5.3-6.8 mm, width 4.4-5.9 mm, length of pronotum 1.7-2.1 mm, width of pronotum 3.1-3.9 mm. Body short-oval to almost circular (figs 53-58).

Extremely variable species. Pale yellow, last three antennal segments more or less infuscate. Elytra with dark pattern. In pale forms elytra yellow with reddish spots at suture and irregular reddish band along sides (fig. 58), these forms are common in northern and eastern Australia. With these forms often occur specimens with similar pattern but black (fig. 56). In New Guinea and adjacent islands more common are specimens with elytra mostly black with more or less developed yellow relief (figs 54, 55). In the darkest specimens elytra are completely black except marginal interval (fig. 53); this form is common in various parts of New Guinea,

especially in mountains. Occasionally specimens with completely black elytra have brownish basal spot on pronotal disc. External margin of dark elytral pattern usually irregular, partly running to eighth row of punctures partly to ninth one, only in the darkest forms the margin is regular and runs to ninth row of punctures. Scutellum yellow, only in the darkest forms brownish to black.

Pronotum 1.6–1.8 times wider than long, specimens from Australia, southern New Guinea and Samoa Is. have pronotum slightly longer and narrower. Maximum width of pronotum at the middle or slightly in front of the middle (especially in specimens from Australia), sides rounded. Disc moderately convex, impunctate, usually without microreticulation, shiny. Explanate margin broad, glabrous, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc strongly, regularly convex or with slightly marked postscutellar elevation (fig. 69), the maximum of the convexity in anterior third. Postscutellar depressions usually distinct, suture between them elevated. Yellow area between suture and lateral band more or less elevated with tendency to form an X-shaped postscutellar elevation. In forms with uniformly black elytra the surface of disc is mostly devoid of relief but always with marked X-shaped postscutellar elevation. In forms from Australia and southern New Guinea elytral relief is usually more elevated than in forms from northern New Guinea. Puncturation of disc regular, but often broken and disordered by elytral relief. Intervals as wide as, to about twice wider than, diameter of punctures, their surface glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row slightly to about twice larger than in submarginal row. Explanate margin broad, in specimens from Australia and southern New Guinea more declivous than in forms from northern New Guinea, especially specimens from northern coast of New Guinea have a very broad explanate margin which tends to form a shallow gutter. Surface of explanate margin glabrous, shiny. Humeral angles strongly protruding enterad, subangulate to angulate, especially the specimens from Northern Territory in Australia have the most angulate humeral angles.

Clypeus about 1.5 times wider than long, flat, impunctate, microreticulate, shiny, its anterior edge curved into arch (fig. 90). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 90).

Antennae long, reaching beyond hind margin of pronotum by last four segments. Length ratio of antennal segments: 100:39:57:68:71:60:71:71:71:78:121 (fig. 32).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

INDONESIA. All from West Irian, Waris, 450–500 m, 24–31 VIII 1959, T. C. MAA, 1 (BM); Wamena, 1700 m, 10–25 II 1960, on sweet potato, T. C. MAA, 2 (BM); Bokondini, 40 km N of Buliem V., 1300 m, 5–11 XI 1961, S. and L. QUATE, 1 (BM); Wisselmeren, Enarotali, 1750–1900 m, 31 VII 1962, 5–6 VIII 1962, 11 VIII 1962, J. SEDLACEK, 4 (BM); Geelvink Bay, Nabire, 0–30 m, 2–9 VII 1962, J. L. GRESSITT, 25 VIII – 5 IX 1962, J. SEDLACEK, 14 IX 1962, H. HOLTMANN, 31 (BM).

PAPUA NEW GUINEA, all from NE New Guinea, Koibuga, 1500 m, 3 VII 1963, 1 (BM); Central Distr., Tapini, 800–1000 m, XI 1968, N. L. KRAUSS, 1 (BM); Busu River, 50 m, 14 I 1965, J. SEDLACEK, 1 (BM); Morobe Distr., Mindik, 1200–1600 m, IX 1968, N. L. KRAUSS, 2 (BM); Morobe Distr., Wau, 1200–1800 m, 25 VI 1961, 3 XII 1961, 2–4 I 1963, 2 V 1963, 6 V 1963, 15 VIII 1963, 13–15 IX 1965, 24 XII 1965, J. SEDLACEK, 26 VIII 1963, H. CLISSOLD, 14 (BM), Wau, Bulolo R., 850–950 m, 4 II 1966, J. SEDLACEK, 1 (BM), Wau, Kunai Ck., 1200–1250 m, 15 V 1965, 1700–1800 m, XII 1965, J. SEDLACEK, 28–30 V 1963, P. SHANAHAN, 4 (BM), Wau, Sandy Ck., 25 XII 1963, H. CLISSOLD, 4 (BM), Wau, Mt Kaindi, 1500–1800 m, 12–14 VI 1963, P. SHANAHAN, 1 (BM), Wau, Mt Missim, 1200–1800 m, 8 XII 1963, H. CLISSOLD, 2 (BM), Wau, Hospital Ck., II 1965, 18 V 1965, 9 I 1966, J. SEDLACEK, 3 (BM), Wau, Vandomi, 1100 m, XI 1961, J. SEDLACEK, 2 (BM), Wau, Kujern, 1500 m, 27 X 1969, A. B. MIRZA, 1 (BM); Hunon Pen., Finschafen, 10 m, 12–14 IV 1963, J. SEDLACEK, 6 (BM), Huon Pen., Finschafen, 80–200 m, 13 IV 1963, J. and M. SEDLACEK, 2 (BM), Huon Pen., Pindiu, 950–1200 m, 17 IV 1963, J. SEDLACEK, 1 (BM), Huon Pen., Zaleng, 1300–2000 m, 23 IV 1963, J. SEDLACEK, 1 (BM), Huon Pen., Zengaren, 1200 m, 28 IV 1963, J. SEDLACEK, 1 (BM), Huon Pen., Lae., 15 m, 27 V 1956, E. J. FORD Jr., 4 VII 1961, J. SEDLACEK, 20 I 1962, G. MONTEITH and J. SEDLACEK, 7 (BM), Lae, Singawa R., 4 IV 1966, J. L. GRESSITT, 2 (BM); Morobe, Kaiapit, XII 1978, 2 (MHNG); E Highlands, Purosa, 1700 m, 17–25 V 1966, J. L.

GRESSITT, 2 (BM); Bupu R., Sicium Vill., 19 km NE Lae, 15 IV–15 V 1970, N. R. SPENCER, 2 (BM); Bulem R., 64 km N Lae, 29 IV 1963, J. SEDLACEK, 2 (BM); Karimui, S of Goroka, 1000 m, 3–5 VI 1961, J. L. and M. GRESSITT, 1080 m, 13 VII 1963, J. SEDLACEK, 7 (BM), Mt Karimui, 1000 m, 16–20 IV 1977, on *Ipomea*, M. K. GRESSITT, 1 (BM); Tifalmin, 1350 m, 19 VIII 1963, R. STRAATMAN, 3 (BM); Feramin, 1450, 21 VIII 1963, R. STRAATMAN, 4 (BM); Bulolo R., 700 m, 29 VII 1969, Y. Hirashima, 26 X 1969, SEDLACEK, 3 (BM); Goroka 1550 m, 19 VI 1955, J. L. GRESSITT, 2 (BM); Wum, Upper Jimmi Vall., 840 m, 16 VII 1955, J. L. GRESSITT, 1 (BM); Miramar, Asaro Vall., 1800 m, 27 VI 1955, J. L. Gressitt, 1 (BM); Torricelli Mts, Mokai Vill., 750 m, 1–23 I 1959, W. W. BRANDT, 1 (BM), Torricelli Mts, I 1939, E. L. CHEESMAN, 1 (SAM); Watut, 850 m, 1 VI 1967, J. L. GRESSITT, 1 (BM); 24 km W Bulolo, 5–6 III 1963, J. SEDLACEK, 1 (BM); Kassem Pass, 1400–1430 m, 4 IX 1964, J. and M. SEDLACEK, 5 (BM); Hagen town, 1650 m, 30 V 1966, J. L. GRESSITT, 2 (BM); Sepalakambang, Salawaket Range, 1920 m, 12 IX 1956, E. J. FORD Jr., 1 (BM); Goiburung, E of Korn Farm, 1560–1650 m, 16 X 1958, on *Crotolaria*, J. L. GRESSITT, 1 (BM); 13 km SE Okapa, 1650–1870 m, 26 VIII 1964, J. and M. SEDLACEK, 2 (BM); Snake R., 48 km S Lae, 25 XII 1962, J. SEDLACEK, 1 (BM); Mt Gyifrie, IV 1939, E. L. CHEESMAN, 2 (SAM). All from SE New Guinea, Vanapa R., 29 II 1964, J. SEDLACEK, 4 (BM); Brown R., 23 V 1956, E. J. FORD Jr., 1 (BM), Brown R., 20 km N Port Moresby, 27–29 IV 1960, C. W. O'BRIEN, 2 (BM); Murua near Kerema, 5–25 m, 6 V 1959, C. D. MICHENER, 22 XII 1964, J. SEDLACEK, 4 (BM); Kerema, 3–9 V 1959, C. D. MICHENER, 1 (BM); W Highlands, Minj, 8–13 IX 1959, T. C. MAA, 2 (BM); Oriomo Govt. Stat., 26–28 X 1960, J. L. GRESSITT, 1 (BM); between Laloki R. and Brown R., 35 m, 16 III 1956, J. L. GRESSITT, 2 (BM); Laloki, on *Ipomoea batatas*, 8 VIII 1963, L. SMEE and J. SZENT-IVANY, 2 (BM); Doradae Plain, 80 km N to Port Moresby, 500 m, 4 IX 1959, T. C. MAA, 1 (BM); Owen Stanley Range, Goilala, Loloipa, 11–20 XII 1957, W. W. BRANDT, 1 (BM), Goilala, Tororo, 15–20 II 1958, W. W. BRANDT, 1 (BM); Kapagere near Rigo, 14–19 V 1959, C. D. MICHENER, 1 (BM); Fly R., Olsobip, 600 m, VIII 1969, Fly R., Kiunga, 35 m, VIII 1969, J. and M. SEDLACEK, 12 (BM); Weam, 9 m, 14 VI 1964, H. W. CLISSOLD, 7 (BM); Milne Bay, III 1965, J. SEDLACEK, 1 (BM); Moorhead, 18 m, 6 VII 1964, 1 (BM); Samarai, 5 VI 1939, 10 IX 1939, R. G. WIND, 4 (CAS); New Guinea, Victoria, Doherty,

1 (LB); New Guinea, Katow, 1 (MLM); 1928, 1 (DZPAS); Yule Is., 6 (MLM); Daru Is., 3 m, 25 VII 1964, H. W. CLISSOLD, 1 (BM); New Ireland, Kinogogo road near Kura Plateau, 40 km N Namatanai, 10–11 XII 1969, J. E. TOBLER, 1 (CAS).

