

A monograph of the Afrotropical Cassidinae
(Coleoptera: Chrysomelidae)
Part III. Revision of the tribe Cassidini 1, except the genera
Aethiopocassis Sp., *Cassida* L., and *Chiridopsis* Sp.

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ABSTRACT. Afrotropical members of the tribe Cassidini, except the genera *Aethiopocassis* Sp., *Cassida* L., and *Chiridopsis* Sp., are revised. Twenty two genera and 80 species (two as incertae sedis) are reviewed, 25 of them are new to the science: *Acrocassis intermedia* (Angola), *Acrocassis undulatipennis* (Namibia), *Basipta sebastiani* (South Africa), *Hovacassis brunneofasciata* (Madagascar), *Hovacassis flavonigra* (Madagascar), *Hovacassis formosa* (Madagascar), *Hovacassis murzini* (Madagascar), *Hovacassis rubromaculata* (Madagascar), *Hovacassis rubrovittata* (Madagascar), *Oxylepus bituberculatus* (South Africa), *Oxylepus convexicollis* (South Africa and Namibia), *Oxylepus grobbelaarae* (South Africa and Namibia), *Oxylepus impressipennis* (Namibia), *Oxylepus intermedius* (Namibia), *Oxylepus planicollis* (South Africa), *Oxylepus sextuberculatus* (South Africa), *Rhytidocassis angulipennis* (Namibia), *Sphenocassis anosibensis* (Madagascar), *Sphenocassis impressipennis* (Madagascar), *Sphenocassis rotundella* (Madagascar), *Trichaspis brevicornis* (Namibia), *Trichaspis erinacea* (Zaire), *Trichaspis louwi* (South Africa), *Trichaspis minutissima* (Zambia), and *Trichaspis tomentosa* (South Africa and Namibia). *Cassida ectypa* BOHEMAN, 1862 and *Cassida soror* WEISE, 1896 are synonymized with *Acrocassis gibbipennis* (BOHEMAN, 1854); *Trigonocassis conducta* ssp. *burgeoni* SPAETH, 1934 is synonymized with the nominotypical subgenus; *Smeringaspis* sgen. *Luimbella* SPAETH in HINCKS, 1952 is synonymized with the nominotypical subgenus. Key to the Old World genera of the tribe Cassidini is given.

Key words: entomology, taxonomy, monograph, Coleoptera, Chrysomelidae, Cassidinae, Cassidini, Afrotropical Region.

INTRODUCTION

The third volume of the monograph of the Afrotropical Cassidinae comprises the first part of the revision of the tribe Cassidini. Previous volumes included revisions of the tribes Epistictinini, Basiprionotini and Aspidimorphini (BOROWIEC 1994 a, 1997). The group includes 24 genera, partly redefined. They were keyed in the first volume of the monograph (BOROWIEC 1994 a). Afrotropical fauna of the tribe Cassidini is distinct, 12 genera are known only from Africa except Madagascar, one genus is known from both tropical Africa and Madagascar, three genera are endemic to Madagascar, one is endemic to the Arabian Peninsula, three genera are common to the Afrotropical and Oriental regions, and three genera are common to Afrotropical and Palaearctic regions. Only the genus *Cassida* L. is subcosmopolitan, occurring in Holarctic (but with only one native species in North America), Oriental, Australian and Afrotropical regions, but with its diversity centre in the Afrotropical region, especially in Madagascar. This volume includes revisions of small genera of the tribe Cassidini, the large and heterogeneous genera *Aethiopocassis* Sp., *Cassida* L., and *Chiridopsis* Sp. will be reviewed in the fourth volume of the monograph of Afrotropical cassids.

Afrotropical Cassidini have never been revised, only partial keys to the genera *Acrocassis* Sp., *Aethiopocassis* Sp., *Chiridopsis* Sp. and *Oocassida* WEISE have been published by SPAETH (1924, 1929, 1941). Afrotropical Cassidini are the most diverse group of Old World cassids, with unclear phylogenetic relationships between the genera. Species of some genera (especially *Aethiopocassis* and *Chiridopsis*) are highly polymorphic and very difficult to identify correctly. Like in many other specialized cassids, the male genitalia and spermathecae are very uniform within most genera, and in this book they were not used as diagnostic characters.

MATERIAL

The following abbreviations have been used in the text (in brackets names of curators):

- AB - coll. A. BIENKOWSKI, Moscow, Russia;
- BM - Bloemfontain Museum, Bloemfontain, South Africa (S. LOUW);
- BMNH - British Museum Natural History, London, England (S. SHUTE);
- CMN - Canadian Museum of Nature, Ottawa, Canada (R.S. ANDERSON);
- CMNH - Carnegie Museum of Natural History, Pittsburgh, USA (R.L. DAVIDSON);
- CTM - Cape Town Museum, Cape Town, South Africa (V. WHITEHEAD);
- DEI - Deutsche Entomologisches Institut, Eberswalde, Germany (L. DIECKMANN);
- DS - coll. D. SASSI, Milano, Italy;
- EGS - coll. E. GOWING-SCOPES, Halstead, England;
- EO - coll. E. OBERMAIER, Würzburg, Germany;
- ER - coll. E. RILEY, Texas, USA;
- FK - coll. F. KANTNER, Lipi, Czech Republic;

- HNHM - Hungarian Natural History Museum, Budapest, Hungary (Z. KASZAB and O. MERKL);
- IFAN - Institut Fondamental d'Afrique Noire, Dakar, Senegal;
- IRSN - Institut Royal des Sciences Naturelles, Bruxelles, Belgium (L. BAERT, M. CLUDTS);
- ITZ - Instituut voor Taxonomische Zoölogie, Amsterdam, The Netherlands (B. BRUGGE);
- IZPAS - Zoological Institute, Polish Academy of Sciences, Warsaw, Poland (S. A. SLIPIŃSKI);
- JV - coll. J. VORISEK, Jirkov, Czech Republic;
- JWI - coll. J. WIERINGA, Amsterdam, The Netherlands;
- LB - coll. Department of Systematic Zoology and Zoogeography, University of Wrocław (coll. L. BOROWIEC), Wrocław, Poland;
- LU - Zoological Museum, Lund University, Lund, Sweden (R. DANIELSSON);
- MCSNG - Museo Civico di Storia Naturale, Genova, Italy (R. POGGI);
- MCSNM - Museo Civico di Storia Naturale, Milano, Italy (C. LEONARDI);
- MCSNT - Museo Zoologico di Storia Naturale, Trieste, Italy (G. ALBERTI);
- MCZC - Museum of Comparative Zoology, Cambridge, USA (D. FURTH);
- MKB - Museum Koenig, Bonn, Germany (M. SCHMITT);
- MM - Manchester Museum, Manchester, England (C. JOHNSON);
- MNHN - Muséum National d'Histoire Naturelle, Paris, France (N. BERTI);
- MO - coll. M. OUDA, Plasy, Czech Republic;
- MRAC - Musée Royal d'Afrique Centrale, Tervuren, Belgium (J. DECELLE, M. DE MEYER);
- MS - coll. M. SNIZEK, České Budějovice, Czech Republic;
- MZSNV - Museo Zoologico di Storia Naturale, Verona, Italy (M. DACORDI);
- MZUF - Museo Zoologico dell'Università, Firenze, Italy (L. BARTOLOZZI);
- NIC - National Collection of Insects, Pretoria, South Africa (B. GROBBELAAR);
- NMM - National Museum and Monuments, Bulawayo, Zimbabwe (L. HANCOCK);
- NMML - Nationaal Natuurhistorisch Museum Leiden (J. KRIKKEN);
- NMP - Národní muzeum, Prague, Czech Republic (S. BILY);
- NRS - Naturhistoriska Riksmuseet, Stockholm, Sweden (P. LINDSKOG);
- OSU - Ohio State University, Columbus, USA (Ch. TRIPLEHORN);
- PMNH - Peabody Museum of Natural History, New Haven, USA (Ch. REMINGTON);
- RB - coll. R. BEENEN, Nieuwegein, The Netherlands;
- RR - coll. R. REGALIN, Milano, Italy;
- SD - coll. S. DOGUET, Noisy le Grand, France;
- SMF - Senckenberg Museum, Frankfurt-am-Main, Germany (R. ZUR STRASSEN);
- SMNS - Staatliches Museum für Tierkunde, Stuttgart, Germany (W. SCHAWALLER);
- TAU - Tel Aviv University, Tel Aviv, Israel (A. FREIDBERG);
- TM - Transvaal Museum, Pretoria, South Africa (S. ENDRÖDY-YOUNGA);
- TW - coll. Th. WAGNER, University of Koblenz, Bonn, Germany;
- UA - coll. U. ARNOLD, Berlin, Germany;
- UH - coll. U. HEINIG, Berlin, Germany;

WM - Windhoek Museum, Windhoek, Namibia (E. MARAIS);
 ZMC - Zoologisk Museum, Copenhagen, Danmark (O. MARTIN);
 ZMHU - Zoologisches Museum, Humboldt Universität, Berlin, Germany (F. HIEKE, M. UHLIG, H. WENDT);
 ZMUH - Zoological Museum, University of Helsinki, Helsinki, Finland (H. SILFVERBERG);
 ZSM - Zoologische Staatssammlung, München, Germany (G. SCHERER);
 HT - holotype;
 LT - lectotype(s);
 PT - paratype(s);
 PLT - paralectotype(s);
 ST - syntype(s);
 TE - type(s);
 Le - body length;
 Wi - body width;
 Lp - length of pronotum;
 Wp - width of pronotum;
 Ex - maximum width of explanate margin of elytra;
 Wd - width of elytral disc;
 Le/Wi - body length/width ratio;
 Wi/Wp - maximum width of elytra/width of pronotum ratio;
 Wp/Lp - width of pronotum/length of pronotum ratio.

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KEY TO THE GENERA

Key to the Afrotropical genera of the subfamily Cassidinae was presented in the first volume of the monograph (BOROWIEC 1994 a). New studies and new taxa described during the last 8 years stimulated me to compile a modified key to the genera of the tribe Cassidini, including genera from outside the Afrotropical Region.

1. Tarsi modified, last segment elongate, at least twice longer than the third segment, distinctly extending behind its marginal setae. 2.
- Tarsi not modified, last segment not or only slightly extending behind marginal setae of the third segment. 4.
2. Elytra without tubercles, costae and folds, at most with low longitudinal elevations, pronotal disc without tubercles. Antennal grooves absent or shallow with no external carina. 3.
- Elytra with tubercles, costae and folds, pronotal disc with a pair of tubercles. Antennal grooves deep, bordered externally by a sharp carina. Third antennal segment longer than the second. Pronotum without basal corners, sides broadly rounded. Turkey, Near East and Central Asia. *Macromonycha*
3. Punctuation of elytra mostly irregular. Pronotum subpentagonal, without basal corners, explanate margin rugose. Third antennal segment shorter than the second. Base of elytra much wider than pronotum, elytral sides strongly converging posterad. Small, length below 4.5 mm. Arabian Peninsula and Egypt. *Nabathaea*
- Punctuation of elytra partly regular. Pronotum semicircular, without basal corners, explanate margin punctate, without rugosities. Third antennal segment longer than the second. Base of elytra slightly wider than pronotum, elytral sides moderately converging posterad. Large, length above 5.5 mm. Armenia and Central Asia. *Chiridula*
4. Mid femora unmodified, on ventral margin without apical tubercle. 5.
- Mid femora on ventral margin, close to apex, with tubercle; usually the tubercle is large, dentiform, sometimes very small, only in shape of slightly elevated ventral margin of femur. Body circular, elytra with conical tubercle.

Puncturation of elytra very coarse, marginalia impunctate, very broad, horizontal. Clypeus flat. Venter of pronotum without antennal grooves. Antennae slim, filiform, third segment distinctly longer than second. Claws simple but appearing strongly toothed due to distally projecting flanks of the last tarsal segment. Only New Guinea and N Australia.

..... *Meroscalsis*

5. Labrum with median longitudinal carina.

..... 6.

- Labrum without longitudinal carina.

..... 7.

6. Labrum stout, rhomboidal. Claws simple but appearing toothed due to distally projecting flanks of the claw segment. Antennal segments 9-10 at most twice longer than wide. SE Asia and Philippines.

..... *Malayocassis*

- Labrum transverse. Claws simple, claw segment without projecting flanks. Antennae extremely filiform, segments 9-10 more than twice as long as wide. From Malay Peninsula to Australia.

..... *Thlaspidula*

7. Venter of pronotum without antennal grooves, or groove present at most along head.

..... 8.

- Venter of pronotum with deep and long antennal groove extending from each side of head to explanate lateral part; the channel can accommodate whole antenna. Body oval, regularly convex. Puncturation of elytra coarse, more or less regular. Pronotum angulate on sides. Base of elytra not or only slightly wider than pronotum, explanate margin narrow, deflexed. Subsaharian part of Africa, Iran, Pakistan, and India.

..... *Oocassida*

8. Antennae with at least four basal glabrous segments.

..... 9.

- Antennae with only three basal glabrous segments. Body circular, elytra with conical tubercle or distinct postscutellar elevation. Marginalia punctate, very broad, subhorizontal. Clypeus flat with fine clypeal lines converging in triangle. Venter of pronotum without antennal grooves. Antennae extremely slim, filiform, third segment distinctly longer than the second. Claws simple. Madagascar.

..... *Hovacassis*

9. Clypeus at most twice as wide as long.

..... 10.

- . Clypeus very short, at least thrice as wide as long, elevated. Dorsum with white adherent vestiture. Pronotum reversely trapezoidal, widest before the middle. Elytral disc coarsely irregularly punctate, marginalia punctate. Humeral angles strongly protruding anterad. Antennae stout, distal segment strongly microsculptured or striated. Metasternal plates strongly elevated. Claws simple. Large, length above 8 mm. South Africa.

..... *Basipta*

10. Prosternal alae without deep pit. Labrum in the middle of anterior margin without spines.

..... 11.

- . Prosternal alae with deep pit. Labrum on each side of median emargination with small spine. Whole pronotum, elytra, and clypeus coarsely punctate. Venter of pronotum with deep antennal grooves. Claws with large basal tooth. Large, length above 9 mm. Zambezi region in South Africa.

..... *Psalidoma*

11. Base of pronotum in front of humerus without emargination.

..... 12.

- . Base of pronotum in front of humerus emarginate. Pronotum with rounded to subangulate sides, widest at or before middle. Both pronotum and elytra coarsely irregularly punctate, marginal row between elytral disc and marginalia often indistinct or obsolete. Clypeus broad with fine clypeal lines. Prosternal collar often with lateral emargination, obsolete in small species. Claws simple. Madagascar.

..... *Sphenocassis* (part)

12. Prosternal collar on sides with lateral emargination, above the emargination often a small plate.

..... 13.

- . Prosternal collar on sides without emargination.

..... 25.

14. Body strongly convex, spherical or cylindrical, explanate margin steeply deflexed.

..... 15.

- . Body moderately convex, or angulate in profile, or depressed, explanate margin moderately deflexed.

..... 17.

15. Pronotum and elytra bare.

..... 16.

- . Pronotum and elytra pubescent and with erect setae. Body cylindrical (nominotypical subgenus) or broadly oval (see antithesis 17). Pronotal sides

more or less angulate, disc punctate. Puncturation of elytra coarse, more or less regular, sometimes disturbed by elytral impressions. Clypeus broad, punctate, with deep lateral grooves. Venter of pronotum with antennal grooves, bordered externally by an obtuse carina. Third antennal segment slightly longer than the second. Claws simple. Africa except Madagascar.

..... *Smeringaspis* (part)

16. Claws with large basal tooth. Explanate margin completely perpendicular to the abdomen surface. Pronotum trapezoidal, widest before middle. Elytral disc and marginalia irregularly punctate, marginal interval visible only in anterior half of disc. Clypeus broad, shiny, with fine lateral grooves and only few small punctures. Venter of pronotum with short antennal grooves, bordered externally by an obtuse carina. Third antennal segment distinctly shorter than the second. NE Africa.

..... *Chelysida*

- Claws simple. Explanate margin completely perpendicular to the abdomen surface. Pronotum trapezoidal, widest before middle. Elytral disc more or less regularly, marginalia irregularly punctate, marginal interval distinct. Clypeus broad, opaque, with shallow lateral grooves and only few small punctures. Venter of pronotum in some species with a plate opposite to the plate above lateral emargination of the prosternal collar. Third antennal segment not or only slightly longer than the second. Africa south of N Congo.

..... *Ischiocassis*

17. Dorsum bare or at most with erect setae.

..... 18.

- Dorsum pubescent and with erect setae (see antithesis 15).

..... *Smeringaspis* (part)

18. Pronotal sides rounded, or more or less angulate but without basal corners, widest before base.

..... 19.

- Pronotum more or less semicircular, widest at base, basal corners distinct.

..... 24.

19. Last segment of tarsi normal, not extending beyond anterior margin of third segment.

..... 20.

- Last segment of tarsi elongate, distinctly extending beyond anterior margin of third segment. Body slightly cuneiform, elytral disc regularly convex with longitudinal elevations. Base of elytra much wider than pronotum, humeral angles angulate. Disc of pronotum sparsely punctate, marginalia rugose. Puncturation of elytra mostly irregular. Explanate margin of elytra very nar-

row, close to apex linear. Clypeus broad, punctate, with very fine lateral lines. Venter of pronotum with short antennal grooves, bordered externally by an obtuse carina. Third antennal segment as long as the second. Claws large, simple. Arabian Peninsula.

..... *Seminabathea*

20. Antennae stout, segment 10 not longer than wide.

..... 21.

- Antennae slim, segment 10 longer than wide. Body strongly triangular, base of elytra much wider than pronotum. Pronotum very broad, approximately twice as wide as long, its whole surface punctate. Elytral disc and marginalia densely irregularly punctate, marginal row visible only in anterior part of disc. Marginalia in anterior half broad, strongly narrowed posterad. Clypeus broad, with fine lateral lines. Venter of pronotum with short antennal grooves, bordered externally by obtuse or sharp carina. Third antennal segment shorter than the second. Claws simple. West and Central Africa.

..... *Trigonocassis*

21. Elytra bare.

..... 22.

- Elytra with erect setae. Iran.

..... *Rhytidocassis* (part)

22. Pronotum regularly elliptical, sides broadly rounded. Elytral puncturation never black.

..... 23.

- Pronotum less regularly elliptical, sides narrowly rounded. Elytral puncturation black. West Africa.

..... *Acrocassis* sgen. *Bassamia*

23. Elytra with three distinct longitudinal elevations. Body oval, more or less parallelsided. Base of elytra only slightly wider than pronotum, humeral angles rounded. Disc of pronotum and marginalia punctate. Puncturation of elytra mostly irregular. Explanate margin of elytra narrow, not wider than 1/6 width of disc. Clypeus broad, punctate, with distinct lateral lines. Venter of pronotum with short antennal grooves, bordered externally by a sharp carina. Third antennal segment shorter than second. Claws simple or with small tooth placed in the middle of ventral margin of claw. Dorsum brown. W Palaearctic.

..... *Hypocassida*

- Elytra without or at most with single, very low longitudinal elevation. Body usually more or less triangular, sides of elytra distinctly converging posterad, occasionally body slightly cylindrical. Base of elytra usually much wider than pronotum, humeral angles more or less angulate. Disc of pronotum and

marginalia punctate. Punctuation of elytra completely irregular. Clypeus broad, punctate, with very fine lateral lines. Venter of pronotum with short antennal grooves, bordered externally by sharp or obtuse carina. Third antennal segment shorter than to as long as the second. Claws simple or with small tooth placed close to base of claw. Dorsum yellow or green, occasionally area close to scutellum with red to brown patch. Africa, Iran, and Indian Subcontinent.

..... *Rhytidocassis*

24. Body parallelsided, elytra regularly convex. Base of elytra only slightly wider than pronotum, humeral angles subangulate. Disc of pronotum finely punctate. Punctuation of elytra completely irregular, disc with longitudinal elevations. Clypeus broad, impunctate, with very fine lateral lines only in basal half. Venter of pronotum with short antennal grooves, bordered externally by an obtuse carina. Third antennal segment as long as or slightly longer than the second. Claws simple. East Africa.

..... *Erbolaspis*

- Body more or less converging posterad, elytra more or less angulate in profile, sometimes with triangular tubercle. Base of elytra usually wider than pronotum, humeral angles more or less angulate. Disc of pronotum punctate. Punctuation of elytra completely irregular. Clypeus broad, not or finely punctate, with fine lateral lines. Venter of pronotum with short antennal grooves, bordered externally by sharp or obtuse carina. Third antennal segment as long as to slightly longer than the second. Claws simple or with small tooth placed close to base of claw. Whole Africa except Madagascar.

..... *Acrocassis*

25. Tarsal claws with basal tooth, or simple but appearing toothed due to distally projecting flanks of the claw segment.

..... 26.

- Tarsal claws simple.

..... 33.

26. Venter of pronotum with deep antennal groove.

..... 27.

- Venter of pronotum without antennal groove.

..... 30.

27. Pronotum semicircular, widest at base, with distinct basal corners. Base of elytra slightly to moderately wider than pronotum.

..... 28.

- Pronotum with rounded sides, widest in the middle, no basal corners. Base of elytra usually much wider than pronotum.

..... 29.

28. Prosternal collar elongate, with sides angulate. Antennal groove bordered externally by a sharp carina. Marginalia of pronotum and elytra impunctate. S China, NE India, and Indochina.

..... *Glyphocassis* s. str.

- Prosternal collar short, its sides not angulate. Antennal groove bordered externally by an obtuse carina. Marginalia of pronotum and elytra punctate. W Palaearctic.

..... *Pilemostoma*

29. Claws simple but appearing toothed due to distally projecting flanks of last segment of tarsi. Explanate margin of elytra extremely broad, in the widest part only slightly narrower than half width of disc. Antennae strongly dimorphic, in male antennae extremely slim, filiform, with segments 9 and 10 many times longer than wide. Elytral disc with conical tubercle. Ceylon, Indochina, Malay Peninsula, Borneo and Sumatra.

..... *Rhacocassis*

- Claws with basal tooth. Explanate margin of elytra moderately broad, in the widest part three times narrower than half width of disc. Antennae not or indistinctly dimorphic, in male segments 9 and 10 at most twice longer than wide. Elytral disc regularly convex or only slightly gibbous. Whole Africa, including Madagascar, and Oriental Region.

..... *Chiridopsis*

30. Elytral disc tuberculate.

..... 31.

- Elytral disc regularly convex or depressed.

..... 32.

31. Eyes large, gena obsolete. Antennae very stout, segments 9 and 10 transverse, segment 3 shorter than segment 2. Pronotal disc punctate. Elytra with erect setae. Explanate margin of elytra narrow, steeply deflexed. India.

..... *Capelocassis*

- Eyes small, gena longer than half width of eye. Antennae elongate, segments 9 and 10 distinctly longer than wide, segment 3 distinctly longer than segment 2. Pronotal disc impunctate, shiny. Elytra without erect setae. Explanate margin of elytra very broad, horizontal. E Australia.

..... *Austropsecadia*

32. Explanate margin of elytra very narrow, not wider than last two intervals combined. Body pubescent or/and with erect setae. Basal tooth of claw large, spiniform. Very small, length below 3.8 mm. Africa south of Congo.

..... *Trichaspis*

- Explainate margin of elytra wider than last two intervals combined. Dorsum usually bare, only occasionally pubescent or/and with erect setae. Basal tooth of claw never spiniform. Length usually above 3.8 mm. Old World and N America.

..... *Cassida* (part)

33. Venter of pronotum without antennal grooves.

..... 35.

- Venter of pronotum with deep antennal grooves bordered externally by a sharp carina.

..... 34

34. Body short-oval to circular. Elytra regularly convex, highest in postscutellar point. Punctuation of disc fine to moderate, intervals in sutural half of disc distinctly wider than rows. Elytral marginalia impunctate. Dorsal surface shiny. E Asia from Korea to N Vietnam.

..... *Glyphocassis* sgen. *Hebdomecosta*

- Body slightly cylindrical, explanate margin steeply deflexed. Elytra in anterior part depressed, highest in posterior half. Punctuation of disc very coarse, intervals as wide as or narrower than rows. Elytral marginalia punctate. Dorsal surface opaque. Central, East and South Africa.

..... *Fornicocassis*

35. Antennae short to moderately elongate, not or only slightly dimorphic, in both sexes not extending beyond the middle of metathorax.

..... 36.

- Antennae extremely elongate, filiform, strongly sexually dimorphic, in male extending to abdomen, in female behind the middle of metathorax. Body circular, elytra with more or less developed postscutellar elevation. Explanate margin extremely broad, horizontal, almost as wide as half width of disc, impunctate. Clypeus narrow, as long as or longer than wide. Third antennal segment distinctly longer than the second. From NE India to Celebes.

..... *Thlaspidosoma*

36. Anterior margin of elytra strongly arcuate, humeral angles strongly protruding anterad. Explanate margin of elytra very broad, as wide as or slightly wider than half width of disc. Elytral disc always with conical tubercle. Large, length always above 10 mm.

..... 37.

- Anterior margin of elytra not or moderately arcuate, humeral angles slightly to moderately protruding anterad. Explanate margin of elytra from narrow to broad, usually distinctly narrower than half width of disc. Elytral disc usually without conical tubercle. Length usually below 10 mm.

..... 38.

37. Antennae stout, segments compactly arranged, third segment only slightly longer than the second, six distal segments dull and slightly longitudinally striate. Clypeus very short, at least 1.8 times as wide as long, punctate. Prosternal process narrow, only slightly expanded apically, canaliculate longitudinally. NE Australia.

..... *Emdenia*

- . Antennae slim, segments loosely arranged, third segment twice to thrice longer than the second, five distal segments pubescent and dull. Clypeus moderately broad, at most 1.6 times as wide as long, punctate. Prosternal process broad, strongly expanded apically, flat. Borneo, Aru Is., and New Guinea.

..... *Lorentzocassis*

38. Explanate margin of elytra steeply deflexed, sometimes perpendicular to the surface of abdomen.

..... 39.

- . Explanate margin of elytra moderately deflexed to almost horizontal.

..... 47.

39. Elytral puncturation partly or completely regular.

..... 40.

- . Elytral puncturation completely or mostly irregular.

..... 43.

40. Elytra regularly convex. Dorsum bare. Coloration usually uniformly yellow or green. Usually small, length below 5 mm.

..... 41.

- . Elytra with conical tubercle. Dorsum with sparse erect setae. Coloration dark brown. Pronotum widest in anterior part with angulate anterior corners. Clypeus broad, flat with fine clypeal lines. Third antennal segment distinctly shorter than the second. Moderately large, length above 6 mm. S India and Malay Peninsula.

..... *Silana*

41. Body oval to cuneiform, if more or less hemispherical than pronotum without angulate anterior corners. Eyes large, gena obsolete or feebly marked.

..... 42.

- . Body regularly hemispherical. Pronotum widest in anterior part, with strongly angulate anterior corners. Eyes small, gena elongate, not shorter than length of the second antennal segment. Clypeus very short, more than twice wider than long. Third antennal segment distinctly longer than the second. Vietnam.

..... *Vietocassis*

42. Very small, length below 3.8 mm. Elytra in posterolateral part with longitudinal elevation. Third antennal segment shorter than the second. South Africa.

..... *Limnocassis*

- Usually longer than 3.8 mm. Elytra in posterolateral part without longitudinal elevation. Third antennal segment usually longer than the second. Old World and North America.

..... *Cassida* (part)

43. Explanate margin of elytra very narrow, in the widest part only slightly wider than length of last two antennal segment combined.

..... 44.

- Explanate margin of elytra broad, in the widest part distinctly wider than length of last two antennal segments combined.

..... 45.

44. Small, length below 5.5 mm. Pronotum pentagonal, widest close to base, with narrow transparent margination. Top of pronotal disc and elytra not rugose. Mediterranean Subregion, the Near East, Caucasus, and Middle Asia.

..... *Ischyronota*

- Large, length above 5.5 mm. Pronotum elliptical, widest close to the middle, without transparent margination. Whole pronotal disc and elytra rugose. Madagascar.

..... *Sphenocassis* (part)

45. Clypeus with faint or obsolete clypeal grooves.

..... 46.

- Clypeus with deep clypeal grooves converging in triangle. Pronotum with angulate sides, widest in or slightly before the middle. Pronotal disc punctate or/and wrinkled. Elytral disc sometimes costate. Explanate margin of elytra distinctly bordered from disc by a marginal row, punctate or/and wrinkled. Third antennal segment distinctly longer than the second. Large, length above 5 mm. South Africa.

..... *Orobiocassis*

46. Explanate margin of elytra completely perpendicular to the surface of abdomen. Pronotum angulate on sides, with maximum width usually before middle. Pronotal disc usually punctate. Elytral disc extremely convex, sometimes with gibbositities or tubercles, or with deep impressions. Marginal row usually absent or barely marked in anterior third of elytron, occasionally distinct along whole border of disc. Prosternal process between coxae very narrow, narrower than second antennal segment. Antennae stout, third segment not longer than the second, segments 8- 10 wider than long or at most equal in length and

width. Small, length below 4.5 mm. Mediterranean Subregion, Arabian Peninsula, NE and S Africa.

..... *Oxylepus*

- Explanate margin of elytra never completely perpendicular to the surface of abdomen. Old World and North America.

..... *Cassida* (part)

47. Clypeus distinctly elevated, especially before antennal insertions. Elytral disc depressed or regularly convex, without postscutellar elevation. Elytra and pronotum usually with black pattern on yellow or brown background.

..... 48.

- Clypeus flat. Elytral disc often with postscutellar elevation or angulate in profile. Elytra and pronotum only occasionally with black pattern on yellow or brown background.

..... 49.

48. Pronotal base bisinuate, pronotum semicircular, widest at base with distinct basal corners. Body regularly oval. Pronotal disc impunctate, shiny. Elytral base only slightly wider than pronotum. Elytral disc slightly depressed. Punctuation of disc regular, surface of disc often without special sculpture. Marginal row distinct. Explanate margin of elytra broad, impunctate and shiny. Clypeus short, triangular, convex, with deep transverse frontoclypeal sulcus. Prosternal collar long, with subangulate sides. Head cavity on sides margined by sharp carina. Third antennal segment longer than the second. Moderately large, length 5-7 mm. Madagascar.

..... *Andevocassis*

- Pronotal base not bisinuate, pronotum widest in or before the middle, no basal corners. Body broadly oval. Pronotum ellipsoidal to reversely pentagonal, sides rounded to subangulate. Disc of pronotum from impunctate, shiny, to punctate, dull. Elytral base more or less wider than pronotum. Explanate margin of elytra moderately broad, often with tendency to form a shallow gutter, its surface smooth to transversely wrinkled. Head cavity on each side usually with a sharp carina. Prosternal collar with subangulate sides. Third antennal segment distinctly longer than the second. Small to medium-sized, length 5-11 mm. Africa except Madagascar.

..... *Aethiopocassis*

49. Eyes large, gena obsolete or very short, always shorter than width of eye. Head cavity on sides without or with collar, but then it is continuously connected with prosternal collar.

..... 50.

- Eyes small, gena distinct, as long as width of eye. Head cavity on sides with sharp collar, distinctly separated from prosternal collar by a deep emargination.

Body almost circular. Pronotum very broad, with maximum width slightly before middle, sides rounded but posterior corners well marked. Pronotal disc microreticulate, with fine pricks, and sometimes with fine wrinkles. Explanate margin of pronotum microreticulate, impunctate with shallow striation. Elytral base only slightly wider than pronotum. Elytral disc angulate in profile. Puncturation completely irregular. Marginal row distinct in 1/3-1/2 length of elytra, in posterior half of elytra marginal row vanishing between coarse puncturation of disc and marginalia. Explanate margin of elytra very broad, moderately deflexed, irregularly punctate. Clypeus very short, as long as first antennal segment. Antennae elongate, third segment distinctly longer than the second. Moderately large, length 8-12 mm. Central and East Africa, and Madagascar.

..... *Tegocassis*

50. Apex of elytral epipleura distinctly pubescent. Antennae slim, segments 9 and 10 at least twice as long as wide. Clypeal lines separated by triangular, shiny clypeal plate, usually apex of the triangle slightly elevated. Body circular. Pronotum impunctate, shiny. Elytral base distinctly wider than pronotum. Elytral disc with more or less distinct postscutellar elevation. Puncturation completely regular but partly interrupted by elytral relief. Marginal row distinct. Explanate margin of elytra very broad, horizontal, impunctate, shiny. Moderately large, 6.5-11 mm. Oriental Region from Burma to Borneo, and eastern part of the Palaearctic Region.

..... *Thlaspidia*

- . Combination of characters not as above. Old World and North America.

..... *Cassida* (part)

REVIEW OF THE GENERA

Genus: *Acrocassis* SPAETH, 1922

- Acrocassis* SPAETH, 1922 b: 1001 (type species: *Acrocassis flavescens* WEISE, 1904, by monotypy); BOROWIEC, 1999: 228.
- Acrocassis* SPAETH, 1924: 312 (type species *Cassida gibbipennis* BOHEMAN, 1854, by original designation); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 14; hom. and syn. (see note below).
- Bassamia* SPAETH, 1924: 312 (type species: *Cassida paeminosa* BOHEMAN, 1856, by monotypy); HINCKS, 1952: 339 (as subgenus of *Cassida*); SEENO and WILCOX, 1982: 176 (as subgenus of *Cassida*); BOROWIEC, 1999: 229 (as subgenus of *Acrocassis*), subgenus.

Small cassids, body length 3.5-8.0 mm. Body subtriangular to subpentagonal. Pronotum semicircular, with maximum width at base, and usually strongly angulate corners (nominotypical subgenus), occasionally basal corners obtuse (subgenus *Bassamia*). Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin moderately broad, not transparent, punctate. Elytral base not or only slightly wider than pronotum. Elytral disc more or less angulate in profile, sometimes with conical postscutellar tubercle. Puncturation of disc coarse, irregular, surface of disc often with longitudinal costae, or/and irregular wrinkles, usually appears irregular to rugose. Marginal row distinct. Explanate margin of elytra narrow, punctate, its surface appears irregular. Clypeus broad, impunctate to faintly punctate, with fine clypeal grooves converging in circle. Venter of pronotum with short antennal groove separated externally by sharp or obtuse carina. Prosternal collar with lateral emargination. Antennae stout, third segment as long as to slightly longer than the second, segments 8-10 not longer than wide. Last segment of tarsi not longer than the third, bilobate segment. Claws simple or with very small basal tooth.

Acrocassis with *Erbolaspis* SP., *Rhytidocassis* SP., *Trigonocassis* HINCKS and Palearctic *Hypocassida* WEISE forms probably a natural group of genera with more or less distinct antennal grooves and prosternal collar emarginate laterally. The last three genera differ distinctly from *Acrocassis* by elliptical pronotum, regularly rounded on sides, while in *Acrocassis* and *Erbolaspis* pronotum is semicircular, with more or less marked posterior angles. *Erbolaspis* differs in elongate, parallelsided body and regularly convex elytra, while in *Acrocassis* the body is subtriangular to subpentagonal, and elytral disc angulate in profile or with postscutellar tubercle.

Endemic to Afrotropical region except Madagascar.

REMARKS

SPAETH (1924) proposed *Bassamia* as separate genus and had distinguished it from *Acrocassis* by the structure of hind corners of pronotum (angulate in *Acrocassis*, obtuse in *Bassamia*) and elytral convexity (tuberculate in *Acrocassis*,

slightly angulate in *Bassamia*). However, these characters are variable within the genera of Cassidini and, in my opinion, they do not provide a sufficient basis to distinguish genera. Thus, in my world catalogue of Cassidinae (BOROWIEC 1999) I placed *Bassamia* as a subgenus in *Acrocassis*, and this point of view is sustained in this monograph.

The name *Acrocassis* was first proposed by SPAETH in 1922 with binome *Hypocassida flavescens* WEISE, 1904, but without formal description. For the second time, the name was used by SPAETH in 1924, with formal description and designation of *Cassida gibbipennis* BOHEMAN, 1854 as type species. According to the Code of Zoological Nomenclature the name *Acrocassis* SPAETH, 1922 is available with *Hypocassida flavescens* WEISE, 1904 as type species by monotypy, and the name *Acrocassis* SPAETH, 1924 is its junior homonym and junior synonym.

KEY TO SUBGENERA

1. Base of pronotum on sides shallowly emarginate, basal corners distinctly angulate. Elytral disc usually with conical postscutellar tubercle and well developed longitudinal costae or wrinkles.
..... *Acrocassis* s. str.
- Base of pronotum on sides not emarginate, basal corners rounded. Elytral disc slightly angulate in profile, but without postscutellar tubercle and without longitudinal costae.
..... *Bassamia*

Subgenus *Acrocassis* s. str.

KEY TO SPECIES

1. Large species, length 7.2-9.5 mm.
..... 2.
- Smaller species, length below 7.2 mm.
..... 4.
2. Postscutellar elevation lower, in profile only postscutellar area appears conical. Larger, length usually exceeds 7.3 mm. Tarsal claws with small basal tooth.
..... 3.
- Postscutellar elevation very high, in profile almost whole elytral disc appears conical. Smaller, length never exceeds 7.3 mm. Tarsal claws simple.
..... *gibbipennis* (large specimens)

3. Slimmer species, Le/Wi 1.43-1.54. Postscutellar elevation low, with obtuse top. Metathorax partly black.
..... *zavattarii*
- Stouter species, Le/Wi 1.27-1.33. Postscutellar elevation high, conical, with acute top. Metathorax uniformly yellow.
..... *flavescens*
4. Postscutellar elevation lower, in profile only postscutellar area appears conical or angulate.
..... 5.
- Postscutellar elevation very high, in profile almost whole elytral disc appears conical.
..... *gibbipennis* (small specimens)
5. Postscutellar elevation higher, in profile appears conical.
..... 6.
- Postscutellar elevation low, in profile disc appears angulate, not conical.
..... *sudanensis*
6. Punctuation of elytra fine, sculpture of disc forming longitudinal costae and few wrinkles but surface not appearing unduliform. Species from West, East and Central Africa south to Zimbabwe.
..... 7.
- Punctuation of elytra coarse, sculpture of disc forming irregular folds and wrinkles, surface appearing unduliform. Namibia.
..... *undulatipennis*
7. Smaller species, Le below 6 mm. Explanate margin of elytra unicolours or with spots. Widespread species.
..... 8.
- Larger species, Le 6.0-6.7 mm. Explanate margin of elytra always unicolours. Angola (Kabinda) only.
..... *intermedia*
8. Explanate margin of elytra with darker humeral and posterolateral part and in middle with paler "window" (the "window" sometimes visible only on underside of the explanate margin). Slightly larger and slimmer species, common in western and eastern, rare in central Africa.
..... *roseomarginata*
- Explanate margin of elytra without paler window, uniformly pale or dark, with darker punctuation but without humeral and posterolateral spots. Slightly smaller and stouter species, common in central, rare in western and eastern Africa.
..... *rufula*

Acrocassis flavescens (WEISE, 1904)

(figs 1-7, pl. 1: 1-3)

Hypocassida flavescens WEISE, 1904 a: 56 (TE in ZMHU); SPAETH, 1914: 90.*Acrocassis flavescens*: SPAETH, 1922: 1001, 1924: 308, 314; BOROWIEC, 1999: 228.

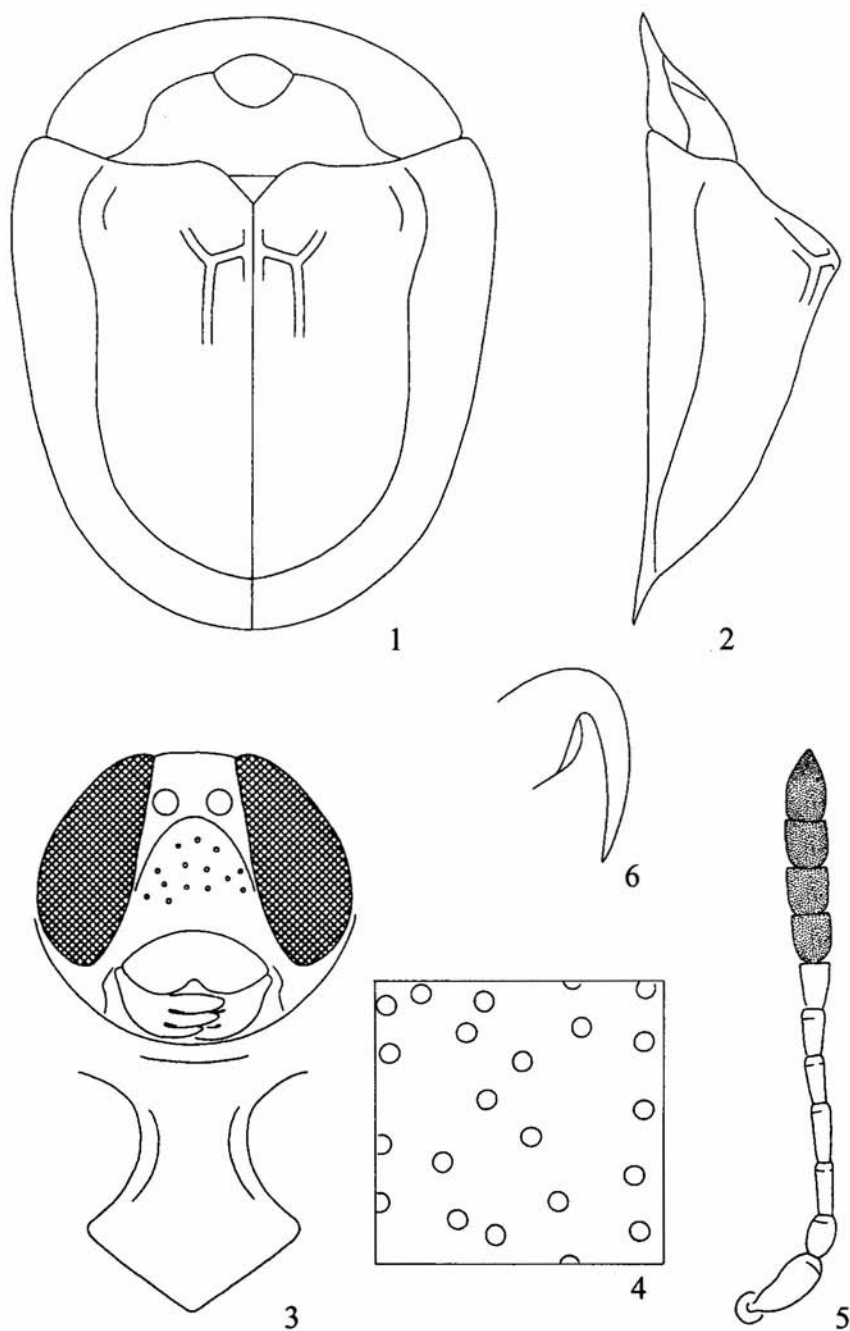
DESCRIPTION

Le: 7.8-9.5 mm, Wi: 6.0-7.1 mm, Lp: 2.5-3.1 mm, Wp: 5.1-6.15 mm, Le/Wi: 1.27-1.33, Wp/Lp: 1.98-2.07. Body subtrapezoidal (fig. 1), moderately converging posterad, males slightly stouter than females (L/W 1.27-1.29, female 1.31-1.33).

Pronotum and elytra usually uniformly yellow, except black basal teeth of elytra. Occasionally, some specimens have elytral disc reddish, and explanate margin with reddish humeral and posterolateral spots. In some specimens there are a few very small black stripes, especially on sutural elevation, elevated border of postscutellar impressions, elytral costae, and in the middle of border of disc. Clypeus, ventrites, and legs uniformly yellow. Antennae yellow, last four segments more or less infusate, sometimes only two or three apical segments slightly darker than basal ones.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a very small denticle. Disc only slightly convex, indistinctly separated from explanate margin. Punctuation of disc fine, shallow but dense, distance between punctures mostly smaller than puncture diameter, interspaces slightly elevated, thus surface appears from slightly irregular to slightly wrinkled, only area above head smooth. Sides of disc close to disc border more or less impressed. Surface of disc from slightly opaque to slightly shiny. Explanate margin narrow, very shallowly punctate, appears slightly irregular and slightly shiny.

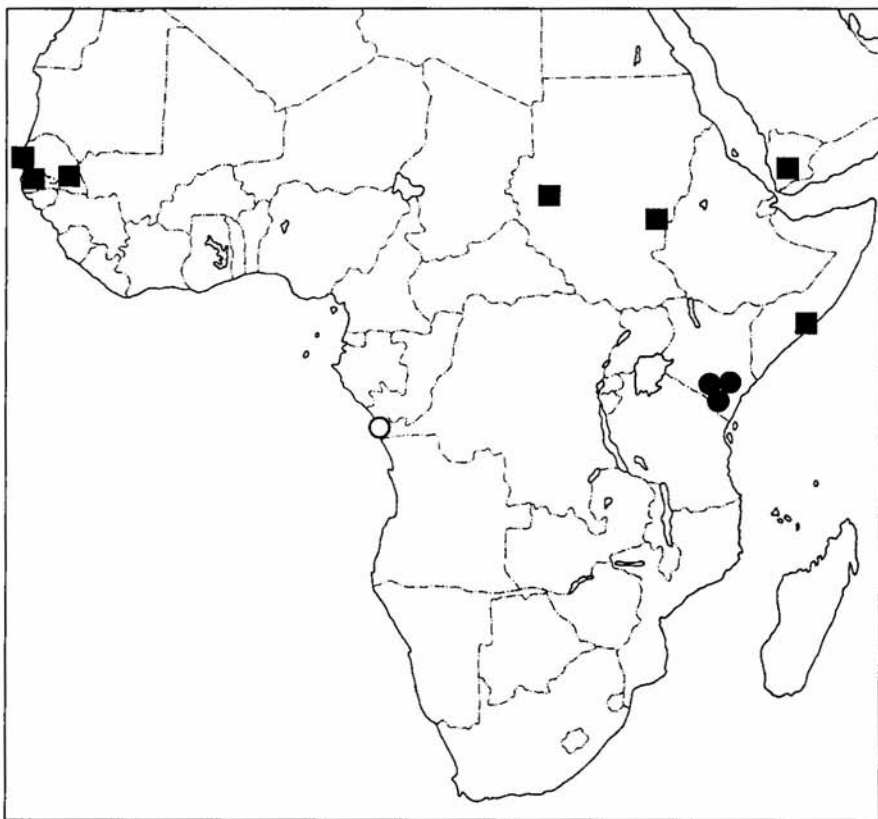
Scutellum large, triangular, usually without transverse sulcus, sometimes with small tubercle in the middle. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc unevenly convex, with distinct, conical postscutellar tubercle, higher and sharper than in *A. zavattarii* but lower than in *A. gibbipennis* (fig. 2). Postscutellar impressions distinct, usually bordered by a fold, or in anterior part by an impunctate line. Each disc with one blunt costa in position of 3rd interval, also in position of 5th interval, in the middle, there is a costa, at most as long as half length of disc but usually shorter. Punctuation completely irregular, fine and dense, distance between punctures from slightly narrower to slightly wider than puncture diameter (fig. 4), but in some specimens punctuation sparser, with distance between punctures almost twice wider than puncture diameter or, on the contrary, punctuation very dense, especially on sides of disc, with punctures almost touching each other. Interspaces not or only slightly convex, disc surface appears mostly regular or only slightly irregular. Marginal interval distinct on whole its length, broad, in posterior half without or with indistinct transverse folds. Marginal row distinct, its punctures distinctly coarser than on disc. Explanate



1-6. *Acrocassis flavescens*: 1 – dorsal, 2 – lateral, 3 – head and prosternum, 4 – puncturation of central part of elytral disc, 5 – antenna, 6 – claw

margin moderately broad, moderately deflexed, in the widest part slightly wider than $1/8$ width of disc of elytra, in apical part broad, as wide as diameter of 6-8 punctures of disc together, lateral margin simple marginate. Surface of explanate margin finely and sparsely punctate, punctures distinctly finer than those on disc, distance between punctures mostly wider than puncture diameter, posterior half of marginalia without or with indistinct radial grooves. Surface appears irregular, slightly shiny. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.2 times as wide as long, with fine clypeal lines, running close to eye margin and converging in arch (fig. 3). Surface of clypeus flat, with few very fine punctures, shiny. Labrum shallowly emarginate to $1/5$ length. Prosternal collar well marked, with deep lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by obtuse to sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or very shallowly impressed, apex impunctate but usually with slightly irregular surface. Antennae moderately slim, segments 9 and 10 only



7. Distribution of *Acrocassis flavescens* (black circles), *A. intermedia* (white circle), and *A. sudanensis* (black squares)

slightly longer than wide, length ratio of antennal segments: 100:53:73:80:66:63:63:66:66:66:100. Segment 3 c. 1.4 times as long as 2, and segment 4 c. 1.1 times as long as segment 3 (fig. 5).

Legs stout, covered by sparse, adherent setae. Claws large, with small basal tooth (fig. 6).

DISTRIBUTION

Kenya (fig. 7).

REMARKS

The largest species of the genus, the only with size up to 9.5 mm. Only the largest specimens of *A. zavattarii* have similar size (up to 8.5 mm) but differ in distinctly slimmer body (Le/Wi 1.43-1.54, in *flavescens* 1.27-1.33) and distinctly lower postscutellar tubercle.

MATERIAL EXAMINED

KENYA: Garissa env., 30 XI 1999, 1, M. SNIZEK (MS); Kitui, X 1937, 2, R. TOKER (BMNH); Tsavo, Voi, 1906, 1, M. DE ROTHSCHILD (MNHN), III 1911, 600 m, 2, ALLUAUD & JEANNEL (MNHN, MM), 22 XI-2 XII 1996, 2, 13-17 XII 1997, 26, M. SNIZEK (MS, LB, RB), 1-9 VI 1997, 2, A. KUDRNA (MO).

Acrocassis gibbipennis (BOHEMAN, 1854)

(figs 8-14, pl. 1: 4-6)

Cassida gibbipennis BOHEMAN, 1854: 488 (LT in NRS), 1856: 146, 1862: 351; GEMMINGER and HAROLD, 1876: 3654; KARSCH, 1882: 401; WEISE, 1896 c: 29.

Hypocassida gibbipennis: WEISE, 1903: 225; SPAETH, 1914: 90.

Acrocassis gibbipennis: SPAETH, 1924: 313, 1938: 61; SHAW, 1956 a: 267; BOROWIEC, 1985 a: 240, 1995: 370, 1999: 228; HERON and BOROWIEC, 1997: 629.

Cassida ectypa BOHEMAN, 1862: 354 (TE in ?); GEMMINGER and HAROLD, 1876: 3653, n. syn.

Hypocassida ectypa: WEISE, 1903: 225; SPAETH, 1914: 90.

Acrocassis ectypa: BOROWIEC, 1999: 228.

Patrisma gibbosa GESTRO: 1895: 470 (HT in MCSNG); KOLBE, 1898: 344; WEISE, 1899: 248; SPAETH, 1901 a: 347 (as syn. of *gibbipennis*).

Hypocassida gibbosa: WEISE, 1903: 225, 1904 a: 57; SPAETH, 1909: 272, 1912 b: 504, 1914: 90.

Acrocassis gibbipennis ssp. *gibbosa*: SPAETH, 1924: 313, 1932: 233.

Cassida soror WEISE, 1896 c: 30 (HT in ZMHU); KOLBE, 1898: 345, n. syn.

Hypocassida soror: WEISE, 1903: 226; SPAETH, 1914: 91.