AUSTRALIA Queensland, Prince of Wales Is., 17 II 1939, R. G. WIND, 2 (CAS); Halifax, V 1920, 1 (LB); Cairns, VIII 1890, I 1891, C. J. WILD, 4 (QM), J. A. ANDERSON, 1 (QM), 2 (MLM), 2 (syntypes of *Metriona strigula sudibunda*, 1 BMNH, 1 MM); N. Queensland, 1 (holotype of *Chirida simplaria*, BMNH); Cooktown, 2 (syntypes of *Metriona callosipennis*, MM); Thursday Is., 3 (syntypes of *Metriona callosipennis dispar*, MM); Cape York, H. ELGNER, 4 (SAM), 1 (QM); Mulgrave, H. HACKER, 1 (QM); N Pine Riv., 7 VII 1929, H. HACKER, 1 (QM); Pt Denison, 3 (MLM); Rockhampton, 1 (MLM); Cape York, 1 (MLM); Gayndah, 2 (MLM); Cape Grenville, 3 (MLM); Brookfield, 2 I 1985, 22 I 1985, V. R. BEJSAK, 2 (VRB), H. HACKER, 1 (QM); Brisbane, 17 I 1912, H. HACKER, 1 (QM), O. W. TIEGS, 1 (QM); Northern Territory, Radon Ck., 14–16 VII 1979, G. MONTEITH and D. COOK, 1 (QM); Northern Territory, Daly R., H. WESSELMAN, 2 (SAM); NW Australia, 2 (MLM).

SAMOA. Upolu Is., Mulivai, I 1978, N. L. KRAUSS, 14 (10 ZMK, 4 LB), probably introduced.

***Cassida compuncta* (BOHEMAN, 1855) n. comb.**

(figs 36, 59, 60, 66, 91, 94)

Coptocyclus compuncta BOHEMAN, 1855: 290, 1862: 440.

Metriona compuncta: SPAETH, 1914: 142, 1915: 235.

Length 4.9–5.6 mm, width 3.8–4.2 mm, length of pronotum 1.8–2.0 mm, width of pronotum 2.7–3.1 mm. Body short-oval to almost circular (figs 59, 60).

At first glance very similar to the palest forms of *C. diomma*. Pale yellow, last four to five antennal segments infusate. Elytra with reddish pattern occupying almost whole disc. External margin of the red pattern regular, with no emarginations, runs to eighth row of punctures. Suture always reddish on whole length except extreme apex. On the reddish background, yellow forms irregular band along disc close to suture (figs 59, 60). Scutellum always yellow.

Pronotum 1.5–1.6 times wider than long, with maximum width at the middle, sides more or less rounded. Disc moderately convex, impunctate, indistinctly microreticulate, shiny. Explanate margin broad, microreticulate, shiny.

Base of elytra wider than pronotum, anterior margin slightly crenulate. Disc strongly, regularly convex, with top of the convexity in anterior third, in posterior half the disc a little more convex than in *C. diomma* (fig. 66). Postscutellar depressions shallow, less distinct than in *C. diomma*, so suture between them only slightly elevated. Yellow band along disc slightly elevated but with no tendency to form a distinct X-shaped postscutellar elevation. Punctuation of disc regular but rows partly broken and disordered by elytral relief. Intervals as wide as to two times wider than diameter of punctures (punctures usually have a dark areola and seem to be larger than in reality), surface of intervals glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row as large as or slightly larger than in submarginal row. Explanate margin broad, but narrower than in *C. diomma*, its surface is slightly uneven, not as glabrous as in *C. diomma*. Humeral angles less protruding anterad than in *C. diomma*, subangulate to rounded.

Clypeus narrower than in *C. diomma*, about 1.2–1.3 times wider than long, flat, microreticulate, shiny, its anterior edge rounded into arch (fig. 91). Prosternal process broad, strongly expanded apically, with no special sculpture (fig. 91).

Antennae long, reaching beyond hind margin of pronotum by last four segments. Length ratio of antennal segments: 100:38:54:65:54:50:54:58:65:62:108 (fig. 36).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

AUSTRALIA. S Queensland: Maryborough, E. W. FISCHER, 1 (SAM); Brisbane, J. TURNER, 1 (SAM), Hacker, 1 (DEI); Southport, 24 X 1926, H. HACKER, 1 (LB); Queensland, 1 (SAM); NE New South Wales: Clarence R., LEA, 3 (1 SAM, 2 MLM); Hunter R., 2 (MLM); Manning R., 5 (MLM); Australia, 6 (3 QM, 3 LB).

Cassida sexguttata BOISDUVAL, 1835

(figs 34, 63, 72-75, 87, 96).

Cassida sexguttata BOISDUVAL, 1835: 539; KIMOTO et al., 1984: 55, 56.

Coptocyclus sexguttatus BOHEMAN, 1855: 240, 1862: 430.

Metrioria sexguttata SPAETH, 1903: 122, 1914: 142.

Coptocyclus Holmgreni BOHEMAN, 1862: 465, n. syn.

Metrioria Holmgreni SPAETH, 1903: 122, 1914: 142.

Matriona Holmgreni tessellata SPAETH, 1903: 123, 1914: 142, n. syn.

Metrioria Holmgreni translapsa SPAETH, 1915: 239, n. syn.

Chirida multicolor BLACKBURN, 1896: 103, n. syn.

Metrioria multicolor: SPAETH, 1913: 448, 1915: 238.

Metrioria Holmgreni multicolor: SPAETH, 1903: 122, 1906: 38, 1909: 27, 1914: 142, 1915: 238.

Length 5.1-6.6 mm, width 4.2-5.5 mm, length of pronotum 1.9-2.2 mm, width of pronotum 3.0-3.7 mm. Specimens from Australia usually smaller than those from New Guinea. Body almost circular (figs 72-75).

Extremely variable species. In various parts of the range different colour forms dominate. Pale yellow, last one to three antennal segments infuscate. Pronotum only in the palest forms from Australia immaculate (fig. 75), in most specimens with basal spot of various shape and size (figs 72-74). In pale forms from Australia the spot is reddish-brown, V-shaped (fig. 74), or forms two parallel lines in front of scutellum. In forms with partly black elytra, basal spot of pronotum is black, varying from elongate, narrow, only slightly wider than base of scutellum (fig. 72) to broad, square or trapezoidal, almost as wide as base of pronotal disc (fig. 73), often the spot is distinctly constricted in the middle, bobbin-like. Basal margin of pronotal disc in dark forms usually black on whole length. Elytra vary from reddish to black with yellow relief. In pale forms from Australia each elytron reddish to brown with 4-10 yellow spots, from which four are always present: round spot in the middle of basal margin of disc; large, usually X-shaped spot beyond scutellum; small round spot laterally to postscutellar elevation, and a more or less regular spot at suture in posterior third of disc (fig. 74). In dark forms from New Guinea each elytron mostly black with three spots: small, round in the middle of basal margin of disc; large, more or less round in the postscutellar area, and a moderately large, more or less round at suture in posterior third of disc. External half of humerus, emargination in the middle of lateral margin of disc and apex of disc usually yellow (fig. 72).

Often some small additional spots are present, especially an elongate spot at the top of scutellum, a round spot laterally to postscutellar spot, and another round spot between the subapical spot and lateral emargination. In the darkest forms whole surface of disc, including last interval, black with small spots: a round in the middle of basal margin of disc; an irregular, beyond scutellum; a round in posterior third of disc close to suture, and transverse in the middle of marginal interval (fig. 73). Scutellum in pale forms yellow, in dark forms black. Between above described aberrations all intermediate forms may be detected.

Pronotum 1.6–1.7 times wider than long, with maximum width at the middle, sides rounded. Disc moderately convex, impunctate, more or less microreticulate, shiny. Explanate margin broad, impunctate, microreticulate, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc regularly convex or with very low postscutellar elevation (fig. 63), with top of the convexity in anterior third. Postscutellar depressions distinct, suture between them elevated. Yellow spots of disc more or less elevated, in pale forms from Australia spots more elevated than in dark forms from New Guinea, especially in postscutellar area spots usually form a X-shaped postscutellar elevation. Forms with regularly round spots usually have no postscutellar elevation. Punctuation of disc regular, but always broken and disordered by elytral relief. Large spots of disc usually impunctate or with one to three punctures. Intervals as wide as to twice wider than diameter of punctures, glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row slightly larger than in submarginal row. Explanate margin very broad, especially in forms from New Guinea, subhorizontal with tendency to form a shallow gutter, impunctate, shiny. Humeral angles strongly protruding anterod, subangulate.

Clypeus 1.3–1.4 times wider than long, flat, impunctate, microreticulate but shiny, its anterior edge subangulate (fig. 87) to rounded. Prosternal process broad, flat, strongly expanded apically, without special sculpture (fig. 87).

Antennae long, reaching beyond hind margin of pronotum by last three segments. Length ratio of antennal segments: 100:47:60:60:76:60:53:53:57:57:101 (fig. 34).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

PAPUA NEW GUINEA. All from NE New Guinea, Lae, Busu R., 10 XI 1969, J. SEDLACEK, 2 (BM), Lae sea level, 4 VII 1961, J. SEDLACEK, 1 (BM), 48 km E Lae, 30 m, 20 III 1963, J. SEDLACEK, 1 (BM); Kuper Ra, 25–26 I 1969, J. Sedlacek, 1 (BM); Kerema, 9 VI 1968, P. H. Colman, 1 (BM); Buka Bara, 23 IX 1963, P. Shanahan, 1 (BM); Talibu, 2700 m, 8–14 IV 1968, J. L. GRESSITT and T. C. MAA, 1 (BM); Bupu R., Sitium Vill., 19 km SE Lae, 15 IV–15 V 1970, N. R. SPENCER, 1 (BM); Ulup, 800–1100 m, IX 1968, N. L. KRAUSS, 3 (BM); Garaina, 550–750 m, 16 I 1968, J. SEDLACEK, 1 (BM), Garaina-Saureli, 5 I 1968, J. SEDLACEK, 1 (BM); Bulolo R., 680 m, 2 II 1969, J. SEDLACEK, 17 IX 1969, A. B. MIRZA, 4 (BM), Bulolo-Vatut, 22–31 V 1969, J. SEDLACEK, 1 (BM); Wau, 900–1200 m, 15 XII 1961, 16–19 V 1962, 29–30 IX 1963, 12 I 1965, J. SEDLACEK, 6 VIII 1963, H. CLISSOLD, VII 1968, N. L. KRAUSS, 6 (BM); Kalalo, 20–30 VIII 1966, T. MENA, 3 (BM); Huon Pen., Finschafen, 10–13 IV 1963, J. SEDLACEK, 5 (BM), 21 IV 1944, E. S. ROSS, 17 (CAS), 1 mil. N Finschafen, 16 XI 1969, J. E. TOBLER, 1 (CAS); Morobe, Kaiapit, XI–XII 1978, II–IV 1979, 18 (15 MHNG, 3 LB); Kainantu, Ouerunka, II 1979, 1 (MHNG); Busu R., 16 km E Lae, 1 X 1969, J. E. Tobler, 1 (CAS); Surprise Ck., 12 mil. N Bulolo, 10 VIII 1955, G. D. WOODARD, 1 (CAS); Astrolabe Bay: Staphansort, 1 (HNHM), Erima, 1 (HNHM), Bay, 1 (MM). All from SE New Guinea, Oriomo R., 9 II 1964, 1 (BM), Oriomo Govt. Stat., 27 X 1960, J. L. GRESSITT, 1 (BM); Milne Bay, 14–23 II 1969, J. SEDLACEK, 1 (BM); Port Moresby to Brown R., 10 m, 16 XII 1964, 30 m, 29 X–1 XI 1965, J. SEDLACEK, 2 (BM); Western Distr., 2 VIII 1964, H. CLISSOLD, 1 (BM); Keparra Songi, Kokoda, 500 m, 26 III 1956, on Sago palm, J. L. GRESSITT, 1 (BM); Kura, 12 VIII 1964, 15 VIII 1964, H. CLISSOLD, 4 (BM); Fly R., Kiunga, 35 m, 24–27 VIII 1957, W. W. BRANDT, VIII 1969, J. and M. SEDLACEK, 8 (BM), Fly R., Olsobip, 600 m, VIII 1969, 1160 m, 23 VIII 1969, J. and M. SEDLACEK, 3 (BM); Popondetta, 60 m, 1–4 IX 1963, J. SEDLACEK, 6 (BM); Ruka, 12 VIII 1964, 9 VIII 1965, H. CLISSOLD, 6 (BM); Daru Is., 20–22 VII 1964, H. CLISSOLD, 2 (BM); New Britain: Olaiupuu, 800 m, VIII 1979, R. EMERY, 3 (MHNG); Gazelle Pen., Mt Sinewit, 900 m, 14–16 XI 1962, J. SEDLACEK, 1 (BM), Gazelle Pen.,

Upper Warangoi, 350–600 m, 28–29 XI 1962, J. SEDLACEK, 1 (BM); New Guinea, 1 (MLM).

INDONESIA. West Irian: Merauke, 1904, KOCH, 1 (LB); Irian, Ifar, Cyclops Mts, 300–500 m, 28–30 VI 1962, J. SEDLACEK, 1 (BM); Geelvink Bay Nabire, 2–9 VII 1962, 25 VIII–2 IX 1962, J. SEDLACEK, 22 VIII–2 IX 1962, H. HOLTMANN, 8 (BM); Dafo, 50 km W Hollandia, 120 m, 12 XI 1961, S. Quate, 1 (BM).

AUSTRALIA. Northern Territory: Darwin, G. F. HILL, 3 (SAM); Adelaide R., H. W. BROWN, 1 (SAM); J. P. TEPPER, 1 (SAM); Queensland, Endeavour R., 2 (MLM), N Queensland, 1 (syntype of *Chirida multicolor*, BMNH), Queensland, 1 (syntype of *Chirida multicolor*, SAM), Queensland, Pt Denison, 2 (SAM); Australia borealis, 1 (IZPAS), Australia, 2 (IZPAS); Nova Hollandia, 1 (syntype of *Metriona holmgreni tessellata*, MM).

***Cassida albertisi* (SPAETH, 1903) n. comb.**

(figs 33, 62, 76, 77, 85, 99)

Metriona Albertisi SPAETH, 1903: 121, 1914: 142.

Length 6.0–7.2 mm, width 5.4–6.2 mm, length of pronotum 2.1–2.3 mm, width of pronotum 3.5–4.0 mm. Body almost circular (figs 76, 77).

Similar to *C. sexguttata*, especially to the dark forms from New Guinea, but slightly larger and with rather constant maculation. Pale yellow, last three antennal segments more or less infusate. Pronotum with large basal, triangular spot (figs 76, 77). The spot sometimes with narrow, median, longitudinal, yellow line in anterior half. Elytra black, with 3–6 yellow spots: always with round spot in the middle of basal margin of disc, large spot in anterior third of disc close to suture, and spot in the middle of lateral margin of disc (fig. 77). Spots of basal margin of disc and of anterior third of disc often connected (fig. 76). Sometimes at basal margin of disc close to humerus a small, additional spot and also a very small round spot between the lateral and subapical spots. Last elytrial interval except apex black. Explanate margin yellow, or occasionally with large humeral and posterolateral spots (fig. 76; only one of the examined specimens, holotype of *C. albertisi*, possesses this character). Scutellum always black.

Pronotum about 1.7 times wider than long, with maximum width at the middle, sides rounded. Disc moderately convex, not or only slightly microreticulate, impunctate, shiny. Explanate margin broad, almost horizontal, glabrous, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc regularly convex, with top of the convexity in anterior third (fig. 62). Postscutellar depressions shallow but distinct, suture between them only slightly elevated. Yellow spots of disc not or only slightly elevated. Punctuation of disc regular, but rows broken and disordered by elytral spots. Large spots of disc unpunctured or possess 1-7 punctures. Intervals 1.5-2.0 times wider than diameter of punctures, their surface glabrous, shiny. Marginal interval as wide as submarginal one, or slightly narrower (especially in posterior half). Punctures of marginal row about as large as in submarginal row. Explanate margin very broad, with tendency to form a shallow gutter. Humeral angles strongly protruding anterad, subangulate.

Clypeus 1.4 times wider than long, impunctate, microreticulate, shiny, its anterior edge narrowly rounded into arch (fig. 85). Prosteral process broad, strongly expanded apically, without special sculpture (fig. 85).

Antennae long, reaching beyond hind margin of pronotum by last three segments. Length ratio of antennal segments: 100:33:68:68:60:56:56:53:63:63:113 (fig. 33).

Last tarsal segment about as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

PAPUA NEW GUINEA. NE New Guinea: Madang Distr., Wamona, 600-720 m, VIII 1968, N. L. KRAUSS, 1 (BM), Madang, 0-100 m, VIII 1968, N. L. KRAUSS, 1 (BM); NE Central Mts, Mulik, 10 km W Archbold Lake, 1050, 25 XI-5 XII 1961; S. and L. QUATE, 1 (BM); Astrolabe Bay, Erima, 1 (LB); SE New Guinea, Fly R., 1876-1877, L. M. D'ALBERTIS, 1 (holotype, MCSNG), Fly R., Olsobip, 400-600 m, VIII 1969, J. SEDLACEK, 10 (8 BM, 2 LB); Maffin Bay, 7-8 X 1944, E. S. ROSS, 2 (CAS); Kani Mts, 1 (LB); New Guinea, 3 (Zoological Museum, Lund University).

***Cassida cristobalensis* (SPAETH, 1936) n. comb.**

(figs 37, 70, 79, 88, 99)

Metriona cristobalensis SPAETH, 1936: 10.

Length 5.5 mm, width 4.5 mm, length of pronotum 1.8 mm, width of pronotum 2.9 mm. Body almost circular (fig. 79).

Very similar to dark forms of *C. sexguttata* and to *C. albertisi*. Pale yellow. Pronotal disc with large basal spot as in fig. 79. Elytra mostly black, except marginal interval, posterior half of submarginal interval, and four yellow spots on each elytron: a very small at base of humerus, a large in the middle of basal margin of disc, a very large in anterior third of disc close to suture, and a large irregular in posterior third of disc close to suture (fig. 79). From similarly shaped forms of *C. sexguttata* it differs in marginal interval which is yellow on whole length (in *C. sexguttata* marginal interval is darkened at least in posthumeral area). In *C. sexguttata* basal spot of pronotum is only occasionally as wide as in *C. cristobalensis*, and large median spot of elytral disc is usually not as regularly round as in *C. cristobalensis*. Similarly coloured *C. albertisi* differ in larger body, pronotal spot regularly triangular, and marginal interval partly black.