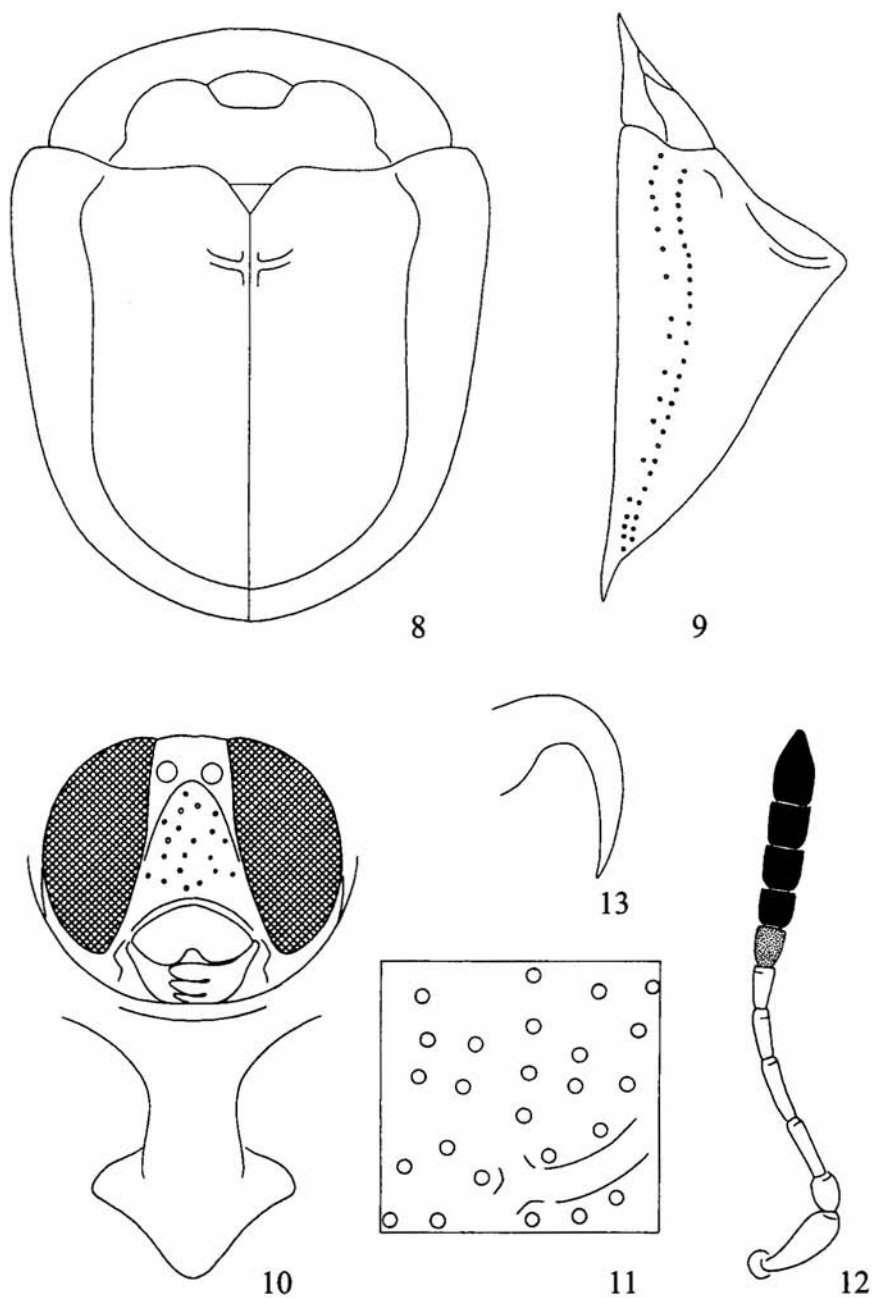
Acrocassis gibbipennis ssp. *soror*: SPAETH, 1924: 313.

Acrocassis gibbosa ssp. *soror*: SPAETH, 1935: 174.

Cassida sanguiventris KLUG: GEMMINGER and HAROLD, 1876: 3654 (nomen nudum).

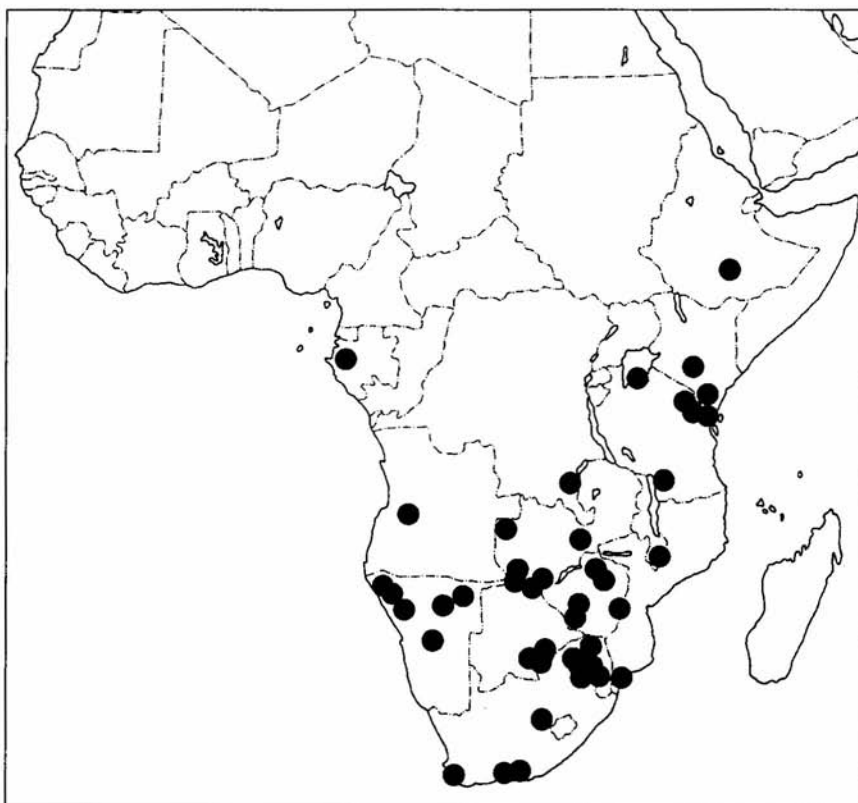
DESCRIPTION

Le: 5.55-7.25 mm, Wi: 4.4-5.7 mm, Lp: 1.9-2.4 mm, Wp: 3.6-4.75 mm, Le/Wi: 1.26-1.32, Wp/Lp ratio: 1.88-2.00. Body subtrapezoidal, distinctly converging posterad (fig. 8), males slightly stouter than females (L/W 1.26-1.29, female 1.30-1.32).



8-13. *Acrocassis gibbipennis*: 8 – dorsal, 9 – lateral, 10 – head and prosternum, 11 – punctuation of central part of elytral disc, 12 – antenna, 13 – claw

Variable species, but not as variable as *A. rufula* or *A. roseomarginata*. Pronotum yellow, disc often partly reddish, occasionally whole pronotum reddish. Scutellum yellow or reddish. Elytral disc in the palest form uniformly yellow, in the darkest form punctures in postcutellar impression and in area close to humerus marked with black, lateral margins of postcutellar tubercle, elytral costae, and sides of disc with small brown to black spots; often ground colour of elytra reddish, occasionally purple red, sometimes only punctures marked with red. Explanate margin yellow to reddish, usually with more or less visible throughout semitransparent elytral surface humeral and posterolateral spots of elytral epipleura. Elytral disc never black. Elytral epipleura never completely yellow, usually yellowish to reddish with brown to black humeral, posterolateral and sutural spots. Clypeus from uniformly yellow to partly infuscate, occasionally brown. Ventrites usually with thorax partly or completely black, sometimes uniformly yellow. Legs uniformly yellow. Antennal segments 1-6 yellow, segments 8-11 black, segment 7 usually partly or completely infuscate.



14. Distribution of *Acrocassis gibbipennis*

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Puncturation of disc moderately coarse, shallow, dense, with distance between punctures mostly smaller than puncture diameter. In some specimens punctures tend to coalesce and form irregular grooves, then surface appears irregular. Spaces between punctures usually shiny, but pronotum often covered by an opaque secretion. Explanate margin moderately broad, impunctate or very shallowly punctate, its surface only slightly irregular, with indistinct radial grooves, or completely regular, shiny or with opaque secretion.

Scutellum large, triangular, usually without transverse sulcus, sometimes with small impression or short sulcus. Base of elytra from slightly to moderately wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc with distinct black crenulation. Disc unevenly convex, with extremely high, conical postscutellar tubercle, thus whole disc appears conical (fig. 9). Postscutellar impressions distinct, bordered externally by a fold. Each disc with two distinct, elongate costae in position of 3rd and 5th interval, but external carina often well marked only for a short distance in the middle of disc. Surface of disc, except costae, usually with numerous shallow impressions and low folds, appears more or less irregular, but never as unduliform as in *A. undulipennis*. Puncturation, except submarginal and marginal rows, irregular, moderately coarse and moderately dense (fig. 11), distance between punctures from slightly narrower to twice wider than puncture diameter; dark forms appear slightly coarser punctate than pale forms. Marginal row distinct, its punctures distinctly coarser than on disc. Marginal interval distinct on whole its length, broad. Explanate margin moderately broad, strongly deflexed, in the widest part only slightly wider than 1/8 width of disc, in apical part as wide as diameter of four to five punctures of disc together, lateral margin simple marginate. Surface of explanate margin finely and sparsely punctate, punctures usually slightly finer than on disc, distance between punctures distinctly wider than puncture diameter, surface appears slightly irregular. Surface of elytra shiny but often covered by an opaque secretion. Apex of elytral epipleura bare.

Clypeus moderately broad, in male slightly longer than wide, in female c. as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 10). Surface of clypeus flat, impunctate or with few very fine punctures, shiny. Labrum distinctly emarginate to 1/5-1/4 length. Prosternal collar well marked, with deep lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or shallowly impressed, apex impunctate, surface sometimes finely irregular. Antennae moderately slim, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:50:80:78:60:50:50:45:52:95. Segment 3 elongate, 1.4-1.6 times as long as 2, and almost as long as segment 4 (fig. 12).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 13).

DISTRIBUTION

Eastern and southern Africa (fig. 14), single locality from Gabon based probably on an introduced or mislabelled specimen.

REMARKS

Well distinct in extremely high postscutellar tubercle, in profile almost whole elytral disc appears conical, while in other tuberculate species only postscutellar area appears conical.

The location of the type of *Cassida ectypa* BOHEMAN, 1862 is unknown, probably the type has been lost. According to the original description and the type locality (Promontorium Bonae Spei) the name is a junior synonym of *Cassida gibbipennis* (BOHEMAN, 1854).

WEISE (1896) described *Cassida soror* from eastern Africa. SPAETH (1924) placed it as subspecies of *A. gibbipennis*. I have examined holotype of *C. soror* and, in my opinion, it is only an aberration of *A. gibbipennis* and now *C. soror* is treated as a simple synonym of *A. gibbipennis*.

MATERIAL EXAMINED

ANGOLA: Nova Lisboa, Huambo, 1, A. DUARTE (ZSM).

BOTSWANA: Gaborone, 1915, 2, R. ELLENSBERGER (MNHN), 9-13 XI 1988, 1, R.D. WARD (CMNH); Kasane, 14 I 1970, 1, N.S. IRVING (CMNH); env. Kasane, 29 XII 1996-7 I 1997, 2, M. SNIZEK (MS, LB); Sebele, Bakgatla, RE Roome, 19 XI 1971, 2, R.D. WARD (CMNH); Tlokwen, 1-7 XI 1988, 1, R.D. WARD (CMNH).

ETHIOPIA: Arussi Galla, Gamale Gudda, III-V 1888, 1, V. BOTTEGO (holotype of *H. gibbosa*, MCSNG).

GABON: Entre Lambarene et de la Mer, 1901, 1, E. HAUG (MNHN).

KENYA: Nairobi, III 1913, 1, BABAULT (NMP); Voi, 24-28 I 1996, 1, M. SNIZEK (MS), 1-9 VI 1997, 1, A. KUDRNA (MO); Voi, Sagala Res., XI 1995, 1, WERNER (FK).

MALAWI: Mlanje, 7 XI 1913, 1, 27 I 1914, 1, S.A. NEAVE (BMNH).

MOZAMBIQUE: Delagoa Bay, 1 (ZMHU).

NAMIBIA: Abachaus, Otjiwarongo Distr., XII 1957, 1, G. HOBOM (MM); Caprivi Zipfel, Katima Mulilo, 15-24 I 1995, 1, M. SNIZEK (MS); Kavango, Mahange Game Res., 28 II 1992, 1, J. DECKERT (ZMHU); Damaraland, Abachaus, XII 1951, 1, III 1953, 1, G. HOBOM (TM); Kaokoland, Khowarib R., 17-19 V 1978, 5, S. LOUW & M.L. PENRITH (WM); Kaokoland, Otjinungwa, 19-22 VIII 1973, 1 (WM); Tsumeb, I III 1948, 1 (WM); Watoberg, 23 IX 1990, 2, P. SCHÜLE (SMNS); Windhoek, 4-5 XI 1991, 1, V. GÖLLNER (ZMHU).

SOUTH AFRICA: Cap, 2 (IRSN), 5, HEYNE (ZMHU); Cap, 3, KREBS (ZMHU); Cap. b. Sp., 2 (lectotype and paralectotype of *gibbipennis*, NRS), 1 (ZMHU); Cape prov., Cape Town, 14 I 1970, 1, C. BESNARD (LB); Cape prov., Grahamstown, 8 XII 1977, 2, S. ENDRÖDI (HNHM); Cap, Sunday Riv., 29 XI 1897, 1, BRAUNS (TM); Dumbrody, 12, O'NEIL (MRAC); Kapland, 11 (ZMHU); Maputa, Sikumba,

1 (ZMHU); Natal, 1 (ZMHU); North Prov., Geelhoutbosh farm, Waterberg, 24.22 S 27.33 E, 15-18 XI 1997, 1, S. BILY (JV); Oranje F. State, Ladybrand, I 1976, 1 (BM); Transvaal, Lydenburg, 2, F. WILMS (ZMHU); Transvaal, 30 km NE Nylstroom, 17-18 XII 1984, 1, H. and A. HOWDEN (CMN); Transvaal, Pretoria, 13 V 1954, 1, 10 XII 1955, 1, 12 IV 1971, 1 (TM); Transvaal, 10 km W Pretoria, rt. 514, 30 XII 1994, 1, A. FREIDBERG (TAU); Transvaal, 22 mls NNW Pretoria, VII 1955, 1, G. RUDEBECK (LU); Transvaal, Waterberg, 1898-99, 3, JUTRZENCKA (TM); Transvaal, Zoutpansberg, 5 (ZMHU); Weenen, 1, GORHAM (ZMHU).

TANZANIA: Kilimandjaro, Dschagga Land, Madschame, 1, T. PAESLER (ZMHU); Kilimandjaro, Kibonoto, 12 IV, 1, SJÖSTEDT (NRS); SO Kilimandjaro, Papyrus-Sumpf, 20-21 I 1906, 1, Ch. SCHRÖDER (ZMHU); Same, 12-17 V 1999, 1, A. KUDRNA (MO); Ubugwe, Boso, 1 (ZMHU); Usambara, Wilhelmstal, 1 (ZMHU); Usandawi, 25 II 1930, 1, 6 IV 1930, 1, H. FLIEGNER (ZMHU); Victoria Lake, Ukerewe Is., 1, Conrads (ZMHU); Wiedhafen, 26 I-5 II 1899, 3, FÜLLEBORN (ZMHU).

ZAIRE (REPUBLIC OF CONGO): Kasenga, II 1912, 2, BEQUAERT (MRAC).

ZAMBIA: Chilanga, 4000 ft., 12 I 1914, 1 (BMNH); Haut-Zambeze, Lealui, 1919, 17, V. ELLENBERGER (MNH); Sesheke, 11 II 1997, 2, J. MORAVEC (MS); Victoria Falls, 23-24 I 1956, 2 (TM).

ZIMBABWE: Binduro, XII 1978, 1 (NMM); Bulawayo, 6 II 1925, 1, R. STEVENSON (TM); Chipese, Chikwarakwara, 6 XII 1974, 1, F. DE MOOR (NMM); 70 km N Chvhu, Fatherstone env., 30 XII 1998, 1, M. SNIZEK (MS); Harare, Backpackers and Overlanders Camp, 17.56 S 31.08 E, 1360 m., 25 III 2000, 1, R. BEENEN (RB), 1, U. HEINIG (UH); Matabeleland, Lonely Mine, 1, H. SWALE (BMNH); Salisbury, 1 (TM), 3 X 1976, 1, 3-11 I 1977, 1, R.K. BROOKE (NMM); Umtali, Vumba Mts., 3 I 1982, 1, D. WHEELER (NMM).

VARIA: Afr. or., 1, Nonfried, (holotype of *Cassida soror* WEISE, ZMHU).

Acrocassis intermedia n. sp.

(figs 7, 15-20, pl. 1: 7-9)

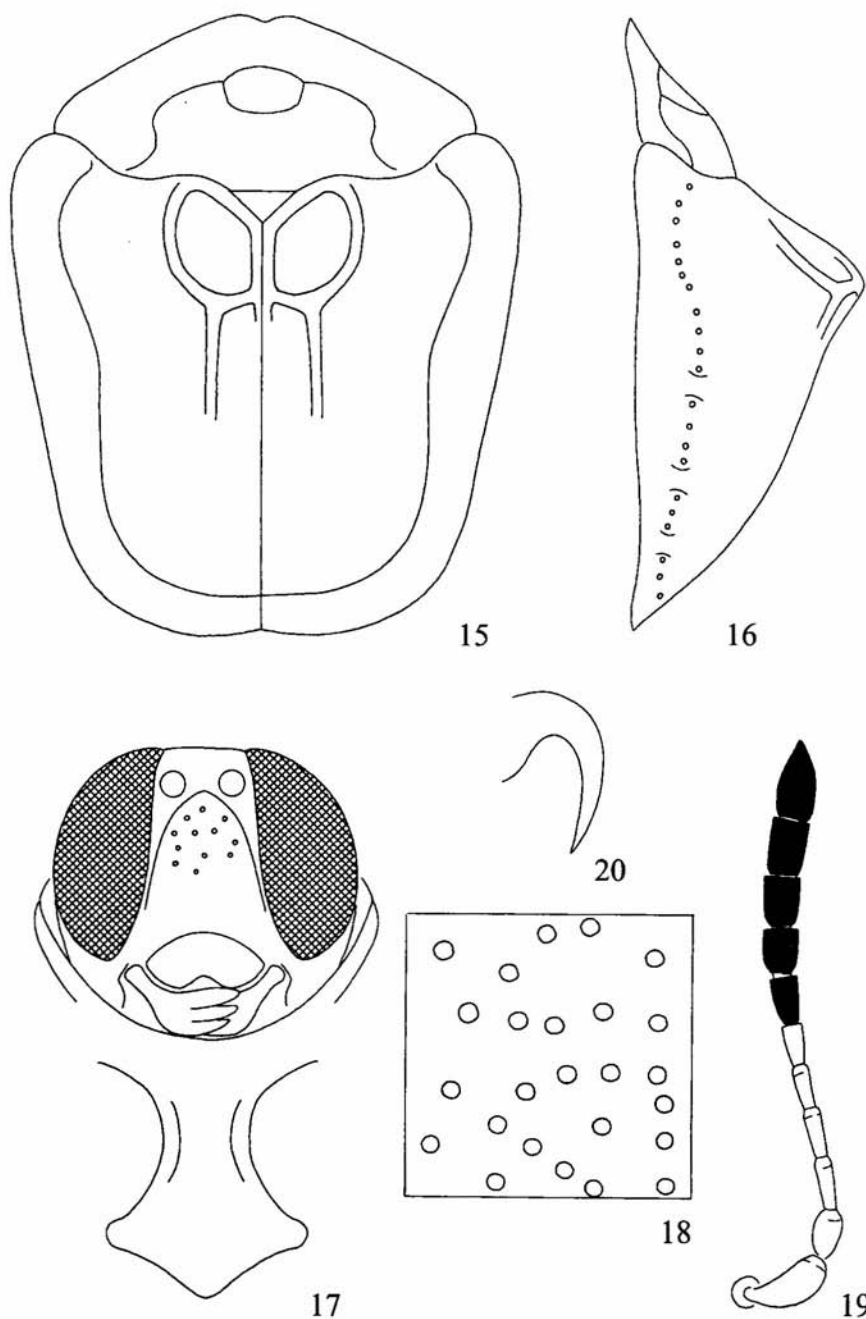
ETYMOLOGY

Named after its intermediate position between small species close to *A. rufula* and large species close to *A. flavescens*.

DESCRIPTION

Le: 6.05-6.7 mm, Wi: 4.8-5.25 mm, Lp: 2.0-2.1 mm, Wp: 3.9-4.25 mm, Le/Wi: 1.26-1.29, Wp/Lp ratio: 1.95-2.01. Body subtrapezoidal, distinctly converging posterad (fig. 15).

Polymorphic species, forms two distinct, pale and dark, aberrations. In both pale and dark forms pronotum yellowish to yellowish-brown with black basal margin, sometimes disc in the middle with two small, round, brown spots. Scutellum



15-20. *Acrocassis intermedia*: 15 – dorsal, 16 – lateral, 17 – head and prothorax, 18 – puncturation of central part of elytral disc, 19 – antenna, 20 – claw

yellow with black margins. Elytral disc in pale form mostly yellowish-brown, each puncture marked with black. Postscutellar tubercle with black anterior slope, also postscutellar impression and humeral area with several, small, black spots. Explanate margin yellowish-brown with black punctures, area close to humeral angle and whole extreme margin of elytra black. In dark form elytral disc mostly black, only margins of postscutellar impression and area before and below humerus yellowish. Explanate margin black. Elytral epipleura in both pale and dark form completely black, the dark colour never forms humeral and posterolateral spots. Clypeus brown, or with yellow centre. Ventriles and legs uniformly yellow. Antennal segments 1-6 yellow, remainder gradually infuscate to black, usually dorsal side of each apical segment darker brown or black and ventral side partly yellowish.

Pronotum semicircular but not as regularly as in related species, with maximum width at base, basal corners well marked, protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Puncturation of disc fine, shallow and moderately dense, with distance between punctures mostly twice larger than puncture diameter. Spaces between punctures shiny. Explanate margin narrow, appears impunctate, with very shallow radial grooves, surface appears only slightly irregular, slightly opaque.

Scutellum large, triangular, without transverse sulcus or impression. Base of elytra much wider than pronotum (like in *A. rufula*), humeri slightly protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc regularly, unevenly convex, with large conical postscutellar tubercle (fig. 16), and with distinct postscutellar impressions, bordered externally by a fold. Each disc with distinct, elongate costae in position of 3rd interval, often also with more or less visible costa in position of 5th interval. First costa usually complete, sometimes shortened and runs only to 2/5 length of disc. Surface of elytra with more or less visible irregular folds and impressions, better marked in specimens with black disc than in pale specimens, but never as irregular as in some specimens of *A. rufula*. Puncturation, except submarginal and marginal rows, irregular, moderately coarse and mostly dense (fig. 18), slightly finer than in related *A. rufula*. Punctures arranged more regularly than in *A. rufula*, and distance between punctures varies from slightly narrower to twice wider than puncture diameter. Marginal row distinct, its punctures distinctly coarser than on disc, especially in area below humerus. Marginal interval distinct on its whole length, broad. Explanate margin narrow, moderately deflexed, in the widest part only slightly wider than 1/8 width of disc of elytra, in apical part as wide as diameter of six to seven punctures of disc together, lateral margin simple marginate. Surface of explanate margin moderately coarse, slightly finer and sparser punctate than on disc, posterior half of marginalia with five to six broad folds. In black form surface often appears completely irregular, with no distinct punctures. Surface of elytra from slightly opaque to shiny. Apex of elytral epipleura bare.

Clypeus only slightly wider than long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 17). Surface of

clypeus flat, with very fine punctures, slightly opaque. Labrum distinctly emarginate to 1/4-1/3 length. Prosternal collar well marked, not longer than length of the second antennal segment, with lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or shallowly impressed, apex impunctate. Antennae moderately slim, segments 9 and 10 slightly longer than wide, length ratio of antennal segments: 100:62:68:62:59:50:62: 62:65:65:112. Segment 3 c. 1.1 times as long as segments 2 and 4 (fig. 19).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 26).

DISTRIBUTION

Angola (Kabinda) (fig. 7).

REMARKS

It is intermediate between large *A. flavescens*, *A. zavattari* and small *A. roseomarginata* and *A. rufula*. Its body colouration with punctures marked with black or with whole elytral disc black is very similar to that of dark forms of *A. rufula*, but distinctly darker than in *A. flavescens* and *A. zavattari*, which never have punctures marked with black and never form black aberrations. *A. intermedia* is distinctly larger than *A. rufula* (Le 6.0-6.7 mm, in *rufula* 4.5-5.5 mm), and slimmer (Le/Wi 1.26-1.29, in *rufula* 1.15-1.25). Large, yellowish-brown specimens of *A. roseomarginata* with partly black elytral punctures are very similar but differ in elytral epipleura with humeral and posterolateral spots, while in *A. intermedia* epipleura are always uniformly black. Large specimens of *A. gibbipennis* have similar size to *A. intermedia* but differ in distinctly higher postscutellar tubercle and explanate margin of elytra with humeral and posterolateral spots (sometimes visible only on underside of the margin).

MATERIAL EXAMINED

ANGOLA: holotype: "Chinchoxo, Falkenstein" "Hist. Coll. 58368" (ZMHU); 6 paratypes: the same data (ZMHU, LB).

Acrocassis roseomarginata (BOHEMAN, 1854)

(figs 21-27, pl. 2: 1-4)

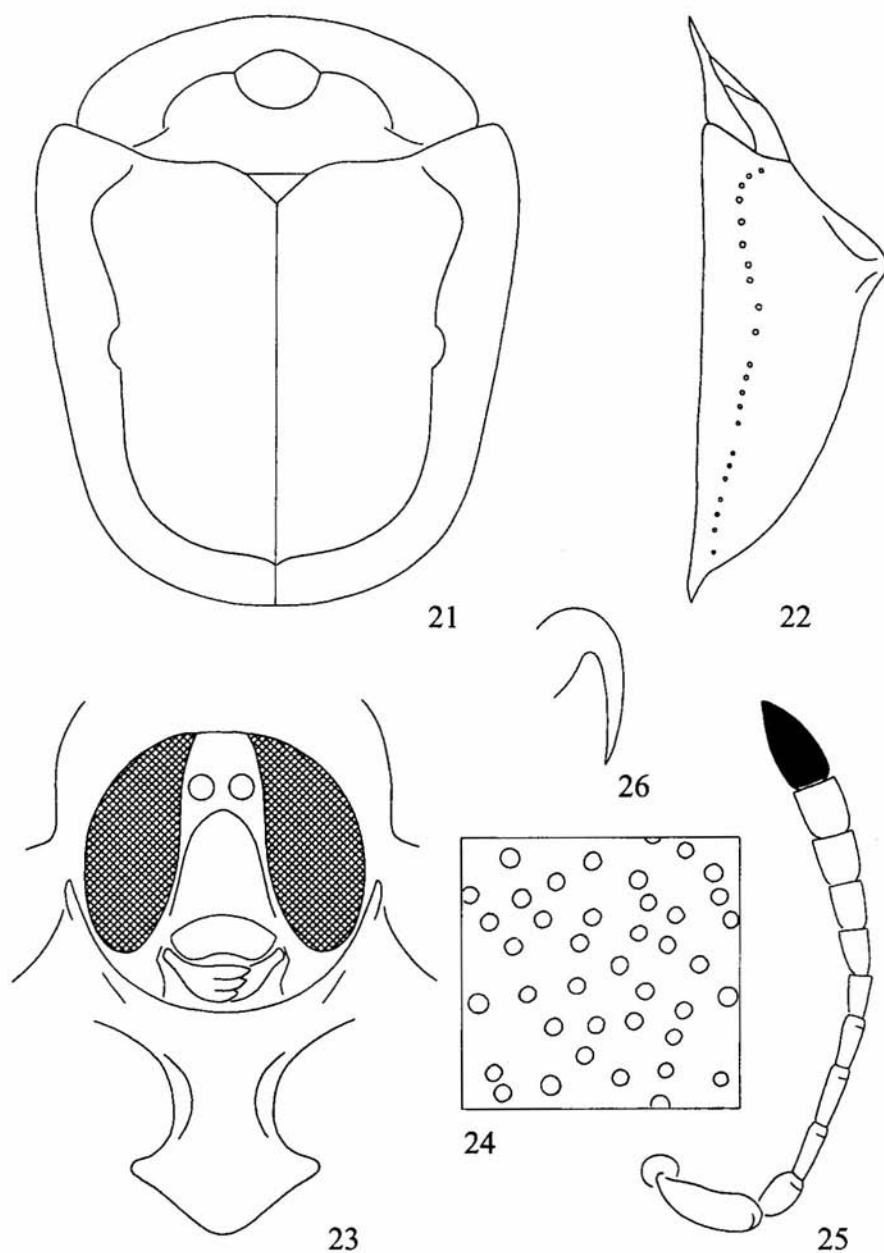
Cassida roseomarginata BOHEMAN, 1854: 489 (HT in NRS), 1856: 146, 1862: 354; WEISE, 1896 c: 29; GEMMINGER and HAROLD, 1876: 3657.

Hypocassida roseomarginata: WEISE, 1903: 226; SPAETH, 1914: 91.

Acrocassis roseomarginata: SPAETH, 1924: 313; BOROWIEC, 1986: 804, 1999: 228.

Cassida bistigma BOHEMAN, 1862: 352 (TE in BMNH); GEMMINGER and HAROLD, 1876: 3652; WEISE, 1896 c: 29; SPAETH, 1924: 313 (as syn. of *roseomarginata*).

Hypocassida bistigma: WEISE, 1903: 226; SPAETH, 1914: 90.



21-26. *Acrocassis roseomarginata*: 21 – dorsal, 22 – lateral, 23 – head and prothorax, 24 – puncturation of central part of elytral disc, 25 – antenna, 26 – claw

Cassida delectabilis BOHEMAN, 1862: 353 (TE in BMNH); GEMMINGER and HAROLD, 1876: 3653; WEISE, 1896 c: 29; SPAETH, 1924: 313 (as syn. of *roseomarginata*).

Hypocassida delectabilis: WEISE, 1903: 226; SPAETH, 1914: 90.

Cassida roseola WEISE, 1899: 243 (TE in ZMHU); BOROWIEC, 1986: 804 (as syn. of *roseomarginata*).

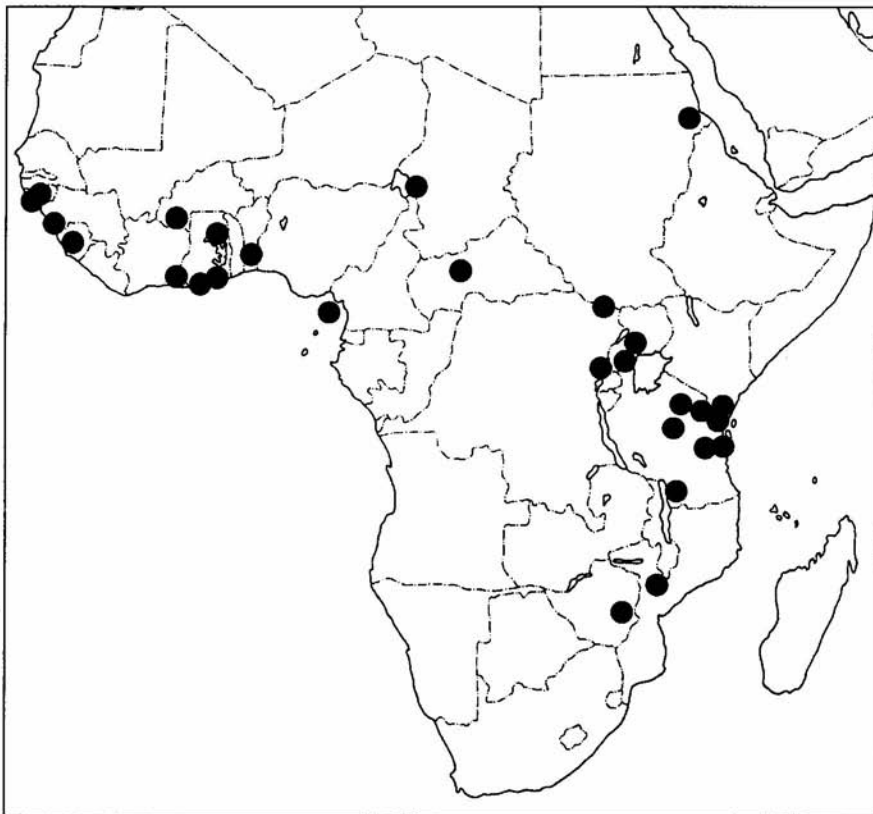
Hypocassida roseola: WEISE, 1903: 226 (TE in ZMHU); SPAETH, 1914: 91.

Acrocassis roseola: SPAETH, 1924: 308, 313; SHAW, 1960: 370, 1972: 72.

DESCRIPTION

Le: 5.0-6.1 mm, Wi: 4.1-4.9 mm, Lp: 1.8-2.05 mm, Wp: 3.5-4.05 mm, Le/Wi: 1.17-1.28, Wp/Lp ratio: 1.92-2.03. Body subtrapezoidal, distinctly converging posterad (fig. 21), males slightly stouter than females (L/W 1.17-1.24, female 1.26-1.28).

Variable species. Pronotum yellowish to yellowish-brown. Elytral disc in the palest form uniformly yellow, in the darkest form almost completely black, except yellowish spots in postscutellar impression, but forms with mostly black elytra are very rare (not more than 3% of examined specimens) in opposition to the common



27. Distribution of *Acrocassis roseomarginata*

dark form in related *A. rufula* (c. 20% of examined specimens). Intermediate specimens have disc with several small dark, brown to black, spots, especially in anterior slope of postscutellar tubercle, at base of elytra, and behind the postscutellar tubercle, sometimes only punctures have dark centre. Sometimes, ground colour of disc reddish. Explanate margin in the palest form uniformly yellow; often marginalia with reddish humeral and posterolateral spots, in the darkest form these spots are brown to black; sometimes the spots are only margined by a darker colour or marked only by punctures with dark centre. Elytral epipleura rarely completely yellow, reddish or brown to black, often with reddish humeral and posterolateral spots, occasionally with yellow and reddish spots alternately. Clypeus, ventrites, and legs usually uniformly yellow, rarely clypeus infusate basally, occasionally clypeus completely brown. Antennae in populations from western Africa usually completely yellow or with only last segment infusate to black, in populations from central and eastern Africa usually last five to six segments infusate to black, but specimens with predominantly yellow and mostly black antennal segments were observed in both eastern and western populations.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Puncturation of disc fine, shallow, moderately dense, with distance between punctures usually slightly larger than puncture diameter. Spaces between punctures usually shiny, but pronotum often covered by an opaque secretion. Explanate margin narrow, impunctate, its surface only slightly irregular or completely regular, shiny or with opaque secretion.

Scutellum large, triangular, without transverse sulcus, sometimes with small impression. Base of elytra from slightly to moderately wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc with distinct black crenulation. Disc unevenly convex, with conical postscutellar tubercle (fig. 22), with distinct postscutellar impressions, bordered externally by a fold. Each disc with two distinct, elongate costae in position of 3rd and 5th interval, but external carina well marked only in a short distance in the middle of disc. Puncturation, except submarginal and marginal rows, irregular, coarse and moderately dense (fig. 24), distance between punctures from slightly narrower to slightly wider than puncture diameter; dark forms appear slightly coarser punctate than pale forms. Interspaces mostly flat and surface of elytral disc never appears irregular. Marginal row distinct, its punctures distinctly coarser than on disc. Marginal interval distinct on whole its length, broad. Explanate margin narrow, strongly deflexed, in the widest part only slightly wider than 1/10 width of disc of elytra, in apical part as wide as combined diameters of four to five punctures of disc, lateral margin simple marginate. Surface of explanate margin moderately coarsely and densely punctate, punctures often slightly coarser than on disc, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Surface of elytra shiny but often covered by an opaque secretion. Apex of elytral epipleura bare.

Clypeus moderately broad, c. as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 23). Surface of clypeus flat, impunctate or with few very fine punctures, shiny. Labrum distinctly emarginate to 1/5 length. Prosternal collar well marked, with deep lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or shallowly impressed, apex impunctate, surface sometimes finely irregular. Antennae moderately slim, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:50:55:62:67:55:42:45:50:55:104. Segment 3 c. 1.1 times as long as 2, and segment 4 c. 1.1 times as long as segment 3 (fig. 25).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 26).

HOST PLANT

Convolvulaceae: *Merremia hederacea*, *Ipomoea argenteaurata/heterotricha*, *I. eriocarpa* (E. OBERMAIER, letter inf.).

DISTRIBUTION

Western and eastern Africa (fig. 27).

REMARKS

Apart from *A. rufula* it is one of the smallest species of the genus, but usually slightly larger and slimmer than its congener, with base of elytra slightly less wider than pronotum. *A. roseomarginata* is usually paler coloured, with explanate margin of elytra always with "window" in middle and with darker coloured humeral and posterolateral spot, while in *A. rufula* explanate margin of elytra are unicolours or only punctures are dark marked. Aberrations with black elytral disc are in *A. roseomarginata* very rare (less than 3% of all examined specimens), while in *A. rufula* they are quite common (c. 20 % of all examined specimens). *A. roseomarginata* often has red marking of elytra (punctures marked with red, or red borders of spots on explanate margin), while in *A. rufula* elytra are never red marked (punctures marked with brown or black). *A. sudanensis* has similar colouration, sometimes also marked with red, but differs in distinctly lower postscutellar tubercle, with elytral profile appearing angulate rather than tuberculate. *A. undulatifennis* at first glance is similar, but differs in coarsely punctate elytra with unduliform sculpture. Both species are separated geographically, *A. undulatifennis* is known only from Namibia, while *A. roseomarginata* is common in western and eastern Africa south to Zimbabwe, rare in central Africa. Large, yellowish-brown specimens of *A. roseomarginata* with partly black elytral punctures are very similar to *A. intermedia* but it differs in elytral epipleura always uniformly black, while in *A. roseomarginata* epipleura have humeral and posterolateral spots.

Specimens from eastern Africa with black five to six apical antennal segments were described under the name *A. roseola* (WSE.), while specimens from western

Africa with infusate only last antennal segment under the name *A. roseomarginata* (BOH.). Other characters are the same in all forms, including infraspecific variability. Actually, the form with infusate 4-6 apical antennal segments predominates in eastern populations, and in western populations the form with only last antennal segment infusate is more common but the character is not constant; I observed specimens from Ivory Coast with infusate apical half of antennae, and specimens from Tanzania with almost uniformly yellow antennae. Therefore, I synonymized *A. roseola* with *A. roseomarginata* (BOROWIEC 1986 a).

MATERIAL EXAMINED

- BENIN: Zagnanado, Uuémé riv., 13-15 IV 2000, 1, Z. ANDRS (FK).
 BURKINA FASO: Pundu, 54, OLSUFIEW (NRS, LB).
 CHAD: Riv. Inondees, IX 1904, 1, J. DECORSE (MNHN).
 EQUATORIAL GUINEA: Fernando Poo, VI 1900, 1, L. CONRADT (ZMHU); Fernando Poo, S. Isabel, 1 VIII 1900, 1, L. CONRADT (ZMHU).
 GHANA: Labadi Beach, Accra, 20 X 1992, 1 (MS), 14 III 1993, 3, M. KLICHA (MS, UA); Northern Region, Tamale, 23 X 1971, 1, S. ENDRÖDY-YOUNGA (HNHM); Takoradi, 3 V 1967, 1, 20 X 1967, 1, C. BESNARD (LB).
 GUINEA: Conakry, 1912, 1, D. SILVESTRI (MCSNG).
 GUINEA BISSAU: Bolama, VI-XII 1899, 1, L. FEA (MCSNG); Bubaque, VII 1956, 1, BENASSI (MCSNM); Suzana, X 1952, 2, ANDREOLETTI (MCSNM).
 IVORY COAST: Comoé Nat. Park, VI 1994, 4, on *Ipomoea* sp., E. OBERMAIER (EO); Delafosse, 1897, 1 (MNHN); Thai-Park, VI 1995, 1, on *Ipomoea batatas*, E. OBERMAIER (EO).
 KENYA: Taru-Mombasa, 1, F. THOMAS (ZMHU).
 MOZAMBIQUE: Tete, 1, K. WIESE (ZMHU).
 REPUBLIC OF CENTRAL AFRICA: Samlia, Riv. N'Gamie, 1, MOCQUERYS (IRSN).
 SIERRA LEONE: Sierra leona, 1 (holotype of *delectabilis*, BMNH).
 TANZANIA: Dar-es-Salaam, 1, R. v. BENNIGSEN (holotype of *Hypocassida roseola* WEISE, ZMHU), 1, BENNIGSEN (DEI); Kigonsera, 1, HANIGER (ZMHU); Litema, 1, BÖTTCHER (ZMHU); Mikumi, 17-20 XII 1993, 1, M. SNIZEK (MS); Mombo, III 1899, 1 (ZMHU); Ugogo, II 1912, 1 (ZMHU); Umbugwe, 4 (ZMHU); W Usambara, VI 1903, 1 (ZMHU).
 UGANDA: Bugiri, 1400 m, 5-8 VIII 1957, 1, BASILEVSKY and LELEUP (MRAC); O'Unyoro, l'Albert-Nyanza Reg., II 1909, 1, Ch. ALLUAUD (MNHN).
 ZAIRE (REPUBLIC OF CONGO): Garamba Nat. Park, I/o/1, 4 V 1950, 1, DE MOULIN (MRAC), II/f/4, 19 I 1951, 1, DE SAEGER (IRSN), II/gd/4, 1 II 1951, 1, DE SAEGER (MRAC); Ngowa, 19 VI 1939, 1, J. MERTENS (IRSN); Uele, 1, coll. CSIKI (HNHM).
 ZIMBABWE: Chirinda Forest Land, Mt. Selinda, 24 I 1998, 1, M. HALADA (MS).
 VARIA: Guinea, 1 (probably syntype of *bistigma*, BMNH); Senegallia, 1, CHEVROLAT (holotype of *roseomarginata*, NRS).

***Acrocassis rufula* (THOMSON, 1858)**

(figs 28-34, pl. 2: 5-8)

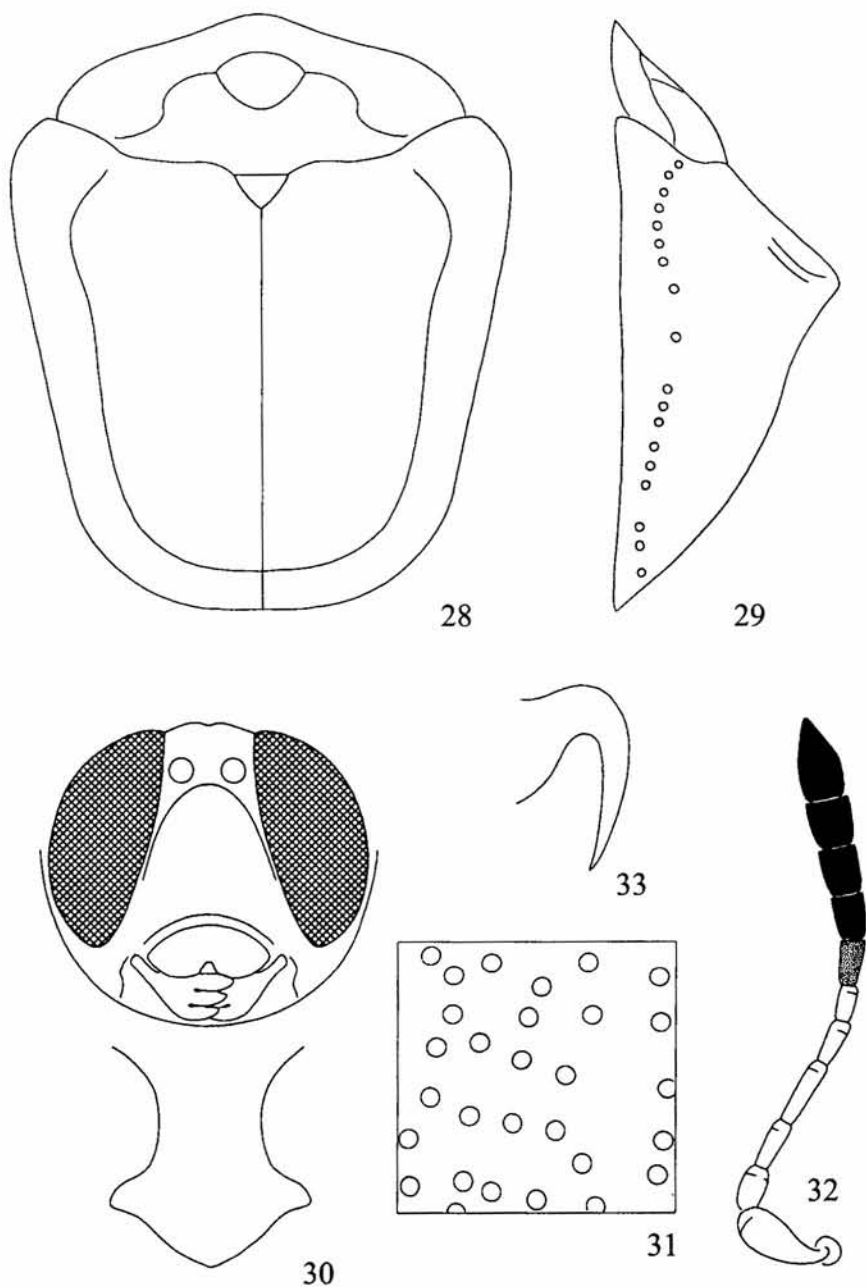
Cassida rufula THOMSON, 1858: 232 (ST in MM); BOHEMAN, 1862: 355; GEMMINGER and HAROLD, 1876: 3657; WEISE, 1896 c: 29.*Acrocassis rufula*: SPAETH, 1924: 314; TIBERGHIE, 1976: 179; BOROWIEC, 1985 a: 240, 1985 b: 447, 1986: 804, 1999: 228.*Hypocassida rufula*: WEISE, 1903: 226; SPAETH, 1914: 91.*Cassida testaceicollis* THOMSON, 1858: 233 (TE in ?); BOHEMAN, 1862: 361; GEMMINGER and HAROLD, 1876: 3659.*Cassida rufula* var. *testaceicollis*: WEISE, 1896 c: 29.*Hypocassida rufula* var. *testaceicollis*: WEISE, 1903: 226, 1910: 43; SPAETH, 1914: 91.*Acrocassis rufula* ab. *testaceicollis*: WEISE, 1910 b: 43; SPAETH, 1924: 314, 1932: 233.*Hypocassida rufula* var. *epipleuralis* WEISE, 1903: 226 (ST in ZMHU); SPAETH, 1914: 91.*Acrocassis rufula* ab. *epipleuralis*: SPAETH, 1924: 314, 1932: 233.*Acrocassis rufula* var. *epipleuralis*: SHAW, 1955: 237, 1972: 72.*Acrocassis rufula* ab. *nigritula* SPAETH, 1932: 233 (ST in MM).

DESCRIPTION

Le: 4.5-5.5 mm, Wi: 3.6-4.65 mm, Lp: 1.6-1.9 mm, Wp: 3.1-3.8 mm, Le/Wi: 1.15-1.25, Wp/Lp ratio: 1.94-2.06. Body subtrapezoidal, distinctly converging posterad (fig. 28), males slightly stouter than females (L/W 1.15-1.18, female 1.20-1.25).

Very variable species. Pronotum usually yellowish to yellowish-brown with black basal margin, in dark forms partly black, in extremely dark form completely black. Scutellum from uniformly yellowish-brown to black. Elytra in typical specimens yellowish to yellowish-brown, except black basal teeth, some punctures in postscutellar impressions, on anterior slope of postscutellar tubercle, and behind the tubercle marked with dark-brown or black; punctures on whole disc usually have narrowly black margin of the hole. Dark forms have elytral disc mostly black, except some yellowish-brown spots in postscutellar impressions and in front of humeri, in extreme case whole disc is black. Explanate margin in pale forms the same colour as disc, with punctures often marked with black, sometimes extreme margin reddish; in dark forms explanate margin completely black. Elytral epipleura in both pale and dark forms mostly or completely black, the dark colour never forms humeral and posterolateral spots, if epipleura partly pale then external margin yellowish or reddish. Clypeus usually yellow, often with infuscate basal corners, occasionally black, also in pale forms. Ventrites, and legs uniformly yellow. Antennal segments 1-6 yellow, remainder black, sometimes segment 7 only partly infuscate.

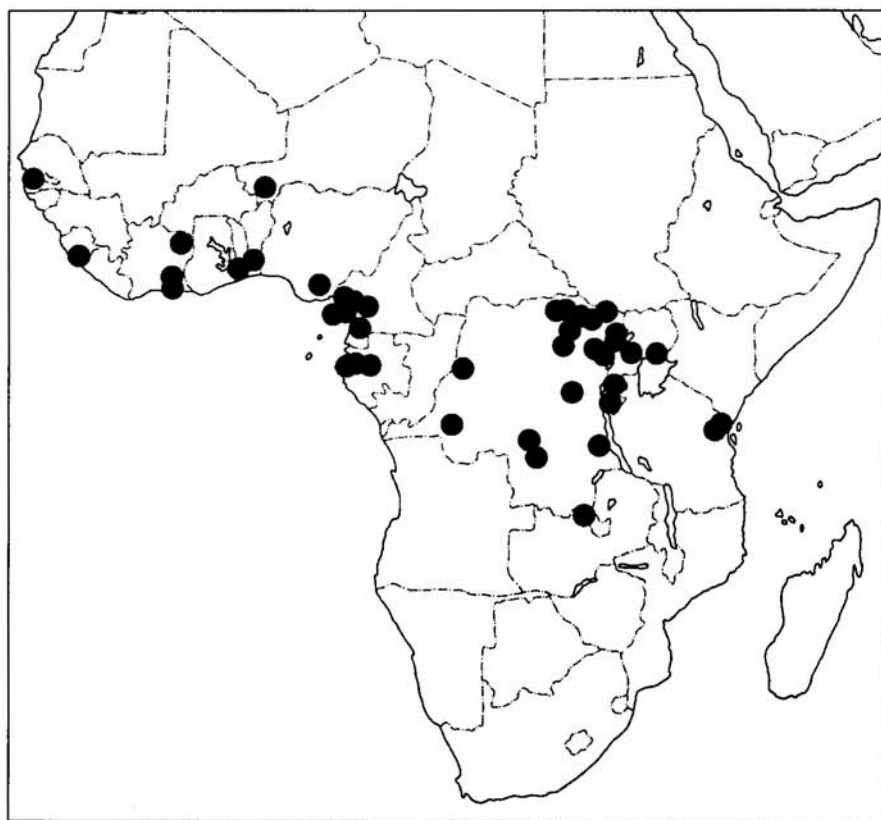
Pronotum semicircular but not as regularly as in related species, sometimes appears subtriangular, with maximum width at base, basal corners well marked, protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Puncturation of disc fine, shallow but dense, with distance between punctures from slightly smaller to slightly larger than puncture diameter. In some specimens punctures elongate, tend to form irregular



28-33. *Acrocassis rufula*: 28 – dorsal, 29 – lateral, 30 – head and prosternum, 31 – punctuation of central part of elytral disc, 32 – antenna, 33 – claw

striation. In other specimens puncturation is very shallow and surface of disc appears slightly irregular rather than punctate. Spaces between punctures usually shiny, but mature beetles often covered by opaque secretion and shiny background is invisible. Explanate margin narrow, impunctate, only slightly irregular, its surface shiny but like disc often covered by opaque secretion.

Scutellum large, triangular, with or without transverse sulcus, sometimes with small impression. Base of elytra much wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc regularly, unevenly convex, with conical postscutellar tubercle (fig. 29), and with distinct postscutellar impressions, bordered externally by a distinct fold. Each disc with distinct, elongate costae in position of 3rd interval, often also with short costa in position of 5th interval. Surface of elytra with more or less visible irregular folds and impressions, better marked in specimens with black disc than in pale specimens. In extreme cases whole surface of elytra appears irregular, then longitudinal costae barely marked. Puncturation, except submarginal and mar-



34. Distribution of *Acrocassis rufula*

ginal rows, irregular, moderately coarse and mostly dense (fig. 31). Punctures arranged irregularly and distance between punctures varies from slightly narrower to thrice wider than puncture diameter. Marginal row distinct, its punctures distinctly coarser than on disc, especially in area below humerus. Marginal interval distinct on its whole length, broad. Explanate margin narrow, moderately deflexed, in the widest part only slightly wider than 1/8 width of disc of elytra, in apical part as wide as combined diameter of six to seven punctures of disc, lateral margin simple marginate. Surface of explanate margin moderately coarse, slightly finer and sparsely punctate than on disc, posterior half of marginalia with five to six broad folds. Surface of elytra from slightly opaque to shiny, often covered by opaque secretion. Apex of elytral epipleura bare.

Clypeus moderately broad, 1.1-1.2 times as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 30). Surface of clypeus flat, impunctate or with very fine few punctures, shiny. Labrum distinctly emarginate to 1/4-1/3 length. Prosternal collar well marked, with lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or shallowly impressed, apex impunctate. Antennae moderately slim, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:50:55:75:50:40:55:50:55:100. Segment 3 c. 1.1 times as long as 2, segment 4 usually elongate, 1.3-1.4 times as long as segment 3 but in some specimens only slightly longer than 3rd segment (fig. 32).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 33).

DISTRIBUTION

Western and central Africa (fig. 34).

REMARKS

It is the smallest and the stoutest species of the genus, only *A. roseomarginata* and *A. undulatipennis* have similar size. *A. undulatipennis* differs in coarsely punctate elytra with unduliform sculpture. *A. roseomarginata* is usually paler coloured, with explanate margin of elytra always with "window" in middle and with darker coloured humeral and posterolateral spot, while in *A. rufula* explanate margin of elytra is unicolourous or only punctures are dark marked. Aberrations with black elytral disc are in *A. roseomarginata* very rare (less than 3% of all examined specimens), while in *A. rufula* they are quite common (c. 20 % of all examined specimens). *A. roseomarginata* often has red marking of elytra (punctures marked with red, or red borders of spots on explanate margin), while in *A. rufula* elytra are never red marked (punctures marked with brown or black). Small specimens of *A. sudanensis* have a similar size to large specimens of *A. rufula*, but differ in paler, pale yellow colouration, with elytra often marked with red, and especially in distinctly lower postscutellar tubercle, with elytral profile appearing

angulate rather than tuberculate. *A. rufula* and *A. roseomarginata* are the commonest species of the genus but, apart from morphological differences, they differ also in biological preferences – *A. rufula* prefers forests, while *A. roseomarginata* open habitats.

MATERIAL EXAMINED

- BENIN: Zangnanado, 36 km E Abomey, 13-16 IV 2000, 1, A. KUDRNA (MO).
 BURUNDI: Rumonge, 800 m, 7 III 1953, 1, P. BASILEVSKY (MRAC).
 CAMEROON: Batanga, 1, VIII 1913, 1, GOOD (CMNH); Bibundi, 15-30 IV 1905, 1, G. TEßMANN (ZMHU); Bipindi, 1, G. ZENKER (ZMHU); Duala, IX 1912, 1, v. ROTHKIRCH (ZMHU); Jaunde, X 1914, 6, TEßMANN (ZMHU); Moliwe n. Victoria, 7 III-1 IV 1908, 3, F. v. MALTZAN (ZMHU); Nkolbison, Yaounde-Bi, 20 VII 1963, 1, L. SEGERS (ZSM).
 EQUATORIAL GUINEA: Fernando Poo, S. Isabel, 7 VI 1900, 1, L. CONRADT (ZMHU).
 GABON: Gabon, 1 (syntype of *rufula*, IRSN); Haut Ogooué, Jusqu'a-Bove, 1909, 1 (MNHN); Gaboon, 1, A.I. GOOD (CMNH); Kangve, Ogove R., 1, A.C. GOOD (CMNH); Lambarene, V 1922, 4, A.C. GOOD (CMNH); Libreville, 1-12 I 1931, 13, A. TINAUT (MRAC); Ogooué-Maritime, Gamba, 12 VI 1992, 1, J. WIERINGA (JWI); Ogove R., 2, GOOD (CMNH); Sud Ogowé, N'Gomo, 1 JUNOD (MRAC); Zonanghe Lac, 1, LENAIRE (NMP).
 IVORY COAST: Bingerville, 1 (NMP); Dimbroko, 2 (1 IRSN, 1 NMP); Grand Bassam, 1904, VI 1904, 1, J. DECORSE (MNHN); Sassandra, 1939, 1, LEPESME et al. (MNHN).
 NIGER: Niger, 1, BENN. (ZMHU).
 NIGERIA: Ogoja County, 6 III 1962, 1, 18 III 1962, 1, 17 III 1963, 5, 8 III 1964, 1, 17 XI 1967, 1, R. MEYER (ZSM).
 RUANDA: Rubona, 19 II 1963, 1, G. PIERRARD (MRAC).
 SIERRA LEONE: Makali, 1981, 1, K. WOLGEMUTH (EGS); Mayemba, 1 (NMP).
 TANZANIA: Amani, X-XII 1905, 900 m, 9, Ch. SCHRÖDER (ZMHU); Amani, 2, REINECK (ZMHU); Sigital, X-XII 1905, 1, Ch. SCHRÖDER (ZMHU); Usambara, 2, Ch. SCHRÖDER (ZMHU).
 TOGO: Misahohe, 8 V 1895, 1, E. BAUMANN (ZMHU).
 UGANDA: Entebe env., 8-13 XII 1994, 1, M. SNIZEK (MS); Masindi Distr., Budongo Forest n. Sonso, 15-25 I 1997, 3, T. WAGNER (LB, TW).
 ZAIRE (REPUBLIC OF CONGO): Albertville, XII 1917, 1, 1918, 1, R. MAYNÉ (1 syntype of ab. *nigritula*, MRAC); Amadi, 17-23 III 1913, 1, VAN DEN PLAS (MRAC); Bambesa, XII 1936, 1, J. VRYDAGH (MRAC); Congo, 5, STAUD. (ZMHU); Congo da Lemba, I 1913, 1, R. MAYNÉ (MRAC); Dungu, III 1920, 1, VAN DEN PLAS (MRAC); Elisabethville, IX 1911, 1, Miss. Agric. (MRAC); Equateur, Bokuma, VII 1952, 1, LOOTENS (MRAC); Garamba Nat. Park, source Duru, 12 IV 1950, 1, DE SAEGER (MRAC); Haut Uele, Abimva, VI-VII 1925, 1, L. BURGEON

(syntype of ab. *nigritula*, MRAC); Haut Uele, Moto, 1923, 1, L. BURGEON (MRAC); Haut Uele, Tuku, IV 1915, 1, P. VAN DEN PLAS (MRAC); Ituri, Bunia, VI 1938, 1, P. LEFÈVRE (MRAC); Ituri, La Moto, Madyu, 1, L. BURGEON (syntype of ab. *nigritula*, MRAC); Kasai, Ngombe, 9 XI 1921, 1, H. SCHOUTEDEN (MRAC); Kivu, Luvungi, XII 1932, 1, L. BURGEON (MRAC); Lac Albert, Mahagi, VII 1937, J. GHESQUIÈRE (MRAC); Lokandu, VI 1939, 1, MARÉE (MRAC); Lomami-Kaniama, III-VI 1932, 1, R. MASSART (MRAC); Mongbwalu, Kilo, VII 1938, 1, Mme SCHEITZ (MRAC); Stanleyville, 19-28 II 1928, 9, VIII 1928, 2, 8-15 VIII 1928, 4, 31 V-5 VI 1929, 4, 1 XI 1929, 1, A. COLLART (IRSN, MRAC); Station de Gandajika, 1957, 1, P. DE FRANQUEN (MRAC); Uelle, VI-VIII, 1, TEßMANN (ZMHU).

***Acrocassis sudanensis* SPAETH, 1929**

(figs 7, 35-40, pl. 3: 1-3)

Acrocassis sudanensis SPAETH, 1929: 236 (ST in BMNH, MM); BOROWIEC, 1985 b: 448, 1999: 229. *Acrocassis somalica* SPAETH, 1938: 59 (HT in MCSNT); BOROWIEC, 1999: 229 (as syn.).

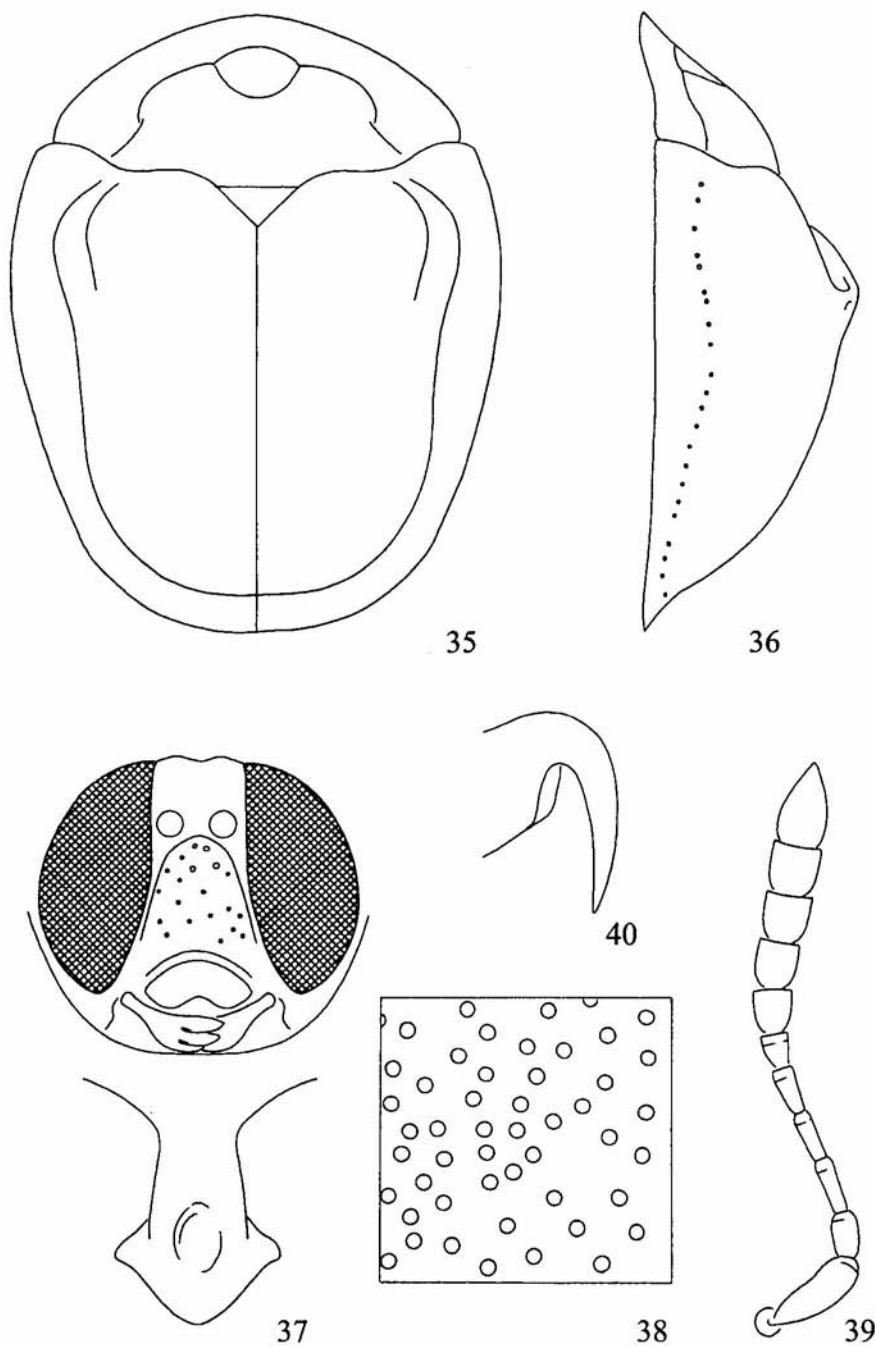
DESCRIPTION

Le: 5.0-6.2 mm, Wi: 3.7-4.7 mm, Lp: 1.8-2.3 mm, Wp: 3.2-4.15 mm, Le/Wi: 1.26-1.38, Wp/Lp ratio: 1.78-1.87. Body subtrapezoidal, moderately converging posterad (fig. 35), males slightly stouter than females.

Pronotum yellow. Elytra in the palest form uniformly yellow, maculate form has small, indistinct, reddish to brown spots on elytral tubercle, elytral costae, and often narrow posterolateral spot on explanate margin. The darkest form has reddish to brown band along sides of disc, spot at top of elytral tubercle and distinct posterolateral spot on explanate margin, often also suture with narrow apical sutural spot and postscutellar impressions with numerous small spots. Punctures in basal area of disc often with dark centre. Clypeus, ventrites, and legs uniformly yellow. Antennae usually uniformly yellow, sometimes last segment infusate, or three to four apical segments slightly darker yellow than basal segments.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Punctuation of disc fine, shallow but dense, with distance between punctures from slightly smaller to slightly larger than puncture diameter, surface of disc appears slightly irregular. Spaces between punctures indistinctly microreticulate, slightly shiny. Explanate margin narrow, extremely shallowly punctate, its surface slightly shiny.

Scutellum large, triangular, without transverse sulcus. Base of elytra not or only slightly wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc with fine black crenulation. Disc unevenly convex, with low and obtuse postscutellar tubercle, the smallest in the nominotypical subgenus



35-40. *Acrocassis sudanensis*: 35 – dorsal, 36 – lateral, 37 – head and prosternum, 38 – punctation of central part of elytral disc, 39 – antenna, 40 – claw

(fig. 36). Postscutellar impressions distinct, bordered externally by an elevation, no other impressions. Each disc with two elongate costae in position of 3rd and 5th interval; the costae in eastern populations usually more prominent than in western populations. First costa usually complete, second costa well marked only in posterior half of disc, sometimes reduced to a small fold in the middle of disc, occasionally completely reduced. Punctuation, except submarginal and marginal rows, completely irregular, moderately coarse and dense, distance between punctures from slightly narrower to slightly wider than puncture diameter (fig. 38). Marginal row distinct, its punctures distinctly coarser than on disc. Marginal interval distinct on its whole length, broad. Explanate margin narrow, strongly deflexed, in the widest part only slightly wider than 1/10 width of disc of elytra, in apical part as wide as combined diameter of three to four punctures of disc, lateral margin simple marginate. Surface of explanate margin very shallowly punctate, posterior half of marginalia without or only with a few indistinct radial grooves. Surface appears slightly irregular, but slightly shiny. Apex of elytral epipleura bare.

Clypeus c. as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 37). Surface of clypeus flat, with very fine punctures, shiny. Labrum distinctly emarginate to 1/4-1/3 length. Prosternal collar well marked, with deep lateral emargination. Venter of pronotum with short and moderately deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle shallowly impressed, apex impunctate. Antennae moderately slim, segments 9 and 10 approximately as long as wide, length ratio of antennal segments: 100:50:65:62:55:40:50:55:55:57:100. Segment 3 c. 1.3 times as long as 2 and approximately as long as segment 4 (fig. 39).

Legs stout, covered by sparse, adherent setae. Claws moderately large, with very small basal tooth (fig. 40).

DISTRIBUTION

Two centres with broad disjunction – one in north-eastern Africa and Arabian Peninsula, another in Senegal in western Africa (fig. 7). Probably occurs in whole Subsaharian area but these desert or semidesert regions of Africa are very poorly known with respect to cassids.

REMARKS

A. sudanensis is well distinguished from other small species of the nominotypical subgenus by its very low postscutellar angulation, with elytra in profile appearing angulate rather than tuberculate. Only *A. zavattari* has similar postscutellar tubercle but differs in larger size (*A. zavattarii*: length 7.2-8.5 mm, *A. sudanensis* 5.0-6.2 mm).

I have examined types of *A. sudanensis* and *A. somalica* and they are conspecific. SPAETH (1938 b) in his diagnosis suggested that *A. somalica* is distinctly larger than *A. sudanensis* but recently studied materials showed that

types of both names represent only extreme size forms of one species. Structural characters of both are almost identical, eastern populations usually have slightly more prominent elytral costae than specimens from the western part of the range. *A. sudenensis* in relation to other species of the genus is quite constant in its body colour and structure.

MATERIAL EXAMINED

SENEGAL: Bakel, 1900, 1, A. CHEVALIER (MNHN); Dakar, 27 VIII, 2, BAUM (NMP); M'Bambey, 11-20 VII 1939, 3, M. RISBEC (MRAC, LB); Senegal, 1827, 1, DUVIVIER (IRSN).

SOMALIA: Mogadiscio, 1, CONFALONIERI (holotype of *somalica*, MCSNT).

SUDAN: Um Doua Koatib, 16 III 1928, 1, W. RUTTLEDGE (syntype of *sudanensis*, BMNH).

YEMEN: Wadi Zabid, XII 1969, 2 (LB).

Acrocassis undulatipennis n. sp.

(figs 41-46, pl. 3: 7-8)

ETYMOLOGY

Latin "*undulatus*" means irregular; the name refers to irregular surface of elytral disc.

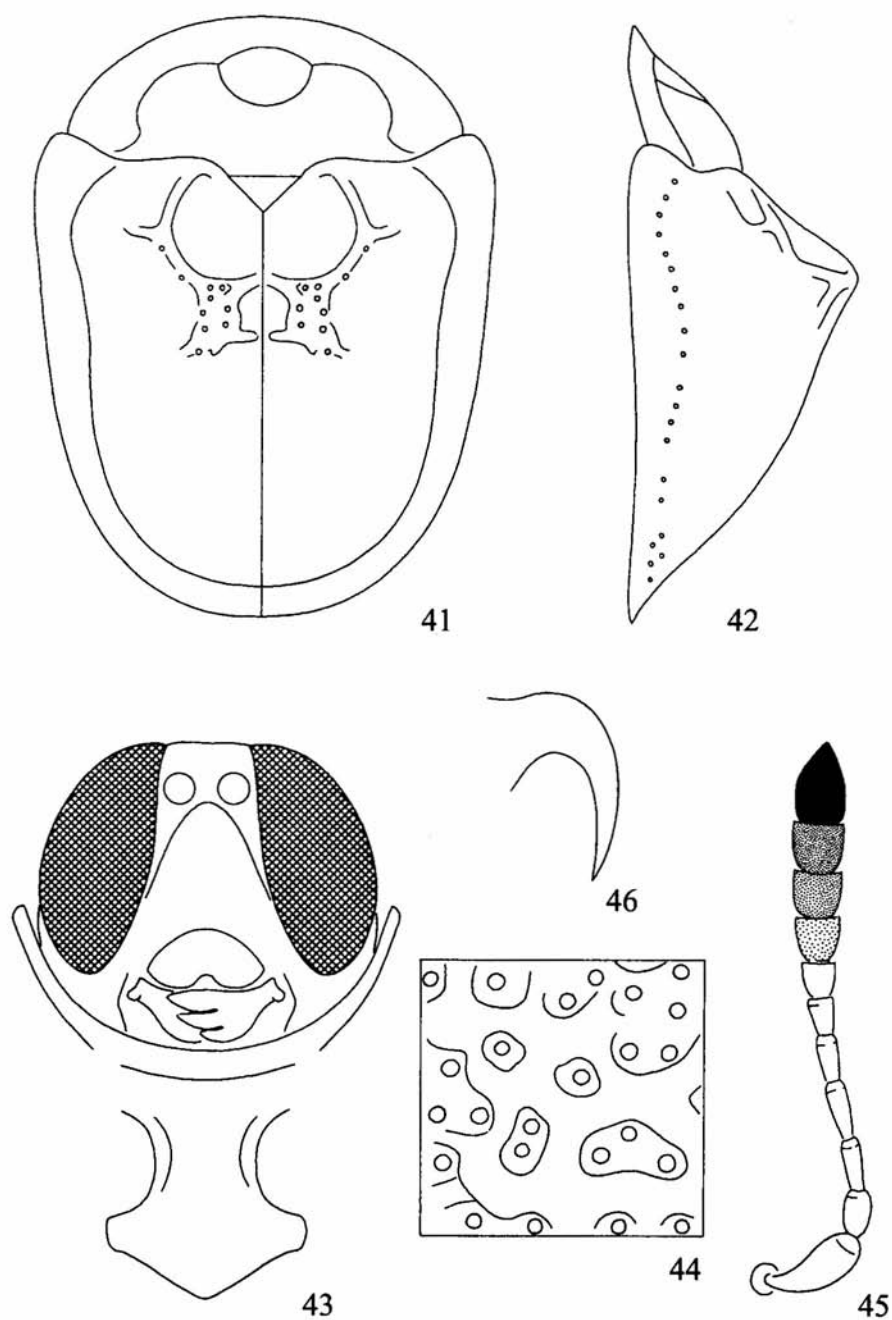
DESCRIPTION

Le: 5.2 mm, Wi: 3.9 mm, Lp: 1.7 mm, Wp: 3.3 mm, Le/Wi: 1.33, Wp/Lp ratio: 1.94. Body subtrapezoidal, distinctly converging posterad (fig. 41).

Pronotum and elytra pale yellow, with only few punctures in postscutellar impressions with dark centre. Clypeus, ventrites, and legs uniformly yellow. Antennae yellow, last four segments gradually infusate, thus apical segment almost black.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a very small denticle. Disc slightly convex, well separated from explanate margin. Puncturation of disc fine, shallow but dense, distance between punctures mostly smaller than puncture diameter, interspaces slightly elevated, thus surface appears from slightly granulate to slightly wrinkled, only area above head smooth. Sides of disc close to disc border deeply impressed. Surface of disc slightly shiny. Explanate margin narrow, very shallowly punctate, appears slightly irregular, slightly shiny.

Scutellum large, triangular, without transverse sulcus. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc with large conical postscutellar tubercle, acute at top (fig. 42). Postscutellar impressions distinct, bordered by a fold. Each disc with one blunt costa in position of 3rd interval. Puncturation completely irregular, very coarse and dense, in relation to the size of beetle the



41-46. *Acrocassis undulatipennis*: 41 – dorsal, 42 – lateral, 43 – head and prothorax, 44 – puncturation of central part of elytral disc, 45 – antenna, 46 – claw

coarsest within the genus, distance between punctures mostly narrower than puncture diameter. Interspaces partly convex, on whole surface of disc form an irregular reticulation, thus elytra appear undulate (fig. 44). Marginal row distinct, its punctures distinctly coarser than on disc. Marginal interval distinct on its whole length, broad, in posterior half with several transverse folds. Explanate margin narrow, strongly deflexed, in the widest part only slightly wider than 1/10 width of disc of elytra, in apical part as wide as combined diameter of four punctures of disc, lateral margin simple marginate. Surface of explanate margin finely and sparsely punctate, punctures distinctly finer than those on disc, distance between punctures mostly wider than puncture diameter, posterior half of marginalia with more or less impressed radial grooves. Surface appears irregular, slightly shiny. Apex of elytral epipleura bare.

Clypeus narrow, c. 1.1 times as wide as long, with fine but distinct clypeal lines, running close to eye margin and converging in arch (fig. 43). Surface of clypeus flat, with few very fine punctures, shiny. Labrum distinctly emarginate to 1/4 length. Prosternal collar well marked, with deep lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, moderately expanded apically, in middle flat but with slightly irregular surface, apex impunctate. Antennae stout, segments 9 and 10 slightly transverse, length ratio of antennal segments: 100:50:55:65:50:45:40:50:48:50:95. Segment 3 c. 1.1 times as long as 2 and segment 4 c. 1.2 times as long as segment 3 (fig. 45).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 46).

DISTRIBUTION

Namibia.

REMARKS

Distinct species, differs from all members of the genus in its coarse elytral puncturation and unduliform sculpture of elytral disc.

MATERIAL EXAMINED

NAMIBIA: holotype: "NAMIBIA, Damara, Brandberg, 21 14 S 14.25 E, 20 II 1995" (LB).

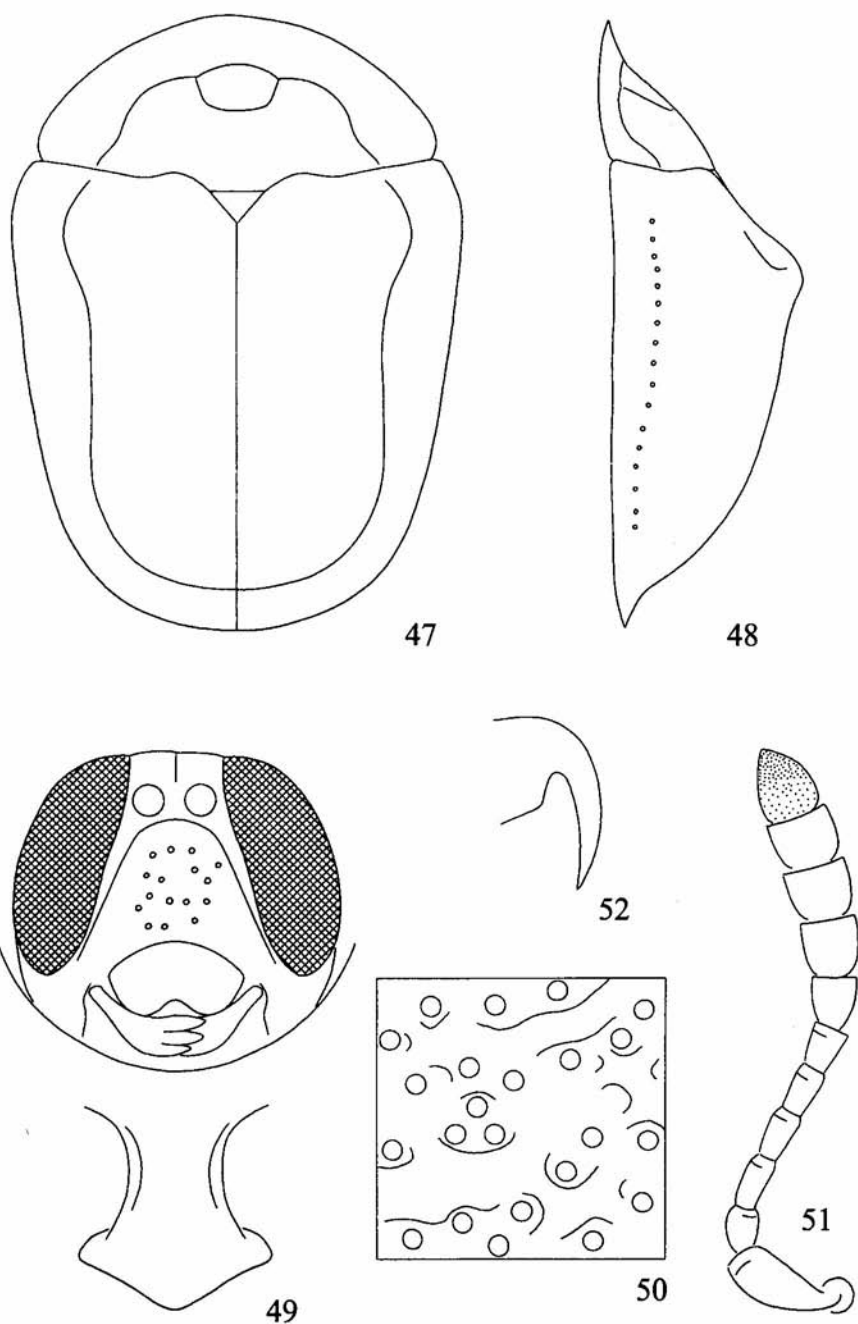
Acrocassis zavattarii SPAETH, 1938

(figs 47-52, pl. 3: 4-6)

Acrocassis Zavattarii SPAETH, 1938: 61 (ST in MCSNT, MM); BOROWIEC, 1999: 229.

DESCRIPTION

Le: 7.2-8.5 mm, Wi: 4.9-5.8 mm, Lp: 2.5-2.7 mm, Wp: 4.65-5.25 mm, Le/Wi: 1.43-1.54, Wp/Lp ratio: 1.86-2.02. Body subtrapezoidal, moderately converging



47-52. *Acrocassis zavattarii*: 47 – dorsal, 48 – lateral, 49 – head and prosternum, 50 – puncturation of central part of elytral disc, 51 – antenna, 52 – claw

posterad (fig. 47), males slightly stouter than females (L/W 1.43-1.44, female 1.49-1.54).

Colouration variable. The palest specimens are almost uniformly pale yellow, except partly black metathorax and infuscate apex of last antennal segment. Intermediate specimens have dorsum yellow, metathorax mostly black and femora with dark rings. The darkest specimens have elytral disc and humeral and apical part of marginalia reddish, and black metathorax and almost whole last antennal segment infuscate. In some species reddish pattern on disc occupies only its sides or only punctures are marked with red.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a very small denticle. Disc only slightly convex, indistinctly separated from explanate margin. Puncturation of disc fine, shallow but dense, distance between punctures mostly smaller than puncture diameter, interspaces slightly elevated, thus surface appears from slightly irregular to slightly wrinkled, only area above head smooth. Sides of disc close to disc border shallowly impressed. Surface of disc from slightly opaque to slightly shiny. Explanate margin narrow, very shallowly punctate, appears slightly irregular, slightly shiny.

Scutellum large, triangular, with or without transverse sulcus, sometimes with small impression. Base of elytra in male slightly narrower, in female as wide as or slightly wider than pronotum, humeri moderately protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc unevenly convex, angulate in postscutellar area but the angulation does not appear like conical tubercle (fig. 48). Postscutellar impressions distinct, bordered by a fold. Each disc with one blunt costa in position of 3rd interval, in some specimens also in position of 5th interval there is a rudimentary costa, sometimes marked only by a zigzag line. Puncturation completely irregular, fine and dense, distance between punctures from as wide as to twice wider than puncture diameter (fig. 50). Interspaces not or only slightly convex, disc surface appears only slightly irregular. Marginal interval distinct on its whole length, broad, in posterior half without transverse folds. Marginal row distinct, its punctures distinctly coarser than on disc. Explanate margin narrow, moderately deflexed, in the widest part only slightly wider than 1/10 width of disc of elytra, in apical part as wide as diameter of four punctures of disc together, lateral margin simple marginate. Surface of explanate margin finely and sparsely punctate, punctures distinctly finer than those on disc, distance between punctures mostly wider than puncture diameter, posterior half of marginalia with more or less impressed radial grooves. Surface appears irregular, slightly shiny. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.4 times as wide as long, with fine but distinct clypeal lines, running close to eye margin and converging in arch (fig. 49). Surface of clypeus flat, with few very fine punctures, shiny. Labrum distinctly emarginate to 1/3 length. Prosternal collar well marked, with shallow lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered

externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or very shallowly impressed, apex impunctate. Antennae stout, segments 9 and 10 slightly wider than long, length ratio of antennal segments: 100:50:56:54:50:45:54:59:56:54:82. Segment 3 only 1.1 times as long as 2 and approximately as long as segment 4 (fig. 51).

Legs stout, covered by sparse, adherent setae. Claws large, with distinct basal tooth (fig. 52).

DISTRIBUTION

Somalia.

REMARKS

Apart from *A. flavescens* it is one of the largest members of the genus. *A. zavattarii* differs in distinctly slimmer body (Le/Wi 1.43-1.54, in *flavescens* 1.27-1.33) and distinctly lower postscutellar tubercle. The largest specimens of *A. gibbipennis* reach size (7.2-7.3 mm) of the smallest specimens of *A. zavattarii* but distinctly differ in extremely high postscutellar tubercle and simple claws. *A. zavattarii* and *A. sudanensis* have the lowest postscutellar tubercle within the nominotypical subgenus but distinctly differ in body size (*A. zavattarii*: length 7.2-8.5 mm, *A. sudanensis* 5.0-6.2 mm).

MATERIAL EXAMINED

SOMALIA: Moyale, bei Borama, V 1937, 1, Miss. ZAVATTARI (lectotype, MCSNT); Neghelli bei Borama, III 1937, 1, IV 1937, 3 (paralectotypes, MCSNT and MM), IV 1937, 1 (LB).

Subgenus *Bassamia* SPAETH, 1922

Only one species in West and Central Africa.

Acrocassis (Bassamia) paeminosa (BOHEMAN, 1856)

(figs 53-59, pl. 4: 1-2)

Cassida paeminosa BOHEMAN, 1856: 146 (LT in NRS), 1862: 356; GEMMINGER and HAROLD, 1876: 3656; WEISE, 1896 c: 29.

Hypocassida paeminosa: WEISE, 1903: 225; SPAETH, 1914: 90.

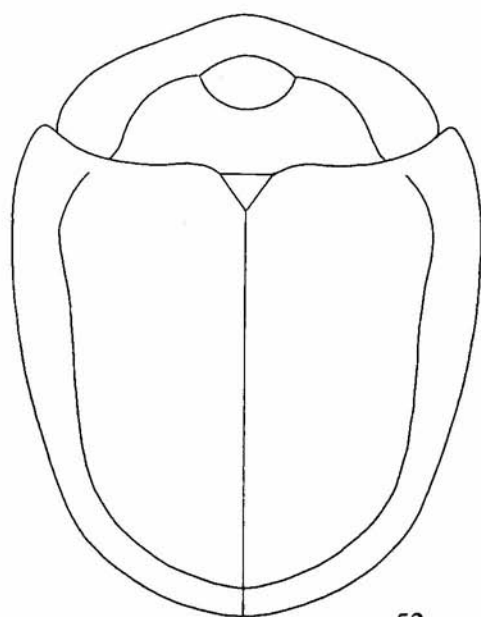
Bassamia paeminosa: SPAETH, 1924: 312.

Cassida (Bassamia) paeminosa: SHAW, 1968 a: 371.

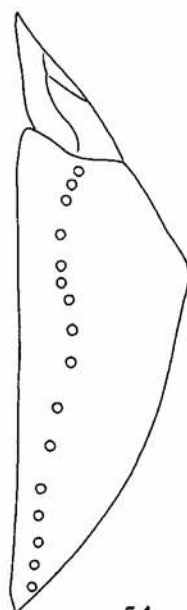
Acrocassis (Bassamia) paeminosa: BOROWIEC, 1999: 229.

Cassida nigropunctata THOMSON, 1858: 232 (HT in IRSN); BOHEMAN, 1862: 357 (as syn. of *paeminosa*).

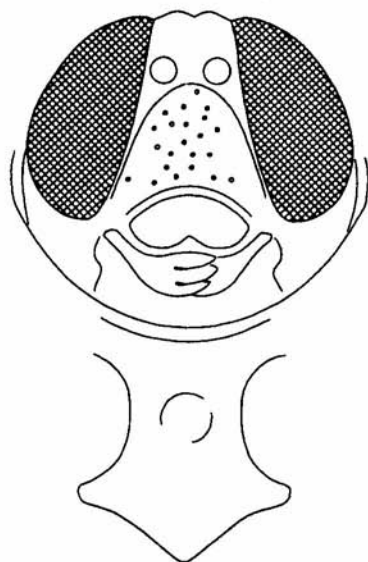
Cassida ramifera DESBROCHERS, 1884: 170 (TE in MNHN); SPAETH, 1914: 90 (as syn. of *paeminosa*).



53



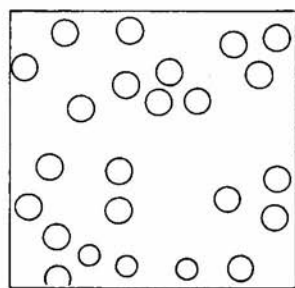
54



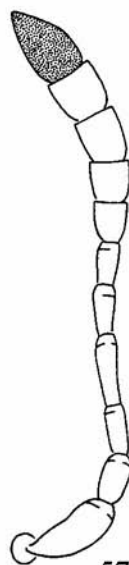
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58



56



57

53-58. *Acrocassis paeminosa*: 53 – dorsal, 54 – lateral, 55 – head and prothorax, 56 – punctuation of central part of elytral disc, 57 – antenna, 58 – claw

DESCRIPTION

Le: 5.5-6.6 mm, Wi: 4.15-4.85 mm, Lp: 1.8-2.1 mm, Wp: 3.4-3.9 mm, Le/Wi: 1.33-1.37, Wp/Lp ratio: 1.86-1.90. Body subtriangular, distinctly converging posterad (fig. 53).

Pronotum uniformly yellow. Scutellum and elytral disc yellow, each puncture with black centre and narrow areola. Punctures tend to coalesce and black often form irregular lines or incomplete reticulation. Suture narrowly black. Explanate margin yellow, its puncturation not marked with black. Clypeus, ventrites, and legs usually uniformly yellow, sometimes clypeus yellowish brown and metasternum in the middle with small brown spot. Antennae usually yellow, last segment often more or less infusate or partly black.

Pronotum semicircular, with maximum width at base, basal corners rounded, only slightly protruding posterad, form a very small denticle. Disc almost flat, indistinctly separated from explanate margin. Puncturation of disc fine, shallow and moderately dense, but punctures tend to coalesce and form more or less developed irregular grooves, thus surface appears partly wrinkled or irregular. In some specimens punctures sparse, then surface completely regular. Spaces between punctures from slightly opaque to slightly shiny. Explanate margin moderately broad, appears impunctate, but surface appears slightly irregular and opaque.

Scutellum large, triangular, with or without transverse sulcus. Base of elytra wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc finely crenulate. Disc unevenly convex, angulate in profile, but without postscutellar tubercle (fig. 54), postscutellar impressions barely marked or absent, no other impressions. Disc without elongate costae but sometimes, in specimens with regularly arranged punctures, in position of 3rd interval, with impunctate, more or less convex line. Puncturation, except submarginal and marginal rows, irregular, coarse and dense (fig. 56). Punctures vary from arranged mostly regularly to partly coalescent and forming irregular grooves or incomplete reticulation. Surface of disc appears more or less irregular. Marginal row distinct, its punctures distinctly coarser than on disc. Marginal interval distinct on its whole length, broad. Explanate margin narrow, moderately deflexed, in the widest part only not wider than 1/10 width of disc of elytra, in apical part as wide as combined diameter of three to four punctures of disc, lateral margin simple marginate; in area below humerus explanate margin usually with more or less visible, impunctate and slightly convex apparent "interval", other parts of its surface shallowly densely punctate, appear slightly irregular. Posterior half of marginalia without radial grooves or folds. Surface appears from slightly opaque to shiny. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.3 times as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 55). Frontal sulcus usually extending behind the border of clypeal plate and forming a short groove in apex of clypeal triangle. Surface of clypeus flat, with very fine punctures, shiny. Labrum shallowly emarginate to 1/6 length. Prosternal

collar short, as long as half length of the second antennal segment, with distinct lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in the middle with round impression, apex impunctate but often with slightly irregular surface. Antennae moderately slim, segments 9 and 10 approximately as long as wide, length ratio of antennal segments: 100:60:60:85:55:50:43:50:55:55:100. Segment 3 c as long as segment 2, and segment 4 c. 1.4 times as long as segment 3 (fig. 57).

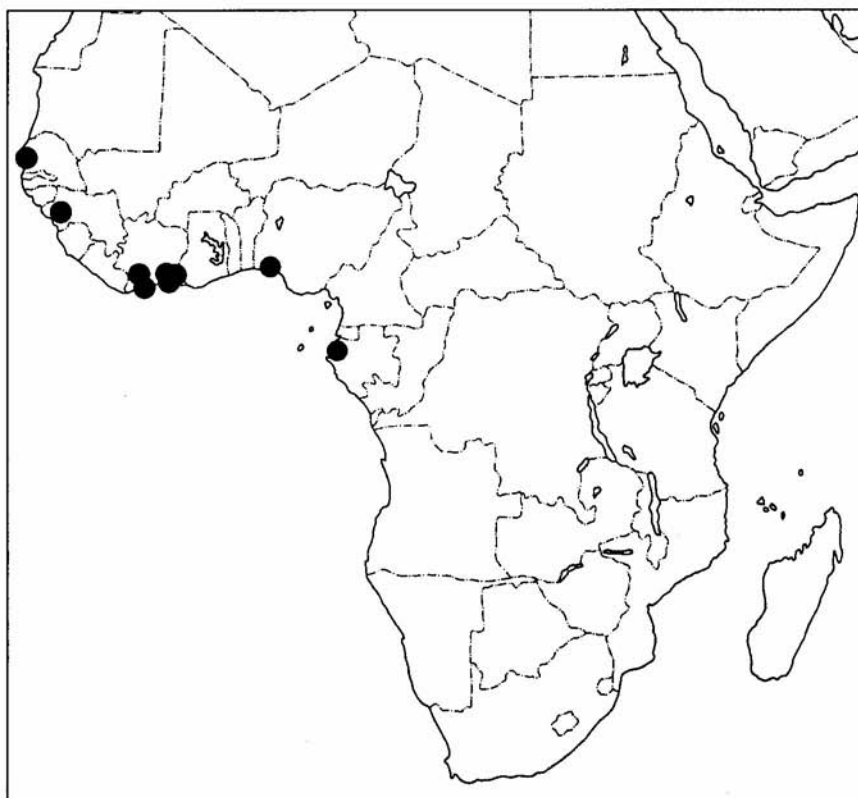
Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 58).

DISTRIBUTION

Western Africa from Senegal to Gabon (fig. 59).

REMARKS

Except subgeneric characters, *A. paeminosa* distinctly differs from all members of the genus in its characteristic black puncturation of elytra. Only



59. Distribution of *Acrocassis paeminosa*

A. intermedia and some forms of *A. rufula* have elytral punctures mostly or completely black, but in both only centre of puncture in black (in *A. paeminosa* black forms also narrow areola around puncture), punctures are never coalescent and black never forms irregular black lines or reticulation.

DESBROCHERS (1884) described *Cassida ramifera* from Algeria, but he probably misinterpreted location of its type locality "Bône". Cities of this name are both in Algeria and on Ivory Coast.

MATERIAL EXAMINED

GABON: Gabon, 1 (holotype of *Cassida nigropunctata*, IRSN), 2 (LB).

IVORY COAST: Bingerville, 1 (LB); Port Bouet, 28 VII 1962, 16, J. DECELLE (MRAC); Sassandra, 15 XI 1961, 11, J. DECELLE (MRAC); Vridi, 29 X 1961, 1, J. DECELLE (MRAC).

NIGERIA: Lagos, 1, STG. (LB).

SENEGAL: Senegal, 2 (1 NMP, 1 ZMHU).

VARIA: Guinea, 2, BUQUET (lectotype and paralectotype of *paeminosa*, NRS).

Genus: *Andevocassis* SPAETH, 1924

Andevocassis SPAETH, 1924: 310 (type species: *Cassida picta* SPAETH, 1905 = *Cassida nigroguttata* FAIRMAIRE, 1904, by monotypy); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 177; BOROWIEC, 1994 a: 18, 1999: 233.

Moderately large cassids, body length 5-7 mm. Body regularly oval. Pronotum semicircular, with maximum width at base. Pronotal disc distinctly separated from explanate margin, smooth, shiny. Explanate margin broad, smooth, shiny. Elytral base only slightly wider than pronotum. Elytral disc slightly depressed. Punctuation of disc regular, surface of disc without special sculpture, intervals distinctly wider than rows. Marginal row distinct. Explanate margin of elytra broad, smooth and shiny. Clypeus short, triangular, convex, with deep transverse frontoclypeal sulcus. Venter of pronotum without antennal grooves. Prosternal collar long, with subangulate sides. Head cavity on sides margined by sharp carina. Antennae moderately long, third segment longer than the second, segments 8-10 not longer than wide. Last segment of tarsi as long as the third, bilobate segment. Claws simple.

Andevocassis at first glance is very similar to African *Aethiopocassis*, especially body colouration with black and reddish-brown pattern is similar to many species of African genus. Both genera differ in structure of pronotum. In *Andevocassis* pronotum is regularly semicircular with bisinuate base and maximum width at base, while in *Aethiopocassis* pronotum is elliptical or transversely trapezoidal, with base not bisinuate, and maximum width in or before the middle.

Only one species, endemic to Madagascar.

Andevocassis picta (SPAETH, 1905)

(figs 60-64, pl. 4: 3-4)

Cassida nigroguttata FAIRMAIRE, 1904: 275 (ST in MNHN); WEISE, 1910 a: 480, not *C. nigroguttata* GORHAM, 1885.

Cassida nigropunctata [sic]: SPAETH, 1924: 310.

Cassida picta SPAETH, 1905: 104 (ST in MM), 1915 b: 154; WEISE, 1910: 480 (as syn. of *nigroguttata*).

Cassida (*Cassida*) *picta*: SPAETH, 1914: 116.

Andevocassis picta: SPAETH, 1924: 310; BOROWIEC, 1999: 233.

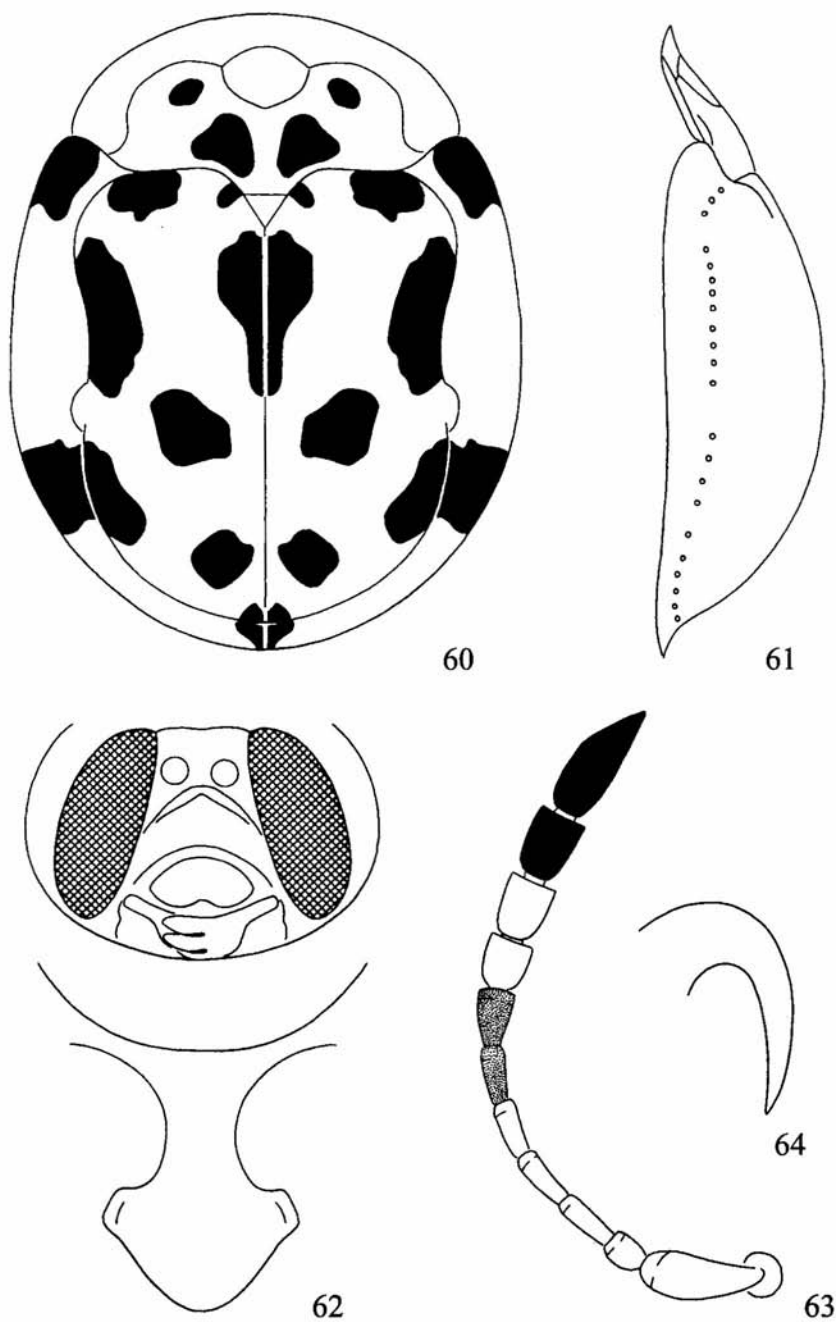
DESCRIPTION

Le: 5.1-7.2 mm, Wi: 4.1-5.7 mm, Lp: 1.8-2.5 mm, Wp: 3.2-4.45 mm, Le/Wi: 1.24-1.31, Wp/Lp ratio: 1.75-2.0. Body short oval, male slightly stouter than female (fig. 60).

Pronotum yellowish-brown to reddish brown. Pronotal disc with four black spots, two large at base close to scutellum, and two small on anterolateral lobes. Elytral disc yellowish-brown to reddish brown with black spots: two small, round at base close to anterior corners of scutellum, two large, round in humeral impressions, large, elongate behind scutellum, sometimes divided into two smaller spots, four, round in posterior half of disc close to suture, two large, elongate in posthumeral area, and two close to base of posterolateral spots of explanate margin of elytra. These spots vary in size but are always present. Explanate margin yellowish-brown to reddish brown with large humeral and posterolateral spots, and narrow sutural spot. Clypeus, ventrites, and legs uniformly yellowish brown, in some specimens apex of tibiae and tarsi more or less infuscate to black. Antennal segments 1-5 yellow, segments 6-11 vary in colour; usually segments 10-11 black, segments 6 and 7 more or less infuscate, and segments 8 and 9 yellow. Sometimes segment 9 partly black, segments 6 and 7 yellow, but usually darker yellow than segments 8 and 9. In extreme cases only two last segments black, or segments 6-11 completely black.

Pronotum semicircular, with maximum width at base, base on sides emarginate, basal corners well marked, distinctly protruding posterad, form a distinct denticle. Disc moderately convex, distinctly separated from explanate margin. Surface of disc smooth and shiny. Explanate margin narrow, but well marked, tends to form a gutter, especially in anterolateral parts. Its surface impunctate, smooth and shiny.

Scutellum large, triangular, without transverse sulcus or impression. Base of elytra only slightly wider than pronotum, humeri slightly protruding anterad, rounded. Basal margin of each disc distinctly bisinuate, strongly crenulate, especially in praehumeral emargination. Disc regularly, evenly convex, with top of convexity in middle (fig. 61), without impressions, only 3rd and 4th rows of punctures in position of principal impression slightly more impressed than in other part of disc. Punctuation completely regular, with scutellar row of several punctures, rows of punctures slightly impressed. Punctuation in rows moderately coarse to coarse, dense, distance between punctures from slightly narrower to twice wider than puncture diameter. Marginal row distinct, its punctures distinctly



60-64. *Andevocassis picta*: 60 – dorsal, 61 – lateral, 62 – head and prosternum, 63 – antenna, 64 – claw

coarser than on disc. Intervals flat to slightly elevated, mostly twice to thrice wider than rows, but in some specimens in posterolateral part of disc up to four times wider than rows. Marginal interval distinct on its whole length, broad. Surface of disc from slightly dull to shiny. Explanate margin narrow, moderately deflexed, in the widest part c. as wide as 1/6 width of disc of elytra, in apical part as wide as three marginal intervals together; lateral margin simple but distinctly marginate, especially in anterior half of its length. Surface of explanate margin impunctate, smooth, from slightly opaque to shiny. Surface appears regular. Apex of elytral epipleura bare.

Clypeus very broad, 1.8-1.9 times as wide as long, forming elevated triangular plate with angulate apex (fig. 62). Lateral sulci invisible. Surface of clypeal triangle slightly impressed, with several moderately coarse punctures, appears slightly irregular. Labrum distinctly emarginate to 1/4 length. Prosternal collar very long, longer than first antennal segment, without lateral emargination. Venter of pronotum without antennal grooves, but head cavity bordered laterally by a sharp carina. Prosternal process between coxae broad, wider than coxa, very strongly expanded apically, in middle shallowly impressed, apex with several coarse punctures. Surface of mid part of prosternal process shiny, apical part appears more or less irregular. Antennae slim, length ratio of antennal segments: 100:32:48:48:46:46:40:40:48:52:108. Segment 3 c. 1.5 times as long as 2 and c. as long as segment 4 (fig. 63).

Legs slim, covered by very sparse, adherent setae. Claws large, simple (fig. 64).

DISTRIBUTION

Madagascar.

MATERIAL EXAMINED

MADAGASCAR: Ankazobe, Ambohitantry, Tampokersy, 160 m, 27 XII 1956, 1 (MNHN); Diego Suarez, 1, DONCKIER (syntype of *picta*, MM), 3 (NMP), 1893, 1, Ch. ALLUAUD (MNHN); La Mandraka, Manfakandriana, 10 X 1956, 1 (MNHN); Madagascar, 1 (syntype or holotype of *C. nigroguttata*, MNHN), 1 (BMNH), 2, NICKERL (syntypes of *picta*, MM, NMP); Mt. d'Ambre, I, 1, II, 1, X, 1, XII, 1, [without month], 11 (MNHN).