Pronotum 1.6 times wider than long, with maximum width slightly in front of the middle, sides broadly rounded. Disc moderately convex, impunctate, glabrous, shiny. Explanate margin broad, subhorizontal, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc regularly convex, with top of the convexity in front of the middle (fig. 70). Postscutellar depressions hardly marked, suture between them only slightly elevated. Punctuation of disc regular, but broken and disordered by elytral impunctate spots. Intervals 1.5–3.0 times wider than diameter of punctures, especially sutural intervals very broad because of small elytral punctuation. Surface of intervals glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row slightly larger than in submarginal row. Explanate margin very broad, impunctate, glabrous, shiny. Humeral angles strongly protruding anterad, subangulate.

Clypeus about 1.3 times wider than long, flat, impunctate, its anterior edge subangulate (fig. 88). Prosternal process broad, strongly expanded apically, without special sculpture (fig. 88).

Antennae long, reaching beyond hind margin of pronotum by last four segments. Length ratio of antennal segments: 100:35:50:47:47:35:41:41:44:41:71 (fig. 37).

Last tarsal segment about as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

SOLOMON IS. San Cristobal Is., R. A. LEVER, 1 (holotype, BMNH).

***Cassida biguttata* (SPAETH, 1903) n. comb.**

(figs. 30, 45, 65, 78, 84, 94)

Metriona biguttata SPAETH, 1903: 126, 1914: 142.

Metriona personata SPAETH, 1903: 127, 1914: 142, n. syn.

Cassida personata: KIMOTO et al., 1984: 55, 56.

Metriona personata *Loriae* SPAETH, 1903: 127, 1914: 142, n. syn.

Length 5.5–6.4 mm, width 4.9–5.7 mm, length of pronotum 2.0–2.4 mm, width of pronotum 3.3–3.8 mm. Body almost circular (fig. 78).

Pale yellow, antennae yellow or with last segment more or less infusate. Pronotal disc with large basal, trapezoidal, black spot (fig. 78). In pale forms anterior edge of the spot is deeply cleft medially by yellow. Occasionally, at base of the spot, close to anterior corners of scutellum there is a pair of oblique yellow spots. Elytra mostly black, each elytron with large yellow spot in anterior third close to suture (fig. 78). In the palest forms this spot extends from sutural row to sixth row, in the darkest forms the spot is smaller, extending from sutural row to fourth row. Marginal interval in pale forms yellow, in dark forms in anterior half black. In pale forms the elytral spot is more circular in outline, in dark forms it is rather rhomboidal. Scutellum always black.

Pronotum about 1.6 times wider than long, with maximum width at the middle, sides broadly rounded. Disc moderately convex, impunctate, glabrous, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc regularly convex with slightly marked postscutellar elevation, with top of the convexity in anterior third (fig. 65). Postscutellar depressions shallow but distinct, suture between them slightly elevated. Elytral spots depressed or slightly elevated. Punc-

turation of disc regular, but partly broken and disordered by elytral spots. Intervals in sutural part of disc about three times, on sides 1.5 times wider than diameter of punctures. Surface of intervals flat, glabrous, shiny. Marginal interval as wide as submarginal one. Punctures of marginal row about as large as in submarginal row. Explanate margin very broad, with tendency to form a shallow gutter, impunctate, glabrous, shiny. Humeral angles strongly protruding anterad but rounded.

Clypeus 1.5 times wider than long, flat, microreticulate, shiny, its anterior edge rounded into arch (fig. 84). Prosternal process strongly expanded apically, flat, without special sculpture (fig. 84).

Antennae long, reaching beyond hind margin of pronotum by last three segments. Length ratio of antennal segments: 100:46:60:63:80:70:80:66:73:73:120 (fig. 30).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

PAPUA NEW GUINEA. All from NE New Guinea: Garaina, 800 m, 15 I 1968, J. and M. SEDLACEK, 1 (BM), Garaina, Saureli, 5 I 1968, J. and M. SEDLACEK, 1 (BM); Zenag-Lae, 200 m, 13 II 1968, P. COLMAN, 2 (BM), Lae, Singuava R., 11 IV 1966, P. SHANAHAN, 2 (BM), Lae, VII 1944, F. E. SKINNER, 2 (BM), Lae, 13 XI 1969, J. E. Tobler, 1 (CAS), 56 km SW Lae, 18 III 1963, J. SEDLACEK, 1 (BM); Lambaeb, Salawaket Range, 900 m, 18 IX 1956, E. J. FORD Jr., 3 (BM); Wau, 1200 m, 23 II 1966, J. SEDLACEK, 1 (BM); Huon Pen., Pindiu, 700–1300 m, 21–1300 m, 21–22 IV 1963, J. SEDLACEK, 1 (BM), Huon Pen., Finschafen, 150 m, 14 IV 1963, J. SEDLACEK, 1 (BM); Bulolo R., 680 m, 2 II 1969, 1 (BM); Maprik, 150 m, 29 XII–17 I 1960, T. C. MAA, 1 (BM); Markham R., 50 m, 20–25 I 1962, J. SEDLACEK, 1 (BM); Dreikikir, Sepik Distr., 350–400 m, 23 VI 1961, J. SEDLACEK, 1 (BM); Torricelli Mts, Mobitei, 750 m, 16–22 IV 1959, W. W. BRANDT, 1 (BM); Morobe, Gurakor, 16 IX 1979, 1 (LB), Morobe, Kaiapit, XII 1978, 16 IX 1979, 3 (MHNG); Morobe Distr., Busu R., 16 km E Lae, 31 X 1969, J. E. TOBLER, 1 (CAS); Wareo, L. Wagner, 6 (SAM); Astrolabe Bay: Stephansort, 5 (4 syntypes of *Mettriona biguttata* MM, 1 LB), Erima, 1896, Biro, 1 (syntype of *Mettriona biguttata*, HNHM), 1 (LB); Cromwell Mts, 1 (LB). All from SE New Guinea, Popondetta, 3–4 IX 1963, J. SEDLACEK, 19 IX–15 X 1963, P. SHANAHAN, VI 1966, light trap,

SONNAHAN-LIPPERT, 6 (BM); Kokoda, 21 III 1956, J. L. GRESSITT, 17-18 XI 1965, J. and M. SEDLACEK, 4 (BM); Brown R., 12-23 X 1968, T. MENA, 1 (BM); Oro Bay, XI 1943-II 1944, J. HEFLER, 5 (BM); Keppara-Sengi near Kokoda, 27-28 III 1956, J. L. GRESSITT, 2 (BM); Arou Estate, W of Redscar Bay, 20 IX 1958, J. L. GRESSITT, 1 (BM); Daradae near Javarere, Musgrove R., 4 X 1958, J. L. GRESSITT, 1 (BM); Murua R., 17 XII 1964, J. SEDLACEK, 1 (BM); Milne Bay, 20 X 1943, W. B. JONES, 14-23 II 1969, J. SEDLACEK, 2 (BM), Milne Bay, (3 syntypes of *Metriona personata*, MM); Dilo, VI-VII 1890, LORIA, 1 (syntype of *Metriona personata lorae*, MCSNG); Fergusson Is., MECK, 1 (LB); New Guinea, 3 (DZPAS).

***Cassida salomonina* (SPAETH, 1936) n. comb.**

(figs 31, 64, 80-83, 86, 99)

Metriona salomonina SPAETH, 1936: 9.

Length 6.7-7.5 mm, width 5.6-6.0 mm, length of pronotum 2.2-2.4 mm, width of pronotum 3.6-3.9 mm. Body almost circular (figs 80-83), elytra in male regularly rounded spically, in female subangulate.

Pale yellow, last four antennal segments more or less infusate. Pronotal disc with large basal spot of variable size and shape (figs 80-83), the spot is always marked by two small, yellow spots at base of pronotum. Basal margin of explanate margin of pronotum black. Elytra mostly black with 7-13 yellow spots (including those at margin of disc, figs 80-83). Marginal interval partly black.

Pronotum about 1.6 times wider than long, with maximum width slightly in front of the middle, sides broadly rounded. Disc moderately convex, impunctate, glabrous, shiny. Explanate margin very broad, impunctate, shiny.

Base of elytra distinctly wider than pronotum, anterior margin slightly crenulate. Disc regularly convex, with top of the convexity in anterior third (fig. 64). Postscutellar depressions shallow, suture between them slightly elevated. Puncturation of disc regular but broken and disordered by elytral, more or less elevated, impunctate spots. Intervals in sutural part of disc about three times, on sides 1.5 times wider than diameter of punctures. Surface of intervals flat, glabrous, shiny. Marginal interval about as wide as submarginal one. Punctures of marginal row

about as large as in submarginal row. Explanate margin very broad with tendency to form a shallow gutter, impunctate, glabrous, shiny. Humeral angles strongly protruding anterad, subangulate.

Clypeus about 1.3 times wider than long, flat, impunctate, microreticulate, shiny, its anterior edge subangulate (fig. 86). Prosternal process strongly expanded apically, flat, without special sculpture (fig. 86).

Antennae long, reaching beyond hind margin of pronotum by last three segments. Length ratio of antennal segments: 100:41:62:67:59:56:56:61:59:112 (fig. 31).

Last tarsal segment as long as third one, claws simple but appearing appendiculate (fig. 45).

MATERIAL EXAMINED

PAPUA NEW GUINEA. All from Bougainville: Kieta, 6 (LB), Togerao, 600 m, 15–24 IV 1968, R. STRAATMAN, 1 (BM), Mutahi, 18 km SE Tinputz, 8–14 III 1968, R. STRAATMAN, 1 (BM), Buin, 31 XII 1969, 10–11 I 1970, J.E. TOBBLER, 3 (CAS), W of Buin, 30 XII 1969–7 I 1970, J. E. TOBBLER, 8 (CAS), Kieta Distr., Buka, 26 XII 1969, J. E. TOBBLER, 6 (CAS).