Genus: *Basipta* CHEVROLAT, 1849

Basipta CHEVROLAT in D'ORBIGNY, 1849: 489 (type species: *Basipta glauca* CHEVROLAT, 1849, by monotypy); SPAETH, 1914: 85; HINCKS, 1952: 337; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 17, 1999: 234.

Moderately large to large cassids, body length 8-13 mm. Body subtriangular, both dorsal and ventral side pubescent. Pronotum reversely trapezoidal, with maximum width before middle. Pronotal disc indistinctly separated from explanate

margin, punctate. Explanate margin broad, punctate. Elytral base distinctly wider than pronotum. Elytral disc from regularly convex to angulate in profile. Punctuation of disc irregular, along middle of each elytron often denser than in sutural and lateral parts, sometimes rugose. Marginal row distinct. Explanate margin of elytra moderately broad, strongly deflexed, punctate. Clypeus very short, shorter than first antennal segment, strongly convex before antennal insertions. Venter of pronotum without antennal grooves. Antennae stout, third segment slightly longer than the second, segments 8-10 wider than long. Last segment of tarsi as long as the third, bilobate segment. Claws simple.

A very distinct genus, well characterized by its pubescent pronotum and elytra, and very short clypeus, not longer than the first antennal segment.

Five species exclusively in South Africa.

KEY TO SPECIES

1. Elytra evenly convex in profile, rounded in postscutellar point.
..... 2.
- Elytra unevenly convex in profile, angulate in postscutellar point.
..... 3.
2. Punctuation in sutural part of elytra uniformly dense, elytra without sparsely punctate longitudinal elevations. Punctuation of pronotal disc slightly coarser and denser, distance between punctures from slightly narrower to twice wider than puncture diameter. Elytral vestiture denser and more adherent. Explanate margin of elytra narrower. Smaller and slimmer species, Le usually below 9.5 mm (the largest females to 10. 2), Wi always below 6.9 mm.
..... *pilosella*
- Punctuation in sutural part of elytra not uniform, along suture very dense, on slope impressed, in position of 3rd interval sparser, the sparsely punctate area often slightly convex, forming irregular longitudinal elevation. Punctuation of pronotal disc finer and sparser, distance between punctures mostly twice wider than puncture diameter. Elytral vestiture sparser and less adherent. Explanate margin of elytra wider. Larger and stouter species, Le usually above 10 mm (the smallest males from 9.4), Wi always above 9.8 mm.
..... *sebastiani*
3. Elytral disc at least in subsutural part moderately densely punctate, with distance between punctures larger than puncture diameter and surface of such punctured parts of disc not rugose. Pronotal sides not emarginate, anterior corners blunt. Stouter species, Le/Wi in males below 1.34, in females usually below 1.49.
..... 4.

- Whole elytral disc densely punctate, with distance between punctures mostly smaller than puncture diameter and surface appearing irregular to rugose. Pronotal sides distinctly emarginate, anterior corners form slightly hook-shaped angle. Slimmer species, Le/Wi in males above 1.36, in females usually above 1.49.

..... *luteocincta*

4. Each elytron along middle with impressed area, distinctly denser punctate and denser pubescent than subsutural and marginal part of disc. Surface of the impression appears irregular to rugose, in contrast to the glabrous subsutural area. Larger species, Le in male 11-12.5 mm, in female 11.2-13.6 mm.

..... *stolida*

- Each elytron along middle without impressed area, at most slightly denser punctate but not denser pubescent than subsutural and marginal part of disc. Whole surface of disc does not appear rugose. Smaller species, Le in male 8.95-10.6 mm, in female 9.4-12.4 mm.

..... *glauca*

***Basipta glauca* CHEVROLAT, 1849**

(figs 65-72, pl. 4: 5-7)

Basipta glauca CHEVROLAT in D'ORBIGNY, 1849: 489 (type lost); GEMMINGER and HAROLD, 1876: 3645 (as syn. of *pallens*); WEISE, 1916: 37; BOROWIEC, 1999: 234.

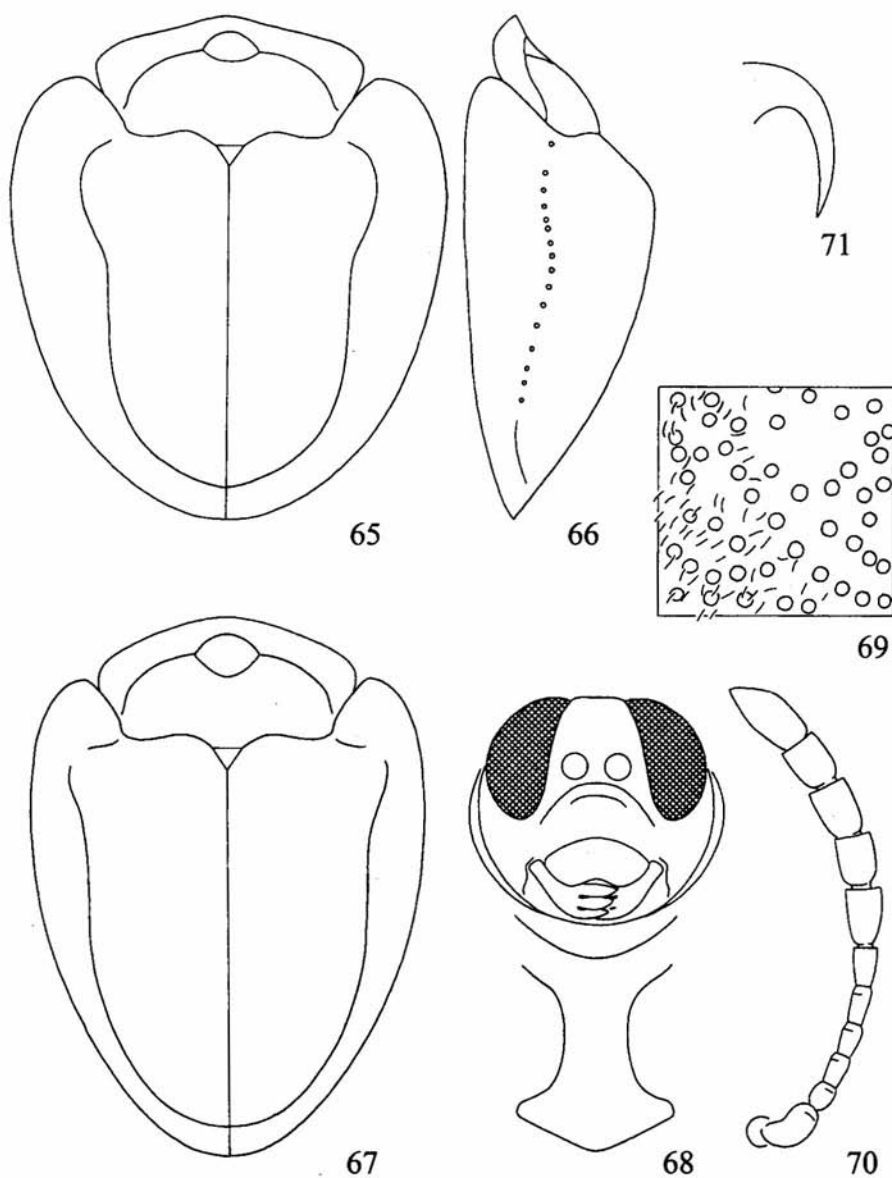
Basipta pallens BOHEMAN, 1854: 187 (LT in ZMHU), 1856: 97, 1862: 243; GEMMINGER and HAROLD, 1876: 3645; SPAETH, 1914: 85; BOROWIEC, 1999: 234 (as synonym of *glauca*).

DESCRIPTION

Le: male 8.95-10.6 mm, female 9.4-12.4 mm, Wi: male 6.55-8.2 mm, female 6.5-8.8 mm, Lp: male 2.8-3.3 mm, female 2.7-3.6 mm, Wp: male 4.65-5.45 mm, female 4.4-6.0 mm, Le/Wi: male 1.28-1.35, female 1.40-1.49, Wp/Lp ratio: 1.63-1.72. Male distinctly stouter (fig. 65) than female (fig. 67)

Body uniformly yellow, including legs and antennae.

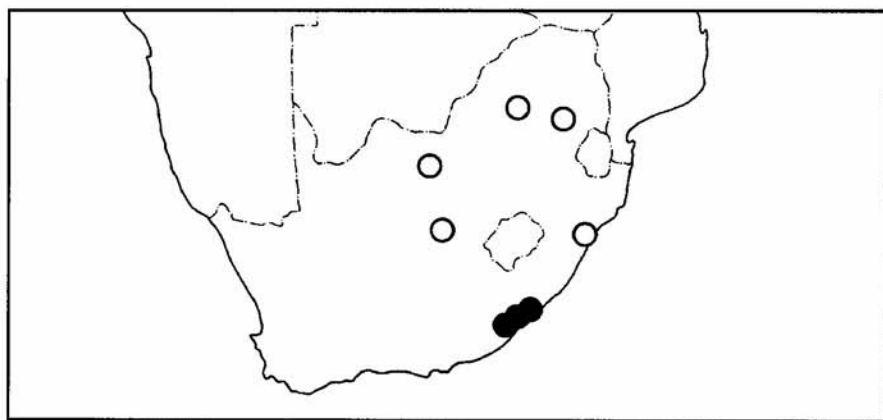
Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners well marked, anterior margin slightly rounded. Disc only slightly convex, indistinctly separated from explanate margin; whole surface finely and densely punctate, distance between punctures from slightly narrower to twice wider than puncture diameter. Spaces between punctures only finely microreticulate and surface of disc appears mostly shiny or only slightly opaque. Explanate margin narrow, especially anteriorly, as coarsely as but slightly sparser and distinctly shallower punctate than on disc, surface appears regular. Whole disc covered by long, chalk-white, adherent vestiture, sparser than in related *B. stolida*, not covering surface of pronotum.



65-71. *Basipta glauca*: 65 – male dorsal, 66 – male lateral, 67 – female dorsal, 68 – head and prosternum, 69 – puncturation of central part of elytral disc, 70 – antenna, 71 – claw

Scutellum subtrapezoidal, apex rounded, surface without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to anterior corners of pronotum, rounded. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, angulate in profile (fig. 66), without postscutellar and principal impressions, but elytral disc along suture, in posterior half, and along middle, and in posterolateral part of disc, shallowly impressed, distinctly less impressed than in related *B. stolidus*. Puncturation completely irregular (fig. 69), punctures of various size and arranged slightly irregularly but distinctly more regularly than in related *B. stolidus*; in impressed parts of disc punctures not or only slightly finer and only slightly denser than on elevated parts, distance between punctures mostly wider than puncture diameter, whole surface of disc appears regular, also impressed parts; top of disc distinctly sparser punctate than sides, often with large impunctate area, border margin of impressed sutural part of disc in apical half of disc often elevated, forms short, impunctate fold. Marginal interval absent, marginal row distinct, punctures distinctly coarser than on disc, especially posthumeral part of the row with very coarse puncturation. Explanate margin broad, strongly deflexed, in the widest part in male as wide as 1/3 width, in female as 1/4 width of disc of elytra. Surface of explanate margin finely and densely punctate, punctures distinctly finer than those on disc, distance between punctures mostly wider than puncture diameter, surface appears regular. Whole surface of disc covered by moderately long, chalk-white, adherent vestiture, sparse on whole disc surface, not covering body surface, or only in impressed sutural part slightly denser than in central part of disc, surface of disc does not appear vittate. Apex of elytral epipleura with dense, erect hairs.

Clypeus very broad, c. 2.2 times as wide as long, with fine clypeal lines only in basal third, but with strongly elevated anterior margin (fig. 68). Surface of clypeus with several moderately coarse punctures, shiny. Labrum in middle of anterior margin not or very shallowly emarginate. Border of head cavity, above



72. Distribution of *Basipta glauca* (black circles) and *Basipta pilosella* (white circles)

prosternal collar slightly elevated, with short, sharp carina. Prosternal collar short, without lateral emargination, prosternal alae without elevated borders. Prosternal process between coxae moderately broad, strongly expanded apically, apical half deeply impressed, central part of apex not higher than expanded sides; surface of prosternal process with only few fine punctures, shiny. Antennae stout, length ratio of antennal segments: 100:50:47:60:57:66:80:73:80:76:146. Segment 3 only slightly longer than 2, segment 4 c. 1.3 times as long as segment 3 (fig. 70).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 71).

DISTRIBUTION

South Africa: Cape Prov. (fig. 72).

REMARKS

It belongs to the species group with elytra angulate in profile. The group comprises also *Basipta luteocincta* and *B. stolidi*. *B. luteocincta* distinctly differs in extremely dense, uniformly punctate elytral disc, with punctures almost touching each other, while in *B. glauca* puncturation is sparser with distance between punctures at least in sutural part of disc larger than puncture diameter. *B. luteocincta* is distinctly slimmer species, with Le/Wi in male 1.45-1.47, in female 1.50-1.52 (in *B. glauca* 1.28-1.35 and 1.40-1.49 respectively). *B. stolidi* differs in the presence of large impressed area along middle of disc of each elytron, distinctly denser punctate than other parts of disc, while in *B. glauca* whole disc is almost uniformly punctate. *B. stolidi* is distinctly larger, especially males (Le in males: 11.0-12.5, in *glauca* 8.95-10.6; in females: 11.2-13.6, in *glauca* 9.4-12.4). Both species are partly separated geographically, *B. glauca* is more western, common in eastern part of Cape Province, especially in East London area, while *B. stolidi* occurs mostly in Natal, and only in the vicinity of East London of eastern Cape both are sympatric.

The name *B. glauca* was overlooked by most entomologists working on Cassidinae. BOHEMAN (1854) did not include the name *B. glauca* in his monograph of world Cassidinae. GEMMINGER and HAROLD (1876) synonymized it with *B. pallens* (BOH.). WEISE (1916) was the first to resurrect the name. Lastly SHAW (1956 a) recorded a number of specimens from Natal in South Africa under the name *B. glauca*. In my opinion, he misinterpreted the name. Specimens he called *B. glauca* belong to *B. stolidi* BOH. According to the original description *B. glauca* is a medium-sized species, c. 8 mm length, distributed in the vicinity of Cape Town (type of *Basipta glauca* lost). The description corresponds well with characters of *B. pallens* BOH., which is smaller and more western in distribution than *B. glauca* (*B. glauca* predominates in Natal, with the westernmost locality in East London at eastern border of Cape Province); admittedly one of the paralectotypes of *B. stolidi* collected by WAHLBERG has a label "Cap. b. Sp.", but it is well known that WAHLBERG collected beetles during his expedition to South Africa only in Natal and Transvaal Provinces. Unfortunately, WAHLBERG's mate-

rial was mislabelled by curators of the Stockholm Museum during integration of the collection of Cassidinae, and all his beetles from South Africa were labelled "Cape" or "Cap. b. Sp.". Thus, in my world catalogue of Cassidinae (BOROWIEC 1999) I proposed the name *B. glauca* as a senior synonym of *B. pallens* BOH., not for *B. stolidus* as suggested by materials identified by SHAW (1956 b).

MATERIAL EXAMINED

SOUTH AFRICA: Cape, Bonza Bay, East London, 7 I 1976, 13 I 1976, 1, 15 II 1976, 2, R.E. PARROT (MZSNV); Cape Prov., East London, 4-8 XII 1956, 88, R.M. MARTIN (TM); Cape Prov., East London, Gonubie, 28 II 1976, 1, R.E. PARROT (MZSNV); Cape Prov., East London, Nahoon, 18 I 1976, 1, R.E. PARROT (MZSNV); Pr. b. sp., 4, KREBS (lectotype and 3 paralectotypes of *B. pallens*, ZMHU).

VARIA: "Mexico" "Type", 1 (probably mislabelled syntype of *B. pallens*, NRS).

***Basipta luteocincta* BOHEMAN, 1854**

(figs 73-79, pl. 4: 8-10)

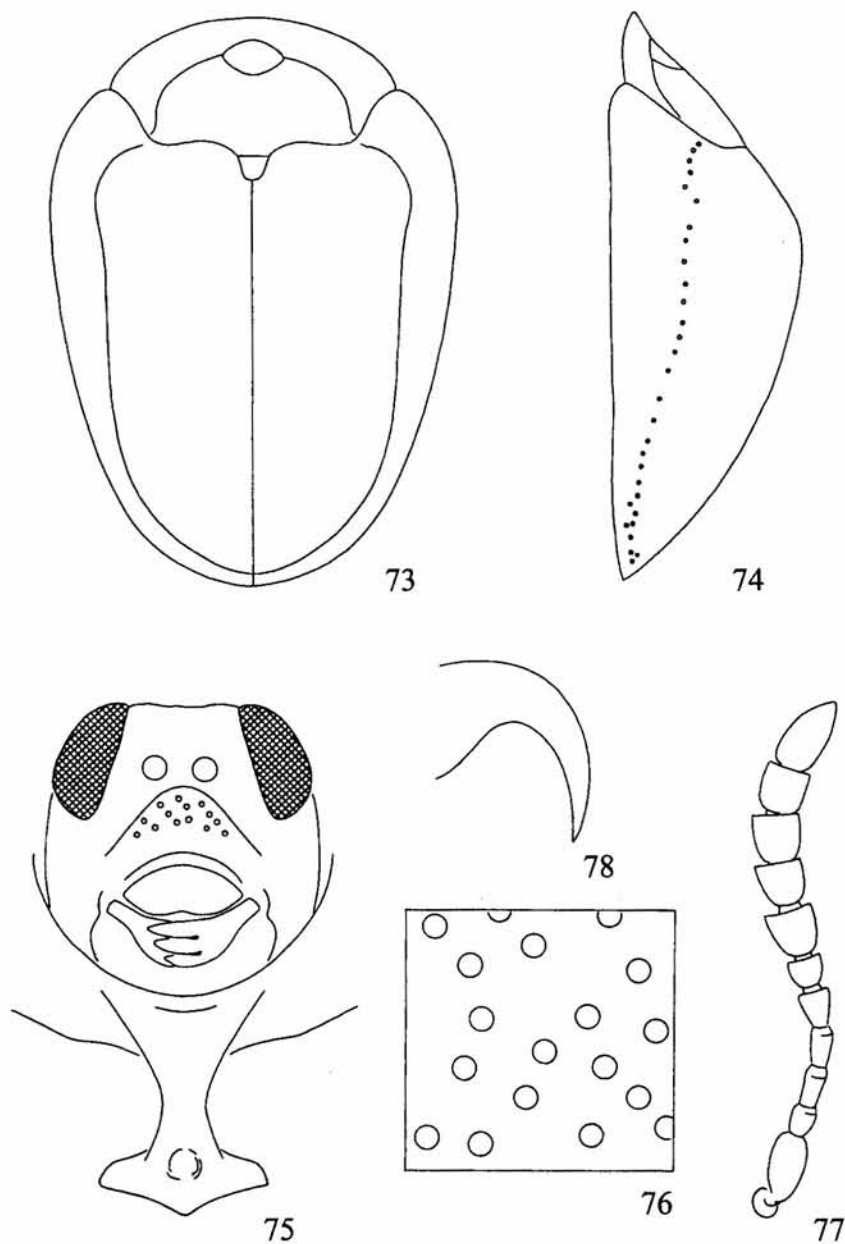
Basipta luteocincta BOHEMAN, 1854: 188 (ST in NRS, ZMHU), 1856: 97, 1862: 243; GEMMINGER and HAROLD, 1876: 3645; SPAETH, 1914: 85; BOROWIEC, 1999: 234.

DESCRIPTION

Le: 8.7-10.5 mm, Wi: 6.0-6.9 mm, Lp: 2.7-3.2 mm, Wp: 4.1-5.1 mm, Le/Wi: 1.45-1.52, Wp/Lp: 1.47-1.70. Body elongate-triangular, distinctly converging posterad (fig. 73), males slightly stouter than females (L/W 1.45-1.47, female 1.50-1.52).

Body uniformly yellow, including legs and antennae. In some dried specimens specimens pronotal and elytral disc preserves green ground colour (like in live specimens), then elytra with yellow relief.

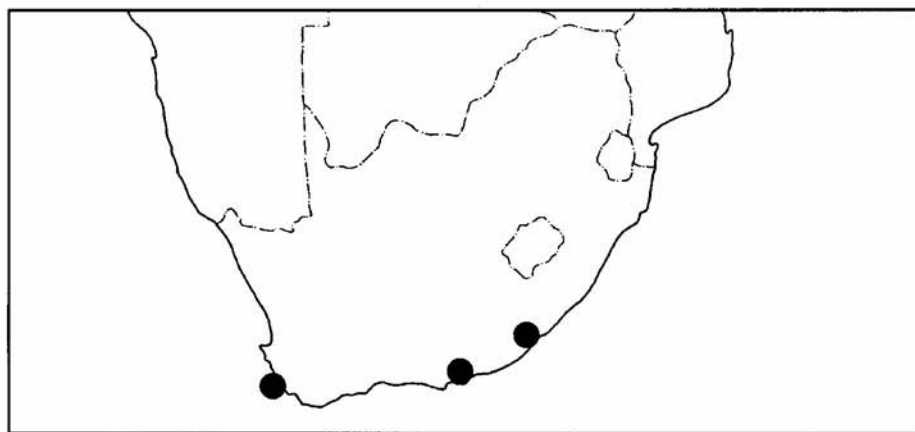
Pronotum reversely trapezoidal, with maximum width in anterior fourth, sides shallowly emarginate and anterior corners form slightly hook-shaped angle, anterior margin slightly rounded. Disc only slightly convex, indistinctly separated from explanate margin, along middle with narrow, often slightly elevated, impunctate line; whole surface finely and densely punctate, distance between punctures from slightly narrower to twice wider than puncture diameter, on sides of disc occur small, impunctate folds, surface appears slightly irregular. Spaces between punctures only finely microreticulate and surface of disc appears slightly shiny or only slightly opaque. Explanate margin narrow, especially anteriorly, as coarsely as but distinctly sparser and shallower punctate than on disc, surface appears regular, shiny. Whole disc covered by short, white, adherent vestiture, sparser and shorter than in all congeners.



73-78. *Basipta luteocincta*: 73 – dorsal, 74 – lateral, 75 – head and prosternum, 76 – puncturation of central part of elytral disc, 77 – antenna, 78 – claw

Scutellum subtrapezoidal, apex rounded, surface without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to anterior corners of pronotum, slightly less rounded than in *B. glauca*. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, angulate in profile (fig. 74), without impressions, also along suture and in posterolateral part of disc. Puncturation completely irregular, extremely dense, moderately coarse (fig. 76), in completely yellow specimens arranged mostly regularly, only postscutellar angulation with two, directed obliquely anterad, impunctate lines; punctures almost touching each other, with tendency to form grooves, whole surface of disc appears more or less rugose; in specimens with preserved green ground colour puncturation coarser than in completely yellow specimens, with well developed, elevated interspaces, thus elytra have irregular yellow relief between green punctures, surface appears strongly rugose. Marginal interval absent, marginal row distinct, punctures distinctly coarser than on disc, especially posthumeral part of the row with very coarse puncturation. Explanate margin moderately broad, strongly deflexed, in the widest part in both sexes as wide as 1/3 width of disc of elytra or slightly narrower, in apical part as wide as diameters of two punctures of disc combined. Surface of explanate margin with double puncturation, composed of sparse coarse punctures, slightly coarser than on disc, and numerous fine secondary punctures, surface appears slightly irregular; Whole surface of disc covered by very short, often barely visible, white, adherent vestiture. Apex of elytral epipleura with very short and sparse, erect hairs.

Clypeus very broad, c. 2.3 times as wide as long, with fine clypeal lines only in basal third, but with strongly elevated anterior margin (fig. 75). Surface of clypeus with several moderately coarse punctures, shiny. Labrum in middle of anterior margin not or very shallowly emarginate. Border of head cavity, above prosternal collar slightly elevated, with short, sharp carina. Prosternal collar



79. Distribution of *Basipta luteocincta*

short, without lateral emargination, prosternal alae without elevated borders. Prosternal process between coxae narrow, strongly expanded apically, apical half not or very shallowly impressed, central part of apex not higher than expanded sides; surface of prosternal process without or with only few fine punctures, shiny. Antennae stout, length ratio of antennal segments: 100:47:66:59:50:41:68:63:68:68:125. Segment 3 c. 1.4 times as long as 2 and c. 1.1 times as long as segment 4 (fig. 77).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 78).

DISTRIBUTION

South Africa: Cape Prov. (fig. 79).

REMARKS

It belongs to the species group with elytra angulate in profile. The group comprises also *B. glauca* and *B. stolidia*. *B. luteocincta* distinctly differs from both congeners in its extremely dense, uniformly punctate elytral disc, with punctures almost touching each other, while in *B. glauca* and *B. stolidia* puncturation at least in sutural part of disc is sparser with distance between punctures larger than puncture diameter. *B. luteocincta* is distinctly slimmer, with Le/Wi in male 1.45-1.47, in female 1.50-1.52 (in *B. glauca* 1.28-1.35 and 1.40-1.49, in *B. stolidia* 1.21-1.29 and 1.38-1.46 respectively).

MATERIAL EXAMINED

SOUTH AFRICA: Cap. b. Spei, 1, THOREY (probably syntype, NRS); Cape, East London, 4-8 XII 1956, 2, R.M. MARTIN (TM); Cape, Port Elisabeth, 28 XI 1950, 1, 6 XII 1950, 1, D. RORKE (TM); Pr. b. sp., 1, KREBS (lectotype, ZMHU).

Basipta pilosella BOHEMAN, 1854

(figs 72, 80-86, pl. 5: 1-3)

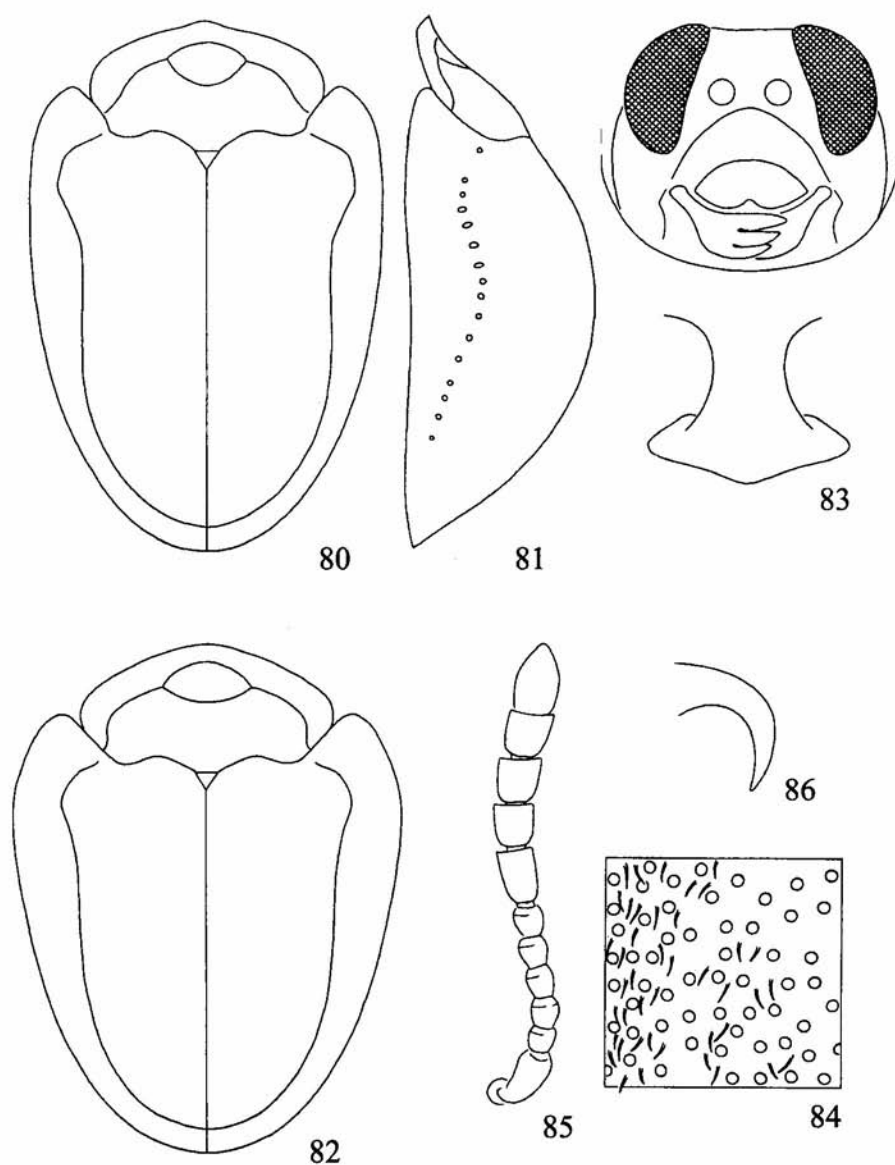
Basipta pilosella BOHEMAN, 1854: 189 (HT in NRS), 1856: 97, 1862: 243; GEMMINGER and HAROLD, 1876: 3645; SPAETH, 1914: 85; BOROWIEC, 1999: 234.

DESCRIPTION

Le: 8.3-10.2 mm, Wi: 5.9-6.8 mm, Lp: 2.7-3.2 mm, Wp: 4.1-4.6 mm, Le/Wi: 1.38-1.53, Wp/Lp: 1.43-1.56. Body subtriangular, moderately converging posterad, males slightly stouter than females (L/W 1.38-1.42: fig. 82, female 1.49-1.53: fig. 80).

Body uniformly yellow, including legs and antennae.

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners marked but broadly rounded, anterior margin more rounded than in other species, except *B. sebastiani* which has similar shape of pronotum. Disc only slightly convex, indistinctly separated from explanate margin; surface mostly moderately coarsely and densely punctate, punctures distinctly coarser and denser



80-86. *Basipta pilosella*: 80 – female dorsal, 81 – female lateral, 82 – male dorsal, 83 – head and prosternum, 84 – puncturation of central part of elytral disc, 85 – antenna, 86 – claw

than in related *B. sebastiani*, distance between punctures from slightly narrower to twice wider than puncture diameter, only on praescutellar lobe and along midline of pronotum punctures fine and sparse, sometimes impunctate line runs along disc. Spaces between punctures not or indistinctly microreticulate and surface of disc appears shiny. Explanate margin narrow, especially anteriorly, as coarsely as but distinctly sparser and shallower punctate than on disc, surface appears regular, shiny. Whole disc covered by long, chalk-white, adherent vestiture, not covering surface of pronotum but usually slightly denser than in related *B. sebastiani*.

Scutellum subtrapezoidal, apex rounded, surface without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to anterior corners of pronotum, rounded, but more narrowly so than in other species, except *B. sebastiani*. Basal margin of each disc distinctly crenulate. Disc regularly, evenly convex, rounded in profile (fig. 81), without impressions. Punctuation completely irregular, punctures arranged mostly regularly, on top of disc only slightly sparser than on sides; punctuation coarse and dense (fig. 84), distance between punctures mostly narrower than puncture diameter, interspaces often with sparse, fine secondary punctures, no impunctate elevations or lines, surface appears regular, shiny. Marginal interval absent, marginal row distinct, punctures distinctly coarser than on disc especially posthumeral part of the row with very coarse punctuation. Explanate margin narrow, strongly deflexed, in the widest part in both sexes not wider than 1/6 width of disc of elytra, in apical part as wide as diameter of three punctures of disc combined, lateral margin distinctly, doubly marginate. Surface of explanate margin coarsely and densely punctate, punctures distinctly coarser than those on disc, distance between punctures mostly narrower than puncture diameter, but surface appears quite regular, shiny. Whole surface of disc and explanate margin covered by long, chalk-white, adherent vestiture, distributed regularly. Apex of elytral epipleura with sparse to moderately dense, erect hairs.

Clypeus extremely broad, c. 2.9 times as wide as long, with fine clypeal lines only in basal third, but with strongly elevated anterior margin (fig. 83). Surface of clypeus with few fine punctures, shiny. Labrum in middle of anterior margin not or very shallowly emarginate. Border of head cavity, above prosternal collar slightly elevated, with short, sharp carina. Prosternal collar short, without lateral emargination, prosternal alae without elevated borders. Prosternal process between coxae moderately broad, strongly expanded apically, apical half usually more or less impressed, but in some specimens without impression; surface of prosternal process with only few fine punctures, shiny. Antennae stout, length ratio of antennal segments: 100:46:50:60:60:60:96:80:90:86:140. Segment 3 only slightly longer than segment 2, segment 4 c. 1.2 times as long as segment 3 (fig. 85).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 86).

DISTRIBUTION

South Africa: Natal and Transvaal (fig. 72).

REMARKS

B. pilosella with *B. sebastiani* forms a group of species with regularly convex elytra. Both are very similar and partly difficult to distinguish. *B. pilosella* is smaller (Le 8.3-10.2, in *sebastiani* 9.4-11.5), its elytral disc is very uniformly punctate, with at most sutural interval in apical half shallowly impressed and more densely punctate than central part of disc, while in *B. sebastiani* sutural intervals in apical half are deeply impressed, densely and rugosely punctate, in position of 3rd interval disc is in *B. sebastiani* sparser punctate than in neighbouring area, the sparsely punctate area often slightly convex, forms irregular longitudinal elevation. Explanate margin of elytra in *B. pilosella* is slightly narrower and elytral pubescence denser and more adherent than in *B. sebastiani*.

MATERIAL EXAMINED

SOUTH AFRICA: Natal: Port Natal, 1, VAHLBERG (holotype, NRS); Oranje F. State, Wesseldam, Boshof, 16 II 1978, 2, A. STRYDOM (BM); Transvaal, Lydenburg, 1896, 1, P.A. KRANTZ (TM); Transvaal, Pienaars Riv., 1898, 3, X-XI 1900, 2, v. JUTRZENCKA (TM); Vryburg, 1893, 2, E. SIMON (NMP).

***Basipta sebastiani* n. sp.**

(figs 87-94, pl. 5: 7-8)

ETYMOLOGY

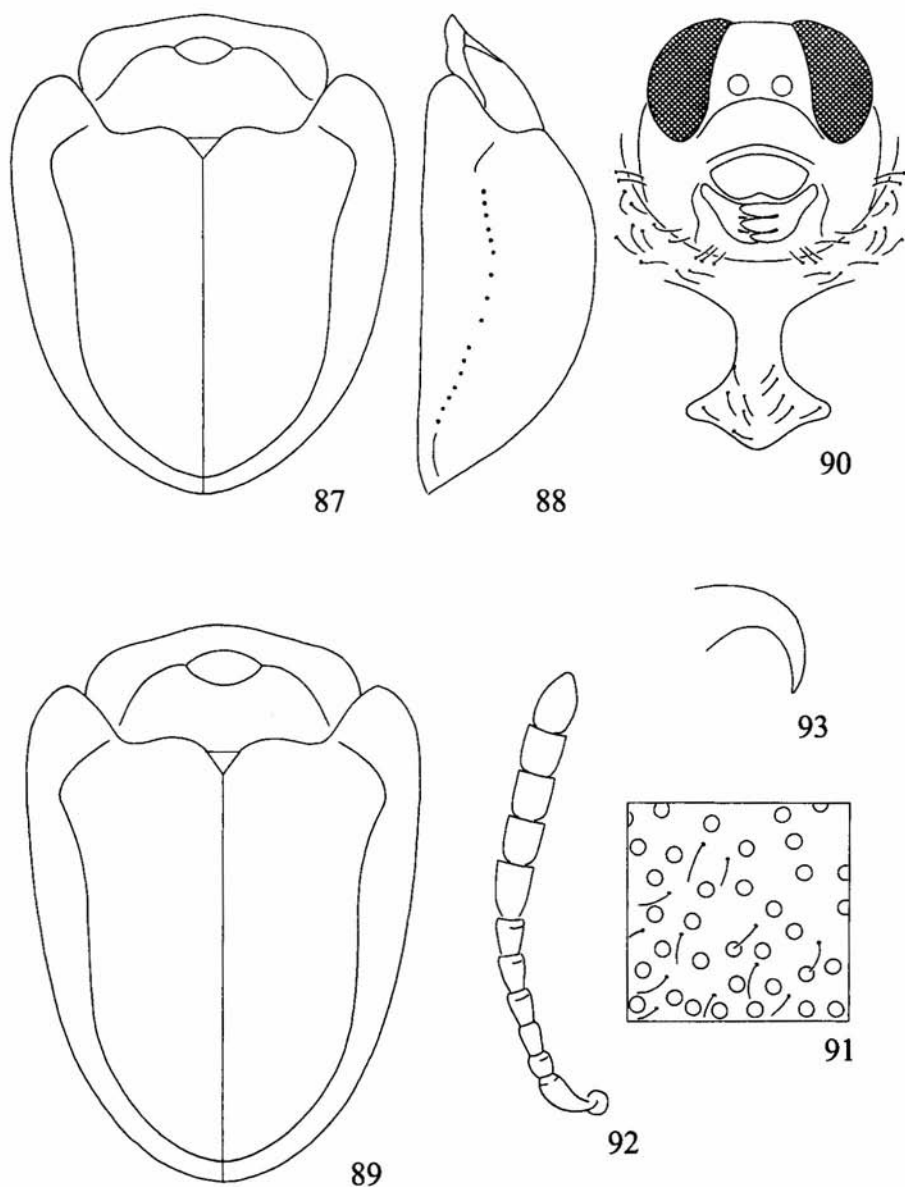
Dedicated to the late Sebastian ENDRÓDY-YOUNGA, the curator of the Transvaal Museum in Pretoria (South Africa).

DESCRIPTION

Le: 9.4-11.5 mm, Wi: 6.9-7.9 mm, Lp: 2.8-3.5 mm, Wp: 4.50-5.5 mm, Le/Wi: 1.33-1.50, Wp/Lp: 1.47-1.68. Body subtrapezoidal, moderately converging posterad, males slightly stouter than females (L/W 1.33-1.42: fig. 87, female 1.43-1.50: fig. 89).

Body uniformly yellow, including legs and antennae.

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners marked but broadly rounded, anterior margin more rounded than in other species, except *B. pilosella* which has a similar shape of pronotum. Disc only slightly convex, indistinctly separated from explanate margin; surface mostly finely and sparsely punctate, distinctly finer and sparser than in related *B. pilosella*, distance between punctures mostly more than twice wider than puncture diameter, on praescutellar lobe and along midline of pronotum punctures usually only slightly finer and sparser than on sides of disc, sometimes along disc impunctate line. Spaces between punctures not or indistinctly microreticulate and surface of disc appears shiny. Explanate margin narrow, especially anteriorly, as coarsely as but distinctly sparser and shallower punctate than on disc, surface appears regular,

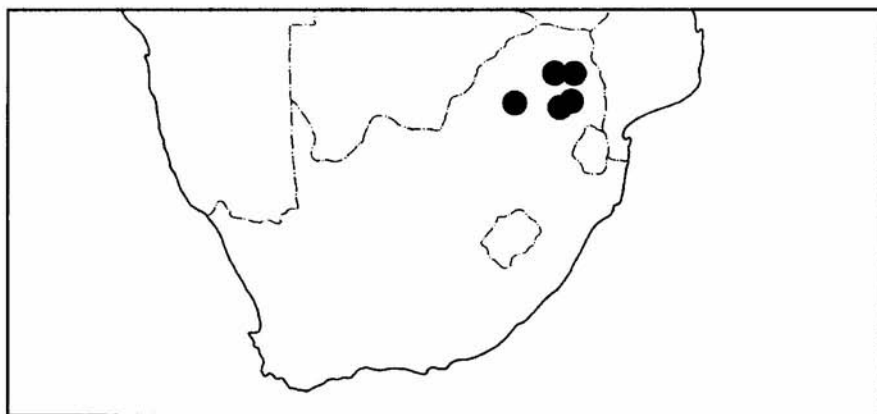


87-93. *Basipta sebastiani*: 87 – male dorsal, 88 – male lateral, 89 – female dorsal, 90 – head and prosternum, 91 – punctuation of central part of clytral disc, 92 – antenna, 93 – claw

shiny. Whole disc covered by long, chalk-white, adherent vestiture, not covering surface of pronotum but usually slightly sparser than in related *B. pilosella*.

Scutellum subtrapezoidal, apex rounded, surface without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to anterior corners of pronotum, rounded, but more narrowly rounded than in other species, except *B. pilosella*. Basal margin of each disc distinctly crenulate. Disc regularly, evenly convex, rounded in profile (fig. 88), with impression in posterior half of suture and usually also with very shallow posterolateral impression. Punctuation completely irregular, punctures arranged mostly regularly (fig. 91), but on top of disc distinctly sparser than in its impressed parts; punctuation coarse and dense, distance between punctures mostly narrower than puncture diameter, interspaces often with sparse, fine secondary punctures; in position of 3rd interval, especially in its posterior half runs a more or less developed, usually slightly elevated line, sometimes also on sides of disc run short, elevated, longitudinal folds. Marginal interval absent, marginal row distinct, punctures distinctly coarser than on disc, especially posthumeral part of the row with very coarse punctuation. Explanate margin narrow, strongly deflexed, in the widest part in both sexes only slightly wider than 1/6 width of disc of elytra, in apical part as wide as combined diameters of three punctures of disc, lateral margin distinctly, doubly marginate. Surface of explanate margin coarsely and densely punctate, punctures not or only slightly coarser than those on disc, distance between punctures mostly narrower than puncture diameter, but surface appears quite regular, shiny; Whole surface of disc and explanate margin covered by long, chalk-white, adherent vestiture, arranged regularly. Apex of elytral epipleura with sparse to moderately dense, erect hairs.

Clypeus extremely broad, c. 2.9 times as wide as long, with fine clypeal lines only in basal third, but with strongly elevated anterior margin (fig. 90). Surface of clypeus with few fine punctures, shiny. Labrum in middle of anterior margin not



94. Distribution of *Basipta sebastiani*

or very shallowly emarginate. Border of head cavity, above prosternal collar slightly elevated, with short, sharp carina. Prosternal collar short, without lateral emargination, prosternal alae without elevated borders. Prosternal process between coxae moderately broad, strongly expanded apically, apical half usually more or less impressed, but in some specimens without impression; surface of prosternal process with only few fine punctures, shiny. Antennae stout, length ratio of antennal segments: 100:46:60:66:73:70:105:86:86:86:133. Segment 3 c. 1.3 times as long as 2, segment 4 c. 1.1 times as long as segment 3 (fig. 92).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 93).

DISTRIBUTION

South Africa: Transvaal (fig. 94).

REMARKS

B. sebastiani with *B. pilosella* forms a group of species with regularly convex elytra. See remarks under *B. pilosella*.

MATERIAL EXAMINED

SOUTH AFRICA: holotype: "Woodbush N.TVL, XII 1944, G. v. SON" "23°50'S 29°55'E, L. SCHULZE" (TM); paratype: "Transvaal, Blyde River Canyon, 22-27 XI 1995" (LB); paratype: "Blyde R. Canyon, 10 km S., 1200 m., 28 XII 1994, A. FREIDBERG" (TAU); 2 paratypes: "Blyde Riv. Nat. Res., TVL, 26-28 I 1997" (LB); paratype: "10 ml SSW Ogama, Rondebosch, 11.6.1957" (TM); 4 paratypes: "Ohrigstad, 29 XII 1994, A. FREIDBERG" (TAU, LB); paratype: "Pienaars River, 1898, v. JUTRZENCKA" (LB); "Transvaal, Berlin, Karst Pl., 25.31 S 30.46 E, 8 XII 1996" (LB).

Basipta stolidus BOHEMAN, 1854

(figs 95-102, pl. 5: 4-6)

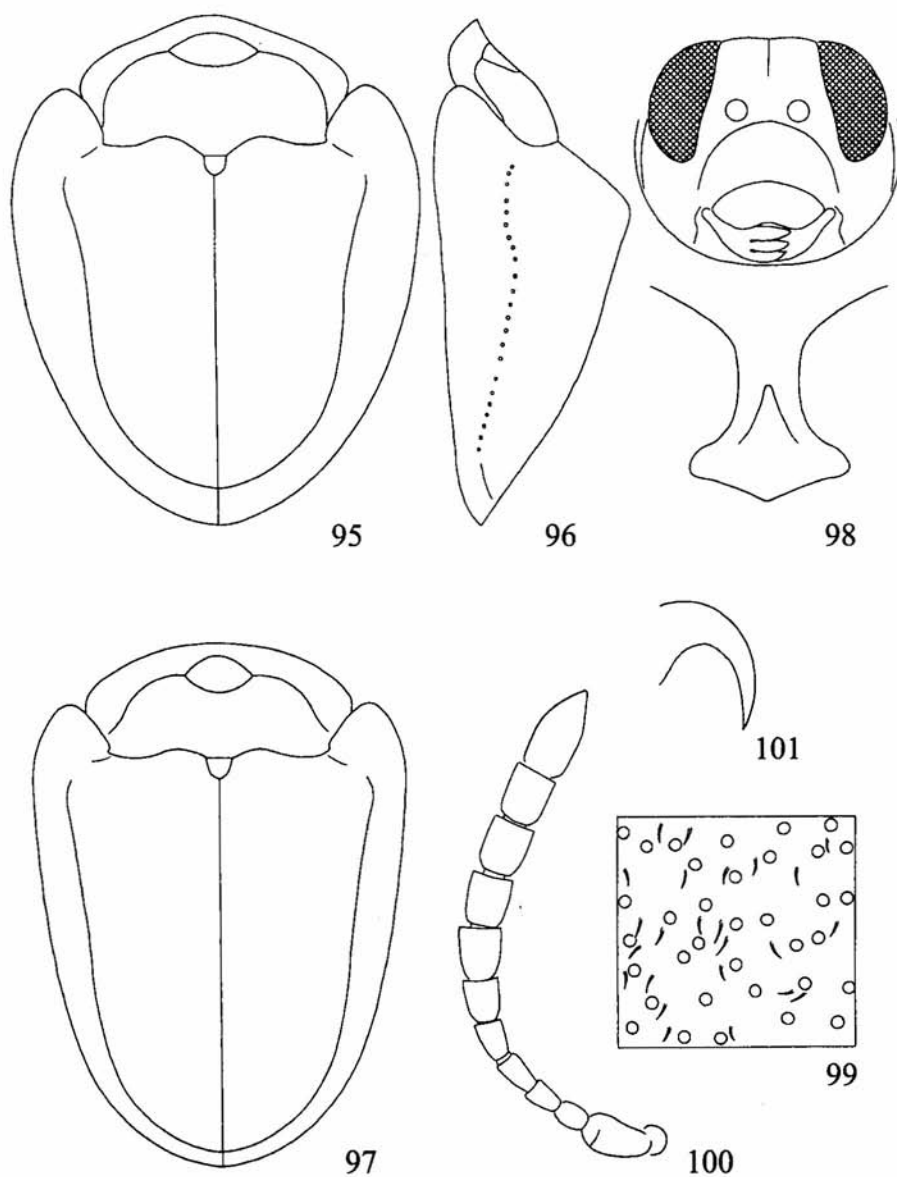
Basipta stolidus BOHEMAN, 1854: 186 (LT in ZMHU, PLT in NRS, ZMHU), 1856: 97, 1862: 243; GEMMINGER and HAROLD, 1876: 3645; MUIR and SHARP, 1904: 7, 12 (ootheca, larva, biology); SPAETH, 1914: 85; BOROWIEC, 1999: 234.

Basipta glauca: SHAW, 1956 a: 266; HERON and BOROWIEC, 1997: 633 (misinterpretation).

DESCRIPTION

Le: male 11.0-12.5 mm, female 11.2-13.6 mm, Wi: male 8.5-9.8 mm, female 7.85-9.3 mm, Lp: male 3.4-3.9 mm, female 3.2-3.8 mm, Wp: male 5.6-6.3 mm, female 5.3-6.6 mm, Le/Wi: male 1.21-1.29, female 1.38-1.46, Wp/Lp ratio: male 1.62-1.71, female 1.54-1.78. Body subtrapezoidal, moderately converging posterad, males slightly stouter than females (figs 95, 97).

Body uniformly yellow, including legs and antennae.



95-101. *Basipta stolidi*: 95 – male dorsal, 96 – male lateral, 97 – female dorsal, 98 – head and prosternum, 99 – puncturation of central part of elytral disc, 100 – antenna, 101 – claw

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners well marked, anterior margin from almost straight to slightly rounded. Disc only slightly convex, indistinctly separated from explanate margin; whole surface finely and densely punctate, distance between punctures from slightly narrower to twice wider than puncture diameter; in some specimens puncturation very shallow, looks like pricks, in other distinct, deep. Spaces between punctures distinctly microreticulate and surface of disc appears slightly opaque. Explanate margin narrow, especially anteriorly, as coarse as but slightly sparser and distinctly shallower punctate than on disc, surface appears regular. Whole disc covered by long, chalk-white, adherent vestiture, more or less covering surface of pronotum.

Scutellum subtrapezoidal, apex rounded, surface without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to anterior corners of pronotum, rounded. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, angulate in profile (fig. 96), without postscutellar and principal impressions, but elytral disc along suture, in its posterior half, and along middle, and in posterolateral part of disc, distinctly impressed. Puncturation completely irregular, punctures of various size and arranged irregularly (fig. 99); in impressed parts of disc punctures finer than on elevated parts but dense, with distance between punctures from slightly narrower to slightly wider than puncture diameter, and surface of disc appears completely irregular to rugose; in not impressed parts of disc punctures distinctly coarser than in impressions, but sparser, with distance between punctures in areas close to impressions as wide as, on top of disc distinctly wider than puncture diameter, with surface smooth and shiny, especially top of disc contrasting shiny in relation to rugose and dull impressions, thus elytral disc appears longitudinally vittate, alternately dull and shiny. Marginal interval absent, marginal row distinct, punctures distinctly coarser than on disc especially posthumeral part of the row with very coarse puncturation. Explanate margin broad, strongly deflexed, in the widest part in male as wide as $1/3$ width, in female as $1/4$ width of disc of elytra. Surface of explanate margin finely and densely punctate, punctures distinctly finer than those on disc, distance between punctures slightly narrower than puncture diameter, surface appears slightly irregular; Whole surface of disc covered by long, chalk-white, adherent vestiture, impressed and dull parts of disc and explanate margin with dense pubescence, partly covering surface, shiny parts of disc distinctly sparser pubescent, vestiture not covering surface. Apex of elytral epipleura with dense, erect hairs.

Clypeus very broad, c. 2.2 times as wide as long, with fine clypeal lines only in basal third, but with strongly elevated anterior margin (fig. 98). Surface of clypeus with several moderately coarse punctures, shiny. Labrum in middle of anterior margin not or very shallowly emarginate. Border of head cavity, above prosternal collar slightly elevated, with short, sharp carina. Prosternal collar short, without lateral emargination, prosternal alae without elevated borders.

Prosternal process between coxae moderately broad, strongly expanded apically, apical half deeply impressed, in some specimens the process in middle, between coxae, canaliculate, central part of apex not higher than expanded sides; surface of prosternal process with only few fine punctures, shiny. Antennae stout, length ratio of antennal segments: 100:58:90:82:76:58:70:58:66:64:118. Segment 3 c. 1.6 times as long as 2 and c. 1.1 times as long as segment 4 (fig. 100).

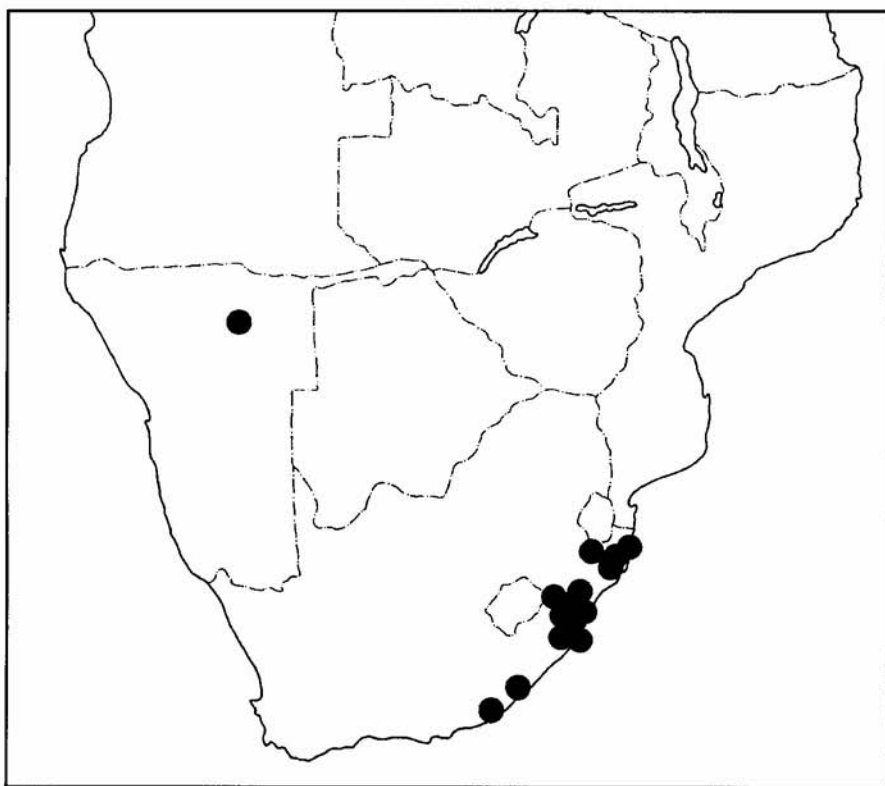
Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 101).

HOST PLANT

Asteraceae: *Brachylaena discolor* (MUIR and SHARP, 1904; HERON and BOROWIEC, 1997).

DISTRIBUTION

South Africa and Namibia (fig. 102). Record from Namibia probably based on introduced specimen.



102. Distribution of *Basipta stolidus*

REMARKS

It belongs to the species group with elytra angulate in profile. The group comprises also *B. luteocincta* and *B. glauca*. The former species distinctly differs in extremely dense, uniformly punctate elytral disc, with punctures almost touching each other, while in *B. stolidus* puncturation is sparser, especially in sutural half of disc with distance between punctures at least twice larger than puncture diameter. *B. luteocincta* is distinctly slimmer, with Le/Wi in male 1.45-1.47, in female 1.50-1.52 (in *B. stolidus* 1.21-1.29 and 1.38-1.46 respectively). *B. glauca* differs in almost uniformly punctate elytral disc, while in *B. stolidus* along middle of disc of each elytron there runs a large impressed area, distinctly denser punctate than other parts of disc. *B. stolidus* is distinctly larger, especially males (Le in males: 11.0-12.5, in *glauca* 8.95-10.6; in females: 11.2-13.6, in *glauca* 9.4-12.4). Both species are partly separated geographically. *B. glauca* is more western in distribution, common in the eastern part of Cape Province, especially in East London area, while *B. stolidus* occurs mostly in Natal, and only in the vicinity of East London of eastern Cape both are sympatric.

The name *B. stolidus* was synonymized with *B. glauca* by SHAW (1956 a) as a result of misinterpretation of the type locality of *B. stolidus*. See remarks under *B. glauca*.

MATERIAL EXAMINED

NAMIBIA: Grootfontein Distr., L. Otjikoto, V 1937, 1, V. FITZSIMONS (TM).
SOUTH AFRICA: Amanzimtoti, 14 II 1946, 1, H.P. THOMASSET (TM); Cap b. Spei, 1, WAHLBERG (paralectotype, NRS), 1, DREGE (paralectotype, NRS); Cape, East London, 1923, 1, R. ELLENBERGER (MNH); Natal, 2 (1 CMNH, 1 IRSN), 6 I, 7, * XII 2, 10 XII, 1, TRIGLORDH (NRS); Natal, Buru, 2 (TM); Natal, Durban, 1 (NMP), VII 1938, 17, BAUM (NMP), 19 IX 1906, 1, G. HEIGH (TM); Natal, Malvern, 1 (EGS), XI 1902, 1, G.A. MARSHALL (BMNH); Natal, Margate, I 1943, 2, W.G. KOBROW (TM); Natal, Mkambati Nat. Res., 29 XI 1992, 1, C. BAYER (MS); Natal, Mkuze, 15 IV 1982, 1, LAWRENSON (TM); Natal, Mtubatuba-Dukuduku, 17-21 XII 1997, 4, I. JENIS (FK, JV, MS); Natal, Ngome Ntandeka Nat. Res., 10 XII 2000, 1, TICHY (MO); Natal, 20 km NW Nongoma forest, 8 II 2000, 1, J. HALADA (MS); Natal, Pt. Natal, 4, PÖPP. (lectotype and 3 paralectotypes, ZMHU); Natal, Port Natal, 2, VAHLBERG (paralectotypes, NRS); Natal, Port Shepstone, X 1914, 2, HARDENBERG (TM); Natal, Salt Rock, 25-28 XI 1984, 3, BELLAMY & HOTMAN (ER); Natal, S. Lucia, 18-25 II 1960, 1, HEJJA (HNHM), 29 X 1981, 3, J. KLAPPERICH (MZSNV); Natal, Scottburg, 28 XI 1991, 1, RICHTER (MS); Natal, Shongweni, 17 IX 1959, 1 (NMM); Natal, Sordwana Bay, 9-11 XI 1986, 2, D. D'HOTMANN (ER); Natal, Southbroom, III 1955, 4, 17 IV 1956, 6, 5 VII 1956, 5 (9 MRAC, 5 LB); Natal, St. Lucia Park, 7-8 X 1983, 2, A. FREIDBERG (TAU); Natal, Tongaat, 1909, 3, H.C. BURNUP (TM); Natal, Umkomaas Mts., IX 1897, 2, G.A. MARSHALL (BMNH), 9-13 III 1951, 1, A.L. CAPENER (TM); Natal, Umtweni, 15 III 1973, 3, C.H. DRAPER (TM); Transkei, Owesa Forest, 26 II 1985, 1,

ENDRÖDY-YOUNGA (TM); Zululand, Hluhluwe, 9 II 1955, 1 (MRAC); Zululand, Lake Sibuya, 10 XI 1984, 2, BELLAMY & SCHOLZ (TM); Zululand, Mtubatuba, 28°22'42"S/32°18'19"E, 4 X 1998, 1, M. RICE (MR); Zululand, Mtubatuba-Dukuduku, 5 IV 1974, 1, ENDRÖDY-YOUNGA (TM).

Genus: *Chelysida* FAIRMAIRE, 1882

Chelysida FAIRMAIRE, 1882: 104 (type species: *Chelysida oblecta* FAIRMAIRE, 1882, designated by SPAETH, 1914: 86); SPAETH, 1914: 86; HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 13, 1999: 296.

Moderately large cassids, body length 4.8-6.2 mm. Body almost hemispherical. Pronotum reversely trapezoidal, with maximum width before middle. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin broad, punctate. Elytral base only slightly wider than pronotum. Elytral disc with low postscutellar elevation. Puncturation of disc irregular. Marginal row indistinct, marginalia separated from disc only in anterior half by irregular row of coarse punctures. Explanate margin of elytra broad, strongly deflexed, punctate. Clypeus broad, flat, punctate but shiny, with very fine, shortened clypeal lines, visible only on basal half of sides of clypeus. Venter of pronotum with short antennal grooves bordered laterally by obtuse carina. Antennae stout, third segment c. twice shorter than the second, segments 8-10 wider than long. Last segment of tarsi as long as third, bilobate segment. Claws with basal tooth.

Distinct genus, well characterized by not transparent marginalia, strongly convex, almost hemispherical body, reversely trapezoidal pronotum, venter of pronotum with antennal grooves, and prosternal collar with lateral emargination. Only some species of *Ischiocassis* Sp. and *Orobiocassis* Sp. have a similar body shape. The former genus distinctly differs in simple claws, the latter in venter of pronotum without antennal grooves and also simple claws.

Only one species in NW Africa.

Chelysida oblecta FAIRMAIRE, 1883

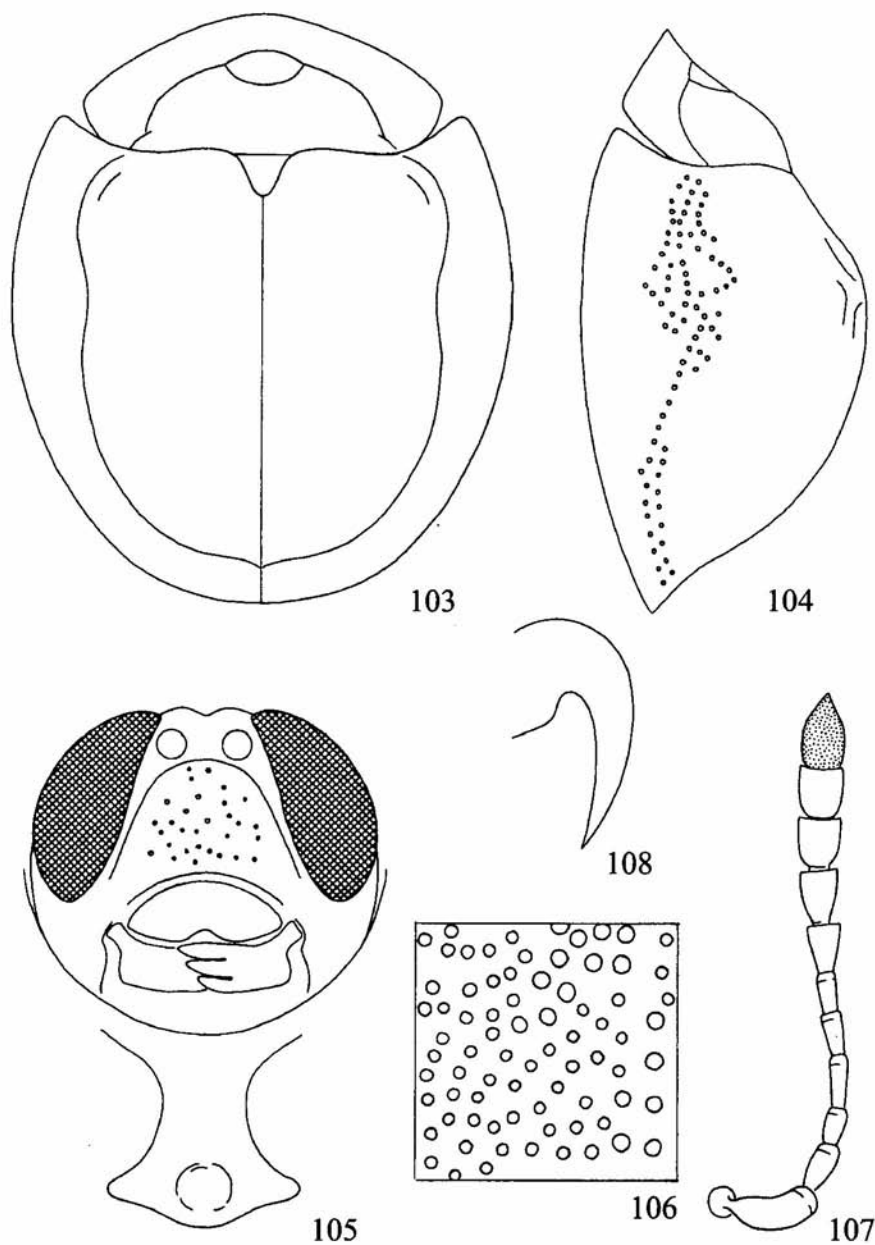
(figs 103-109, pl. 10: 9-11)

Chelysida oblecta FAIRMAIRE, 1883: 103 (HT in MNHN); KOLBE, 1898: 343; SPAETH, 1901 b: 751, 1914: 86; BOROWIEC, 1999: 296.

DESCRIPTION

Le: 5.1-7.8 mm, Wi: 3.4-6.25 mm, Lp: 1.8-2.6 mm, Wp: 3.2-4.50 mm, Le/Wi: 1.17-1.37, Wp/Lp ratio: 1.63-1.79. Body from almost spherical to short-oval, males slightly stouter than females (fig. 103).

Pronotum and elytra brown; clypeus mostly yellowish-brown or brown, only at base black; pro- and mesothorax black, metathorax black in middle and at base,

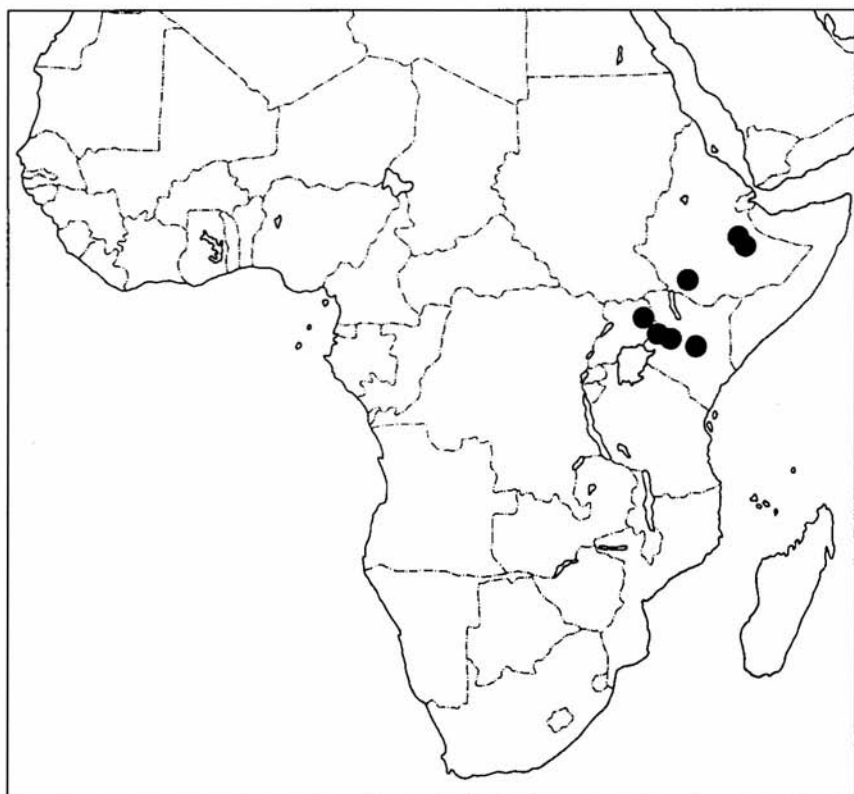


103-108. *Chelysida oblecta*: 103 – dorsal, 104 – lateral, 105 – head and prosternum, 106 – puncturation of central part of elytral disc, 107 – antenna, 108 – claw

sides and lateral plates yellowish to yellowish-brown, abdomen always yellowish; legs yellowish, antennae usually yellowish, or with only one or two last segments slightly infuscate.

Pronotum reversely trapezoidal, with maximum width close to almost straight anterior margin, anterior corners well marked, angulate. Disc distinctly convex, distinctly separated from explanate margin; area above head smooth, top and sides of disc finely, sparsely punctate, in some specimens puncturation almost invisible, in other quite distinct but distance between punctures always wider than puncture diameter, surface of disc appears regular, or only on sides slightly irregular. Explanate margin quite broad, impunctate, smooth or with indistinct radial wrinkles, especially on sides. Surface of explanate margin, especially in area close to anterior corners, covered by extremely short, adherent setae.

Scutellum triangular, without punctures or sulci. Base of elytra not or only slightly wider than pronotum, humeri strongly protruding anterad, angulate. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, with top of convexity in postscutellar point (fig. 104), postscutellar impressions distinct,



109. Distribution of *Chelysida obtecta*

bordered by elevations, principal impressions well marked, lateral impressions absent. Puncturation completely irregular (fig. 106), moderately coarse and dense, distance between punctures mostly narrower than puncture diameter, surface of disc appears regular. Postscutellar area with more or less distinct H-shaped elevation. In position of 3rd interval runs obtuse costa, connected with border elevation of postscutellar impressions, and by transverse ridge connected with postscutellar point. In some specimens in posterior half of disc the costa completely vanishing within elytral puncturation. Marginal interval usually completely invisible, or marked only in anterior 1/3 length, marginal row usually completely vanishing between punctures of disc and explanate margin. Explanate margin broad, strongly deflexed, in the widest part c. as wide as 1/3 width of disc, surface in inner half moderately coarse and sparsely punctate, externally mostly impunctate, appears mostly regular, or only in posterior half of the margin with indistinct radial wrinkles. Whole surface of disc, especially in fresh specimens, covered by very short and sparse, barely visible adherent setae. Apex of elytral epipleura with sparse erect hairs.

Clypeus very broad, c. 1.7 times as wide as long, with fine clypeal lines running close to margin of eye (fig. 105). Surface of clypeus flat, shiny, with few small punctures. Labrum shallowly emarginate. Venter of pronotum along sides of head deeply impressed, forms short antennal groove, bordered externally by sharp carina. Prosternal collar short, with lateral emargination and narrow plate above the emargination. Prosternal process between coxae narrow, strongly expanded apically, along middle impressed or canaliculate, apex with few elongate punctures, surface appears regular. Antennae stout, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:60:43:66:53:46:56:63:56:60:93. Segment 2 c. 1.4 times as long as segment 3 and slightly shorter than segment 4 (fig. 107).

Legs stout, covered by sparse, adherent setae. Claws with large basal tooth (fig. 108).

DISTRIBUTION

Ethiopia, Somalia, Uganda, and N Kenya (fig. 109).

MATERIAL EXAMINED

ETHIOPIA: Dire Dawa, III, 1 (ZMHU); Dire Daoua, 1 (NRS), 4, KRISTENSEN (MM); Gamu Gofa Prov., Konso, 1610 m, 28 III 1960, 32, 11 IV 1960, 13, W. RICHTER (SMNS, LB); Harar, 2 (MRAC); Konso, 10 km of Gemu Gofa, IV 1993, 1, WERNER (DS).

KENYA: Elgon Distr., IV-V 1914, 1, BAYER (MRAC); Jonct. Camp, E Elgon, IV-V 1914, 1, BAYER (MRAC); Kabarnet, 11-12 X 1998, 1, F. KAPLAN & A. FREIDBERG (TAU); Samburu-Isiolo, 00°33'N-37°33'E, 950 m, J. KRIKKEN and R. DE JONG (NNML).

SOMALIA: "Somalis" (holotype, MNHN).

UGANDA: Moroto, 8 X 1953, 2 (LB).

SPECIES INCERTAE SEDIS

***Chelysida peringueyi* FAIRMAIRE, 1891**

Chelysida peringueyi FAIRMAIRE, 1891 b: 90 (TE in MNHN); SPAETH, 1901 b: 751, 1914: 86; BOROWIEC, 1999: 296.

REMARKS

Unknown to me. I did not find the type of *Ch. peringueyi* at the Paris Museum or the South African Museums. It has probably been lost. The original description is very enigmatic. In my opinion the species is not a member of the genus *Chelysida* FRM. but probably belongs to *Orobiocassis* SP., as suggested by the type locality – “nord de la Cafrerie” (=Natal) in South Africa (the genus *Chelysida* is distributed only in NE Africa).

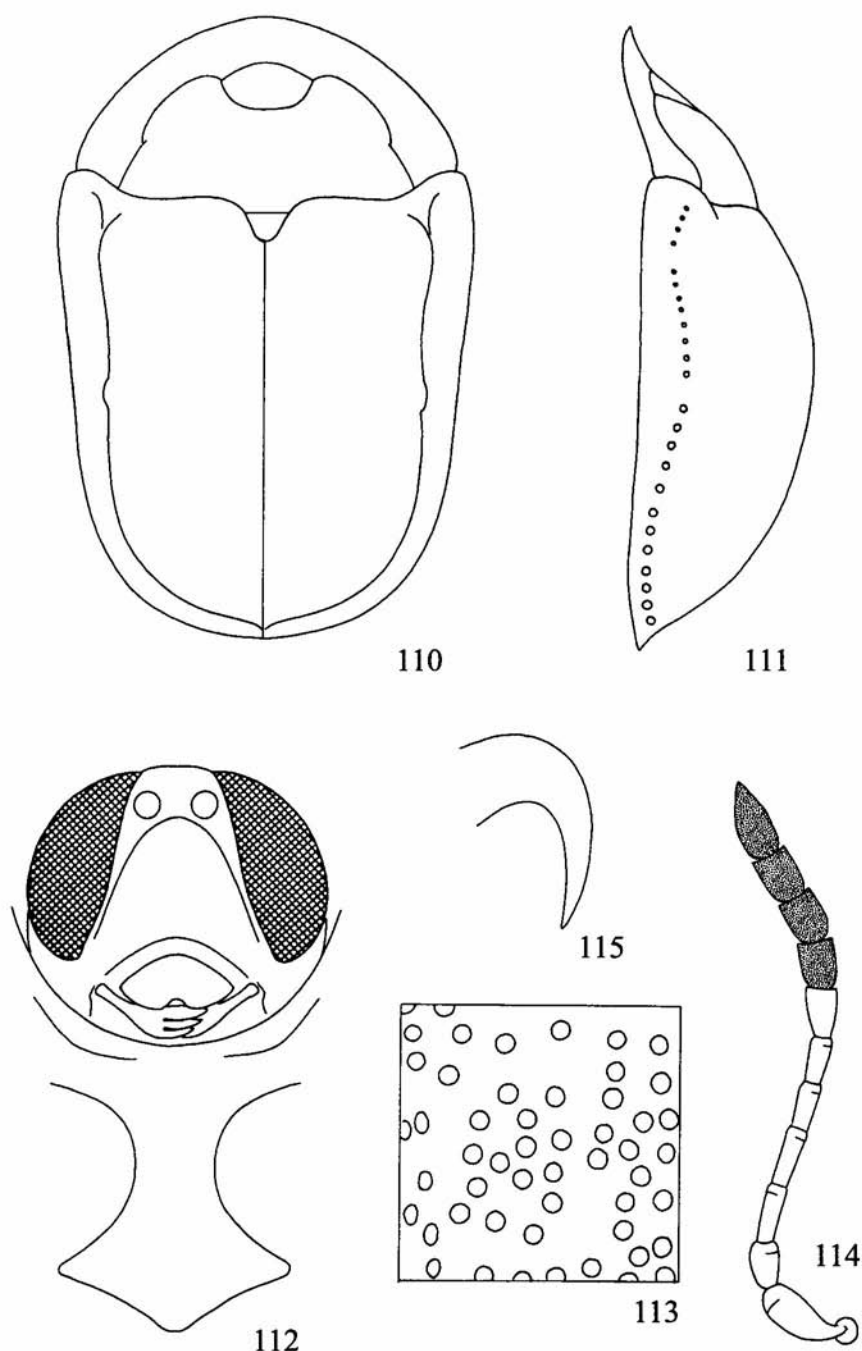
Genus: *Erbolaspis* SPAETH, 1924

Erbolaspis SPAETH, 1924: 312 (type species: *Hypocassida passaria* WEISE, 1900, by monotypy); HINCKS, 1952: 339 (as subgen. of *Cassida*); SEENO and WILCOX, 1982: 177 (as subgen. of *Cassida*); BOROWIEC, 1994 a: 14, 1999: 305.

Small cassids, body length c. 5-6 mm. Body elongate, almost parallelsided. Pronotum semicircular, with maximum width at base and with strongly angulate posterior corners. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin moderately broad, not transparent, punctate. Elytral base only slightly wider than pronotum. Elytral disc moderately, regularly convex, with shallow postscutellar impression and each elytron with two longitudinal, obtuse costae. Punctuation of disc coarse, irregular. Marginal row distinct. Explanate margin of elytra narrow, punctate. Clypeus broad, faintly punctate, clypeal lines barely marked. Venter of pronotum with short but deep antennal grooves separated externally by obtuse carina. Prosternal collar with deep lateral emargination. Antennae moderately long, third segment slightly longer than the second, segments 8-10 slightly longer than wide. Last segment of tarsi not longer than the third, bilobate segment. Claws simple.

Erbolaspis SP. is close to *Acrocassis* SP., *Rhytidocassis* SP., *Trigonocassis* HINCKS and Palaearctic *Hypocassida* WEISE. They probably form a natural group of genera with more or less distinct antennal grooves and prosternal collar emarginate laterally. The last three genera distinctly differ from *Erbolaspis* in their elliptical pronotum, regularly rounded on sides, while in *Erbolaspis* and *Acrocassis* pronotum is semicircular, with distinct posterior angles. *Acrocassis* differs in subtriangular to subtrapezoidal body, and elytra angulate in profile, while in *Erbolaspis* body is almost parallelsided, and elytral disc almost regularly convex with no postscutellar tubercle.

Only one species in East Africa.



110-115. *Erbolaspis passaria*: 110 – dorsal, 111 – lateral, 112 – head and prothorax, 113 – puncturation of central part of elytral disc, 114 – antenna, 115 – claw

***Erbolaspis passaria* (WEISE, 1900)**

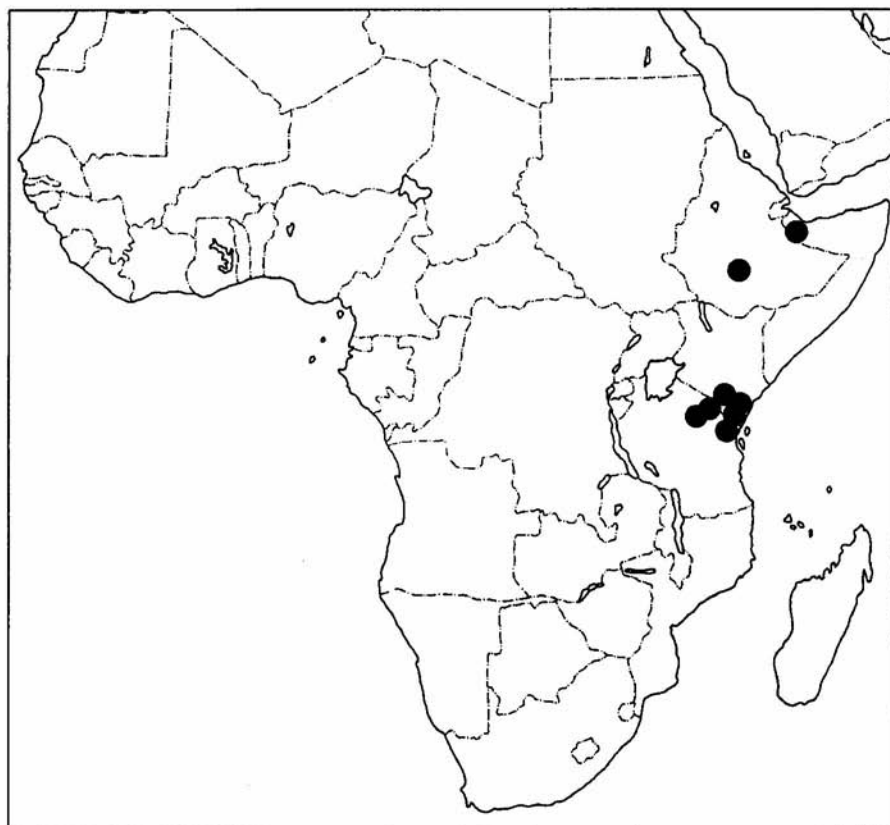
(figs 110-115, pl. 5: 9-10)

Hypocassida passaria WEISE, 1900: 215 (ST in ZMHU, BMNH, MM), 1903: 225; SPAETH, 1909: 272, 1914: 90.*Erbolaspis passaria*: SPAETH, 1924: 312; BOROWIEC, 1999: 305.

DESCRIPTION

Le: 6.10-7.05 mm, Wi: 4.0-4.5 mm, Lp: 2.3-2.6 mm, Wp: 3.70-4.25 mm, Le/Wi: 1.52-1.66, Wp/Lp ratio: 1.54-1.63. Body elongate oval, slightly converging posterad (fig. 110).

Pronotum yellowish to yellowish-brown. Elytra yellowish to yellowish-brown, except black basal teeth, some punctures along sides of elytral elevations (suture and two costae) marked with dark-brown or black, sometimes also some punctures on sides of disc marked with brown to black. In some specimens dark margins along sutural sides and the first costa tend to coalesce and then form stripes or

116. Distribution of *Erbolaspis passaria*

small spots. Clypeus, ventrites, and legs uniformly yellow. Antennae yellow, last four segments more or less infusate, sometimes also segment 7 partly infusate.

Pronotum semicircular, with maximum width at base, basal corners well marked, slightly protruding posterad, form a small denticle. Disc moderately convex, indistinctly separated from explanate margin. Puncturation of disc fine, shallow but dense, with distance between punctures from slightly smaller to slightly larger than puncture diameter. In some specimens punctures elongate, tend to form irregular striation, in other puncturation is very shallow and surface of disc appears slightly irregular rather than punctate. Spaces between punctures usually microreticulate, opaque to slightly shiny. Explanate margin narrow, impunctate, its surface from slightly opaque to slightly shiny.

Scutellum large, triangular, with or without transverse sulcus, sometimes with small impression. Base of elytra only slightly wider than pronotum, humeri slightly protruding anterad, subangulate. Basal margin of each disc distinctly crenulate. Disc regularly, evenly convex, with top of convexity in or slightly behind postscutellar area (fig. 111), with shallow postscutellar impressions, and often very shallow principal impressions. Each disc with two distinct, elongate costae in position of 3rd and 5th interval. In postscutellar part of disc more or less visible H-shaped elevation or impunctate area. Puncturation, except sutural and marginal rows, irregular, coarse and dense, distance between punctures from slightly narrower to slightly wider than puncture diameter (fig. 113), but in some parts of disc punctures tend to group. Marginal interval distinct on its whole length, broad. Marginal row distinct, its punctures distinctly coarser than on disc. Explanate margin narrow, strongly deflexed, in the widest part only slightly wider than 1/10 width of disc of elytra, in apical part as wide as diameter of two punctures of disc together, lateral margin simple marginate. Surface of explanate margin finely and sparsely punctate, punctures distinctly finer than those on disc, distance between punctures distinctly wider than puncture diameter, posterior half of marginalia with more or less impressed radial grooves. Surface appears regular, from slightly opaque to shiny. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.3 times as wide as long, with fine clypeal lines, barely marked apically, running close to eye margin and converging in arch (fig. 112). Surface of clypeus flat, with very fine punctures, shiny. Labrum distinctly emarginate to 1/4-1/3 length. Prosternal collar well marked, with lateral emargination. Venter of pronotum with short but deep antennal grooves, bordered externally by a sharp carina. Prosternal process between coxae broad, strongly expanded apically, in middle flat or shallowly impressed, apex impunctate. Antennae stout, segments 9 and 10 c. 1.2 times as long as wide, length ratio of antennal segments: 100:46:66:68:53:52:56:54:54:56:87. Segment 3 c. 1.4 times as long as 2 and c. as long as segment 4 (fig. 114).

Legs stout, covered by sparse, adherent setae. Claws large, simple (fig. 115).

DISTRIBUTION

Eastern Africa from Ethiopia to N Tanzania (fig. 116).

MATERIAL EXAMINED

ETHIOPIA: Sidamo, near Negele, 7-8 V 1997, 1, WERNER & LIZLER (DS).

KENYA: Kibwezi, 2, SCHEFFLER (ZMHU); Merifano, IX 1932, 2, McARTHUR (BMNH); Rabai, VIII 1937, 1 (LB); Voi, 13-17 XII 1997, 1, M. SNIZEK (MS).

SOMALIA: Borama, IV 1936, 1, E. FAA DI BRUNO (MZUF).

TANZANIA: Kilimandjaro, Kibonoto, 1300-1900 m, 9 XI, 1, SJÖSTEDT (ZMHU); Korogwe, Mkokoni, 2 (LB); Meru, Ngare nanyuki, I, 1, SJÖSTEDT (ZMHU); Mombo, VII 1899, 4 (lectotype and 3 paralectotypes of *Hypocassida passaria* WEISE, present designation, ZMHU); Mombo, 7, PAUL (paralectotypes of *Hypocassida passaria* WEISE, ZMHU); Usambara, 2 (syntypes, BMNH); O Usambara, I 1903, 1 (ZMHU); W Usambara, V 1904, 6 (ZMHU); Usambara, Kwai, 25 (ZMHU, LB).

Genus: *Fornicocassis* SPAETH, 1917

Fornicocassis SPAETH, 1917: 438 (type species: *Fornicocassis rufocincta* SPAETH, 1917, by monotypy); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 177; BOROWIEC, 1994 a: 17, 1999: 305.

Small cassids, body length 4.5-6.5 mm. Body regularly convex, almost cylindrical. Pronotum elliptical, with broadly rounded sides and maximum width before middle. Pronotal disc distinctly separated from explanate margin, from smooth to sparsely punctate. Explanate margin broad, not transparent, from finely to coarsely punctate. Elytral base only slightly wider than pronotum. Elytral disc regularly convex. Punctuation of disc coarse, usually regular, but sometimes rows disturbed by transverse wrinkles or simple additional punctures. Marginal row distinct. Explanate margin of elytra broad, steeply deflexed, almost perpendicular, shallowly to coarsely punctate, not transparent. Clypeus broad, slightly impressed, punctate with irregular surface, with very deep clypeal grooves. Venter of pronotum with deep antennal grooves, separated laterally by sharp carina but prosternal collar without lateral emargination. Border margin between venter of pronotum and prosternal alae strongly elevated, carinate. Antennae stout, third segment distinctly longer than the second, segments 8-10 wider than long. Last segment of tarsi as long as third, bilobate segment. Claws simple.

It is well characterized by subcylindrical body, venter of pronotum with deep antennal grooves, prosternal collar without lateral emargination, and simple claws. Only some species of Madagascan *Sphenocassis* Sp. are similarly shaped but differ in irregularly punctate elytra and base of pronotum deeply emarginate before humerus. Strongly convex species of the genus *Cassida* L. can be also similar but differ in venter of pronotum without antennal grooves.

Three species in Africa south of Equator.

KEY TO THE SPECIES

1. Pronotal disc impunctate, at most with very fine pricks, pronotal surface regular. Elytral intervals well visible, first and second interval at least in posterior half as wide as to slightly wider than rows.
..... 2.
- Pronotal disc finely but distinctly punctate, pronotal surface appears slightly irregular. Elytral intervals very narrow, linear or barely marked.
..... *obdurans*
2. Ventrites yellow. Elytral disc with well marked black pattern. Larger, length 6.0-6.8 mm.
..... *rufocincta*
- Ventrites partly brown to black. Elytral disc uniformly brown, or with indistinct brown pattern. Smaller, length 4.9-5.1 mm.
..... *unicolor*

***Fornicocassis obdurans* (SPAETH, 1917)**

(figs 117-123, pl. 6: 1-2)

Cassida obdurans SPAETH, 1917: 432 (HT in MM), 1933: 347.*Fornicocassis obdurans*: BOROWIEC, 1999: 305.

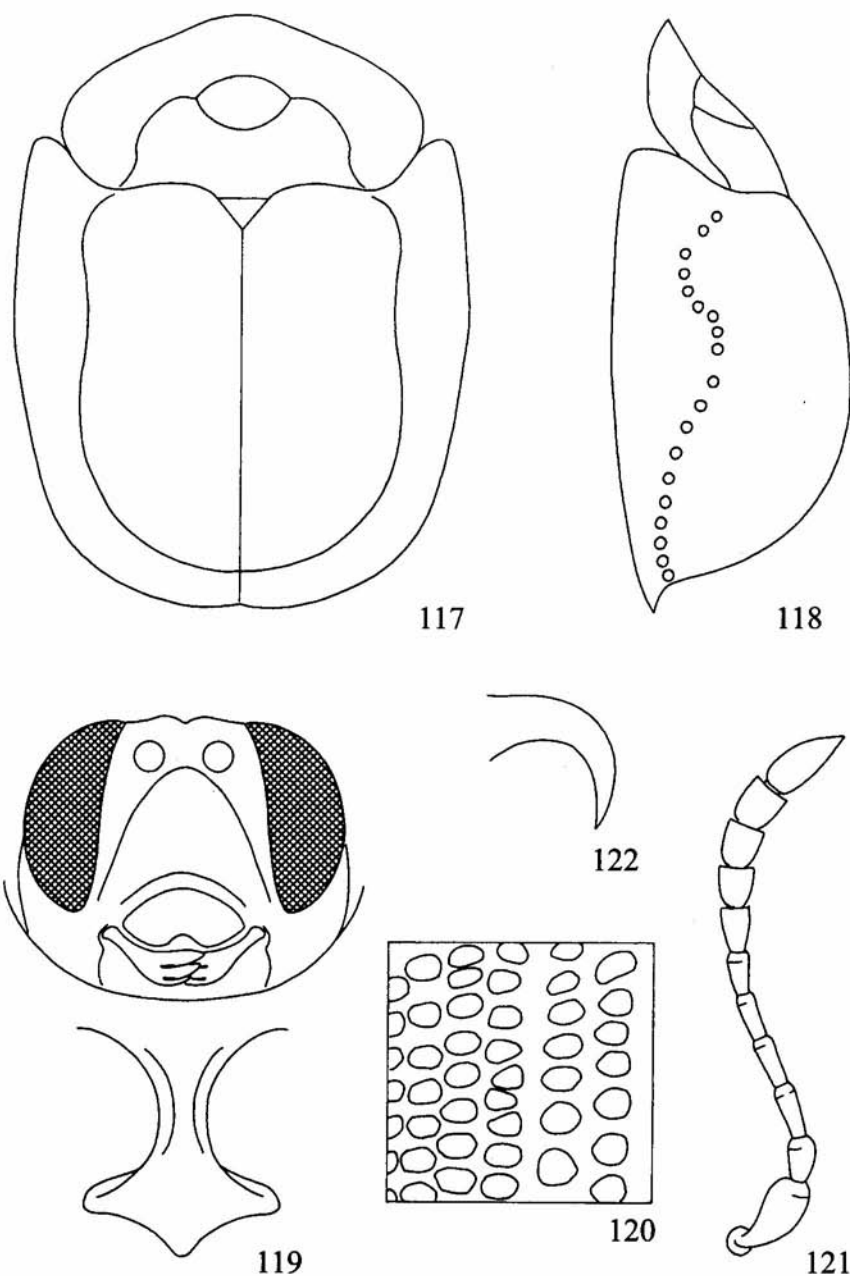
DESCRIPTION

Le: 4.6-5.7 mm, Wi: 3.4-3.8 mm, Lp: 1.8-2.1 mm, Wp: 2.75-3.25 mm, Le/Wi: 1.37-1.54, Wp/Lp ratio: 1.53-1.56. Body shortly-oval, very convex (fig. 117).

Pronotum brown. Elytra uniformly brown, or with darker brown pattern, forms broad band along sides of disc and two incomplete irregular bands across disc in 2/3 elytral length and on slope. Sometimes also second interval in 1/3 length with dark brown stripe. Clypeus brown. Ventrites uniformly brown or prothorax brown with darker brown borders, meso- and metathorax dark brown to black, abdomen mostly dark brown to black, only lateral borders of abdominal sterna yellowish-brown. Legs and antennae uniformly yellowish-brown.

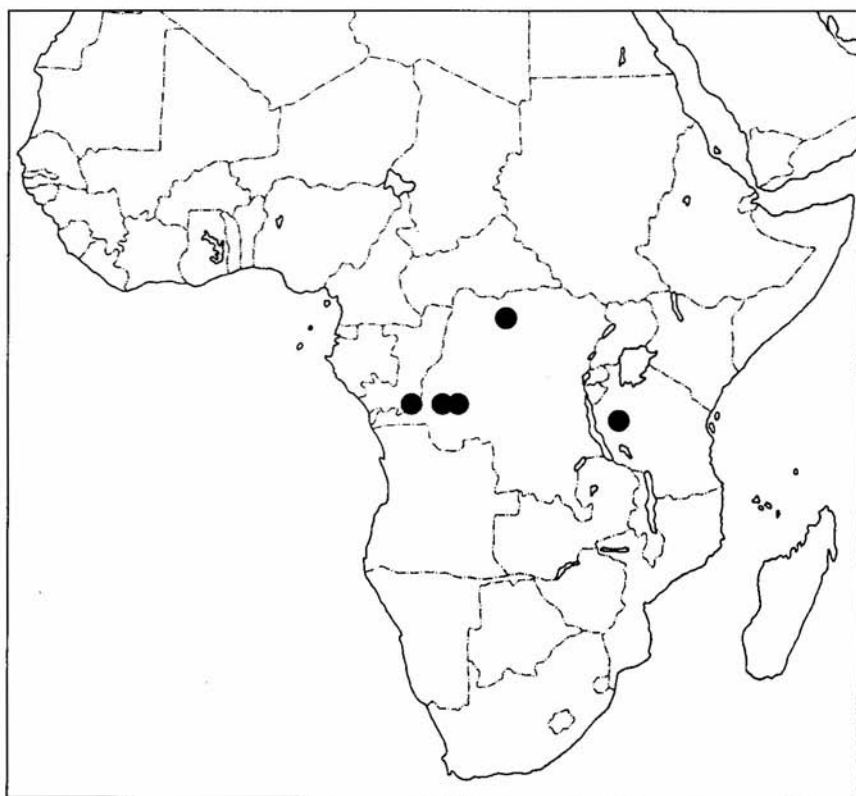
Pronotum broadly elliptical, 1.53-1.56 times wider than long, with maximum width before middle, sides broadly rounded, more converging posterad than anterad. Disc finely but mostly densely punctate, surface appears slightly irregular, dull. Explanate margin distinctly separated from disc, especially along sides of disc with shallow sulcus, broad; whole surface with fine irregular wrinkles, appears distinctly irregular.

Scutellum triangular, its surface with or without transverse sulcus. Base of elytra slightly wider than pronotum, humeri moderately protruding anterad, rounded. Anterior margin of disc not crenulate. Disc regularly, strongly convex,



117-122. *Fornicocassis obdurans*: 117 – dorsal, 118 – lateral, 119 – head and prosternum, 120 – puncturation of central part of elytral disc, 121 – antenna, 122 – claw

almost cylindrical, at top slightly depressed, with top of convexity in posterior third of elytra (fig. 118). Behind scutellum elytra shallowly, transversely impressed. Puncturation regular, extremely coarse and dense (fig. 120), on whole surface of disc punctures almost touching each other. Intervals barely marked, linear, but mostly sharp, intervals 1-4 on slope slightly widened and elevated. Surface of disc appears irregular. Marginal interval distinct only below humeral callus, on the remaining part of border of disc punctures of submarginal and marginal rows touching each other. Marginal row distinct, its punctures only slightly coarser than those of central part of disc, very deep, especially in posterior half of the row, interspaces between punctures form distinct folds. Explanate margin narrow, strongly deflexed, in the widest part as wide as $1/5$ width of disc of elytra, in apical part as wide as two marginal rows and one interval together. Surface of explanate margin coarsely but shallowly punctate, interspaces elevated, form wrinkles and whole surface of marginalia appears distinctly irregular. Elytral epipleura bare.



123. Distribution of *Fornicocassis obdurans*

Clypeus moderately broad, c. 1.3 times wider than long, flat, its surface strongly irregular, in some specimens along middle runs sharp carina and sides are deeply impressed (fig. 119). Clypeal grooves fine but distinct, converging in arch. Labrum narrowly emarginate to 1/3 length. Venter of pronotum with short but very deep antennal groove, separated externally by a sharp carina. Prosternal collar moderately elongate, without lateral emargination. Borders of prosternal alae strongly elevated. Prosternal process narrow in middle, strongly expanded apically, surface of apex distinctly irregular. Antennae stout, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:62:76:70:68:58:62:54:60:60:122. Segment 3 c. 1.2 times as long as 2 and only slightly longer than segment 4 (fig. 121).

Claws large, simple (fig. 122).

DISTRIBUTION

Zaire and W Tanzania (fig. 123).

REMARKS

It is the most coarsely punctate member of the genus. Its pronotum is finely but distinctly punctate with pronotal surface slightly irregular, while in both congeners pronotum appears impunctate, with surface completely regular. Elytral intervals in *F. obdurans* are very narrow, linear, always narrower than rows, while in both congeners at least two first intervals are as wide as to slightly wider than rows.

MATERIAL EXAMINED

TANZANIA: Unyamwesi, VI 1911, 1 (LB).

ZAIRE (REPUBLIC OF CONGO): Eala, 21 IV 1932, 1, H.J. BRÉDO (MRAC); Kasai, Ipamu, 1922, 1, P. VANDERIJST (MRAC); Leopoldville, VI 1899, 1, E. CLAVAREAU (holotype, MM); Mobwasa, 30 XI 1912, 1 (LB).

Fornicocassis rufocincta SPAETH, 1917

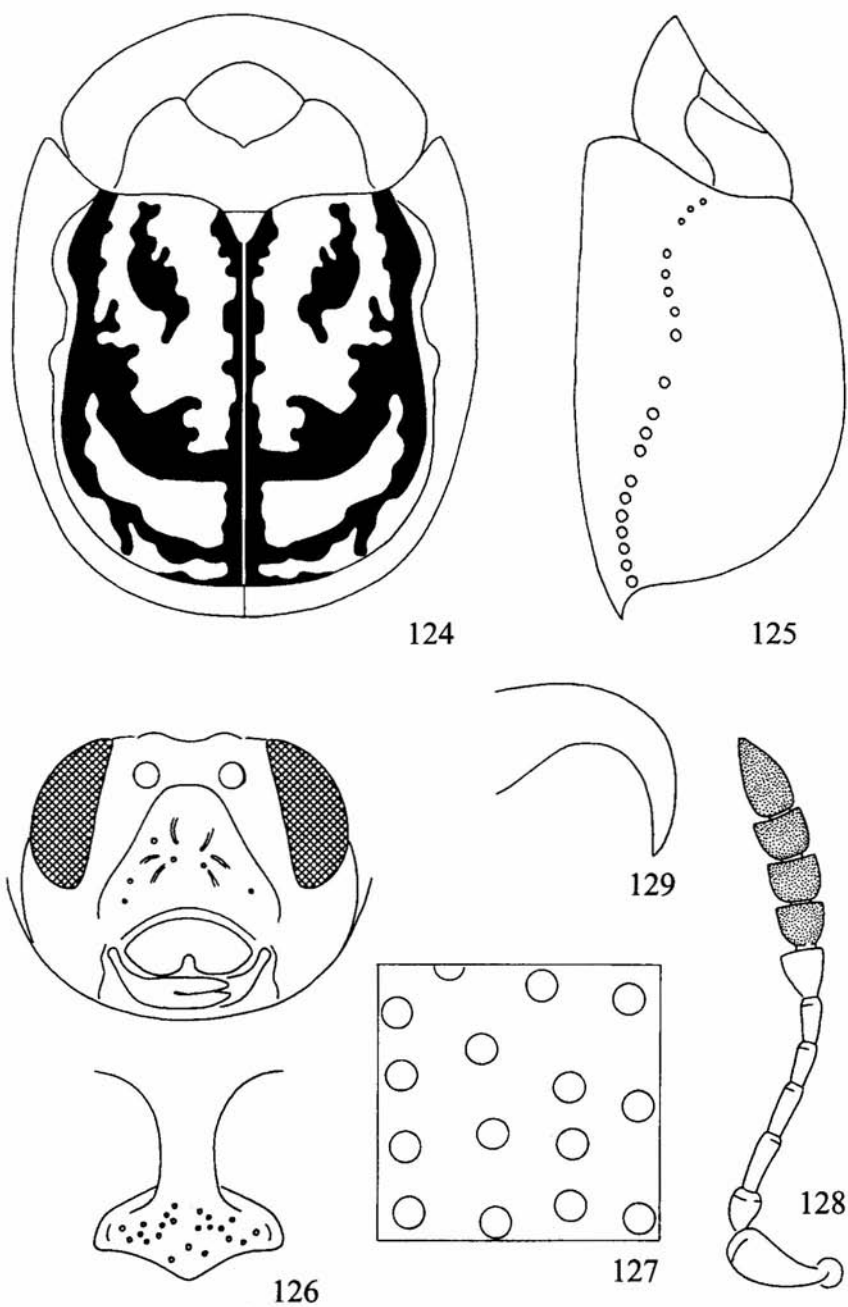
(figs 124-130, pl. 6: 3-4)

Fornicocassis rufocincta SPAETH, 1917: 438 (ST in MM); BOROWIEC, 1995: 372, 1999: 305.

DESCRIPTION

Le: 5.6-6.75 mm, Wi: 3.6-4.5 mm, Lp: 2.1-2.50 mm, Wp: 3.2-3.75 mm, Le/Wi: 1.45-1.56, Wp/Lp ratio: 1.46-1.50. Body almost cylindrical (fig. 124).

Pronotum yellowish to reddish-brown. Elytra yellow to brownish with black pattern: band along suture, irregular band along sides of disc, except marginal interval, spot in anterior part of third interval, more or less complete transverse bands in 2/3 length of disc and on slope, and transverse band before apex of disc,

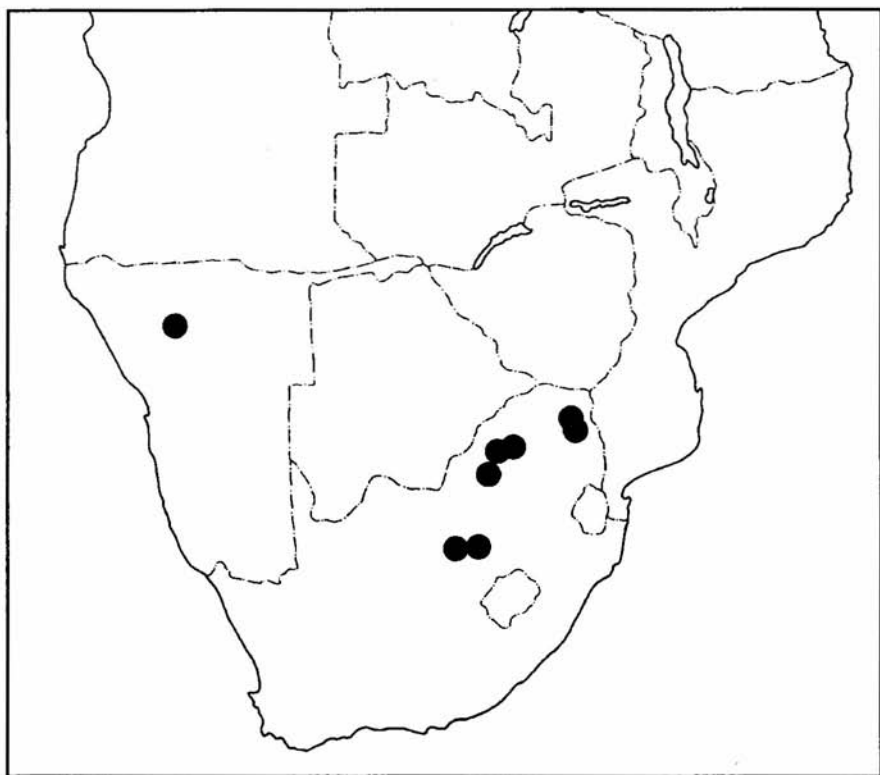


124-129. *Fornicocassis rufocincta*: 124 – dorsal, 125 – lateral, 126 – head and prosternum, 127 – puncturation of central part of elytral disc, 128 – antenna, 129 – claw

the latter band often reduced to few spots. Clypeus, ventrites and legs yellow, sometimes coxae and trochanters infusate. Antennal segments 1-6(7) yellow, remainder partly infusate.

Pronotum elliptical, moderately broad, 1.46-1.50 times wider than long, with maximum width before middle, sides broadly rounded, more converging posterad than anterad. Disc moderately convex, with well defined, large area above head, and longitudinal impression on each side. Surface with very fine pricks, especially on sides, dull. Explanate margin broad, distinctly separated from disc, especially along sides of disc with shallow sulcus; whole surface slightly irregular.

Scutellum triangular, its surface with or without transverse sulcus, sometimes slightly irregular. Base of elytra slightly wider than pronotum, humeri moderately protruding anterad, rounded. Anterior margin of disc not crenulate. Disc regularly, strongly convex, almost cylindrical, at top slightly depressed, with top of convexity in posterior third of elytra (fig. 125). No elytral impressions. Yellow parts of disc slightly elevated, form a relief. Puncturation regular, very coarse (fig. 127), yellow relief sparser punctured than black parts of elytra, distance between punctures from as wide as to twice wider than puncture diameter. Intervals well



130. Distribution of *Fornicocassis rufocincta*

marked, in sutural half of disc slightly wider than rows, on sides mostly as wide as rows. Surface of disc, except relief, appears mostly regular. Marginal interval distinct on whole length, distinctly wider than submarginal interval. Marginal row distinct, its punctures only in middle coarser than punctures of central part of disc, very deep, especially in posterior half of the row, interspaces between punctures form distinct folds. Explanate margin narrow, strongly deflexed, in the widest part as wide as 1/5 width of disc of elytra, in apical part as wide as two marginal rows and one interval combined. Surface of explanate margin coarsely but sparsely and shallowly punctate, interspaces slightly elevated, surface appears slightly irregular. Elytral epipleura bare.