SOLOMON IS. Gizo Is.: 1931, R. A. LEVER, 3 (holotype BMNH, 2 paratypes MM), 20 IV 1964, 1 (BM); Fulakora Is., W. M. MANN, 2 (MCZ); Malaita Is., Auki, W. M. MANN, 1 (MCZ); Santa Isabel Is., WEBSTER, 3 (MCZ); Guadalcanal Is., Gold Ridge, 600 m, 22 VI 1956, J. L. GRESSITT, 1 (BM); Kolombangara Is., Ringi Cove, 16 I 1970, Ringi Cove, road to airport, 18 I 1970, 14 (CAS); Vella Lavella Is., 20 XI–13 XII 1943, P. D. HURD, 3 (CAS).

SPECIES EXCLUDED FROM THE AUSTRALIAN REGION AND FROM THE GENUS *CASSIDA*

Charidotella purpurata (BOHEMAN, 1855)

Coptocyclus purpurata BOHEMAN, 1855: 300.

Charidotella purpurata: SPAETH in HINCKS, 1952: 350.

Chirida lacunata BLACKBURN, 1896: 105, n. syn.

Metriona lacunata: SPAETH, 1914: 142.

BLACKBURN (1896) described *Chirida lacunata* from North Queensland. I have examined the holotype (BMNH) and this name is synonym of *Charidotella purpurata* (BOH.). Now, this species is known from southern

part of USA and Mexico. Probably the specimen studied by BLACKBURN was mislabelled or introduced to Australia from North America.

***Lacoptera permodica* (BOHEMAN, 1862) n. comb.**

Cassida permodica BOHEMAN, 1862: 349; SPAETH, 1903: 136, 1914: 115.

Lacoptera insulana WEISE, 1910: 144, n. syn.

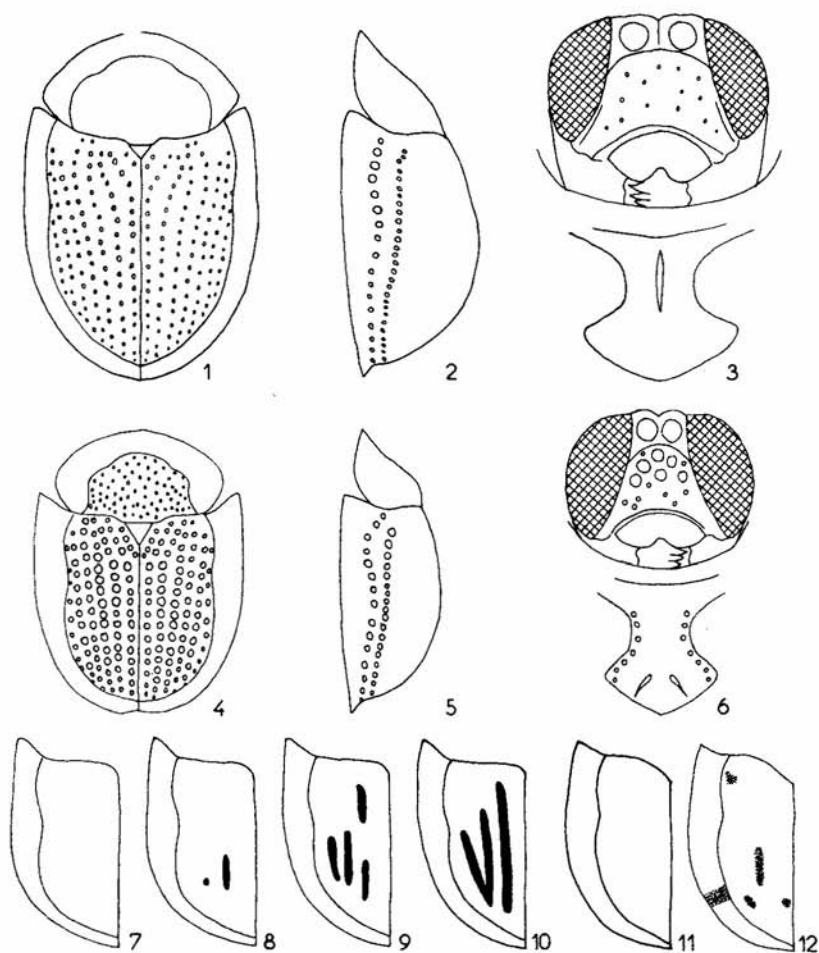
BOHEMAN (1862) described *Cassida permodica* from New Guinea (type locality: Coup). I have examined the holotype of this species (BMNH) and it is the older synonym of *Lacoptera insulana* WEISE, whose types I have also examined (BOROWIEC, 1987). This species is known from Timor Is. and Wetter Is. north-west of Australia. BOHEMAN's record from New Guinea is doubtful. I have not found the type locality in available gazettters (the inscription of the type locality on original label is very indistinct, but looks rather as Copida than Coup). I have examined a large material of the genus *Lacoptera* and related genera from Papuan Subregion and I have not found specimens of *L. permodica*.

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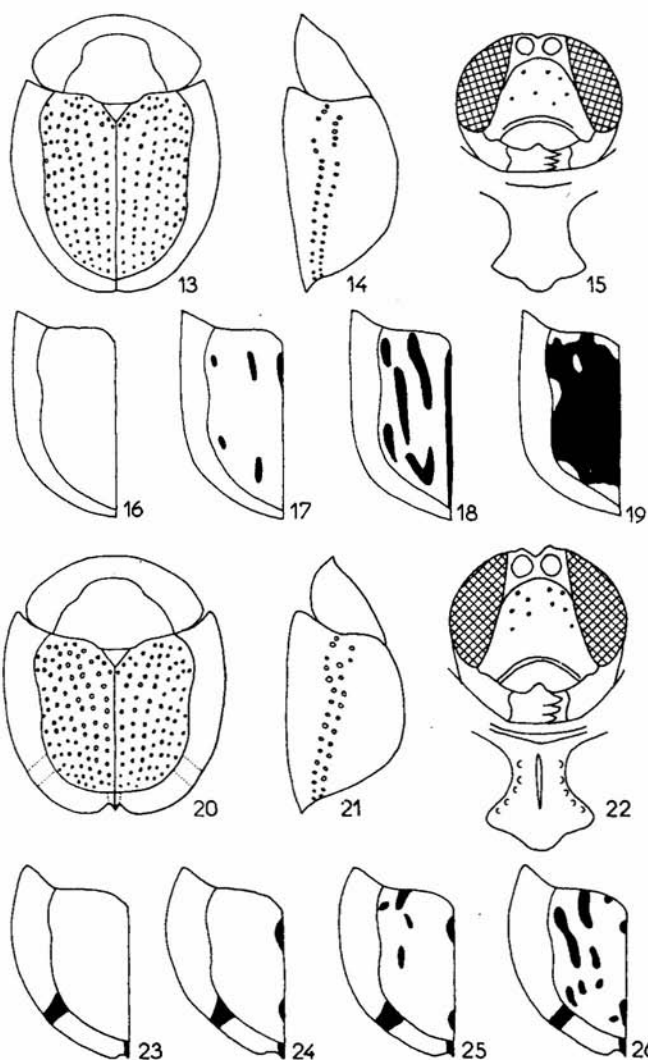
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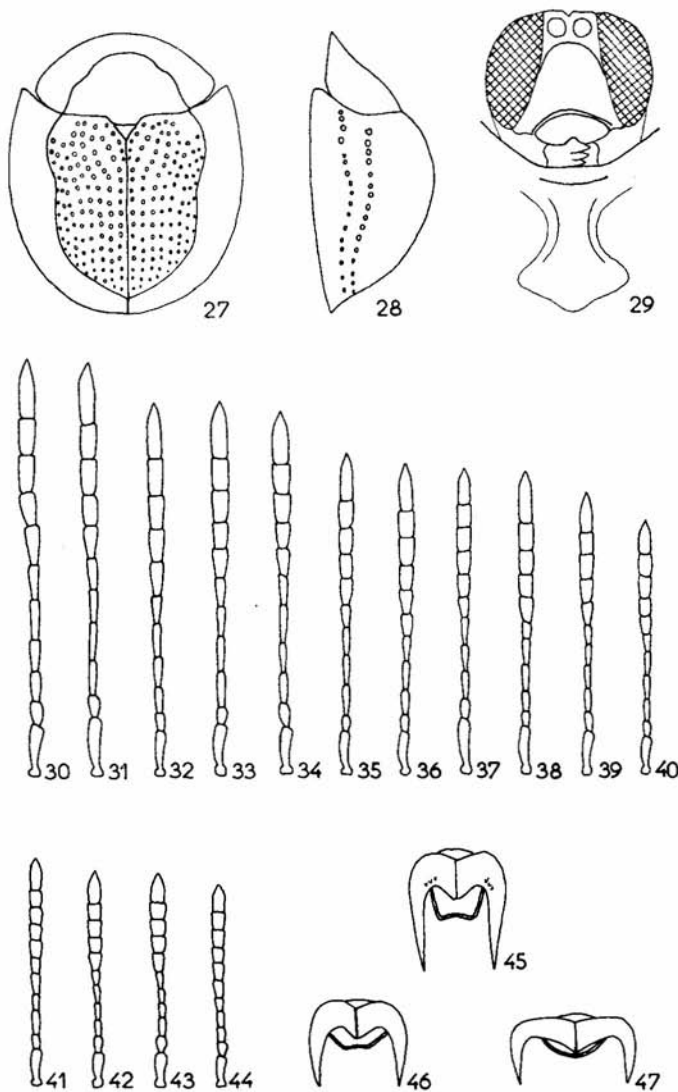
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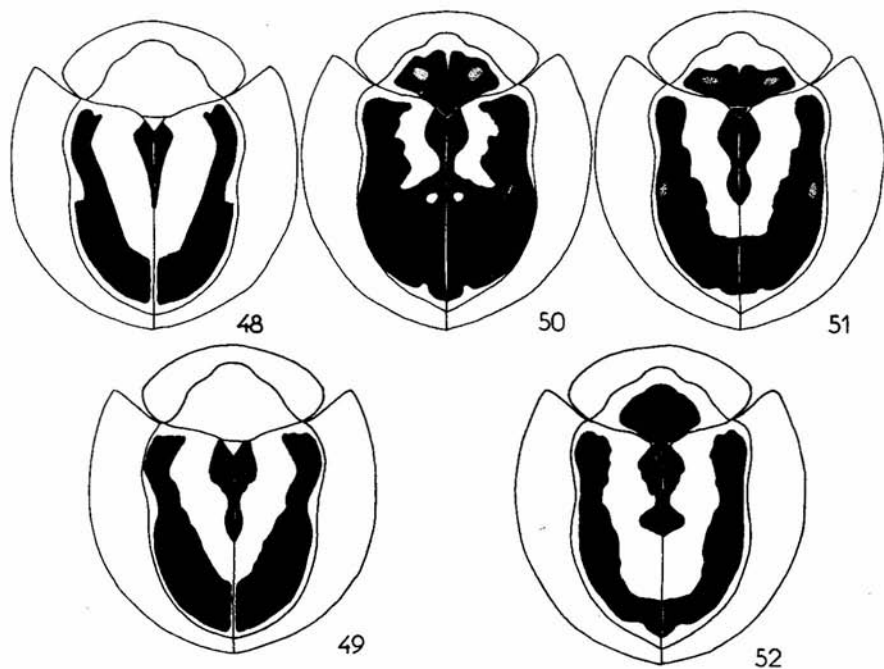
1-3, 7-10. *Cassida navicella*, 4-6, 11-12. *C. mera*: 1, 4 — body outline, 2, 5 — body in profile, 3, 6 — head and prosternum, 7-12 — variation of elytral maculation