Clypeus very broad, c. 1.6 times wider than long, flat, its surface punctate and slightly irregular (fig. 126). Clypeal grooves deep, converging in trapezium. Labrum narrowly emarginate to 1/3 length. Venter of pronotum with short but very deep antennal groove, separated externally by a sharp carina. Prosternal collar moderately elongate, without lateral emargination. Borders of prosternal alae strongly elevated. Prosternal process narrow in middle, strongly expanded apically, apex impressed on sides, with few punctures, its surface appears irregular. Antennae stout, segments 9 and 10 slightly wider than long, length ratio of antennal segments: 100:50:72:70:52:50:57:50:50:50:100. Segment 3 c. 1.4 times as long as 2 and almost as long as segment 4 (fig. 128).

Claws large, simple (fig. 129).

DISTRIBUTION

Namibia and South Africa (fig. 130).

REMARKS

It is well distinguished by its distinct, black elytral pattern. In both congeners the pattern, if present, is brown to dark brown with indistinct borders. *F. rufocincta* is the largest species, with length usually above 5.7 mm, while its relatives are usually below 5.6 mm in length, only the largest specimens of *F. obdurans* exceeding length of the smallest specimens of *F. rufocincta* (5.6-5.7 mm).

MATERIAL EXAMINED

NAMIBIA: Namaland, 1, REHBOCK (ZMHU); Outjo, Ike, 10-14 III 1979, 1, S. LOUW & M.-L. PENRITH (WM).

SOUTH AFRICA: Orange Fr. Stat., Bothaville, BRAUNS, 2 (TM, LB); S. Africa, 1876, 1, HOLUB (syntype, MM); Orange F. State, Sandveld Nature Reserve, Hoopstad, 8-12 II 1982, 1 (BM); Transvaal, 15 km E Klaserie, 19-31 XII 1985, 1, M. SANBORNE (MZSNV); Transvaal, Nylsvley, 5 IX 1975, 1, ENDRÖDY-YOUNGA (TM); Transvaal, Plat-riv., I-II 1903, 2, JUTRZENCKA (TM, LB); Transvaal, Guersney Farm, 15 km E Klaserie, 19-31 XII 1985, 2, Flight intercept, 22 XII 1985, 1, 24 XII 1985, 1, H. and A. HOWDEN (CMN, LB); Transvaal, Waterberg, 1898-99, 1, JUTRZENCKA (TM).

***Fornicocassis unicolor* Spaeth, 1934**

(figs 131-137, pl. 6: 5-6)

Fornicocassis unicolor SPAETH, 1934: 388 (HT in MM); BOROWIEC, 1999: 306.

DESCRIPTION

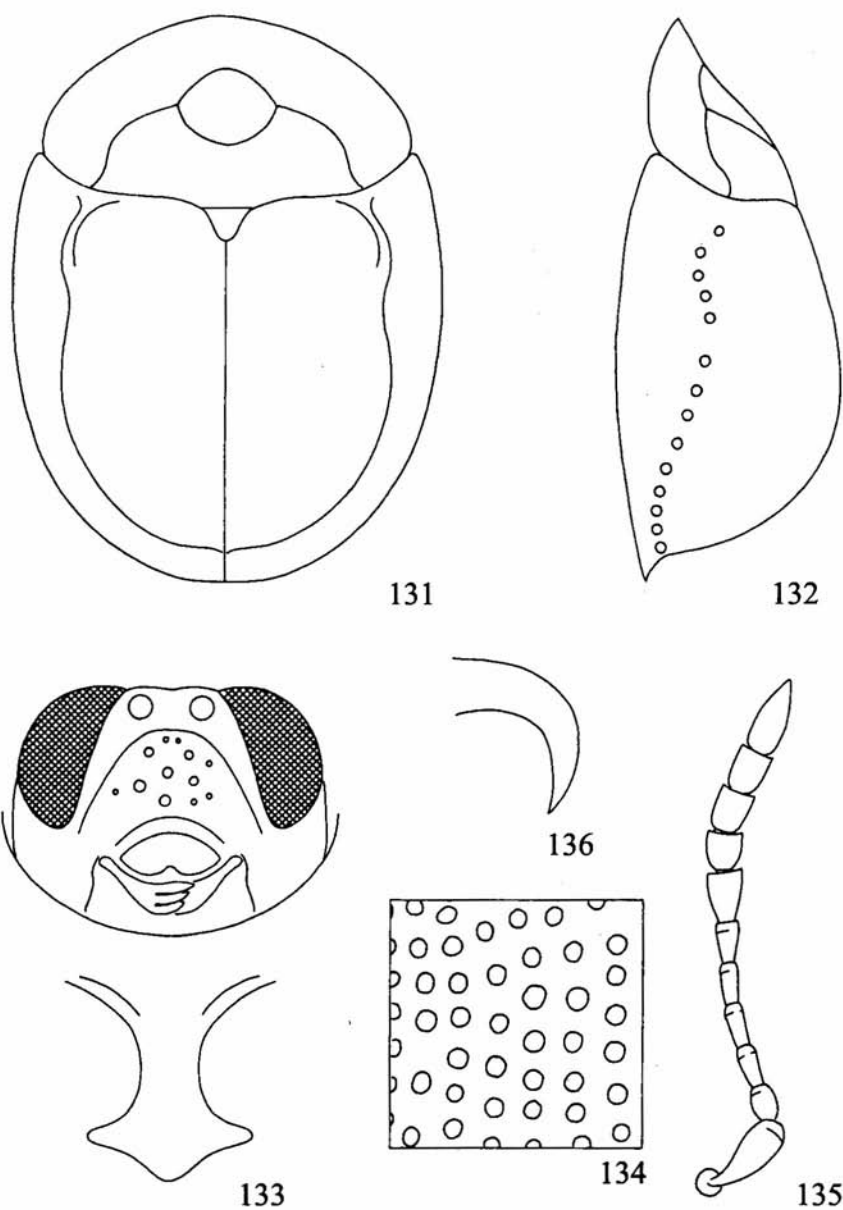
Le: 4.9-5.1 mm, Wi: 3.6 mm, Lp: 1.9-2.1 mm, Wp: 3.05-3.15 mm, Le/Wi: 1.36-1.42, Wp/Lp ratio: 1.50-1.61. Body short-oval, very convex (fig. 131).

Pronotum brown. Elytra uniformly brown, or with indistinct darker brown, irregular spot of vanishing borders across 2/3 elytral length and narrow sutural spot. Clypeus brown. Prothorax brown with darker brown borders, meso- and metathorax dark brown to black, abdomen mostly dark brown to black, only lateral borders of abdominal sterna narrowly yellowish-brown. Antennae uniformly yellowish-brown or with last five segments slightly infusate.

Pronotum broadly elliptical, 1.50-1.61 times wider than long, with maximum width in middle, sides broadly rounded. Disc only slightly convex, dull, impunctate. Explanate margin indistinctly separated from disc, broad, dull, impunctate.

Scutellum triangular, its surface with few longitudinal, shallow striae. Base of elytra slightly wider than pronotum, humeri moderately protruding anterad, rounded. Anterior margin of disc not crenulate. Disc regularly, strongly convex, almost cylindrical, at top slightly depressed, with top of convexity in posterior third of elytra (fig. 132). No elytral impressions. Puncturation regular, coarse and dense (fig. 134), distance between punctures in rows mostly narrower than puncture diameter. Intervals narrow, in central part of each disc mostly narrower than rows, only intervals 1, 2 and sometimes 3 at least in posterior half from as wide as to slightly wider than rows and slightly elevated. Interspaces between punctures regular, surface of disc appears coarsely punctate but rather regular. Marginal interval distinct on whole length. Marginal row distinct, its punctures c. twice coarser than punctures of central part of disc, very deep, especially in posterior half of the row, interspaces between punctures form distinct folds. Explanate margin narrow, strongly deflexed, in the widest part as wide as 1/5 width of disc of elytra, in apical part as wide as two marginal rows and one interval combined. Surface of explanate margin mostly impunctate, only some cells of honeycomb structure along border of disc marked with very shallow punctures. Elytral epipleura bare.

Clypeus broad, c. 1.6 times wider than long, flat, its surface dull, with few punctures (fig. 133). Clypeal grooves fine but distinct, converging in arch. Labrum narrowly emarginate to 1/3 length. Venter of pronotum with short but deep antennal groove, separated externally by a sharp carina. Prosternal collar moderately elongate, without lateral emargination. Borders of prosternal alae strongly elevated. Prosternal process narrow in middle, strongly expanded apically, apex with shallow impressions, surface of prosternal process irregular, with fine oblique striation, impressions or shallow punctures. Antennae stout, segments 9 and 10 c. 1.3 times as long as wide, length ratio of antennal segments: 100:40:52:52:



131-136. *Fornicocassis unicolor*: 131 – dorsal, 132 – lateral, 133 – head and prothorax, 134 – puncturation of central part of elytral disc, 135 – antenna, 136 – claw

46:46:60:48:54:54:100. Segment 3 c. 1.3 times as long as 2 and c. equal in length with segment 4 (fig. 135).

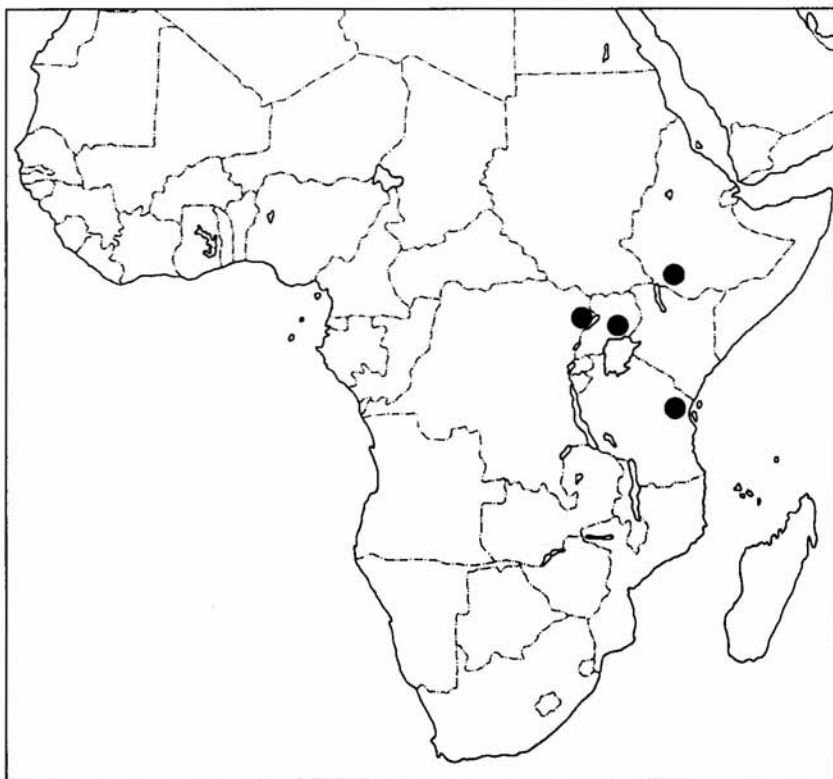
Claws large, simple (fig. 136).

DISTRIBUTION

SW Ethiopia, Uganda, Tanzania and E Zaire (fig. 137).

REMARKS

Fornicocassis unicolor, like *F. rufocincta* and unlike *F. obdurans*, has well marked elytral intervals. It is well characterized by completely impunctate pronotal disc, while in *F. rufocincta* it has fine pricks and in *F. obdurans* pronotum is finely but distinctly punctate. Elytra in *F. unicolor* is uniformly brown or with only indistinct pattern in posterior half of disc, while in *F. rufocincta* the pattern is well marked, also in anterior part of disc, black. *F. unicolor* is smaller and stouter than *F. rufocincta*, with length below 5.2 mm (above 5.5 mm in *F.*



137. Distribution of *Fornicocassis unicolor*

unicolor), and L/W 1.36-1.42 (1.45-1.50 in *F. unicolor*). Male of *F. obdurans* has similar measurements but differs in extremely coarse puncturation of elytra and linear or obsolete intervals. All species of the genus are separated geographically, *F. unicolor* is eastern African, *F. obdurans* central African, and *F. rufocincta* a southern African species.

MATERIAL EXAMINED

ETHIOPIA: Gamu Gofa Prov., Konso, 1610 m, 3 IV 1960, 1 (LB).

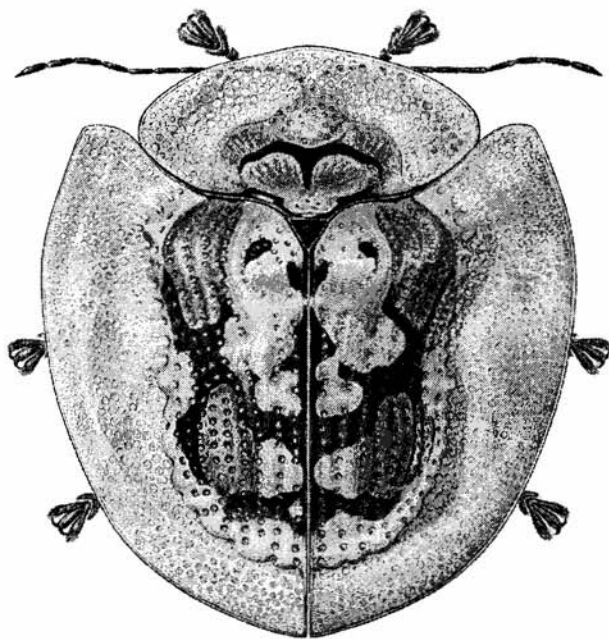
TANZANIA: Boma, Old Shinyanga, 7 IV 1935, 1 (LB).

UGANDA: Nakure, 30 XI 1910, 1, KATTWINKEL (SMNS).

ZAIRE (REPUBLIC OF CONGO): Lac Albert, Forêt de Kawa, 1 (holotype, MM); Lac Albert, Kasenyi, V 1935, 1, H.J. BREDØ (MRAC), XII 1938, 1, P. LEFÈVRE (MRAC).

Genus: *Hovacassis* SPAETH, 1952

Hovacassis SPAETH in HINCKS, 1952: 347 (type species: *Coptocycla discolor* BOHEMAN, 1855, by monotypy); HINCKS, 1952: 340; SEENO and WILCOX, 1982: 178; BOROWIEC, 1994: 12, 1999: 307.



138. Habitus of *Hovacassis discolor* (by J. ŚWIĘTOJAŃSKA)

Moderately large cassids, body length 7-11 mm. Body subtriangular to almost circular. Pronotum elliptical, with rounded sides and maximum width slightly to distinctly before middle. Pronotal disc distinctly separated from explanate margin by sharp sulcus, smooth and shiny. Explanate margin broad, transparent, smooth and shiny to slightly granulate. Elytral base much wider than pronotum. Elytral disc always with conical postscutellar tubercle. Punctuation of disc usually regular, but rows usually broken by elytral relief. Marginal row distinct. Explanate margin of elytra very broad, moderately deflexed, punctate or granulate, transparent. Clypeus flat, with narrow, fine clypeal lines. Venter of pronotum without antennal grooves, prosternal collar without lateral emargination. Prosternal process very broad, only slightly expanded apically. Antennae extremely slim and long, third segment distinctly longer than the second, segments 8-10 usually slightly longer than wide. Last segment of tarsi slightly longer than the third, bilobate segment. Claws simple.

A very distinct genus, well characterized by extremely elongate, slim, filiform antennae, with only three basal, glabrous segments. Only Oriental genera *Thlaspidula* Sp. and *Thlaspidosoma* Sp., and Neotropical *Ischnocodia* Sp. have similar antennae, but in both Oriental genera four to five basal segments are glabrous. *Ischnocodia* has only three basal segments glabrous, but differs in very narrow clypeus, and elytra regularly convex without postscutellar elevation.

Eight species only in Madagascar.

KEY TO SPECIES

1. Elytral disc with red pattern, forming spots or bands.
..... 4.
- Elytral disc with brown or black pattern, without red spots or bands, or elytra uniformly yellow to brown.
..... 2.
2. Elytral disc without black reticulation, at most with few black bands or lines.
..... 3.
- Elytral disc with black reticulation as in fig. 150.
..... *flavonigra*
3. Only last antennal segment infusate to black. Pronotum broader, Wp/Lp 1.75-1.79.
..... *pulchra*
- Six last antennal segments infusate to black. Pronotum narrower, Wp/Lp 1.66-1.69.
..... *brunneofasciata*

4. Elytral disc without black pattern, or it occurs only in suture.
..... 5.
- Elytral disc with distinct black pattern, also in mid part of disc and on its sides.
..... 6.
5. Pronotum without black pattern, elytral suture not black. Only last antennal segment black.
..... *murzini*
- Pronotum with black pattern as in fig. 175, elytral suture partly black. At least six last antennal segments infuscate to black.
..... *rubrovittata*
6. Anterior (humeral) red spot not surrounding anterior yellow spot, its posterior margin extending at most to 4th row of punctures. Larger species, Le above 7.3 mm.
..... 7.
- Anterior (humeral) red spot surrounding anterior yellow spot, its posterior margin extending to first row of punctures. Small species, Le below 7.0 mm.
..... *formosa*
7. Only last antennal segment infuscate to black. Between posterior red spot and suture no yellow spots. Larger species, Le 9.5-9.9 mm.
..... *rubromaculata*
- Four to seven apical antennal segments infuscate to black. Between posterior red spot and suture there is a yellow spot. Smaller species, Le 7.4-9.2 mm.
..... *discolor*

***Hovacassis brunneofasciata* n. sp.**

(figs 139-143, pl. 6: 7-8)

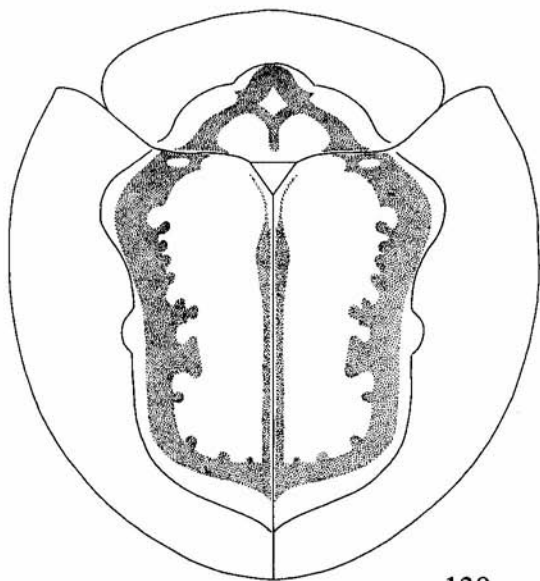
ETYMOLOGY

Named after brown bands along sides of elytral disc.

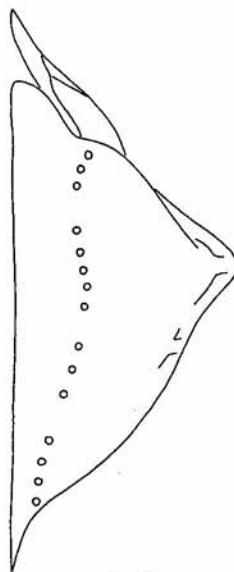
DESCRIPTION

Le: 8.1-8.7 mm, Wi: 7.4-7.8 mm, Lp: 2.9-3.0 mm, Wp: 4.95-5.1 mm; Le/Wi: 1.09-1.12, Wp/Lp: 1.70-1.71. Body almost circular (fig. 139)

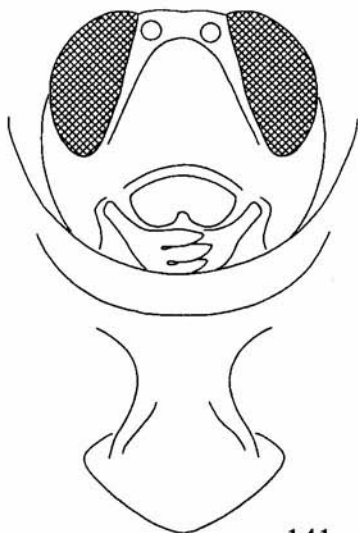
Pronotum yellow, disc with brown pattern as in fig. xx. Scutellum yellow. Elytral disc yellow, with brown pattern forming band along suture and irregular band along sides of disc except marginal interval and lateral fold; the pattern is formed by a coalescent brown areolae around each elytral puncture. The area between brown suture and brown lateral bands composed of yellow relief, very sparsely punctate but punctures also have brownish areola. Explanate margin of elytra yellow. Head, ventrites and legs yellow. Five basal antennal segments yellow, remainder gradually infuscate, last three segments almost or completely black.



139



140



141



143



142

139-143. *Hovacassis brunneofasciata*: 139 – dorsal, 140 – lateral, 141 – head and prosternum, 142 – antenna, 143 – claw

Pronotum elliptical, with maximum width slightly anterior to the middle, anterior margin moderately rounded, sides narrowly rounded. Disc moderately convex, its surface smooth and shiny. Explanate margin on sides shallowly impressed, separated from sides of disc by distinct sulcus, its surface with very shallow, small puncturation, appears only slightly irregular, shiny.

Scutellum triangular, as long as wide. Base of elytra much wider than base of pronotum, humeri strongly produced anterad, margin of elytra behind humerus shallowly emarginate, humeri appear acute, sides of elytra regularly rounded. Disc with large, conical postscutellar tubercle, profile behind the top of angulation deeply concave (fig. 140). Postscutellar impressions deep, no other impressions. Puncturation of disc coarse, on brown parts of disc very dense, punctures almost touching each other, on yellow parts of disc punctures very sparse, thus elytra only on sides appear partly regularly punctate. Marginal row distinct, its punctures large and deep. Intervals marked only on sides of disc but very narrow, linear. Surface of elytral disc shiny. Explanate margin broad, in the widest part as wide as $3/8$ width of disc, shallowly and densely punctate, its surface appears irregular. Apex of elytral epipleura with sparse erect hairs.

Clypeus only slightly wider than long, flat, impunctate, shiny, clypeal lines fine, converging in arch (fig. 141). Labrum emarginate to $1/4$ length. Antennae filiform, length ratio of antennal segments: 100:44:50:89:77:72:72:69:69:116. Segment 3 only slightly longer than segment 2, segment 4 c. 1.8 times as long as segment 4 (fig. 142).

Prosternal collar prominent, as long as length of 2nd antennal segment, prosternal process moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate, only apex appears slightly irregular.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 143).

DISTRIBUTION

Madagascar.

REMARKS

Elytra lacking red spots or bands place this species close to *H. flavonigra* n. sp. and *H. pulchra* Sp. The former species distinctly differs in black reticulate elytral disc. *H. pulchra* at first glance is very similar, especially specimens with brown pattern, but differs in only last antennal segment infusate to black, while in *H. brunneofasciata* six distal segments are infusate to black. Pronotum in *H. brunneofasciata* is slimmer (Wp/Lp 1.66-1.69, in *pulchra* 1.75-1.79) with anterior margin slightly more convex than in *H. pulchra*.

MATERIAL EXAMINED

MADAGASCAR: holotype: "Nd. Madagascar, Amber Gebirge" (LB); paratype: "Madagascar, Vohémar" (LB).

***Hovacassis discolor* (BOHEMAN, 1855)**

(figs 138, 144-149, pl. 6: 9-10)

Coptocycla discolor BOHEMAN, 1855: 412 (LT in NRS), 1856: 192, 1862: 465; GEMMINGER and HAROLD, 1876: 3668; WEISE, 1910: 441; SPAETH, 1914: 130.

Hovacassis discolor: SPAETH in HINCKS, 1952: 347; BOROWIEC, 1985 a: 241, 1999: 307.

Coptocycla tricolorata FAIRMAIRE, 1897: 203 (ST in MNHN, MM); WEISE, 1910: 442 (as syn. of *discolor*).

Coptocycla Fairmairei SPAETH, 1899: 221 (new name for *Coptocycla tricolorata* FAIRMAIRE, 1897 not CHAMPION, 1894).

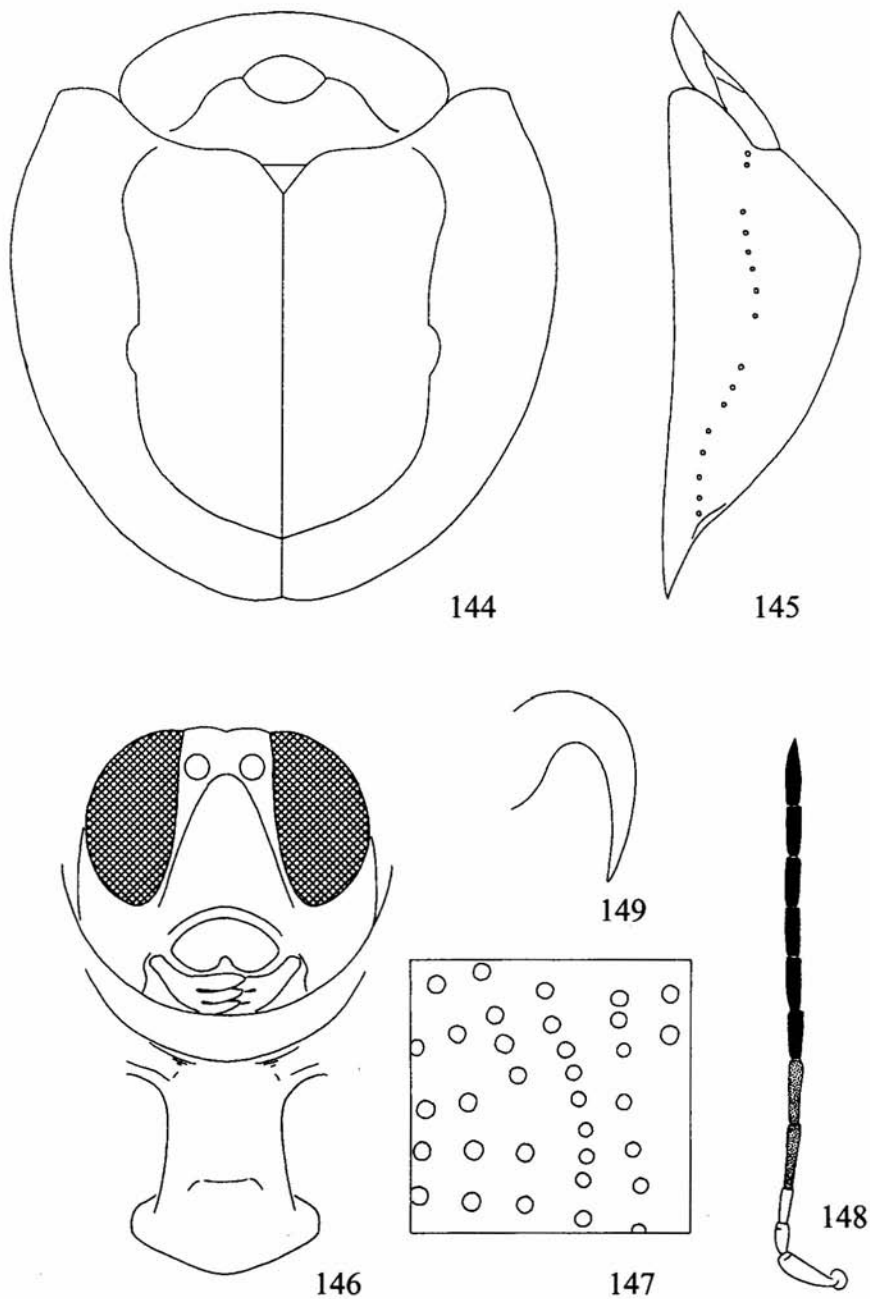
DESCRIPTION

Le: 6.4-9.2 mm, Wi: 6.0-8.8 mm, Lp: 2.1-3.2 mm, Wp: 3.9-5.5 mm; Le/Wi: 1.05-1.15, Wp/Lp: 1.68-1.98. Body almost circular (fig. 143, 144).

Pronotum yellow, disc usually with black pattern as in fig. 138, the black pattern can be increased or reduced, in extreme cases pronotum uniformly yellow. Scutellum usually black, or apex with small yellow spot, specimens with immaculate pronotum have scutellum uniformly yellow. Elytral disc with yellow, red and black pattern. Yellow are: marginal and partly submarginal interval including lateral fold, spots close to anterior corners of scutellum, very small elongate spots behind scutellum, large spots at each side of postscutellar angulation, two small, almost round spots in the centre of disc, sometimes reduced, two pairs of moderately large, almost round spots slightly behind half length of disc, close to suture, and the extreme apex of disc. Yellow spots are usually separated by black reticulation, but in specimens with partly reduced black pattern yellow spots partly coalesce, form more or less elongate large spots. Spots in humeral and posterolateral part of disc are red. Anterior margin of humeral spot reaches anterior margin of disc, and posterior margin extends to 5th row of punctures; the spot is never divided by a black line. Posterolateral red spot is divided from humeral spot by more or less broad black line. Black runs along submarginal interval, along suture, and surrounds each yellow and red spot. Sometimes the black reticulation partly reduced, especially along external border of humeral red spot, and between anterior and central yellow spots. Explanate margin of elytra uniformly yellow. Head, ventrites and legs yellow. Antennae with only three basal segments yellow, distal segments partly infusate to black, usually 4 to 6 distal segment completely black, and segments 4-7 more or less infusate, occasionally in females only last antennal segment infusate.

Pronotum almost regularly elliptical, with maximum width c. in the middle, anterior margin regularly rounded, sides broadly rounded. Disc only slightly convex, its surface smooth and shiny. Explanate margin very broad, not or on sides shallowly impressed, separated from sides of disc by distinct sulcus, smooth and shiny.

Scutellum triangular, slightly longer than wide, with distinct transverse sulcus. Base of elytra much wider than base of pronotum, humeri strongly produced anterad, slightly angulate, sides of elytra regularly rounded. Disc with moderately



144-149. *Hovacassis discolor*: 144 – dorsal, 145 – lateral, 146 – head and prosternum, 147 – punctuation of central part of elytral disc, 148 – antenna, 149 – claw

large, obtuse postscutellar tubercle, profile behind the top of tubercle concave (fig. 145). Postscutellar impressions moderately deep, no other impressions. Yellow spots of disc slightly convex, form a relief. Punctuation of disc moderately coarse and mostly dense (fig. 147), appears mostly regular but yellow spots impunctate or only sparsely punctate; red spots with regular punctuation, black reticulation regularly punctate, like red parts of disc. Marginal row distinct, its punctures coarse and deep, only slightly coarser than in submarginal rows. Surface of elytral disc usually shiny, but often on yellow parts shiny, on black and reddish parts slightly opaque. Explanate margin very broad, in the widest part almost as wide as half width of disc, its surface with very shallow, irregular punctuation appears less irregular than in related species. Apex of elytral epipleura with sparse erect hairs.

Clypeus elongate, c. as wide as long, flat, impunctate, shiny, clypeal lines distinct, converging in angle (fig. 146). Labrum emarginate to 1/5 length. Antennae filiform, length ratio of antennal segments: 100:53:66:110:120:90:100:96:93:93:136. Segment 3 c. 1.2 time as long as segment 3, segment 4 c. 1.7 times as long as segment 3 (fig. 148).

Prosternal collar moderately long, slightly shorter than second antennal segment. Prosternal process broad, only slightly expanded apically, its sides slightly convex, surface mostly smooth, impunctate, only apex appears slightly longitudinally striate.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 149).

DISTRIBUTION

Madagascar.

REMARKS

The most common and widespread species of the genus. With *H. formosa* n. sp. and *H. rubromaculata* n. sp. it forms a group of species with distinct variegate pattern of red, black and yellow spots and bands. *H. formosa* has the largest red humeral spots, surrounding anterior yellow spots, and with their posterior margins extending up to elytral suture, while in *H. rubromaculata* and *H. discolor* posterior margin of humeral red spots extends at most to 4th row of punctures. In *H. discolor* humeral red spot is simple, while in *H. rubromaculata* it is divided by narrow black line into two spots. In *H. discolor* between posterior red spot and suture there is a yellow spot, while in *H. rubromaculata* there is no such spot. In *H. discolor* at least four (usually six to seven) distal antennal segments are infusate, while in *H. rubromaculata* only last antennal segment is infusate to black.

MATERIAL EXAMINED

MADAGASCAR: Beanana, VI 1945, 1, MICHEL (MNHN); Beloka, 1 (MNHN); Bezanonano, 1 (ITZ); Fenerive, 2, E. PERROT (ZMHU); Forêt de Fito, 3 (2 MRAC,

1 LB), VI-VII 1897, 3 (MKB); Madagascar, 4 (MCZC), 1, H. PERROT (syntype of *tricolorata*, MM), 1, Do Breme (lectotype of *discolor*, NRS), 1, M. Berl. (paralectotype of *discolor*, NRS), 3, GOUDOT (paralectotypes of *discolor*, ZMHU); Madagascar, 1889, 1, coll. DUVIVIER (IRSN); Madagascar, 1, F. SIKORA (IRSN); Madagascar, 1 1890, 1 (MNHN); Madagascar, int. austr., 1, HILDEBRANDT (ZMHU); Mahatsinjo, 7, LE MOULT (IRSN, LB); Maroantsetra, II 1919, 4 (IRSN), XII 1934, 3, I 1935, 4, VADON (MNHN); Maroantsetra, Sahantaha, XI 1938, 1, VADON (MNHN); Moramanga, Perinet, 1 II 1938, 1, B. KRECZMER (LB); Sahana Forest, IX 1904, 1 (LB); Tamatave, 20 (MNHN); Tamatave, env. Moramanga, 14-18 XII 1995, 1, I. JENIS (MS); Tampina, Côte Est, forêt de Tampina, 4, M. LAVAUDEN (AB).

***Hovacassis flavonigra* n. sp.**

(figs 150-154, pl. 6: 11-12)

ETYMOLOGY

Named after its yellow and black dorsal colouration.

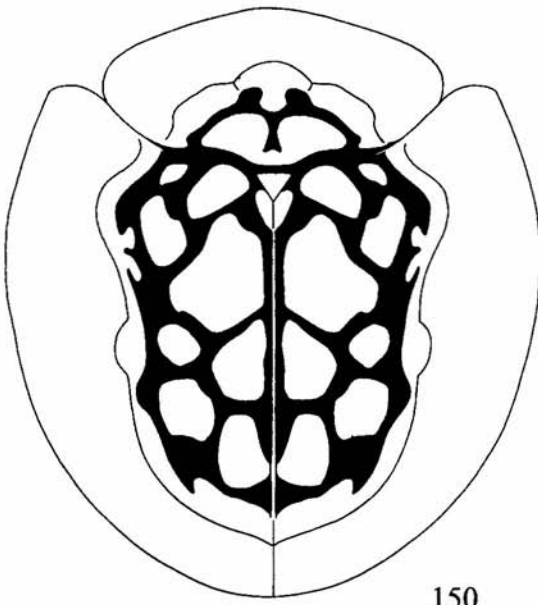
DESCRIPTION

Le: 7.7-8.0 mm, Wi: 6.9-7.6 mm, Lp: 2.6-2.8 mm, Wp: 4.3-4.8 mm; Le/Wi: 1.05-1.12, Wp/Lp: 1.65-1.71. Body almost circular (fig. 150)

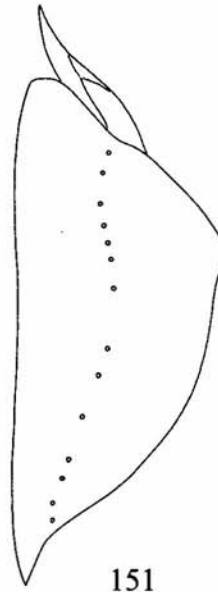
Pronotum yellow, disc with black pattern as in fig. 150. Scutellum black with small yellow spot apically. Elytral disc yellow, with black reticulation as in fig. 150. Lines of the reticulation can get increased or reduced, thus yellow spots surrounded by black also vary in size. Black line between the largest central spots sometimes completely reduced. Explanate margin of elytra yellow, only anterior and sutural margins black. Head, ventrites and legs yellow. Seven basal antennal segments yellow, remainder gradually infusate, last two segments often almost black.

Pronotum elliptical, with maximum width in or slightly anterior to the middle, anterior margin regularly rounded, sides broadly rounded. Disc moderately convex, its surface smooth and shiny. Explanate margin on sides not or shallowly impressed, separated from sides of disc by distinct sulcus, smooth and shiny.

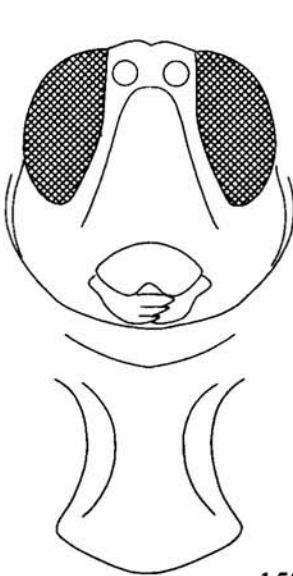
Scutellum triangular, slightly longer than wide, with transverse sulcus. Base of elytra much wider than base of pronotum, humeri moderately produced anterad, subangulate, sides of elytra regularly rounded. Disc with low and obtuse postscutellar angulation, profile behind the top of angulation only slightly concave (fig. 151). Postscutellar impressions moderately deep, no other impressions. Yellow spots of disc slightly convex, form a relief. Puncturation of disc moderately coarse, but mostly sparse. Yellow spots impunctate or with only a few punctures, and in specimens with narrow black reticulation disc appears sparsely irregularly punctate. In specimens with broad black reticulation black parts regularly punctate, two submarginal rows always regular. Marginal row distinct, its



150



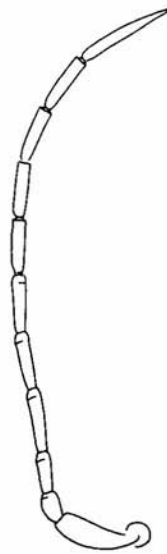
151



152



154



153

150-154. *Hovacassis flavonigra*: 150 – dorsal, 151 – lateral, 152 – head and prothorax, 153 – antenna, 154 – claw

punctures large and deep. Intervals mostly reduced by yellow relief, only on black part of disc intervals partly visible, as wide as or slightly narrower than rows. Surface of elytral disc shiny. Explanate margin very broad, in the widest part almost as wide as half width of elytra, its surface very shallowly, densely punctate but appears only slightly irregular and shiny. Apex of elytral epipleura with sparse erect hairs, sometimes appears bare.

Clypeus elongate, slightly longer than wide, flat, only apex with shallow impression, impunctate, shiny, clypeal lines fine, converging in angle (fig. 152). Labrum shallowly emarginate to 1/5 length. Antennae filiform, length ratio of antennal segments: 100:35:50:80:70:72:67:70:70:75:130. Segment 3 c. 1.4 times as long as segment 2, and segment 4 c. 1.6 times as long as segment 3 (fig. 153).

Prosternal collar short, prosternal process moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate only apex appears slightly irregular.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 154).

DISTRIBUTION

Madagascar.

REMARKS

It belongs to the group of species without red elytral pattern. Its elytral pattern forming black reticulation is unique.

MATERIAL EXAMINED

MADAGASCAR: Holotype: "Antalaha" "2.45 Abadie" "*Hovacassis flavonigra* HINCKS TYPE" (MNHN); paratype: "Reg. Maroantsetra, Andranofotry, XII 1936", 1 (LB); paratype: "Reg. Maroantsetra, Sahantaha, XI 1938", 1 (LB).

Hovacassis formosa n. sp.

(figs 155-159)

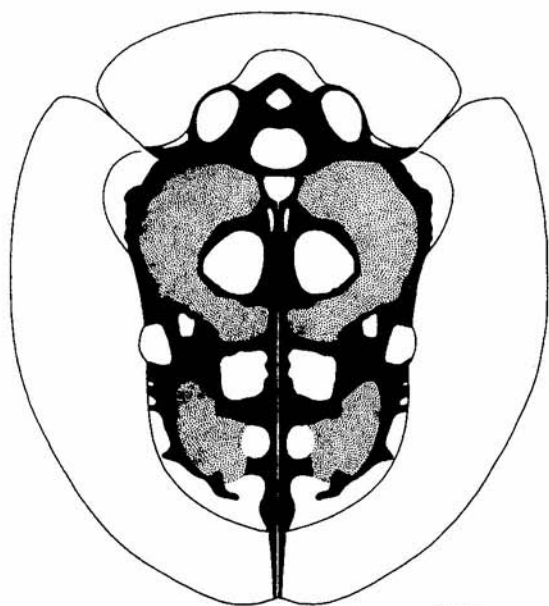
ETYMOLOGY

Latin "*formosus*" means beautiful. The name was proposed by W.D. HINCKS in his unpublished manuscript on several new species of Cassidini from Madagascar. I agree with him that the new species is one of the most beautiful cassids.

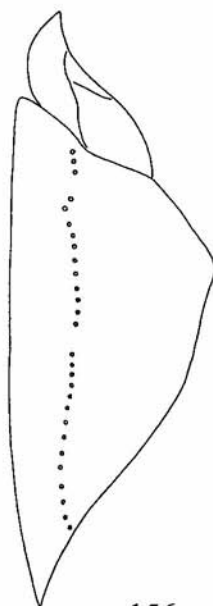
DESCRIPTION

Le: 6.95 mm, Wi: 6.2 mm, Lp: 2.2 mm, Wp: 4.15 mm; Le/Wi: 1.12, Wp/Lp: 1.89. Body almost circular (fig. 155).

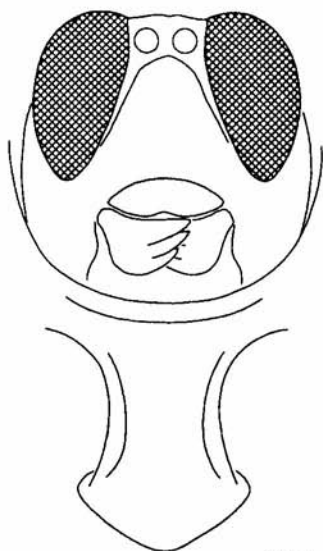
Pronotum yellow, disc with black pattern as in fig. 155. Scutellum yellow with black margins. Elytral disc with yellow, red and black pattern. Yellow are: small elongate spot behind scutellum, large round spot at each side of postscutellar



155



156



157



159



158

155-159. *Hovacassis formosa*: 155 – dorsal, 156 – lateral, 157 – head and prothorax, 158 – antenna, 159 – claw

angulation, almost round spot slightly behind half length of disc, close to suture, slightly elongate spot on slope, close to suture, lateral parts of humerus, lateral fold and extreme apex of disc, sometimes also small spot in the middle of sides of disc. Red are: large, half-moon spot in anterior half of disc, reaching its anterior margin to base of disc and posterior margin to suture, and moderately large, irregular spot in anterior part of slope. Black forms irregular reticulation between pale spots. Explanate margin of elytra yellow, only anterior and sutural margins black. Head, ventrites and legs yellow. Six basal antennal segments yellow, remainder gradually infuscate, last two segments almost black.

Pronotum elliptical, with maximum width slightly anterior to the middle, anterior margin softly rounded, sides narrowly rounded. Disc moderately convex, its surface smooth and shiny. Explanate margin on sides shallowly impressed, separated from sides of disc by distinct sulcus, smooth and shiny.

Scutellum triangular, slightly longer than wide. Base of elytra much wider than base of pronotum, humeri moderately produced anterad, slightly angulate but not acute, sides of elytra regularly rounded. Disc with low postscutellar angulation, profile behind the top of angulation almost straight (fig. 156). Postscutellar impressions deep, no other impressions. Yellow spots of disc slightly convex, form a relief. Puncturation of disc coarse, but mostly sparse, appears mostly irregular. Yellow spots impunctate, red spots with several irregular punctures, black reticulation with punctures mostly at borders of black and pale, only sutural and two submarginal rows partly regular. Marginal row distinct, its punctures large and deep. Surface of elytral disc less shiny than surface of pronotum. Explanate margin very broad, in the widest part almost as wide as half width of disc, its surface smooth and shiny. Apex of elytral epipleura with sparse erect hairs.

Clypeus moderately broad, c. 1.3 times wider than long, flat, only apex with shallow impression, impunctate, shiny, clypeal lines fine, converging in angle (fig. 157). Labrum shallowly emarginate. Antennae filiform, segments 9 and 10 many times longer than wide, length ratio of antennal segments: 100:44:47:71:100:71:88:82:88:94:165. Segment 2 and 3 almost equal length, segment 4 c. 1.5 times as long as segment 3 (fig. 158).

Prosternal collar short, prosternal process moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate only apex appears slightly irregular.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 159).

DISTRIBUTION

Madagascar.

REMARKS

With *H. discolor* (BOH.) and *H. rubromaculata* n. sp. it forms a group of species with distinct variegated pattern of red, black and yellow spots and bands.

H. formosa is well distinguished from both congeners by the largest red humeral spots, surrounding anterior yellow spots, and with its posterior margin extending up to elytral suture, while in *H. rubromaculata* and *H. discolor* posterior margin of humeral red spots extends at most to 4th row of punctures. *H. formosa* is the smallest species of the group, with length below 7 mm, while in both relatives it exceeds 7.3 mm, up to 9.9 mm.

MATERIAL EXAMINED

MADAGASCAR: Holotype: "Mt Tsaratanana, 2000 m, X-49 RP [R. PAULIAN], Inst. Scient. Madagascar" "lisière supérieure de la forêt à mousses" "*Hovacassis formosa* HINCKS TYPE" (MNHN).

Hovacassis murzini n. sp.

(figs 160-164, pl. 7: 1-2)

ETYMOLOGY

Dedicated to S. MURZIN, who collected holotype specimen.

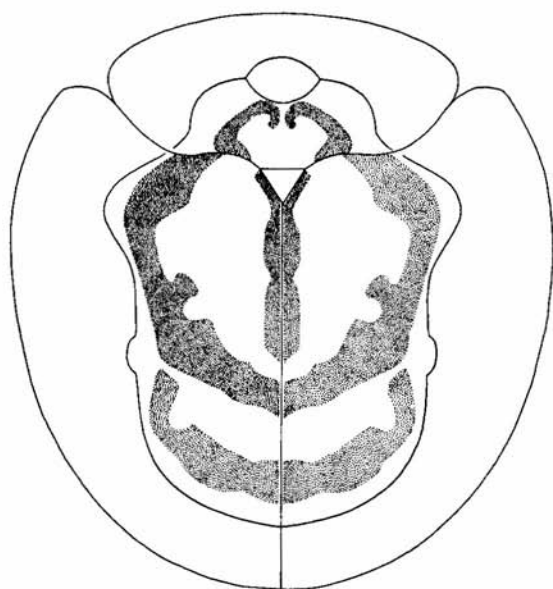
DESCRIPTION

Le: 8.1 mm, Wi: 7.35 mm, Lp: 2.7 mm, Wp: 4.8 mm; Le/Wi: 1.10, Wp/Lp: 1.78. Body almost circular (fig. 160).

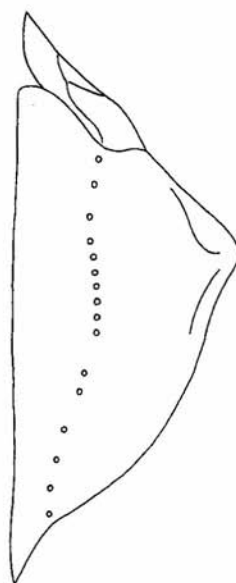
Pronotum yellow, disc with two pale reddish crescent-shaped spots. Scutellum yellow. Elytral disc yellow, with pale red pattern forming narrow band along suture, narrow ring around disc, except yellow marginal interval and lateral fold, and band across disc slightly behind middle. The band along suture is, posterior to the postscutellar elevation, broken by yellow relief. Yellow transverse spot between reddish transverse band and apical part of reddish ring also forms a relief. Explanate margin of elytra uniformly yellow. Head, ventrites and legs yellow. Antennae yellow, only last segment mostly black.

Pronotum elliptical, with maximum width slightly in front of the middle, anterior margin softly rounded, sides broadly rounded. Disc moderately convex, its surface smooth and slightly opaque. Explanate margin on sides flat, separated from sides of disc by distinct sulcus, its surface impunctate, slightly opaque.

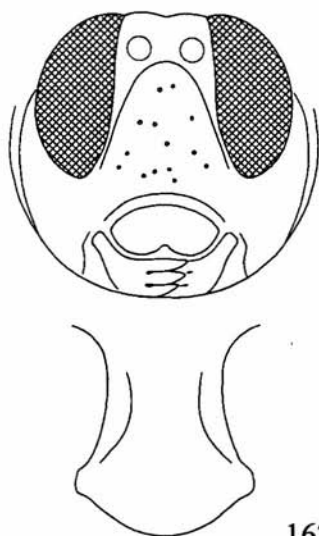
Scutellum triangular, distinctly longer than wide, with transverse sulci. Base of elytra much wider than base of pronotum, humeri strongly produced anterad, margin of elytra behind humerus not emarginate, humeri subangulate. Disc with moderately large, conical postscutellar tubercle, profile behind the top of angulation concave (fig. 161). Postscutellar impressions deep, no other impressions. Punctuation of disc coarse, on reddish parts of disc very dense, punctures almost touching each other, on yellow parts of disc punctures very sparse. Punctures tend to form more or less regular rows, but in posterolateral parts of disc punctures are so dense that punctuation appears irregular. Marginal row distinct, its punctures



160



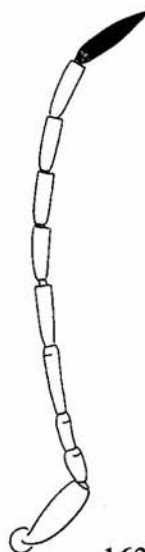
161



162



164



163

160-164. *Hovacassis murzini*: 160 – dorsal, 161 – lateral, 162 – head and prothorax, 163 – antenna, 164 – claw

large and deep. Intervals marked mostly on sides of disc but very narrow, linear, only three sutural intervals in posterior third of disc wider than rows. Surface of elytral disc mostly shiny, only red band in posterolateral part of disc partly opaque. Explanate margin broad, in the widest part as wide as $3/8$ width of disc, shallowly and densely punctate, its surface appears slightly irregular. Apex of elytral epipleura with sparse erect hairs.

Clypeus as long as wide, flat, with few small punctures, slightly opaque, clypeal lines fine but distinct, converging in arch (fig. 162). Labrum emarginate to $1/5$ length. Antennae filiform, length ratio of antennal segments: 100:43:45:88:80:70:70:70:75:165. Segment 2 and 3 of almost equal length, segment 4 almost twice as long as segment 3 (fig. 163).

Prosternal collar prominent, as long as 2nd antennal segment, prosternal process moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate, only apex appears distinctly irregular.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 164).

DISTRIBUTION

Madagascar.

REMARKS

It belongs to the species group with reddish elytral pattern. Like in *H. rubrovittata* n. sp. the pattern forms only bands, elytral disc lacking red spots, and the pattern is not as intensely red as in species of *H. discolor* group. *H. murzini* distinctly differs from *H. rubrovittata* n. sp. in pronotum without black pattern, and elytra completely without black (in *H. rubrovittata* elytral suture is partly narrowly black). In *H. murzini* only last antennal segment is infusate, while in *H. rubrovittata* at least six distal segments are infusate to black.

MATERIAL EXAMINED

MADAGASCAR: holotype: "env. Fianarantsoa, S Ranomafana, 900 m., 5-16 I 2001, S. MURZIN" (LB).

Hovacassis pulchra (SPAETH, 1915)

(figs 165-169, pl. 7: 5-7)

Coptocycla pulchra SPAETH, 1915 b: 151 (ST in MM).

Coptocycla pulchra SPAETH, 1914: 130 (nomen nudum).

Hovacassis pulchra: BOROWIEC, 1999: 307.