13-19. *Cassida sappho*, 20-26. *C. denticulata*: 13, 20 — body outline, 14, 21 — body in profile, 15, 22 — head and prosternum, 16-19, 23-26 — variation of elytral maculation

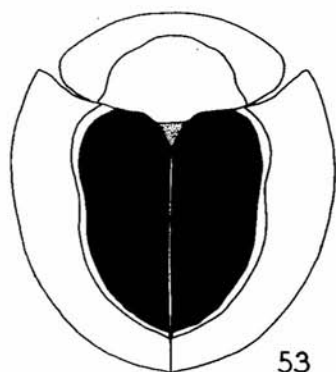


27-29. *Cassida aureola*: 27 — body outline, 28 — body in profile, 29 — head and prosternum. 30-44. Antennae, 45-47. Tarsal claws: 30, 45 — *C. biguttata*, 31 — *C. salomonina*, 32 — *C. diomma*, 33 — *C. albertisi*, 34 — *C. sexguttata*, 35 — *C. astrolabiana*, 36 — *C. punctata*, 37 — *C. cristobalensis*, 38 — *C. papuana*, 39 — *C. lawrencei*, 40 — *C. aureola*, 41, 47 — *C. navicella*, 42 — *C. denticulata*, 43, 46 — *C. mera*, 44 — *C. sappho*

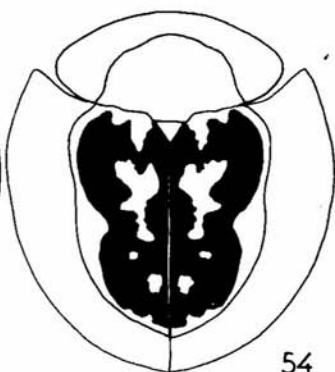


48-52. Variation of dorsal maculation: 48, 49 — *Cassida astrolabiana*, 50-52 — *C. papuana*

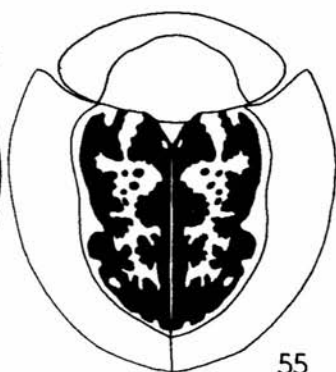
53-61. Body outline and dorsal maculation: 53-58 — *Cassida diomma*, 59, 60 — *C. compuncta*, 61 — *C. lawrencei*



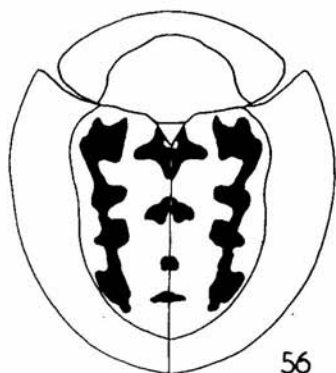
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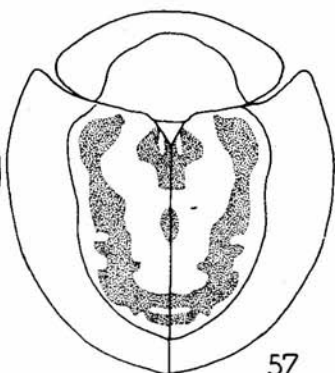
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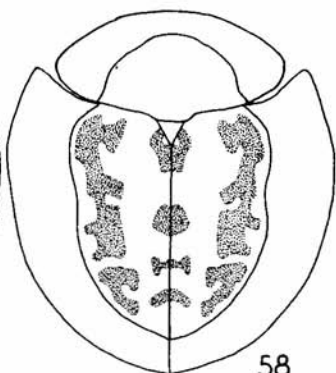
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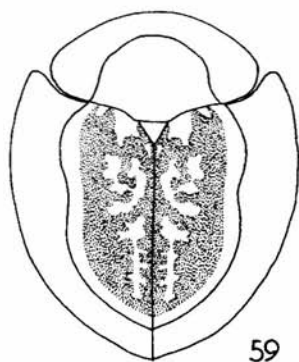
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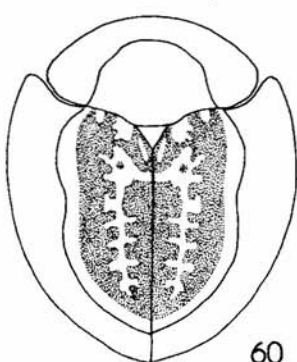
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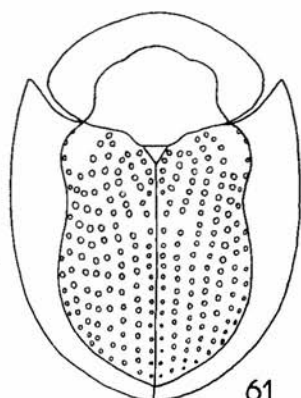
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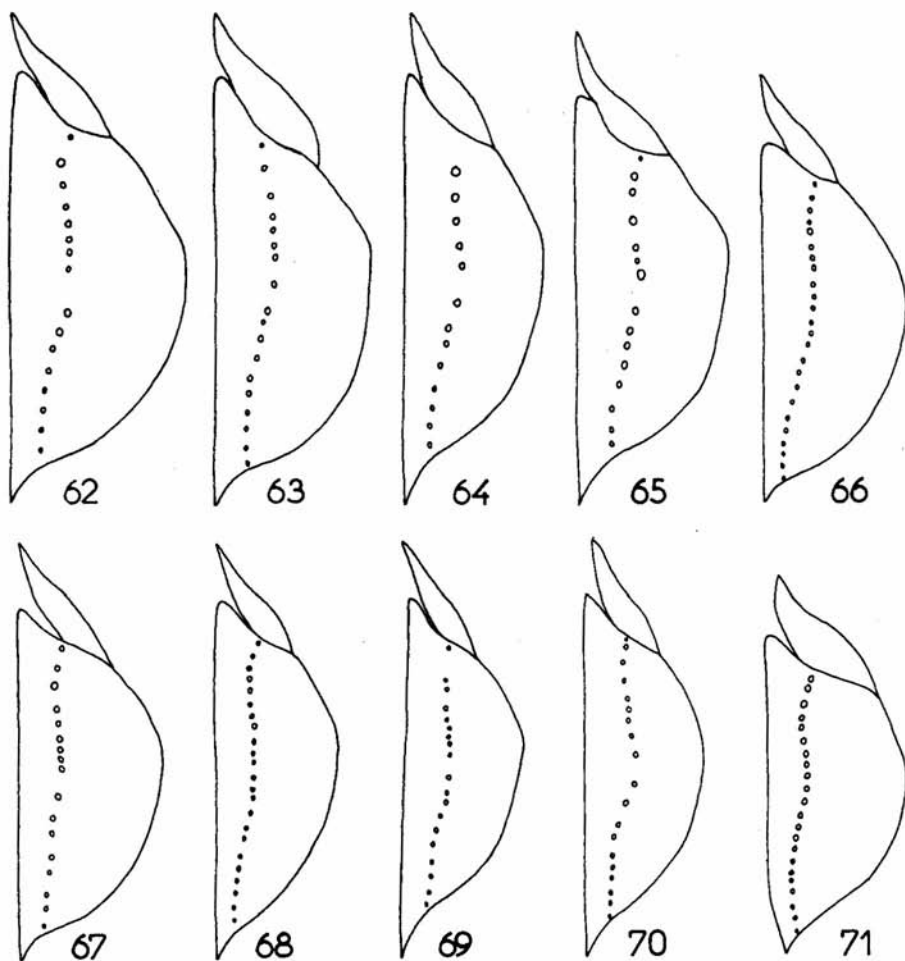
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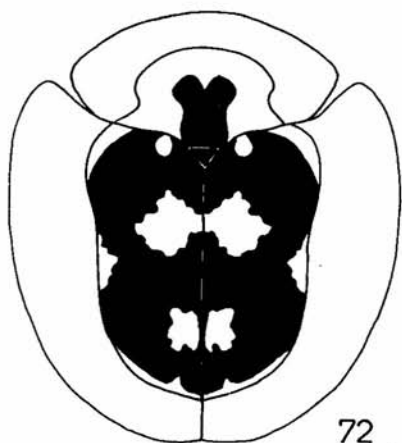
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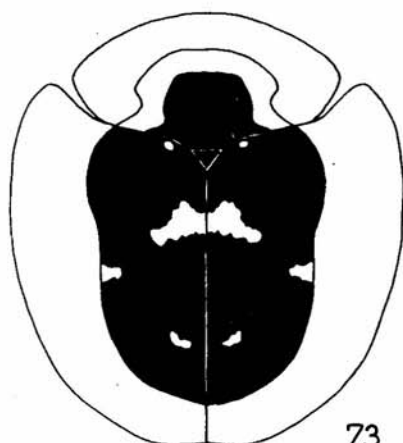
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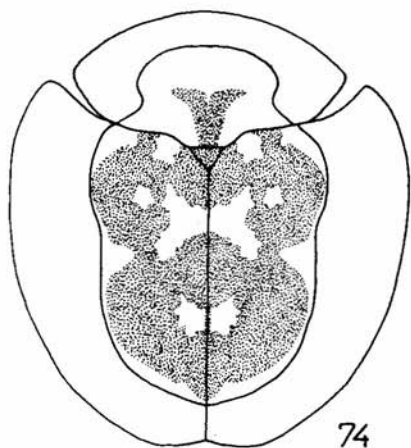
62-71. Body in profile: 62 — *Cassida albertisi*, 63 — *C. sexguttata*, 64 — *C. salomonina*, 65 — *C. biguttata*, 66 — *C. compuncta*, 67 — *C. astrolabiana*, 68 — *C. papuana*, 69 — *C. diomma*, 70 — *C. cristobalensis*, 71 — *C. lawrencei*