DESCRIPTION

Le: 8.7-8.8 mm, Wi: 8.3-8.4 mm, Lp: 2.8-2.9 mm, Wp: 5.2 mm; Le/Wi: 1.04-1.06, Wp/Lp: 1.79-1.86. Body almost circular (fig. 165).

Colouration variable. Pale form has pronotum uniformly yellow. In intermediate specimens pronotum yellow, disc with more or less visible M-shaped brown figure. In the darkest form pronotum yellow, disc with black pattern as in fig. 165. Elytral disc in pale form uniformly yellow, in darker forms with a pattern, varying from pale brown to black. The pattern forms a ring surrounding disc (but marginal interval always yellow), and at least band along anterior third of suture, sometimes whole suture dark coloured. In the darkest form elytral punctures surrounded by a brownish areola. Explanate margin of elytra in all forms uniformly yellow. Head, ventrites and legs yellow. Antennae yellow, only last segment partly infuscate to black.

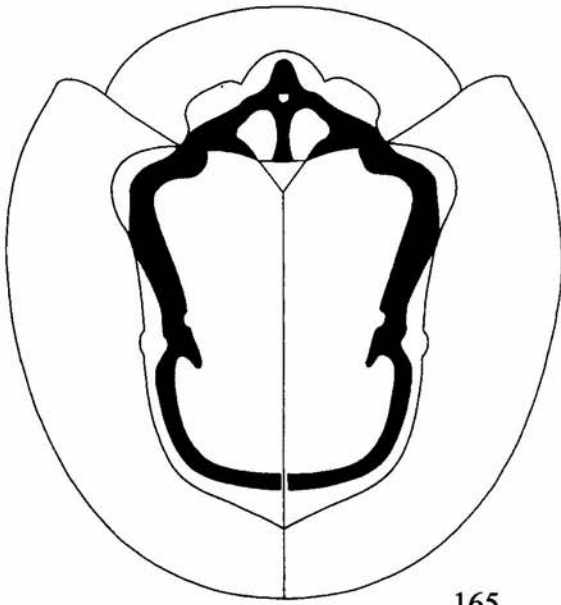
Pronotum elliptical, with maximum width slightly in front of the middle, anterior margin softly rounded, sides narrowly rounded. Disc moderately convex, its surface from slightly opaque to shiny. Explanate margin on sides not or shallowly impressed, separated from sides of disc by distinct sulcus, its surface finely granulate, appears slightly irregular and opaque.

Scutellum triangular, slightly longer than wide, with transverse sulcus and few small punctures. Base of elytra much wider than base of pronotum, humeri strongly produced anterad, elytral margin behind humeral angle more or less emarginate, thus humeri appear from angulate to almost acute, sides of elytra regularly rounded. Disc with large postscutellar, conical tubercle, profile behind the top of angulation concave (fig. 166). Postscutellar impressions deep, no other impressions. Puncturation of disc coarse and dense, appears mostly regular, but some convex interspaces of various size disturb the regularity. Rows more or less impressed. Punctures in lateral rows dense, with distance between punctures mostly narrower than puncture diameter, punctures along middle of elytra sparser than in lateral rows, divided by partly convex interspaces as wide as to thrice wider than puncture diameter. Marginal row distinct, its punctures coarse and deep. Intervals narrow, on sides of disc narrower than rows, in central and sutural part of disc mostly as wide as rows. Surface of elytral disc mostly shiny or only on sides slightly opaque. Explanate margin very broad, in the widest part only slightly narrower than half width of disc, its surface finely shallowly punctate and granulate, appears irregular. Apex of elytral epipleura with sparse erect hairs.

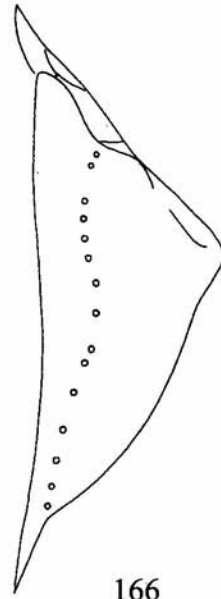
Clypeus moderately broad, c. 1.2 times wider than long, flat, only apex with shallow impression, impunctate, shiny, clypeal lines fine, converging in angle (fig. 167). Labrum shallowly emarginate to 1/5 length. Antennae filiform, length ratio of antennal segments: 100:44:56:106:84:78:78:78:80:78:106. Segment 3 c. 1.3 times as long as segment 2, and segment 4 c. 1.9 times as long as segment 3 (fig. 168).

Prosternal collar short, prosternal process moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate only apex appears slightly irregular.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 169).



165



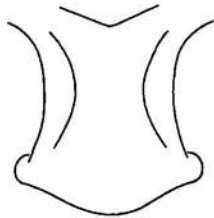
166



167



169



168

165-169. *Hovacassis pulchra*: 165 – dorsal, 166 – lateral, 167 – head and prosternum, 168 – antenna, 169 – claw

DISTRIBUTION
Madagascar.

REMARKS

Elytra lacking red spots or bands place this species close to *H. flavonigra* n. sp. and *H. brunneofasciata* n. sp. The first species distinctly differs in black reticulate elytral disc. *H. brunneofasciata* at first glance is very similar to specimens of *H. pulchra* with brown pattern, but differs in possessing six distal antennal segment infusate to black, while in *H. pulchra* only last segment is infusate to black. Pronotum in *H. brunneofasciata* is slimmer (Wp/Lp 1.66-1.69, in *pulchra* 1.75-1.79) with anterior margin slightly more convex than in *H. pulchra*. *H. pulchra* is the only member of the genus forming aberrations with no dorsal pattern, uniformly yellowish to yellowish-brown.

MATERIAL EXAMINED

MADAGASCAR: Diego Suarez, 1, DONCKIER (syntype, MM), 1 (syntype, NMP); N Madagascar, Vohimar, 1 (syntype, MM); Mt. d'Ambre, 1 (LB); Tamatave, Alahakato forest, 1 VII 1988, 1 (LB).

***Hovacassis rubromaculata* n. sp.**

(figs 170-174, pl. 7: 3-4)

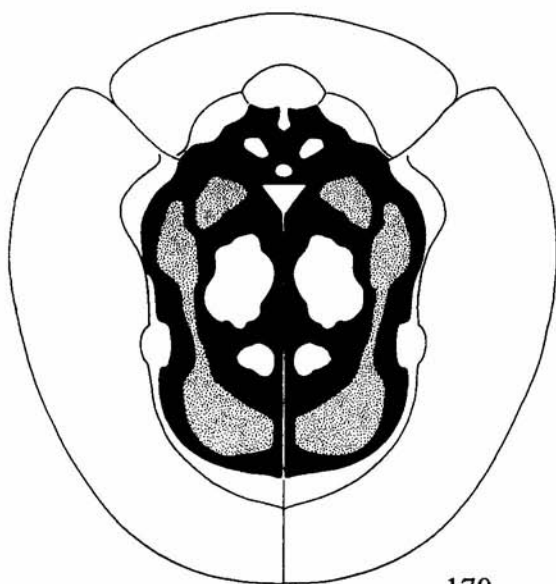
ETYMOLOGY

Named after red spots on elytral disc.

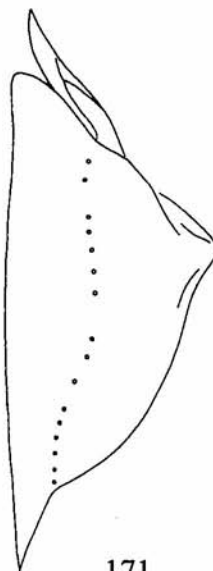
DESCRIPTION

Le: 9.5-9.9 mm, Wi: 8.9-9.0 mm, Lp: 3.2-3.3 mm, Wp: 5.7-5.8 mm; Le/Wi: 1.07-1.10, Wp/Lp: 1.73-1.81. Body almost circular (fig. 170).

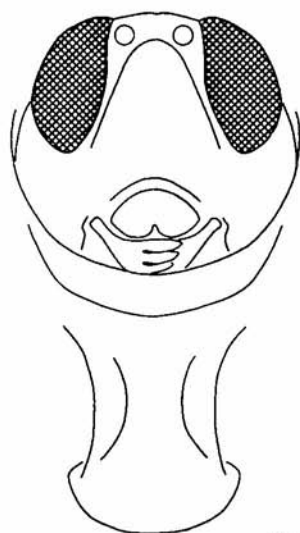
Pronotum yellow, disc with black pattern as in fig. 170. Scutellum black, apex with small yellow spot. Elytral disc with yellow, red and black pattern. Yellow are: marginal interval including lateral fold, very small elongate spots behind scutellum, large round spot at each side of postscutellar angulation, two small, almost round spots slightly behind half length of disc, close to suture, and extreme apex of disc. Red are large, half-moon spots in anterior half of disc, reaching its anterior margin to base of disc and posterior margin to 5th row of punctures; the spot is divided into two spots by a narrow oblique black line, running from yellow lateral spot of postscutellar tubercle to humeral impression; red are also two very large spots in posterior part of disc. Black runs along submarginal interval, along suture, and surrounds each yellow and red spot. Explanate margin of elytra uniformly yellow. Head, ventrites and legs yellow. Antennae mostly yellow, only last segment partly infusate to black.



170



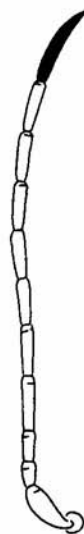
171



172



174



173

170-174. *Hovacassis rubromaculata*: 170 – dorsal, 171 – lateral, 172 – head and prothorax, 173 – antenna, 174 – claw

Pronotum slightly reversely trapezoidal, with maximum width distinctly anterior to the middle, anterior margin softly rounded, sides narrowly rounded. Disc only slightly convex, its surface smooth and slightly opaque. Explanate margin very broad, not or on sides shallowly impressed, separated from sides of disc by distinct sulcus, smooth and slightly opaque.

Scutellum triangular, slightly longer than wide, with distinct transverse sulcus. Base of elytra much wider than base of pronotum, humeri strongly produced anterad, almost up to anterior margin of pronotum, slightly angulate, sides of elytra regularly rounded. Disc with conical postscutellar tubercle, profile behind the top of tubercle distinctly concave (fig. 171). Postscutellar impressions deep, no other impressions. Yellow spots of disc slightly convex, forming a relief. Punctuation of disc coarse and mostly dense, appears mostly regular. Yellow spots impunctate, red spots with regular punctuation, black reticulation regularly punctate, like red parts of disc. Marginal row distinct, its punctures coarse and deep, only slightly coarser than in submarginal rows. Surface of elytral disc on yellow parts shiny, on black and reddish parts slightly opaque. Explanate margin very broad, in the widest part almost as wide as half width of disc, its surface with dense but shallow, irregular punctuation. Apex of elytral epipleura with sparse erect hairs.

Clypeus elongate, c. as wide as long, flat, only apex with small angulation, impunctate, shiny, clypeal lines distinct, converging in angle (fig. 172). Labrum emarginate to 1/4 length. Antennae filiform, length ratio of antennal segments: 100:50:57:103:93:89:88:92:86:89:157. Segment 2 only slightly shorter than segment 3, segment 4 c. 1.8 times as long as segment 3 (fig. 173).

Prosternal collar moderately long, slightly shorter than second antennal segment. Prosternal process broad, only slightly expanded apically, its sides slightly convex, surface mostly smooth, impunctate, only apex appears slightly longitudinally striate.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 174).

DISTRIBUTION

Madagascar.

REMARKS

With *H. discolor* (BOH.) and *H. formosa* n. sp. it forms a group of species with distinct variegate pattern of red, black and yellow spots and bands. *H. formosa* has the largest red humeral spots, surrounding anterior yellow spots, and with their posterior margins extending up to elytral suture, while in *H. rubromaculata* and *H. discolor* posterior margin of humeral red spots extends at most to 4th row of punctures. In *H. discolor* humeral red spot is simple, while in *H. rubromaculata* it is divided by narrow black line into two separate spots. In *H. discolor* between posterior red spot and suture there is a yellow spot, while in *H. rubromaculata* the

slope is lacking yellow spots. In *H. discolor* at least four (usually six to seven) distal antennal segments are infusate, while in *H. rubromaculata* only last antennal segment is infusate to black.

MATERIAL EXAMINED

MADAGASCAR: holotype: "Madagascar, Forêt d'Antsianaka, 1994" (LB); paratype: "Madagascar, Tsitondrona, IV.52" (DS).

Hovacassis rubrovittata n. sp.

(figs 175-179, pl. 7: 8-9)

ETYMOLOGY

Named after red bands along sides of elytral disc.

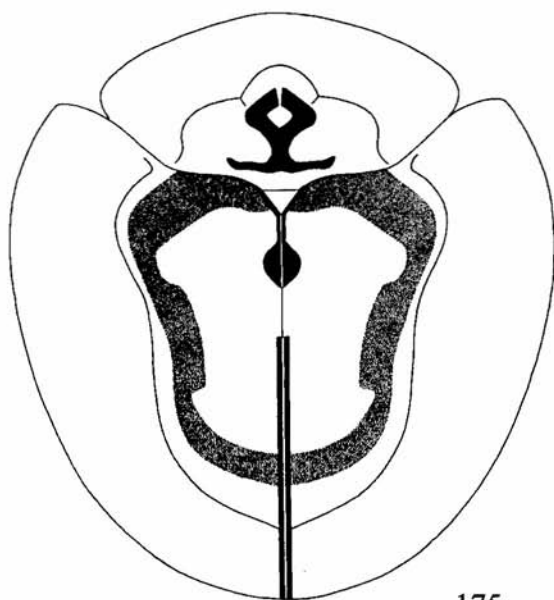
DESCRIPTION

Le: 8.0-10.3 mm, Wi: 7.4-9.6 mm, Lp: 2.8-3.5 mm, Wp: 4.8-6.2 mm; Le/Wi: 1.07-1.11, Wp/Lp: 1.71-1.77. Body almost circular (fig. 175)

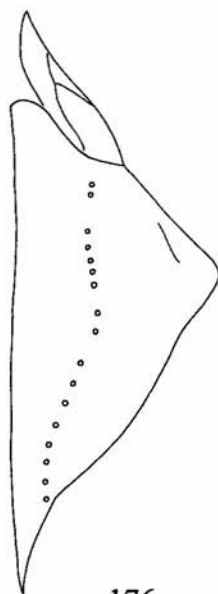
Pronotum yellow, disc with black pattern as in fig. 175; basal branches of black figure sometimes reduced. Basal margin of pronotum and basal margin of elytral disc black. Scutellum yellow with or without black margins. Elytral suture at least partly black; in holotype anterior part of suture is completely black, including broad spot on anterior slope of postscutellar tubercle, posterior part of suture is mostly black except short yellow distance between posterior margin of postscutellar tubercle and transverse reddish band; in paratype from Maroantsetra whole suture is narrowly black, spot on anterior slope of postscutellar tubercle extending only to first row of punctures; in paratype from Tsitondrona black on suture is reduced to the spot on anterior slope of postscutellar tubercle and posterior half of suture. In all forms explanate margin of elytra with narrow, black sutural spot. Elytral disc with reddish pattern of broad ring around disc, except yellow marginal interval and lateral fold; in holotype also occurs narrow reddish band across disc, slightly behind middle of elytra. Yellow spots closed by a reddish pattern not forming a relief. Explanate margin of elytra yellow. Head, ventrites and legs yellow. Three to five basal antennal segments yellow, remaining six to eight segments black, sometimes segments 4 and 5 only slightly infusate.

Pronotum elliptical, with maximum width anterior to the middle, anterior margin gently rounded, sides narrowly rounded. Disc moderately convex, its surface smooth and shiny. Explanate margin on sides shallowly impressed, separated from sides of disc by distinct sulcus, extremely shallowly punctate, only in lateral light surface appears slightly irregular but shiny.

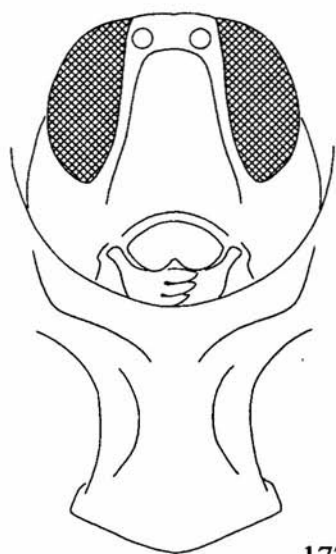
Scutellum triangular, slightly longer than wide, with or without transverse sulci. Base of elytra much wider than base of pronotum, humeri distinctly produced anterad. Margin of elytra behind humerus not emarginate, humeri angulate,



175



176



177



179



178

175-179. *Hovacassis rubrovittata*: 175 – dorsal, 176 – lateral, 177 – head and prosternum, 178 – antenna, 179 – claw

sides of elytra regularly rounded. Disc with large conical postscutellar angulation, profile behind the top of angulation concave (fig. 176). Postscutellar impressions deep, no other impressions. Punctuation of disc moderately coarse, appears mostly irregular, yellow parts of disc only slightly sparser punctate than lateral parts of disc. Punctures in rows mostly dense, on sides of disc distance between punctures from slightly narrower to slightly wider than puncture diameter, on yellow parts of disc punctures slightly sparser than on sides of disc with interspaces from as wide as to thrice wider than puncture diameter. Marginal row distinct, its punctures large and deep. Intervals mostly well marked, on yellow parts of disc c. 1.5 times as wide as rows, on sides of disc as wide as or slightly narrower than rows. Surface of elytral disc mostly shiny. Explanate margin very broad, in the widest part almost as wide as half width of disc, its surface very shallowly punctate, appears slightly irregular. Apex of elytral epipleura with sparse erect hairs.

Clypeus elongate, slightly longer than wide, flat, impunctate, shiny, clypeal lines fine but distinct, converging in arch (fig. 177). Gena elongate, as long as half width of eye. Labrum shallowly emarginate to 1/5 its length. Antennae filiform, length ratio of antennal segments: 100:33:66:122:100:100:100:93:94:133. Segment 3 twice longer than segment 2, segment 4 c. 1.8 times as long as segment 3 (fig. 178).

Prosternal collar moderately elongate, slightly shorter than length of 3rd antennal segment. Prosternal process broad, moderately expanded apically, its sides distinctly convex, surface mostly smooth, impunctate only apex appears slightly irregular.

Legs slim, last segment of tarsi slightly extending behind the penultimate segment. Claws large, simple, micropectinate (fig. 179).

DISTRIBUTION

Madagascar.

REMARKS

It belongs to the species with reddish elytral pattern. Like in *H. murzini* n. sp. the pattern forms only bands, is more intensely red than in *H. murzini*, but not as intensely as in species of *H. discolor* group. *H. murzini* distinctly differs from *H. rubrovittata* in immaculate pronotum, and elytra completely without black (in *H. rubrovittata* elytral suture is partly narrowly black). In *H. murzini* only the last antennal segment is infuscate, while in *H. rubrovittata* at least six distal segments are infuscate to black.

MATERIAL EXAMINED

MADAGASCAR: holotype: "Madagascar, Fampanambo, II 1961" (LB); paratype: "Madagascar, Maroantsetra, XII 1994" (LB); paratype: "Madagascar, Tsitondrona, IV.52" (DS).

Genus: *Ischiocassis* SPAETH, 1917

Ischiocassis SPAETH, 1917: 435 (type species: *Cassida umbrata* BOHEMAN, 1854, by monotypy);
HINCKS, 1952: 338; SEENO and WILCOX, 1982: 177; BOROWIEC, 1994 a: 14, 1999: 308.

Small to moderately large cassids, body length 4.5-8.0 mm. Body almost hemispherical or cylindrical. Pronotum reversely trapezoidal, with maximum width before middle. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin broad, punctate. Elytral base only slightly wider than pronotum. Elytral disc with low to moderately high postscutellar elevation. Punctuation of disc coarse, more or less regular, intervals always narrower than disc. Marginal row distinct. Explanate margin of elytra broad, strongly deflexed, almost perpendicular, punctate. Clypeus broad, flat, punctate, with fine clypeal lines. Venter of pronotum with short antennal grooves bordered laterally by obtuse to sharp carina. In some species above lateral emargination of prosternal collar there is a small plate and on venter of pronotum there is a plate opposite to the plate of prosternum. Prosternal process deeply canaliculate. Antennae stout, third segment from slightly shorter to slightly longer than the second, segments 8-10 wider than long. Last segment of tarsi slightly shorter than the third, bilobate segment. Claws simple.

Distinct genus, well characterized by not transparent marginalia, strongly convex, almost hemispherical body, reversely trapezoidal pronotum, venter of pronotum with antennal grooves, and prosternal collar in some species with extremely deep lateral emargination and distinct plate above the emargination. Only *Chelysida* FRM. and *Orobiocassis* SP. are similar in shape. The former genus distinctly differs in toothed claws, the latter in venter of pronotum without antennal grooves. No genus has a plate on prosternal collar as large as that in some species of *Ischiocassis*.

Four species in Africa south of Congo.

KEY TO SPECIES

1. Body almost hemispherical, L/W 1.18-1.41. Elytra more or less elevated in postscutellar point.
..... 2.
- Body elongate, almost cylindrical, L/W 1.45-1.56. Elytra regularly convex.
..... *umbrata*
2. Postscutellar elevation moderate, elytra bluntly angulate in profile
..... 3.
- Postscutellar elevation high, elytra strongly angulate in profile.
..... *tragardhi*

3. Sides of prosternal collar with large plate, also ventral side of pronotum with large plate opposite to the prosternal plate. Marginal row below humeral callus strongly bent downward.

..... *convexa*

- . Sides of prosternal collar and venter of pronotum without plates. Marginal row below humeral callus softly bent downward.

..... *stabilis*

Ischiocassis convexa (BOHEMAN, 1854)

(figs 180-186, pl. 8: 1-3)

Cassida convexa BOHEMAN, 1854: 418 (HT in NRS), 1856: 134, 1862: 330; GEMMINGER and HAROLD, 1876: 3653.

Cassida (Cassida) convexa: SPAETH, 1914: 118.

Ischiocassis convexa: SPAETH, 1932: 233; SHAW, 1956 a: 267; 1963: 457; BOROWIEC, 1985 a: 240 (part), 1995: 372, 1999: 308.

Cassida semiglobosa BOHEMAN, 1854: 441 (LT in NRS, PLT in NRS, BMNH), 1856: 137, 1862: 339; GEMMINGER and HAROLD, 1876: 3658; SPAETH, 1917: 435 (as syn.).

Cassida (Cassida) semiglobosa: SPAETH, 1914: 119.

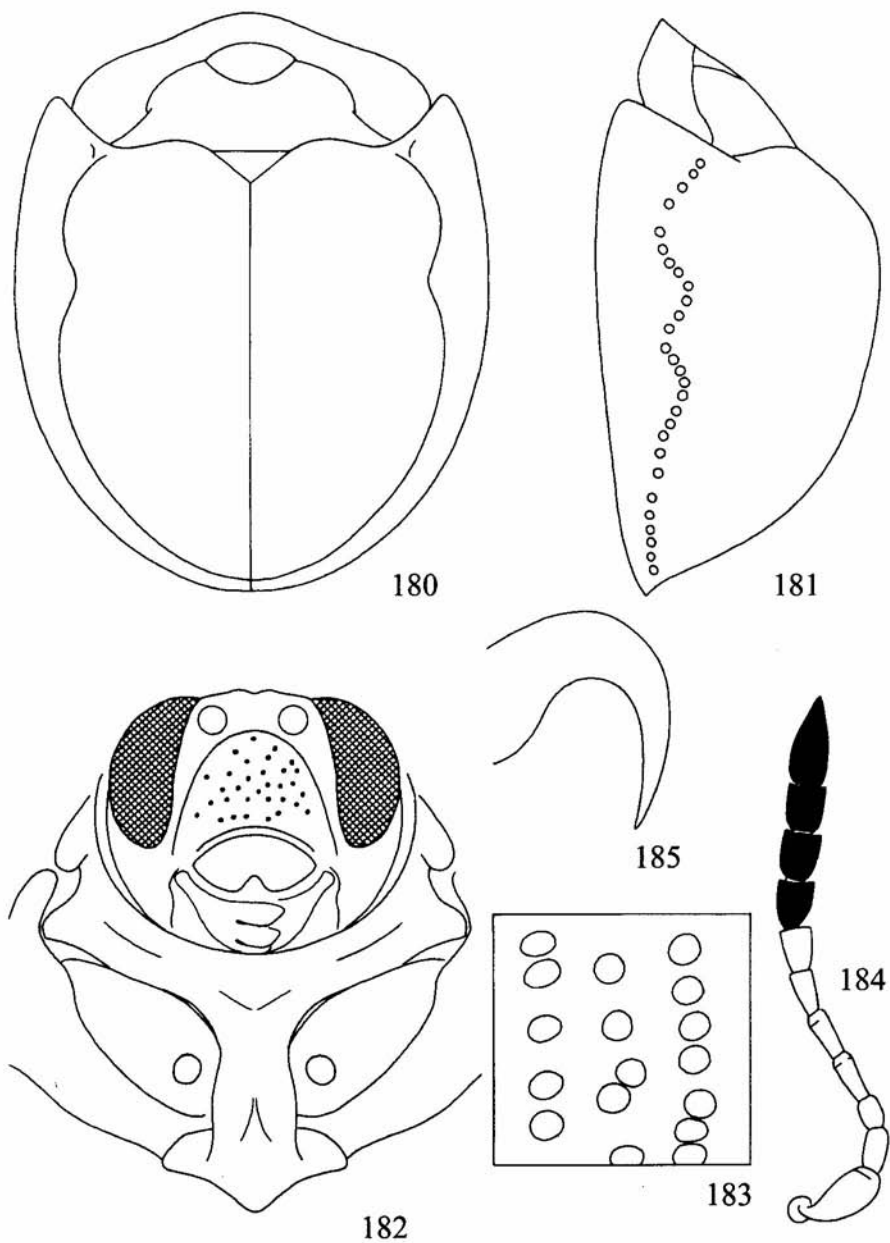
DESCRIPTION

Small form (= *semiglobosa*): Le: 5.35—5.80 mm, Wi: 4.25-4.60 mm, Lp: 2.00-2.05 mm, Wp: 3.2-3.4 mm, Le/Wi: 1.22-1.33, Wp/Lp ratio: 1.56-1.70.

Normal form: Le: 6.1-8.2 mm, Wi: 4.9-6.3 mm, Lp: 2.2-2.8 mm, Wp: 3.7-4.5 mm, Le/Wi: 1.18-1.33, Wp/Lp ratio: 1.60-1.76. Body hemispherical, males slightly stouter than females (fig. 180).

Colouration variable, pale specimens have pronotum and elytra yellowish-brown, elytral punctures marked with brown or black, ventrites paler to darker brown, legs yellowish-brown, antennae with seven basal segments yellowish-brown, distal four more or less infusate. Dark specimens have pronotum and elytra dark brown, ventrites and legs brown, sometimes with femora in basal half dark brown, and antennae mostly brown with brownish-black four distal segments. Between these pale and dark forms occurs all intermediates, sometimes dorsum with indistinct pattern – on pale yellowish-brown ground colour occur darker brown spots or bands of vanishing borders; often pronotal disc darker brown than pale explanate margin, or explanate margin of elytra darker brown than pale brown disc; punctures of whole elytral surface marked with brown or black, or only punctures of disc so marked but punctures of explanate margin of the same colour as interspaces. Populations are mostly homogenous and in the same locality predominates pale or dark form. Both polymorphic forms (large and small) have the same range of colour variability.

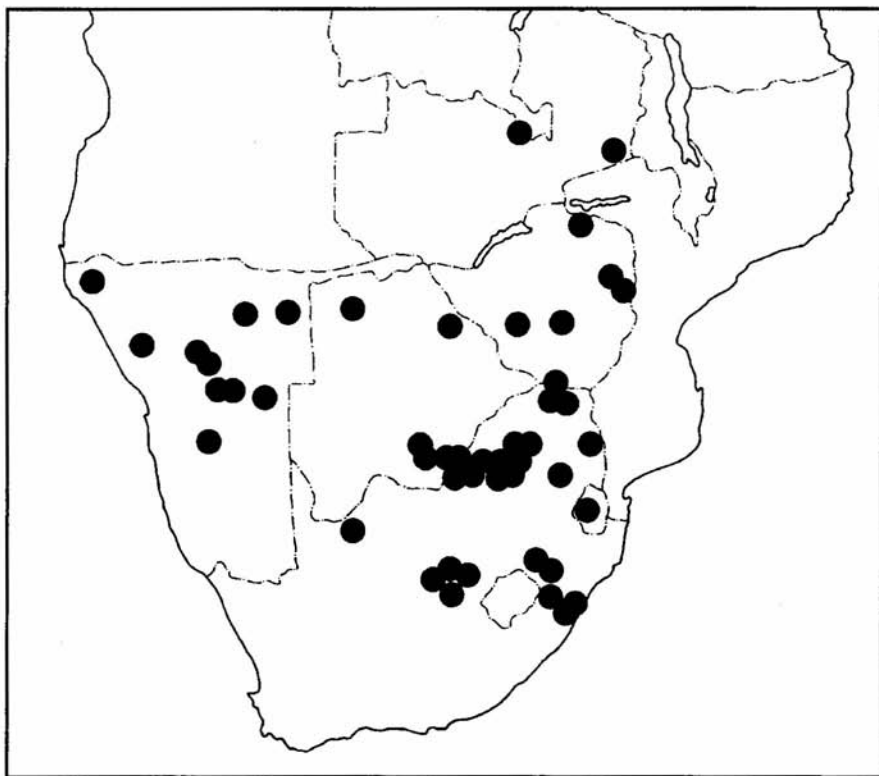
Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners well marked but rounded. Disc only slightly convex, indistinctly



180-185. *Ischiocassis convexa*: 180 – dorsal, 181 – lateral, 182 – head and prosternum, 183 – puncturation of central part of elytral disc, 184 – antenna, 185 – claw

separated from explanate margin, coarsely punctate, the largest punctures occur on top of disc, on sides puncturation gradually smaller; distance between punctures on top of disc narrower than puncture diameter, sometimes punctures almost touching each other, on sides of disc interspaces wider, as wide as to slightly wider than puncture diameter. Surface of disc slightly irregular, from slightly opaque to shiny. Explanate margin narrow, especially in anterior part of pronotum, as coarsely punctate as sides of disc, surface slightly irregular, from slightly opaque to shiny.

Scutellum triangular, slightly wider than long, without sulci, impunctate. Base of elytra only slightly wider than pronotum, humeri distinctly protruding anterad, up to anterior corners of pronotum, angulate. Disc strongly convex, almost hemispherical (fig. 181), slightly elevated in postscutellar area. Postscutellar impressions very shallow, often barely marked, with no elevated borders, no other impressions. Puncturation of disc moderately coarse to coarse (fig. 183), mostly regular, only intervals 2 and 4 in anterior part with few additional punctures. Rows slightly impressed, especially in sutural half of disc, punctures in rows arranged in some specimens completely regularly, with distances between punc-



186. Distribution of *Ischiocassis convexa*

tures equal, mostly slightly wider than puncture diameter, in other slightly irregularly with distance between punctures from narrower to distinctly wider than puncture diameter. In the same population differences in size of elytral punctures were observed, some specimens have elytral punctures twice coarser than others of the same body length. Intervals broad, in specimens with smaller elytral puncturation three to five times wider than rows, in specimens with coarse puncturation on sides of disc usually only twice wider than rows, interval 3 in posterior half of disc usually distinctly wider than intervals 2 and 4. Two or three sutural intervals often slightly elevated, on sides of disc interspaces often partly elevated, form more or less distinct, short transverse folds or wrinkles, occasionally the folds slightly before middle of elytra connected and form elevated fold across whole elytral disc. Marginal row distinct, its punctures large and deep, below humeral callus the row strongly bent downward, then return upward, thus marginal row in anterior half strongly bisinuate. Marginal interval broad, in anterior half almost as wide as two submarginal intervals together. Surface of elytral disc from slightly opaque to shiny. Explanate margin broad, in the widest part slightly wider than 1/6 width of disc, strongly deflexed, almost perpendicular to surface of abdomen, sparsely punctate; punctures always smaller than on disc, in some specimens only slightly smaller, in other many times smaller; interspaces from almost regular to slightly irregular, surface from slightly opaque to shiny. Apex of elytral epipleura with sparse erect hairs.

Clypeus very broad, c. 1.7 times as wide as long, in middle more or less impressed, clypeal lines fine, converging in trapezium (fig. 182); surface of clypeus distinctly microreticulate, finely sparsely punctate, from slightly opaque to shiny. Labrum distinctly emarginate to 1/3 length. Prosternal collar prominent, angulate on sides, with lateral emargination and large plate above the emargination; venter of pronotum with large plate opposite to the prosternal plate, both plates form special structure locking antennal groove. Prosternal process between coxae broad, strongly expanded apically, at base and on apex with deep pit. Surface of prosternal process finely punctate, slightly irregular, shiny. Antennae stout, segments 9 and 10 c. 1.3 times as long as wide, length ratio of antennal segments: 100:54:42:70:70:62:62:65:68:66:131. Segment 2 c. 1.2 times and segment 4 c. 1.7 times as long as segment 3 (fig. 184).

Legs stout, covered by sparse, mostly adherent setae. Claws large, simple (fig. 185).

DISTRIBUTION

Southern Africa north to Zambia (fig. 186).

REMARKS

I. convexa (BOH.) and *I. umbrata* (BOH.) have characteristic structures of prosternal collar and venter of pronotum - sides of prosternal collar with large plate, and ventral side of pronotum with large plate opposite to the prosternal plate. *I. umbrata* distinctly differs in elongate, almost cylindrical body, while in *I. convexa* body is almost hemispherical. At first glance the most similar is *I. stabilis*

(WEISE), especially by its hemispherical body, but differs in prosternal collar and venter of pronotum simple. Marginal row of punctures below humeral callus in *I. convexa* is more bent downwards than in *I. stabilis*. Apart from dark brown specimens, in populations of *I. convexa* often occur specimens with pale coloured dorsum, yellowish brown or pale brown, while populations of *I. stabilis* are uniform, always with dark brown dorsum.

I. convexa forms two distinct morphotypes. The larger was described as *I. convexa*, the c. twice smaller form as *I. semiglobosa*. Between these forms there are no intermediates and thus the variability is of polymorphic character. Both forms have been collected in the same habitats and relations between them need genetic studies.

MATERIAL EXAMINED

BOTSWANA: Gaberones, 1915, 6, R. ELLENSBERGER (MNH); Jwaneng, 19 XII 1984, D. d'HOTMAN (ER); Maun, Island Safari Lodge env., 2-15 I 1994, 1, 15-29 I 1997, 1, M. SNIZEK (MS); Nata, 9-14 I 1997, 3, M. SNIZEK (MS); Sebele, 1972, 2, R.D. WARD (CMNH); Tlokweng, 29-31 V 1988, 1, R.D. WARD (CMNH).

NAMIBIA: Abachaus, Otjiwarongo Distr., I 1947, 1, III 1953, 3, G. HOBOM (TM), 10 I 1956, 1, G. HOBOM (MM); Damara, 1 (LU); Damaraland, Hartbeespoort, 14 I 1970, 1, L. VARI (TM); Damaraland, Neuhoof-Kowas, II 1952, 1, A. VIERECK (TM); Gobabis, 1933, 2, Maag (SMNS); Grootfontein, Farm Hurisib, IV 1989, 2, J. IRISH (ZMHU); Kaokoveld, Ohopoho, 6 II 1975, 1, S. ENDRÖDY-YOUNGA (TM); Khomashock, Höhenheim farm, 15 I 1985, 1, Univ. Pret. Exp. (TM); Okahandja, 1240 m, 31 I-3 II 1979, 1, H. ROER (MKB); Ongombeanavita, 7 I 1969, 1 (WM); Osona n. Okahandja, III-IV 1989, 8, J. IRISH (ZMHU); Outjo, Delhi, 14-16 III 1979, 1, S. LOUW & M.-L. PENRITH (WM); Ovita, 15 II 1963, 1 (WM); Tsumkve, Kungveld, I 1958, 1, C. KOCH (TM).

SOUTH AFRICA: Cape, Dunsinane, 1 III 1980, 3, S. LOUW & M.-L. PENRITH (WM); Cape Prov., Erfdeel, Hay, 2-4 IX 1981, 1, S. LOUW (BM); Natal, 1 (ZMHU); Cape, Goldfinger Ranch, 1 III 1980, 1, S. LOUW & M.-L. PENRITH (WM); Mpumalanga, Hectorspruit, 21 I 2000, 1, P. SCHÜLE (SMNS); Natal, Durban, 12 XII 1906, 1, 28 XII 1906, 1, 31 VIII 1908, 1, G.F. LEIGH (TM); Natal, Josini-Nbunu, 14 I 1976, 1, P.E. REAVEL (TM); Natal, Leydenburg, 1 (ZMHU); Natal, Pinetown, 24 I 1909, 1, G.F. LEIGH (TM); Natal, Port Natal, 6 (holotype of *convexa* NRS, lectotype and 3 paralectotypes of *semiglobosa* NRS, one paralectotype BMNH); Natal, Weenen Distr.; Vall. Rushveld, Farm Roman Spruit, 1200 m, 30 III 1991, 1, C.D. QUICKELBERGE (DNSM); North Prov., Geelhoutbosh farm, Waterberg, 24.22 S 27.33 E, 15-18 XI 1997, 3, S. BILY (JV); North Prov., 8 km S Pienaarsriver, 25.15 S 28.17 E, 5 V 1998, 1, S. BILY (JV); Orange F. State, Bloemfontain, I 1985, 1 (BM); Orange F. State, Bothaville, 10 III 1899, 1, BRAUNS (TM); Orange F. State, Kromrant, Boshof, 8 XI 1983, 1 (BM); Orange F. State, Mooihoek, Vrederfort, 10-11 XII 1984, 1, A. v. RENSBERG (BM); Transvaal, 18 km ESE Brits, 30 XI-2 XII 1984, 2, BELLAMY & HOTMAN (ER); Transvaal,

Elandshoek, XI 1947, 1, A.L. CAPENER (TM); Transvaal, Hartebeestpoort-Dam, 1200 m, 26 XI 1957, 5 on *Ziziphus*, R. z. STRASSEN (SMF); Transvaal, Kruger-Park, 2 (MRAC); Transvaal, vic. Melodie, 11 VIII 1985, 1, 7-8 IX 1985, 1, 16 XI 1985, 1, 29-31 XII 1985, 2, C.L. BELLAMY, D. d'HOTMAN (ER, LB); Transvaal, Mbalolela, 8 III 1973, 1, S. ENDRÖDY-YOUNGA (TM); Transvaal, Middlefontein, near Nylstroom, 15-17 XII 1953, 1, A.L. CAPENER (LB); Transvaal, Nylsvley, 22 III 1984, 1, L.L. BELLAMY (ER), 15 XI 1984, BELLAMY & EDWARDS (TM); Transvaal, Pienaars Riv., 1898, 3, X-XI 1900, 2, JUTRZENCKA (TM); Transvaal, Plat-river, I-II 1903, 2, JUTRZENCKA (TM); Transvaal, Sandriver Mts., 8-9 XI 1985, 1, 18-19 XII 1985, 1, D. d'HOTMAN (ER), 3 III 1986, 2, LDEBEER (ER); Transvaal, Silkaatsnek, 21 III 1972, 1, STRYDOM (TM); Transvaal, Warmbaths, II 1918, 2, G. KOBROW (TM); Transvaal, Waterberg, 1898-99, 15, JUTRZENCKA (TM); Transvaal, Waterfal Bo, 24 XI 1981, 3, J. KLAPPERICH (MZSNV); N Transvaal, Waterpoort, 3, W.A. LINGNAN (DEI); Transvaal, Zoutpansberg, 9-10 1938, 2, D.L. Uyttenboogart (ITZ); Zululand, Akuzi, 21 XI 1956, 1 (MRAC).

ZAMBIA: Ndola, XI 1944, 2, W. EICHLER (LB).

ZIMBABWE: Bubi Riv. Vall., 70 km N Beitbridge, 8 XII 1998, 18, F. KANTNER (FK, LB, MS); Bulawayo, XI 1922, 1, Swinburne & STEVENSON (TM), 19 XII 1924, 1, R. STEVENSON (TM); Masvingo, Mushandike Sanctuary, 9-11 XII 1998, 1, M. HALADA (MS); Mavhuradonha Saf. A., 15 km SE Muzarabani, 17 XII 1998, 1, M. HALADA (MS); Umtali, 1, BODONG (ZMHU).

Ischiocassia stabilis (WEISE, 1899)

(figs 187-193, pl. 8: 4-6)

Cassida stabilis WEISE, 1899: 241 (TE in ZMHU).

Cassida (Cassida) stabilis: SPAETH, 1914: 119.

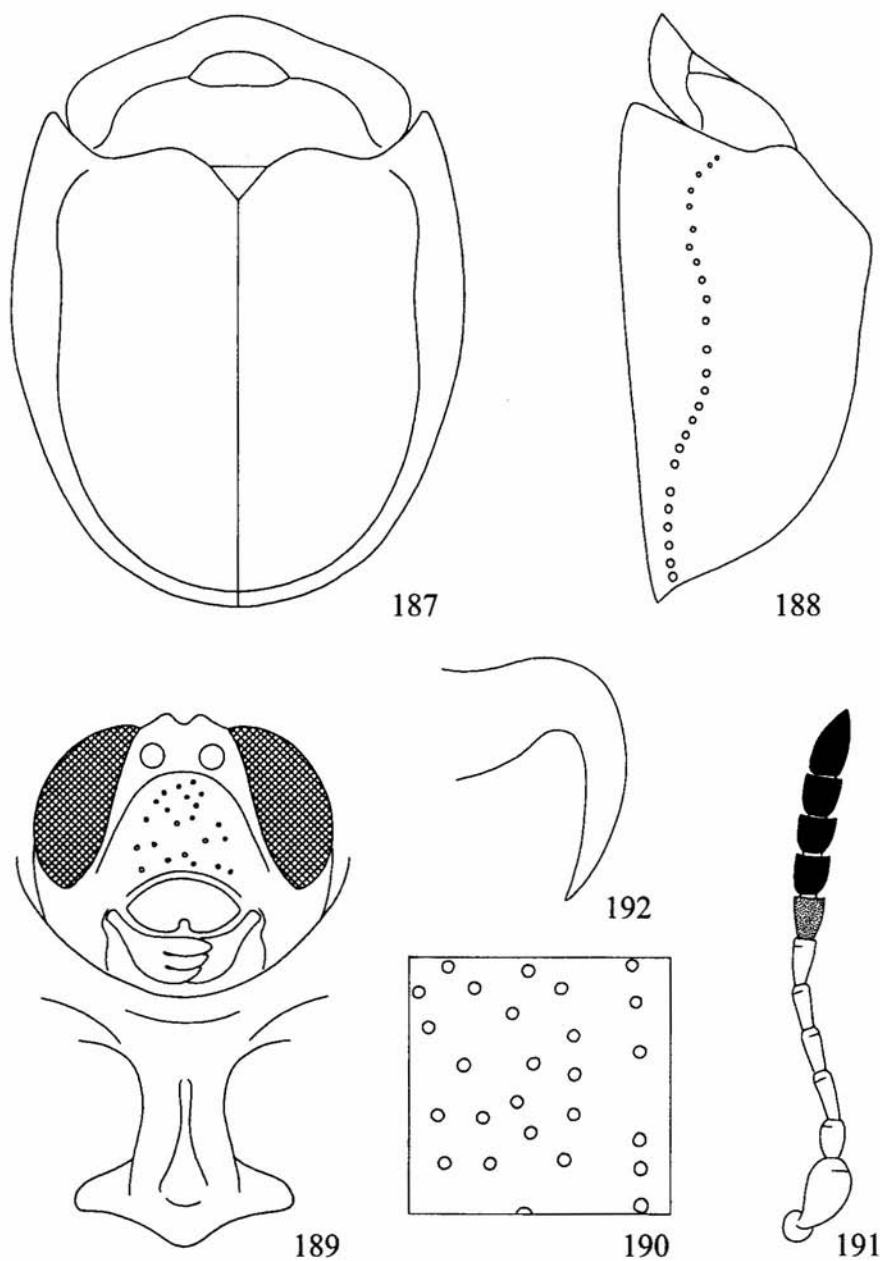
Ischiocassia stabilis: SPAETH, 1932: 233; SHAW, 1972: 72; BOROWIEC, 1995: 372, 1999: 308.

Ischiocassia convexa: BOROWIEC, 1985 a: 240 (part, specimens from Livingstone).

DESCRIPTION

Le: 6.4-8.7 (usually above 7.5) mm, Wi: 5.15-6.50 mm, Lp: 2.5-3.1 mm, Wp: 3.95-4.90 mm, Le/Wi: 1.24-1.41, Wp/Lp ratio: 1.41-1.63. Body short-oval, males slightly stouter than females (fig. 187).

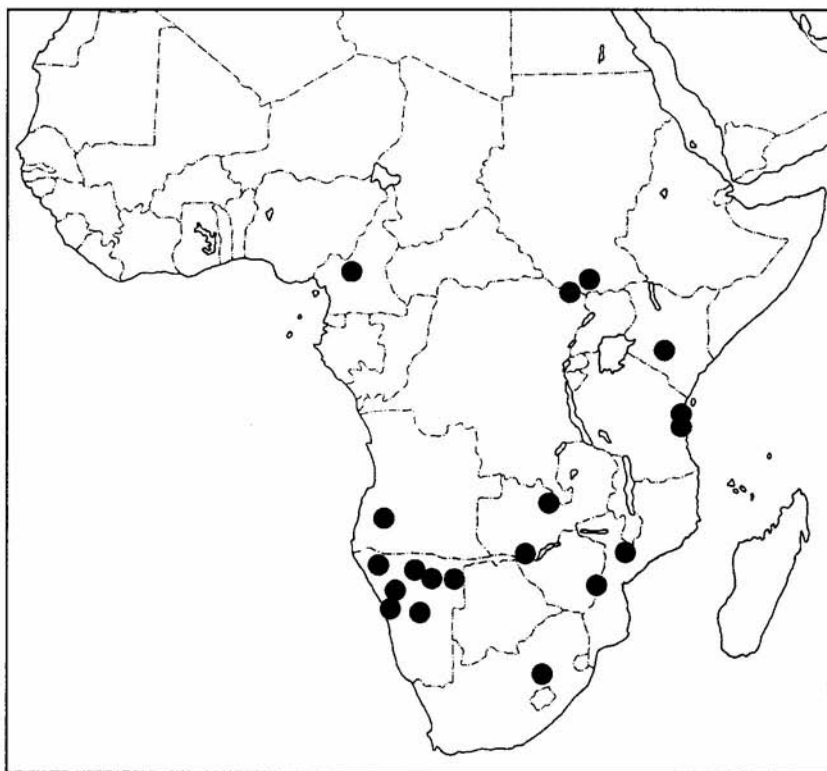
Colouration more constant than in *I. convexa*, pronotal disc and elytra usually dark brown, explanate margin of pronotum paler, yellowish-brown, especially in area above head. Clypeus brown, thorax mostly to completely black, abdomen usually black with paler, brown margins. Legs brown, sometimes tibiae dark brown, and/or femora infuscate apically. Antennae mostly yellowish-brown, four to five distal segments infuscate to black. The palest specimens have body mostly pale brown, with thorax pale brown or only infuscate in middle, and abdomen mostly pale brown with darker brown centre. Elytral punctures, like in *I. convexa*, with dark centre.



187-192. *Ischiocassis stabilis*: 187 – dorsal, 188 – lateral, 189 – head and prosternum, 190 – puncturation of central part of elytral disc, 191 – antenna, 192 – claw

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners well marked but rounded. Disc only slightly convex, indistinctly separated from explanate margin, moderately coarse and slightly finer punctate than in *I. convexa*, punctures on top of disc and on sides of equal size; distance between punctures mostly narrower than puncture diameter, sometimes punctures almost touching each other, or tend to form fine grooves, especially on sides of disc. Surface of disc slightly irregular, shiny. Explanate margin narrow, especially in anterior part of pronotum, finer and sparser punctate than disc, in pale area above head almost impunctate, surface mostly regular, shiny.

Scutellum triangular, slightly wider than long, without sulci, impunctate. Base of elytra only slightly wider than pronotum, humeri distinctly protruding anterad, up to anterior corners of pronotum, angulate. Disc strongly convex, almost hemispherical (fig. 188), slightly elevated in postscutellar area. Postscutellar impressions very shallow, often barely marked, with no elevated borders, no other impressions. Puncturation of disc moderately coarse to coarse (fig. 190), mostly regular, but some intervals with few additional punctures, especially area laterally



193. Distribution of *Ischiocassis stabilis*

to postscutellar elevation appears almost irregularly punctate. Rows slightly impressed, especially in sutural half of disc, punctures in rows in some specimens arranged completely regularly, with distances between punctures equal, mostly slightly wider than puncture diameter, in other specimens punctures arranged slightly irregularly with distance between punctures from narrower to distinctly wider than puncture diameter. In the same population differences in size of elytral punctures were observed, some specimens have elytral punctures twice coarser than other of the same body length. Intervals broad, in specimens with smaller elytral puncturation three to five times wider than rows, in specimens with coarse puncturation on sides of disc usually only twice wider than rows, intervals 2 and 3 in posterior half of disc usually slightly wider than neighbouring intervals, only occasionally slightly elevated. On sides of disc interspaces often partly elevated, form more or less distinct, short transverse folds or wrinkles. Marginal row distinct, its punctures large and deep, below humeral callus the row not or only slightly bent downward, thus marginal row in anterior half does not appear distinctly bisinuate. Marginal interval broad, in anterior half almost as wide as two submarginal intervals together. Surface of elytral disc shiny. Explanate margin broad, in the widest part slightly wider than 1/6 width of disc, strongly deflexed, almost perpendicular to surface of abdomen, sparsely punctate; punctures always smaller than on disc, in some specimens only slightly smaller, in others many times smaller; interspaces from almost regular to slightly irregular, surface shiny. Apex of elytral epipleura with sparse erect hairs.

Clypeus very broad, c. 1.7 times wider than long, in middle not or only shallowly impressed, clypeal lines fine, converging in trapezium (fig. 189), run closer to eye margin than in *I. convexa*; surface of clypeus microreticulate, finely sparsely punctate, shiny. Labrum only slightly emarginate to 1/6 length. Prosternal collar prominent, angulate on sides, with small lateral emargination but without plate above the emargination, also venter of pronotum without special plate. Prosternal process between coxae broad, strongly expanded apically, deeply canaliculate along middle. Surface of prosternal process finely punctate, slightly irregular, shiny. Antennae stout, segments 9 and 10 approximately as wide as long, length ratio of antennal segments: 100:58:75:67:67:71:63:58:54:58:108. Segment 3 c. 1.3 times as long as segment 2 and c. 1.1 times as long as segment 4 (fig. 191).

Legs stout, covered by sparse, mostly adherent setae. Claws large, simple (fig. 192).

DISTRIBUTION

Africa south of Equator, single localities in N Cameroon and Sudan (fig. 193).

REMARKS

I. stabilis (WEISE) and *I. convexa* (BOH.) are very similar in body shape. Both are almost hemispherical, only slightly elevated in postscutellar area. *I. convexa* distinctly differs in the presence of peculiar structures of prosternal collar and

venter of pronotum. Marginal row of punctures below humeral callus in *I. convexa* is more bent downwards than in *I. stabilis*. Apart from dark brown specimens, in populations of *I. convexa* often occur specimens with pale coloured dorsum, yellowish brown or pale brown, while populations of *I. stabilis* are uniform, always with dark brown dorsum.

MATERIAL EXAMINED

ANGOLA: Huila, Tchivinguire, 14-17 XI 1974, 1 (WM).

CAMEROON: Ma roua, VII 1979, 1, G. ONORE (MRAC).

KENYA: Sansibar, Kitui, 1, HILDEBRANDT (ZMHU).

MOZAMBIQUE: mittl. Sambesi, 1, W. TIEELER (ZMHU).