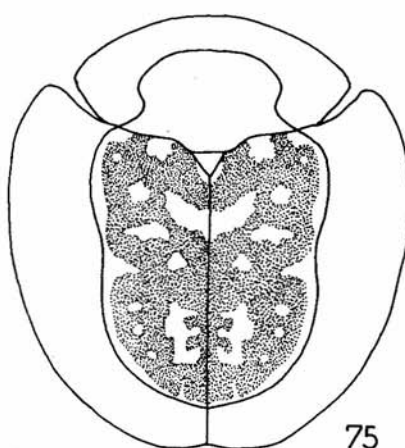
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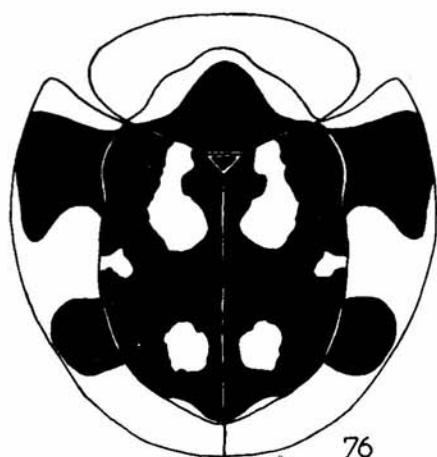


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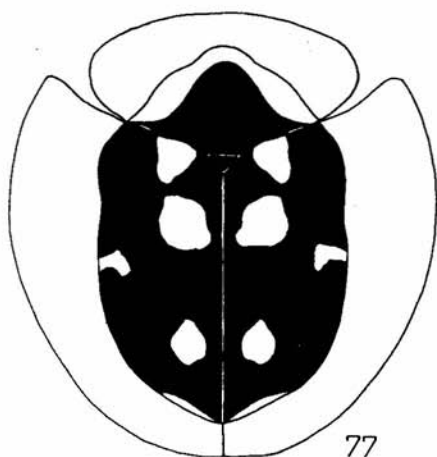


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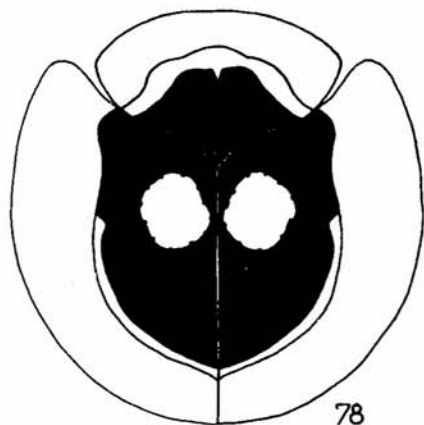
72-75. *Cassida sexguttata*, variation of dorsal maculation



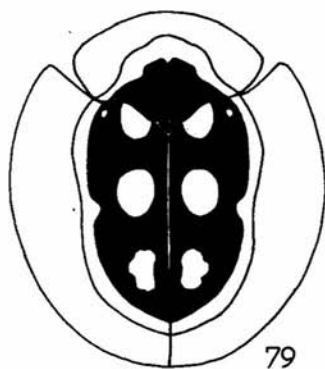
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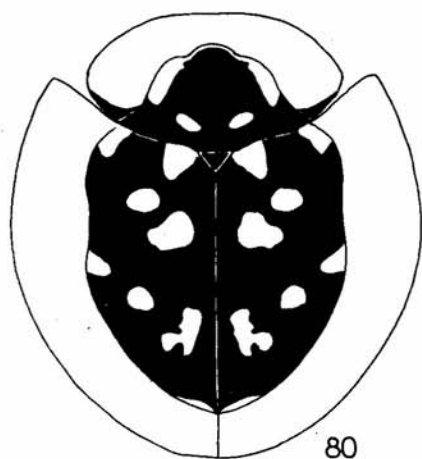


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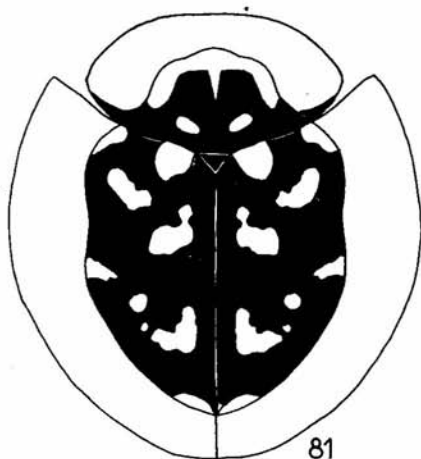


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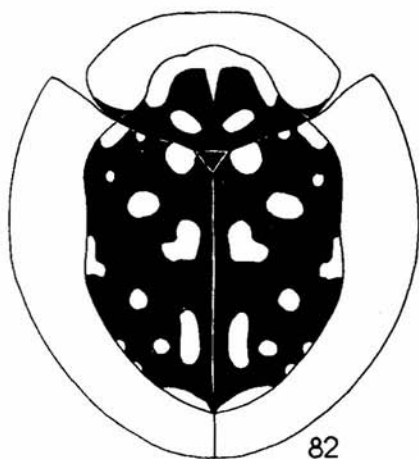
76-79. Dorsal maculation: 76, 77 - *Cassida albertisi*, 78 - *C. biguttata*, 79 - *C. cristobalensis*



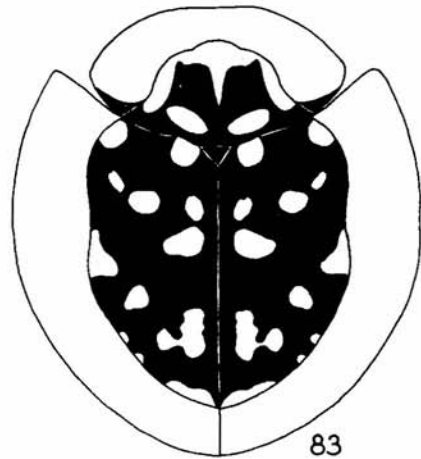
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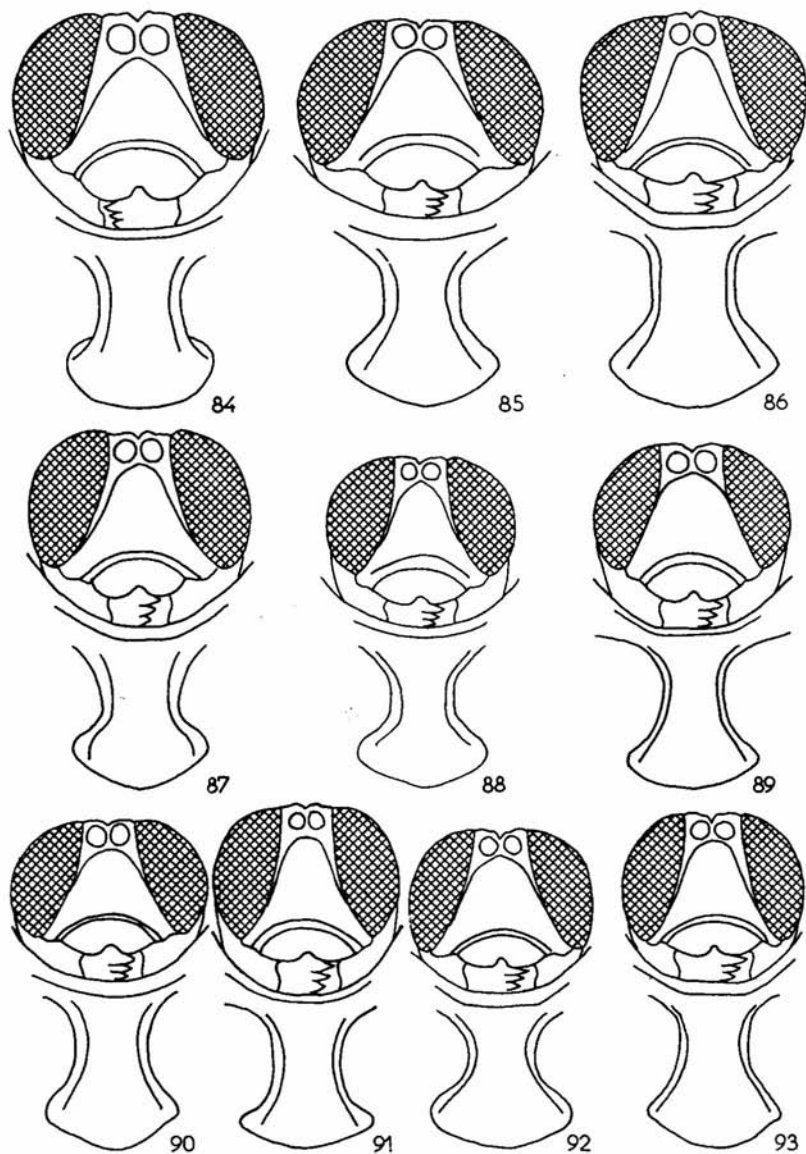


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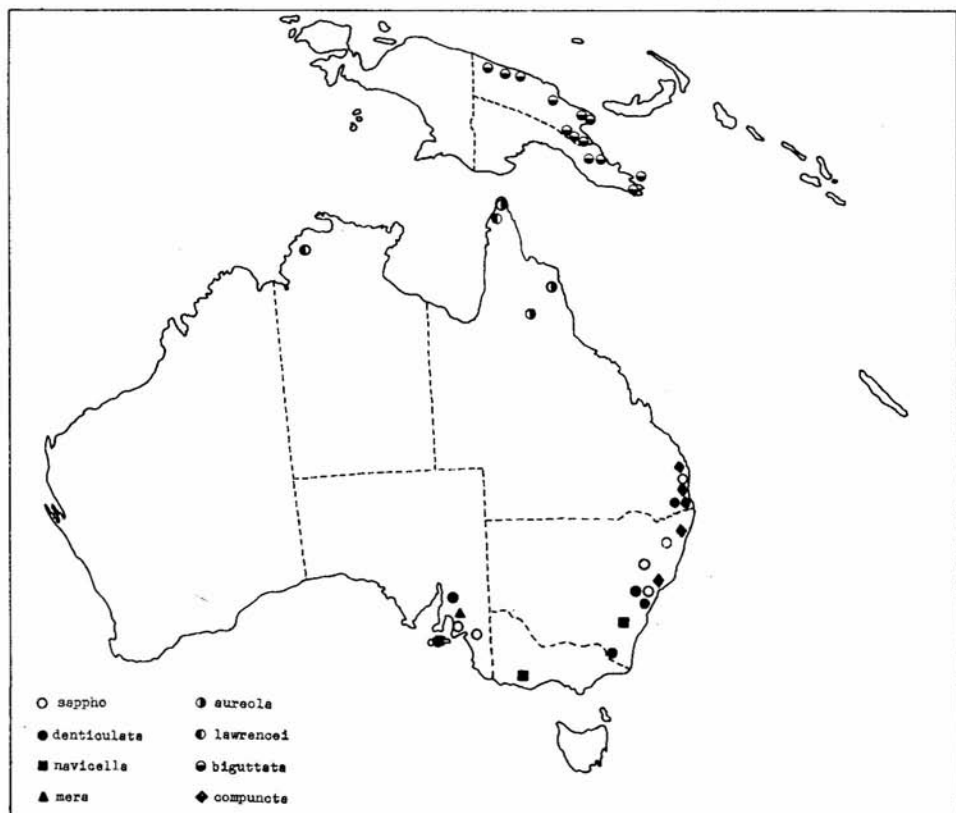


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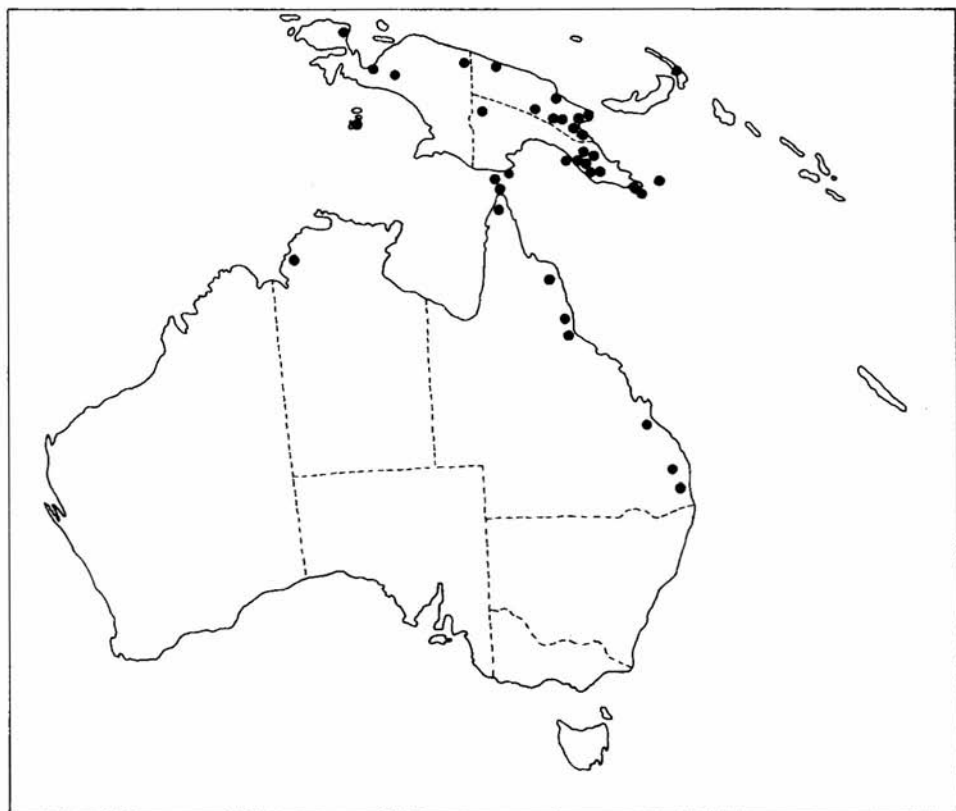
80 83. *Cassida salomonina*, variation of dorsal maculation



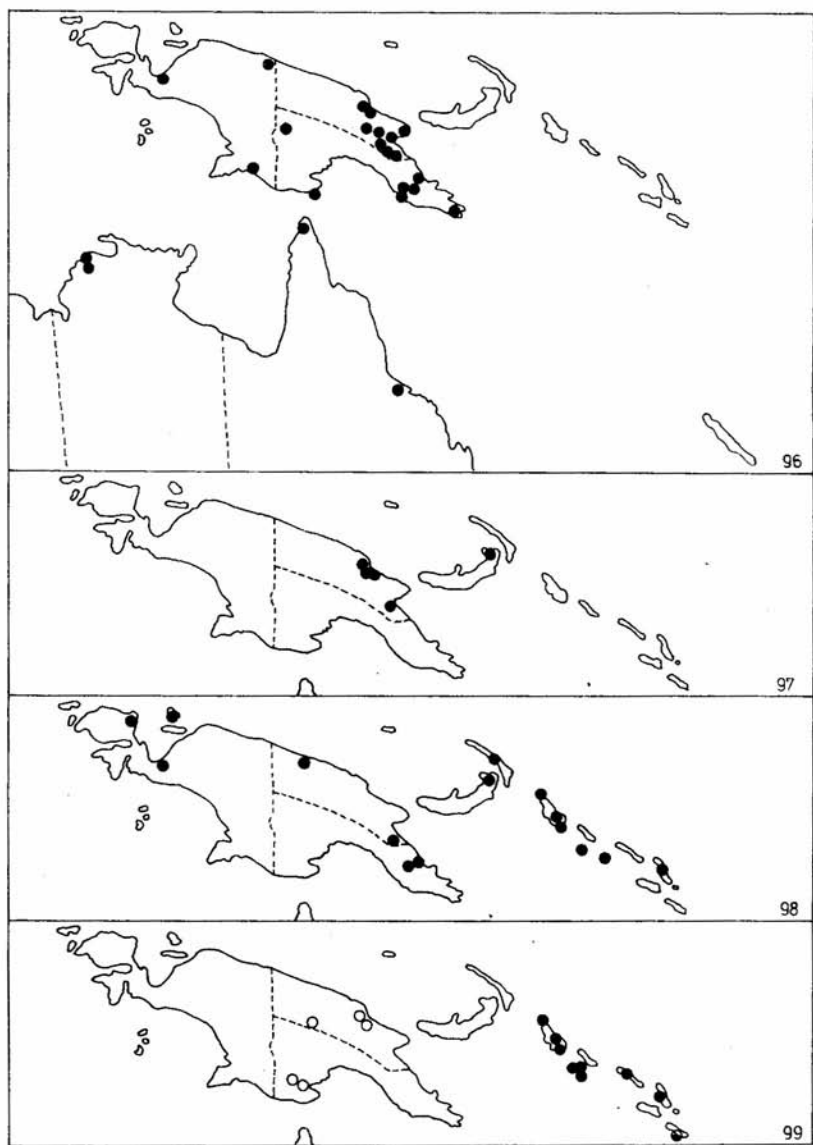
84-93. Head and prothorax: 84 — *Cassida biguttata*, 85 — *C. albertisi*, 86 — *C. salomonina*, 87 — *C. sexguttata*, 88 — *C. cristobalensis*, 89 — *C. lawrencei*, 90 — *C. diomma*, 91 — *C. compuncta*, 92 — *C. astrolabiana*, 93 — *C. papuana*



94. Distribution of *Cassida aureola*, *biguttata*, *compuncta*, *denticulata*, *lawrencei*, *mera*, *navicella* and *sappho*



95. Distribution of *Cassida diomma*



96–99. Distribution of: 96 – *Cassida sexguttata*, 97 – *C. astrolabiana*, 98 – *C. papuana*, 99 – *C. albertsi* (white circles), *salomonina* (black circles), *cristobalensis* (white and black circle)