NAMIBIA: Damara, 1 (LU); Grootfontein, 3 I 1948, 1 (WM); Otjiwarongo, Abachaus, I 1953, 2, G. HOBOM (ZSM); Otjiwarongo, Okosongomongo, 6-8 III 1979, 1, S. LOUW & M.L. PENRITH (WM); Tsumeb centr., 9 I 1995, 2, M. SNIZEK (MS); Swakopmund, I 1955, 5, G. HOBOM (MM, ER); Tsumkwe, Kungveld, I 1958, 2, C. KOCH (TM); Watoberg, 23 IX 1990, 1, P. SCHÜLE (SMNS); Windhoek, 6, H. KINGES (TM).

SOUTH AFRICA: Oranje, Golden Gate, 14-15 I 1964, 1, A. CAPENER (ZSM).

SUDAN: Lado Enclave, nr. Gondokoro, 1 (LB).

TANZANIA: Dar es Salaam, 1 (holotype, ZMHU); Kitwi, 4 (ZMHU).

ZAIRE (REPUBLIC OF CONGO): Garamba Nat. Park, II/gd/4, 2 V 1952, 28, DE SAEGER (IRSN); Garamba Nat. Park, Gambala, 3 V 1950, 9, DE SAEGER (MRAC); Garamba Nat. Park, Garamba, 6 IV 1951, 3, J. VERSCHUREN (2 MRAC, 1 LB).

ZAMBIA: Livingstone, 29 XII 1944, 1, W. EICHLER (LB); Ndola, XI 1944, 1, W. EICHLER (LB).

ZIMBABWE: Chimanimani Nat. Park, 14 XII 1998, 1, S. BECVAR (JB),

Ischiocassis tragardhi (SPAETH, 1928)

(figs 194-200, pl. 7: 9-10)

Cassida Trägårdhi SPAETH, 1928: 4 (HT in NRS).

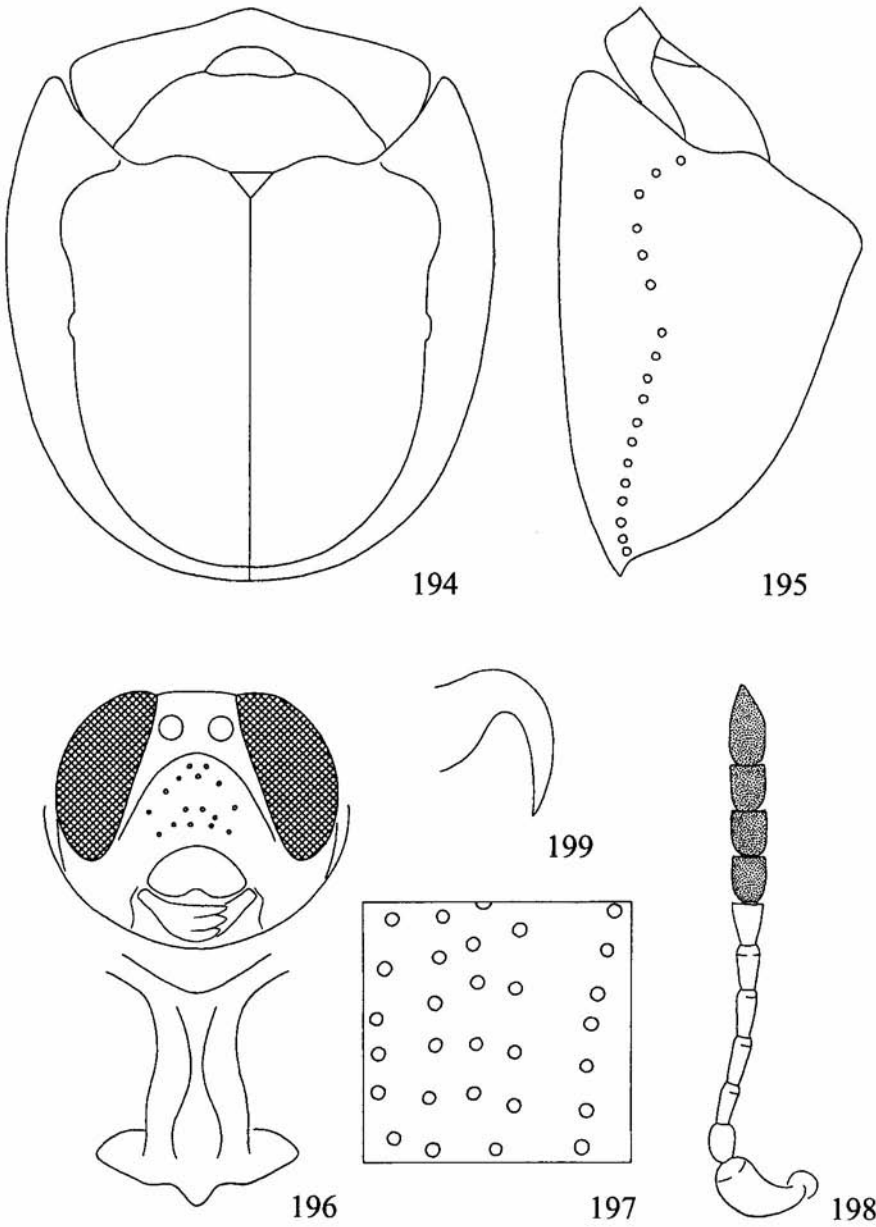
Ischiocassis traghårdti [sic]: SPAETH, 1932: 233.

Ischiocassis tragardhi: BOROWIEC, 1999: 308.

DESCRIPTION

Le: 8.2 mm, Wi: 6.75 mm, Lp: 3.0 mm, Wp: 5.0 mm, Le/Wi: 1.21, Wp/Lp ratio: 1.67. Body almost hemispherical (fig. 194).

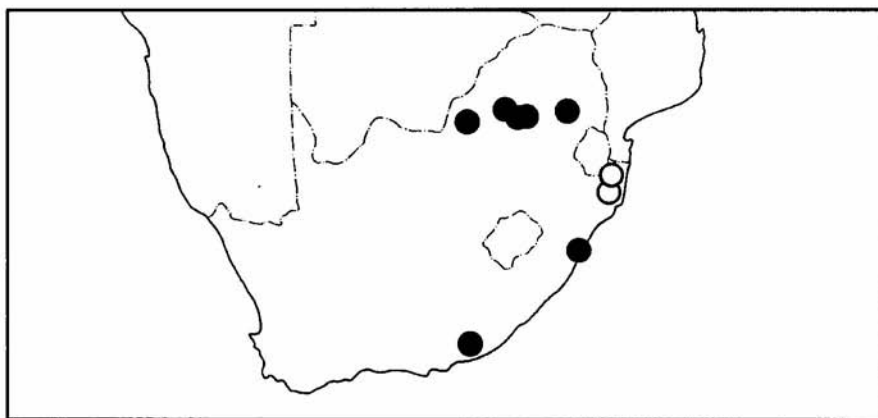
Pronotal disc and elytra dark brown, explanate margin of pronotum and elytra paler brown. Clypeus brown, thorax mostly black, only central part of metasterna brown, abdomen brown, with blackish posterior margins of sternites. Legs brown, basal half of femora dark brown. Antennae mostly yellowish-brown, four distal segments dark brown. Elytral punctures without dark centre.



194-199. *Ischiocassis tragardhi*: 194 – dorsal, 195 – lateral, 196 – head and prosternum, 197 – puncturation of central part of elytral disc, 198 – antenna, 199 – claw

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior corners well marked but rounded. Disc convex, indistinctly separated from explanate margin, moderately coarse and shallowly but densely punctate, punctures mostly almost touching each other, surface of disc appears irregular to wrinkled, but shiny. Explanate margin narrow, especially in anterior part of pronotum, finer and sparser punctate than disc, in area above head almost impunctate, surface mostly regular, shiny.

Scutellum triangular, slightly wider than long, without sulci, impunctate. Base of elytra more distinctly wider than pronotum than in congeners, humeri distinctly protruding anterad, up to anterior corners of pronotum, angulate. Disc strongly convex, almost hemispherical, with large, tuberculate elevation in postscutellar area (fig. 195). Postscutellar impressions shallow, but well marked, with no elevated borders, no other impressions. Puncturation of disc coarse (fig. 197), runs more or less regularly, but dense and with some intervals with few additional punctures, and especially area laterally to postscutellar elevation appears almost irregularly punctate. Rows, except two sutural, not impressed. Punctures in rows arranged regularly, with interspaces distinctly narrower than puncture diameter. Intervals narrow, because of elevated interspaces in rows sometimes indistinctly marked and narrower than rows, only intervals 1 and 2 behind elytral tuberculation well marked, slightly convex and wider than rows. On sides of disc interspaces often partly elevated, form more or less distinct, short transverse folds or wrinkles and surface of sides of disc appears irregular. Marginal row distinct, its punctures large and deep, below humeral callus the row only slightly bent downward, thus marginal row in anterior half does not appear distinctly bisinuate. Marginal interval broad, in anterior half almost as wide as two submarginal intervals together. Surface of elytral disc shiny. Explanate margin broad, in the widest part slightly wider than $1/8$ width of disc, strongly deflexed, almost perpendicular to surface of abdomen, sparsely and shallowly punctate; punctures always smaller



200. Distribution of *Ischiocassis tragardhi* (white circles) and *Ischiocassis umbrata* (black circles)

than on disc, interspaces only slightly irregular, surface shiny. Apex of elytral epipleura with sparse erect hairs.

Clypeus very broad, c. 1.7 times wider than long, area between clypeal lines slightly elevated but shallowly impressed before labrum, clypeal lines distinct, converging in trapezium (fig. 196), run in distance to eye margin, like in *I. convexa*; surface of clypeus microreticulate, finely sparsely punctate, opaque. Labrum only slightly emarginate to 1/6 length. Prosternal collar prominent, angulate on sides, with small lateral emargination but without plate above the emargination, also venter of pronotum without special plate, similar as in *I. stabilis*. Prosternal process between coxae broad, strongly expanded apically, deeply canaliculate along middle. Surface of prosternal process finely punctate, slightly irregular, shiny. Antennae stout, length ratio of antennal segments: 100:46:46:60:66:56:56:60:60:100. Segment 2 and 3 almost equal length, segment 4 c. 1.3 times as long as segment 3 (fig. 198).

Legs stout, covered by sparse, mostly adherent setae. Claws large, simple (fig. 199).

DISTRIBUTION

South Africa: Zululand (fig. 200).

REMARKS

It is well distinguished by elytral disc strongly elevated in postscutellar area, angulate in profile. *I. tragardi* (Sp.), like *I. stabilis* (Weise), has no peculiar structures of prosternal collar and venter of pronotum.

MATERIAL EXAMINED

SOUTH AFRICA: Zulu, 1, TRÄGÄRDH (holotype, NRS); Zululand, Hluhluwe, X 1914, 1 (LB); Zululand, Maputa, XI 1955, 1 (MRAC).

Ischiocassida umbrata (BOHEMAN, 1854)

(figs 200-206, pl. 8: 7-9)

Cassida umbrata BOHEMAN, 1854: 420 (HT in NRS), 1856: 134, 1862: 331; GEMMINGER and HAROLD, 1876: 3659.

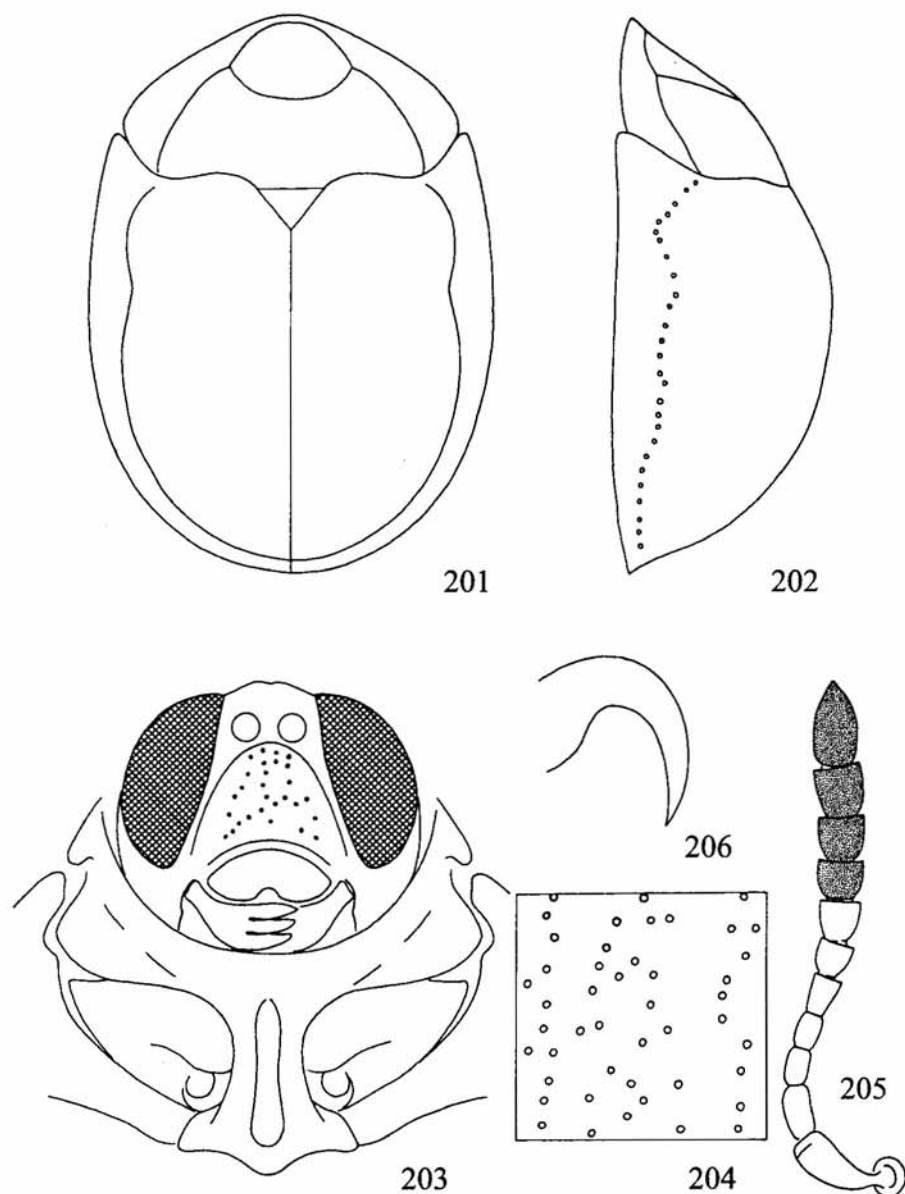
Cassida (Cassida) umbrata: SPAETH, 1914: 119.

Ischiocassida umbrata: SPAETH, 1917: 436; SHAW, 1956 a: 267; BOROWIEC, 1999: 308.

DESCRIPTION

Le: 6.75-7.10 mm, Wi: 4.50-4.75 mm, Lp: 2.40-2.55 mm, Wp: 3.90-3.95 mm, Le/Wi: 1.45-1.56, Wp/Lp ratio: 1.55-1.63. Body elongate-oval, slightly cylindrical, males slightly stouter than females (fig. 201).

Pronotum and elytra brown, sometimes pronotal disc slightly darker brown than explanate margin of pronotum and disc and marginalia of elytra. In immature specimens dorsum yellow, with elytral puncturation brown marked, especially on top of disc. Clypeus yellow to brown. Thoracic plates yellow to brown in centre with brown to dark brown margination. Abdomen brown to dark brown in centre,



201-206. *Ischiocassis umbrata*: 201 – dorsal, 202 – lateral, 203 – head and prosternum, 204 – puncturation of central part of elytral disc, 205 – antenna, 206 – claw

yellow to yellowish-brown on sides and apex. Legs yellowish to brown, basal half to third of femora usually darker than apex of femora and tibia, often posterior part of tibiae more or less infuscate. Antennae yellowish to yellowish-brown, four apical segments more or less infuscate.

Pronotum reversely trapezoidal, with maximum width slightly before the middle, sides angulate. Disc only slightly convex, indistinctly separated from explanate margin, coarsely punctate. Distance between punctures narrower than puncture diameter, sometimes punctures almost touching each other, interspaces form more or less convex folds, surface of disc appears irregular. Interspaces from slightly dull to shiny. Explanate margin narrow, especially in anterior part of pronotum, finer punctate than disc, surface only slightly irregular, from slightly opaque to shiny, not transparent.

Scutellum triangular, slightly wider than long, without sulci, or in apical third with transverse sulcus, impunctate. Base of elytra only slightly wider than pronotum, humeri distinctly protruding anterad, angulate. Disc regularly convex, with top of convexity in postscutellar point (fig. 202), without impressions. Punctuation of disc moderately coarse (fig. 204), mostly regular, intervals 2 and 4 with several additional punctures disturbing the regularity. Rows not impressed, or only two sutural rows slightly impressed. Punctures in rows in some specimens arranged completely regularly, with equal distances between punctures, mostly slightly narrower than puncture diameter, in other specimens punctures tend to form groups, with distance between punctures from narrower to distinctly wider than puncture diameter. Dark coloured specimens have elytral punctuation arranged more regularly than in pale specimens. Intervals narrow, usually as wide as or slightly narrower than rows, only interval 1 in the middle and interval 2 in posterior half slightly wider than rows, sometimes also interval 4 in the middle slightly widened. Intervals mostly flat, only widened parts of intervals 1, 3, and 4 slightly convex. Marginal row distinct, its punctures large and deep, as coarse as in submarginal row, below humeral callus the row moderately bent downward, thus marginal row in anterior half only slightly bisinuate. Marginal interval broad, in anterior half almost as wide as two submarginal intervals together. Surface of elytral disc from slightly opaque to shiny. Explanate margin narrow, distinctly narrower than in congeners, in the widest part c. as wide as 1/6 width of disc, strongly deflexed, almost perpendicular to the surface of abdomen, sparsely punctate; punctures distinctly smaller than on disc, interspaces from almost regular to slightly irregular, surface from slightly opaque to shiny. Apex of elytral epipleura bare or with only few short erect setae.

Clypeus very broad, c. 1.7 times wider than long, flat or shallowly impressed in the middle, clypeal lines fine, converging in trapezium (fig. 203); surface of clypeus distinctly microreticulate, finely and sparsely punctate, from slightly opaque to shiny. Labrum distinctly emarginate to 1/3 length. Prosternal collar prominent, angulate on sides, with lateral emargination and large plate above the emargination; venter of pronotum like in *I. convexa* (BOH.), with large plate opposite to the prosternal plate, both plates form special structure locking antennal

groove. Prosternal process between coxae broad, strongly expanded apically, canaliculate longitudinally. Surface of prosternal process finely punctate, slightly irregular, shiny. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:66:46:46:50:43:50:47:56:63:106. Segment 2 c. 1.4 times as long as 3 and 4 (fig. 205).

Legs stout, covered by sparse, mostly adherent setae. Claws large, simple (fig. 206).

DISTRIBUTION

South Africa: Natal and Transvaal (fig. 200).

REMARKS

It is well distinguished by elongate, almost cylindrical body and elytra not elevated in postscutellar area. *I. umbrata* (BOH.), like *I. convexa* (BOH.), has peculiar structures of prosternal collar and venter of pronotum - sides of prosternal collar with large plate, and ventral side of pronotum with large plate opposite to the prosternal plate.

MATERIAL EXAMINED

SOUTH AFRICA: Natal, Port Natal, 1, VAHLBERG (holotype, NRS); Transvaal, Lydenburg, 1 (LB); Transvaal, Pretoria, 4 XII 1900, 1 (LB); Transvaal, Rietvleldam N. R., 15 I 1981, 1 (LB).

Genus: *Limnocassis* SPAETH, 1952

Limnocassis SPAETH in HINCKS, 1952: 346 (type species: *Cassida pumilio* BOHEMAN, 1854 = *Oxylepus turneri* SPAETH, 1933, by monotypy); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 18, 1999: 310.

Very small cassids, body length below 3.7 mm. Body oval, slightly narrowed posterad, very convex. Pronotum elliptical, with broadly rounded sides and maximum width slightly before middle. Pronotal disc indistinctly separated from explanate margin, microreticulate, impunctate. Explanate margin narrow, microreticulate. Elytral base wider than pronotum. Elytral disc regularly convex. Punctuation in sutural and marginal parts of disc almost regular, in the middle of each elytron irregular, coarse, intervals narrower than punctures. The sixth interval in posterior half slightly elevated. Marginal row distinct. Explanate margin of elytra very narrow, strongly deflexed, almost perpendicular, punctate. Clypeus narrow, coarsely punctate, with fine clypeal lines. Venter of pronotum without antennal grooves. Lateral margins of prosternal alae elevated, sharp. Antennae stout, third segment slightly shorter than second, segments 8-10 wider than long. Last segment of tarsi as long as third, bilobate segment. Claws simple.

SPAETH (1952) placed it close to *Oxylepus* DESBR., but in my opinion it is close to *Cassida* L., especially to species of *C. litigiosa* group from South Africa. It differs in very narrow, steeply deflexed, almost perpendicular explanate margin

of elytra. Most species of *Cassida* are larger than *Limnocassis*, with length above 3.6 mm. No species of *Cassida* has as high and sharp lateral margins of prosternal alae as in *Limnocassis*. Steeply deflexed elytral marginalia and venter of pronotum without antennal grooves are found also in *Oxylepus* DESBR. and *Orobiocassis* Sp. Both differ in completely irregular elytral puncturation, *Orobiocassis* differs also in large size, with length above 4.5 mm.

Only one species in Zimbabwe and South Africa.

***Limnocassis pumilio* (BOHEMAN, 1854)**

(figs 207-213, pl. 9: 1-2)

Cassida Pumilio BOHEMAN, 1854: 426 (TE in NRS), 1856: 135, 1862: 332; GEMMINGER and HAROLD, 1876: 3657.

Cassida (Cassida) pumilio: SPAETH, 1914: 119.

Cassida (Cassidulella) pumilio: SPAETH, 1939: 19.

Limnocassis pumilio: BOROWIEC, 1999: 310.

Oxylepus Turneri SPAETH, 1933: 357 (ST in BMNH, MM); BOROWIEC, 1999: 310 (as syn.).

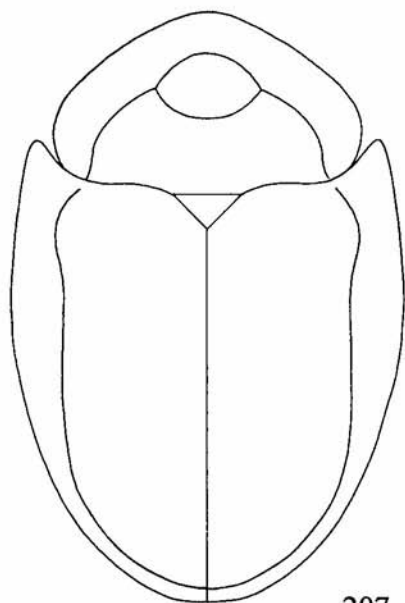
DESCRIPTION

Le: 3.4-3.7 mm, Wi: 2.1-2.3 mm, Lp: 1.1-1.25 mm, Wp: 1.80-1.95 mm, Le/Wi: 1.57-1.61, Wp/Lp ratio: 1.44-1.58. Body elongate oval, distinctly converging posterad (fig. 207).

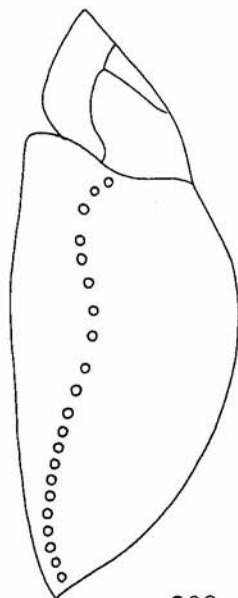
Pronotum yellow, elytra yellowish or yellowish-green, elevated part of intervals 2 and 6 usually green. Head, ventrites, legs and antennae uniformly yellow, sometimes apex of last antennal segment infusate.

Pronotum elliptical, 1.44-1.58 times wider than long, with maximum width slightly before middle, sides broadly rounded. Disc moderately convex, microreticulate, with very shallow, fine and sparse puncturation, appears impunctate. Explanate margin narrow, indistinctly separated from disc, very shallowly and sparsely punctate, appears mostly impunctate, surface slightly dull.

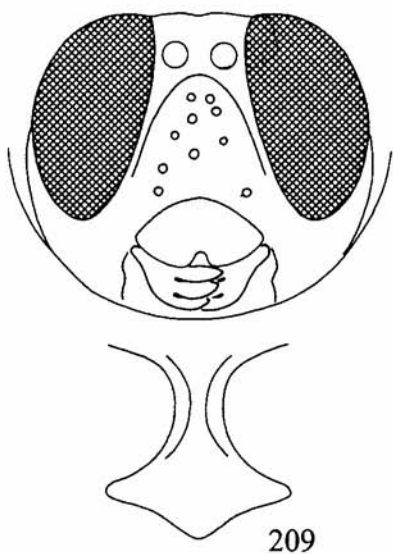
Scutellum pentagonal with rounded apex. Base of elytra moderately wider than pronotum, humeri moderately protruding anterad, angulate. Basal margin of disc not crenulate. Disc regularly convex (fig. 208), without postscutellar and principal impressions, but usually with shallow lateral impressions, running along inner border of elevated part of sixth interval. Puncturation between suture and second interval, and between sixth interval and marginal row almost regular, but some additional punctures disturb the regularity, especially in postscutellar area. Puncturation between second and sixth interval completely irregular. Punctures coarse and dense, distance between punctures mostly narrower than puncture diameter (fig. 210). Interval 1 barely marked, almost linear, intervals 7, 8, 9, c. as wide as or slightly narrower than rows; interval 2 well marked in anterior half of disc, as wide as punctures diameter, slightly elevated, interval 6 well marked in posterior half of disc, slightly wider than diameter of neighbouring punctures, slightly elevated. Marginal interval in anterior half of disc distinct, wide, slightly



207



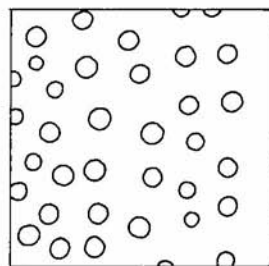
208



209



212



210



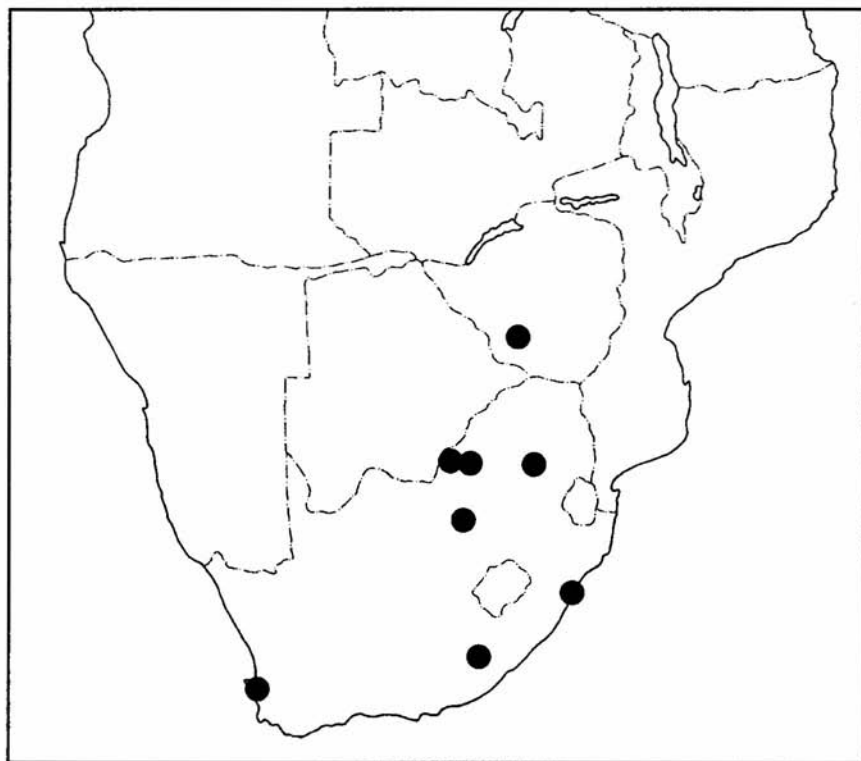
211

207-212. *Limnocassis pumilio*: 207 – dorsal, 208 – lateral, 209 – head and prothorax, 210 – punctation of central part of elytral disc, 211 – antenna, 212 – claw

wider than two marginal rows and intervals combined. Marginal row distinct, its punctures as coarse as or slightly coarser than on disc. Border of disc behind humeral callus deeply impressed. Explanate margin strongly deflexed, almost perpendicular, very narrow, in the widest part as wide as 1/6 width of disc, in apical part as wide as punctures of marginal row. Puncturation shallow but coarse, groups along border of disc and along extreme margin, area along middle of explanate margin impunctate, slightly elevated. Whole surface of disc slightly dull. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.2 times as wide as long (fig. 209), flat, shiny, with few coarse, shallow punctures. Clypeal grooves fine but distinct, converging in triangle. Labrum stout, anterior margin narrowly emarginate to 1/4 length. Venter of pronotum around upper part of head impressed but without antennal grooves. Prosternal collar short without lateral emargination. Prosternal process narrow, in middle not wider than trochanter, moderately expanded apically, apex strongly bent downward, with few shallow punctures. Antennae stout, segments 9 and 10 approximately as long as wide, length ratio of antennal segments: 100:54:54:52:54:57:57:54:57:62:108. Segments 2, 3, and 4 approximately of equal length (fig. 211).

Claws simple (fig. 212).



213. Distribution of *Limnocassis pumilio*

DISTRIBUTION

South Africa and Zimbabwe (fig. 213).

REMARKS

I examined types of both *C. pumilio* BOH. and *O. turneri* SP. and they are conspecific (BOROWIEC 1999). It is interesting that SPAETH in 1939 studied type of *C. pumilio* but compared it with European *C. vittata* VILL. and not with *O. turneri* described by him a few years earlier.

MATERIAL EXAMINED

SOUTH AFRICA: Cape prov., Langebaan, 2 XI 1983, 1, ENDRÖDY-YOUNGA (TM); Cape Prov., Queenstown, 3500 ft., 16 I-10 II 1923, 2, R.E. TURNER (holotype of *turneri*, BMNH, paratype MM); Natal, Port Natal, 1, VAHLBERG (holotype of *pumilio*, NRS); North West Prov., 20 km W Bothaville, Klerksdorp Vaal riv., 12 I 2001, 1, M. SNIZEK (LB); Transvaal, Middelburg, 8 II 1966, 1, H. VAN SCHALKWYK (NIC); Transvaal, Nylsvley, Smith Farm, 1 (LB); Transvaal, Zwarttruggens, 4 IX 1979, 1 (LB).

ZIMBABWE: Bulawayo, 17 X 1944, 1 (LB).

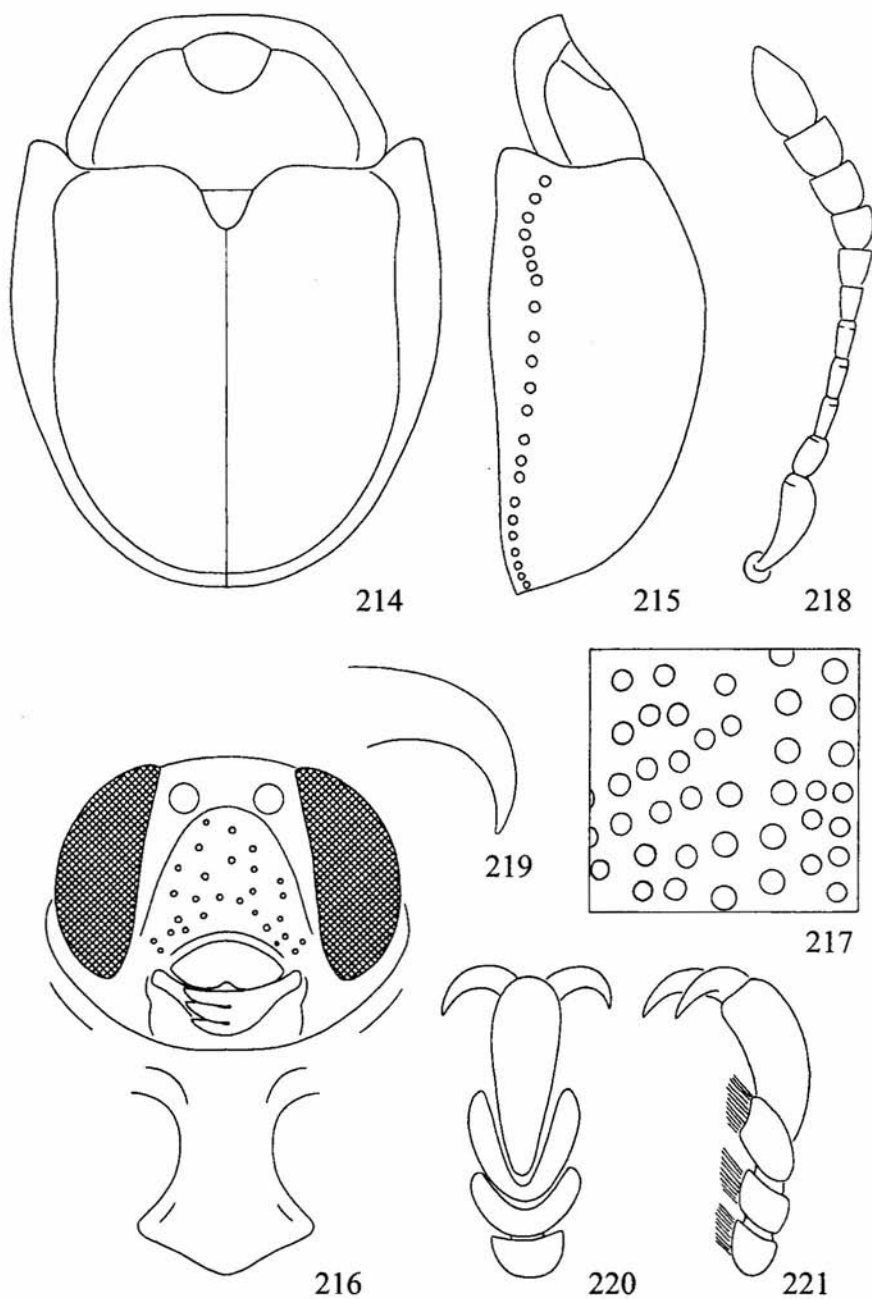
Genus: *Nabathaea* SPAETH, 1911

Nabathaea SPAETH, 1911: 272 (type species: *Nabathaea pygmaea* SPAETH, 1911, designated by HINCKS, 1952: 337), 1914: 86; HINCKS, 1952: 337; SEENO and WILCOX, 1982: 176; BOROWIEC, 1999: 312.

Nabatheia [sic]: BOROWIEC, 1994 a: 15.

Very small cassids, body length below 3.6 mm. Body oval, slightly narrowed posterad, convex. Pronotum subpentagonal, with broadly rounded sides and maximum width c. in middle. Pronotal disc indistinctly separated from explanate margin, coarsely punctate. Explanate margin narrow, rugosely punctate. Elytral base wider than pronotum. Elytral disc regularly convex. Punctuation coarse, mostly irregular, but punctures along suture have tendency to form partly regular rows. Marginal row distinct in basal third of border of disc. Explanate margin of elytra very narrow, strongly deflexed, irregularly punctate. Whole surface of elytral disc with short, erect setae. Clypeus broad, punctate, with fine clypeal lines only in basal 2/3 length. Venter of pronotum without antennal grooves. Prosternal collar at sides with small pit but without lateral emargination. Antennae stout, third segment slightly shorter than the second, segments 8-10 wider than long. Last segment of tarsi very long, c. twice longer than the third, bilobate segment. Claws simple.

A very distinct genus, well distinguished from all Afrotropical genera by its elongate last segment of tarsi, c. twice longer than the third, bilobate segment. A similar character occurs only in Palaearctic genera *Chiridula* WEISE and *Macromonycha* SP. but they differ in distinctly larger size (above 4 mm); *Chiridula*



214-221. *Nabathaea pygmaea*: 214 – dorsal, 215 – lateral, 216 – head and prothorax, 217 – punctuation of central part of elytral disc, 218 – antenna, 219 – claw, 220-221 – tarsus (220 – dorsal, 221 – lateral)

differs also in depressed body, and *Macromonycha* differs in strongly sculptured pronotum and elytra with irregular tubercles, wrinkles and costae. At first glance the genus *Seminabathea* Bor., sympatric with *Nabathaea*, is the most similar but differs in prosternal collar with lateral emargination, venter of pronotum with short antennal groove, and last segment of tarsi only slightly extending beyond margin of the third tarsal segment.

Only one species in Arabian Peninsula and Egypt.

***Nabathaea pygmaea* SPAETH, 1911**

(figs 214-221, pl. 9: 3-4)

Nabathaea pygmaea SPAETH, 1911: 272 (HT in MM), 1914: 86; BOROWIEC, 1999: 312.

DESCRIPTION

Le: 3.35-4.35 mm, Wi: 2.30-3.05 mm, Lp: 1.1-1.4 mm, Wp: 1.8-2.35 mm, Le/Wi: 1.39-1.58, Wp/Lp ratio: 1.64-1.75. Body subtriangular, distinctly converging posterad (fig. 214).

Specimens from Aden have dorsum and ventrites brown, specimens from Egypt yellowish green but the difference resulted probably from different killing solution or different method of their preservation. Antennae uniformly yellow green or brown, or with infusate to black 3-4 apical segments.

Pronotum trapezoidal but with rounded anterior and basal corners, with maximum width slightly before base, sides regularly converging anterad, anterior margin almost straight. Disc moderately convex, indistinctly separated from explanate margin, moderately coarse but densely punctate, distance between punctures mostly narrower than puncture diameter, surface between punctures slightly shiny. Specimens from Aden have pronotal disc slightly coarser and denser punctate than specimens from Egypt, but in some specimens from Egypt punctures coalesce and tend to form irregular grooves, then surface of disc appears irregular. Explanate margin very narrow, with extremely narrow, impunctate, transparent extreme margin. Surface of explanate margin with longitudinal grooves.

Scutellum triangular, as wide as long, smooth. Base of elytra wider than base of pronotum, humeri moderately produced anterad, obtuse. Disc regularly convex, without tubercles or impressions, at top slightly depressed (fig. 215). Puncturation of disc coarse, mostly irregular, distance between punctures mostly narrower than puncture diameter (fig. 217). Punctures along suture tend to form two more or less regular rows. In some specimens in position of 3rd and 5th intervals there are narrow, slightly convex longitudinal elevations (in specimens from Egypt they are more distinct than in specimens from Aden). Marginal row distinct only in anterior third of border of disc, its punctures twice coarser than in central part of disc. Marginal interval marked only in anterior 1/4 length of border of disc. Surface of elytra between punctures from slightly dull to slightly shiny.

Explanate margin very narrow, in the widest part only twice wider than marginal interval. Whole surface of elytra with very short, erect setae. Apex of elytral epipleura with very short and sparse erect hairs.

Clypeus broad, c. 1.5 times as wide as long (fig. 216), flat, with several fine punctures, shiny, clypeal lines fine, short, well visible only in basal 2/3 length of the clypeal plate (in some specimens clypeal lines are barely visible). Labrum very shallowly emarginate. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:50:50:50:45:47:55:57:60:125. Segments 2, 3, and 4 almost equal length (fig. 218).

Prosternal collar short, prosternal process broad, moderately expanded apically, its sides slightly convex, surface mostly smooth, impunctate or with few small punctures. Prosternal collar at sides without emargination but with small pits, without plate above the pit. Venter of pronotum without antennal grooves.

Last segment of tarsi very long, more than twice longer than the third (figs 220, 221). Claws large, simple (fig. 219).

DISTRIBUTION

Arabian Peninsula and Egypt.

REMARKS

Specimens from Egypt differ slightly from nominotypical form from Aden in green ground body colour (brown in holotype), slightly slimmer antennae, usually well marked longitudinal elevation in position of 2nd interval and usually less rugose puncturation of sides of pronotal disc. Both known localities of the species are separated by broad disjunction but it may be only an apparent difference because western coasts of Saudi Arabia are poorly known with respect to insect fauna. Thus, I have not decided to describe specimens from Egypt as a separate taxon because they may represent only an extreme form of geographically variable species. The differences of body ground colour between the holotype and specimens from Egypt depend probably on different methods of killing the beetles or different methods of their preservation.

MATERIAL EXAMINED

ADEN: Aden, 1, coll. DONCKIER (holotype, MM); Aden, 23 I 1903, 2, M. CAMERON (BMNH).

EGYPT: Wadi Hof (east of Cairo), 5 VI 1959, 2, 26 VI 1959, 2, 29 II 1960, 5, 9 VII 1960, 1, 30 XI 1962, 1, 7 II 1963, 1, R. VESELY (NMP, LB).

Genus: *Oocassida* WEISE, 1897

Oocassida WEISE, 1897: 110 (type species: *Cassida pudibunda* BOHEMAN, 1856, by monotypy); SPAETH, 1914: 88; HINCKS, 1952: 338; SEENO and WILCOX, 1982: 177; BOROWIEC, 1994 a: 12, 1999: 312.

Moderately large cassids, length 7-8 mm. Body oval. Pronotum with angulate sides and maximum width distinctly behind middle. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin narrow, punctate, not transparent. Elytral base as wide as pronotum. Elytral disc regularly convex, without tubercles or impressions. Puncturation very coarse, regular, intervals narrower than rows. Marginal row distinct. Explanate margin of elytra narrow, strongly deflexed, irregularly punctate, not transparent. Clypeus broad, flat, punctate, with distinct clypeal lines. Venter of pronotum with deep antennal grooves extending from each side of head to explanate lateral part of pronotum, the channel can accommodate whole antenna. Prosternal collar with lateral emargination and small plate above the emargination. Antennae stout, third segment slightly longer than the second, segments 8-10 wider than long. Last segment of tarsi not longer than the third, bilobate segment. Claws with large basal tooth.

A very distinct genus, the only one with venter of pronotum with deep and long antennal groove extending from each side of head to explanate lateral part; thus the channel can accommodate whole antenna.

Only one species in Subsaharian region and in East Africa. One species is known also from Northern Africa and three from India and Ceylon.

***Oocassida schultzei* SPAETH, 1917**

(figs 222-228, pl. 9: 7-10)

Oocassida Schultzei SPAETH, 1917: 437 (HT in MM), 1929 b: 238; BOROWIEC, 1999: 313.

Oocassida sudanensis SPAETH, 1929 b: 237 (ST in BMNH, MM); BOROWIEC, 1999: 313 (as syn. of *schultzei*).

Oocassida senegalensis SPAETH, 1929 b: 238 (ST in MM, NRS); BOROWIEC, 1999: 313 (as syn. of *schultzei*).

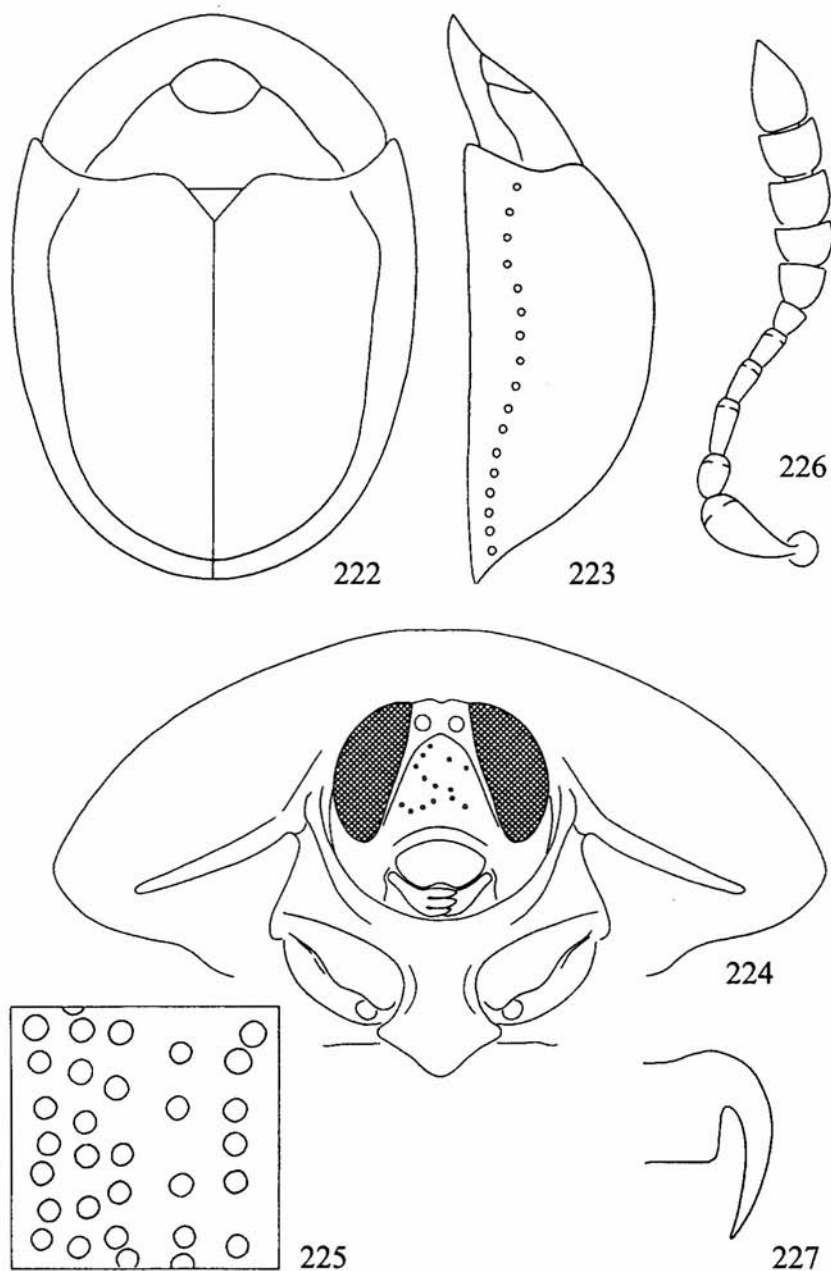
DESCRIPTION

Le: 5.7-6.6 mm, Wi: 4.1-4.65 mm, Lp: 2.2-2.5 mm, Wp: 3.6-4.1 mm, Le/Wi: 1.39-1.48, Wp/Lp ratio: 1.56-1.70. Body oval (fig. 222)

Polymorphic species. Pale form has pronotum and elytra uniformly yellow, dark form uniformly black. Intermediate, maculate form has elytral disc with reddish stripe along suture and along middle of each elytron, the stripe sometimes reduced to red areolae around elytral punctures. Head, ventrites, legs and antennae yellowish to brown, sometimes apex of last antennal segment infuscate.

Pronotum elliptical, with maximum width in the middle, sides angulate. Disc only slightly convex, not or indistinctly separated from explanate margin. Top of disc coarsely and densely punctate, surface appears irregular, in area above head puncturation sparser than on top of disc, surface not irregular. Explanate margin shallowly, but coarsely and densely punctate, its surface appears slightly irregular.

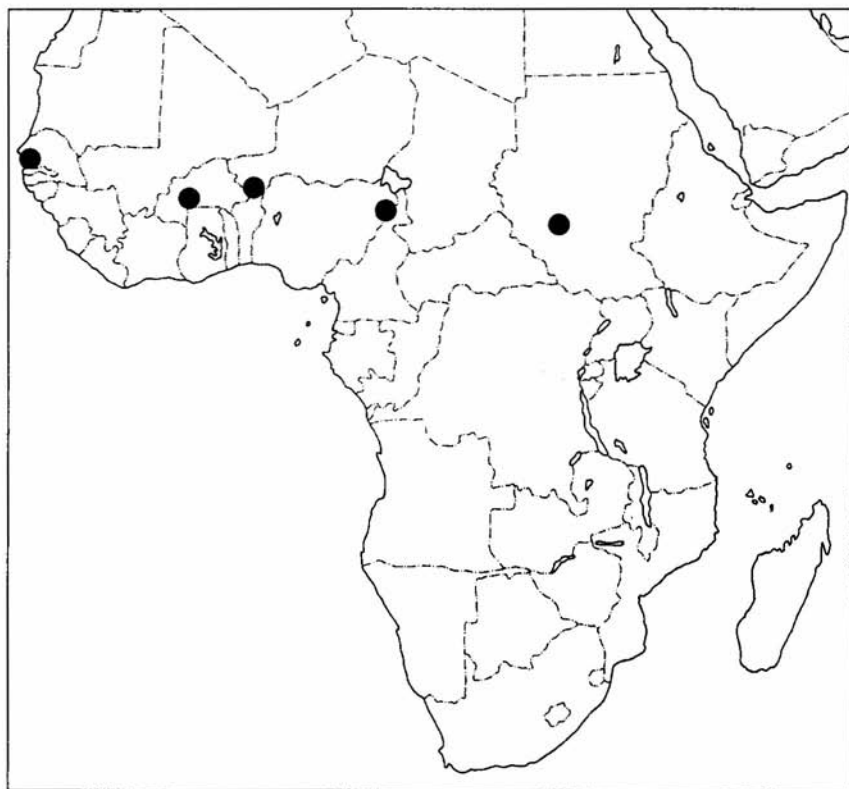
Scutellum triangular, with slightly irregular surface. Base of elytra as wide as or only slightly wider than pronotum, humeral angles moderately protruding



222-227. *Oocassida schultzei*: 222 – dorsal, 223 – lateral, 224 – head, prosternum and venter of pronotum, 225 – puncturation of central part of elytral disc, 226 – antenna, 227 – claw

anterad, more or less angulate. Basal margin of each disc of elytra finely crenulate. Disc regularly convex, without tubercles, gibbosities, or impressions (fig. 223). Punctuation very coarse, regular, rows impressed, especially on slope, punctures in rows very dense, partly touching each other (fig. 225). Intervals narrow, linear, narrower than rows, only third interval partly as wide as or slightly wider than neighbouring rows. Specimens with dark coloured elytra are slightly coarser punctate than pale specimens (in the genus *Oocassida* it is a rule that dark polymorphic forms are coarser punctate than pale forms). Marginal row distinct, with punctures only slightly coarser than in central rows. Marginal interval broad, in anterior part twice to thrice wider than three lateral intervals together. Surface of elytral disc appears more or less irregular. Explanate margin strongly deflexed, in widest part as wide as $1/8$ width of disc, its surface varies from almost impunctate, only slightly irregular, to shallowly and densely punctate, irregular. Elytral epipleura bare.

Clypeus moderately broad, c. 1.2 times as wide as long (fig. 224), flat, shiny, with few small punctures, clypeal lines fine but distinct, converging in arch. Labrum shallowly emarginate to $1/6$ length. Antennae stout, segments 9 and 10



228. Distribution of *Oocassida schultzei*

distinctly wider than long, length ratio of antennal segments: 100:43:65:48:43:35:48:41:52:52:104. Segment 3 c. 1.5 times longer than 2 and c. 1.4 times as wide as segment 4 (fig. 226).

Prosternal collar short, at sides with shallow emargination and small plate above the emargination. Venter of pronotum with deep antennal channels to accommodate whole antenna. Lower margin of the channel, close to prosternal collar, forms a plate in opposite position to the plate of lateral emargination of collar. Prosternal process flat or with indistinct impression in middle, apex with strongly expanded alae, surface of prosternal process mostly smooth, only apex with few punctures.

Last segment of tarsi slightly extending behind the penultimate segment. Claws large, with large basal tooth (fig. 227).

DISTRIBUTION

Subsaharian region from Senegal to Sudan (fig. 228).

REMARKS

Examination of numerous specimens from whole Subsaharian region indicates that all the three described Afrotropical *Oocassida* are conspecific. A pale aberration with reddish elytral pattern was described as *O. sudanensis*, uniformly brown specimens were named *O. senegalensis*. In Senegal both forms were collected in the same place. Such polymorphic forms were observed also in *O. cruenta* (F.) from India which is very similar to *O. schultzei*. Nominotypical form is the same as *O. sudanensis*, the character given by SPAETH (1929 c) in his key - slimmer body in *O. schultzei* - is illusory, he compared a glued specimen of *O. schultzei* to a pinned, slightly deformed specimen of *O. sudanensis*. The second character given in the diagnosis - broader pronotum in *O. sudanensis* - is under infraspecific variation, in material studied recently I found slim specimens with broad pronotum and stout specimens with relatively slim pronotum. Thus the character is not diagnostic. Specimen described under the name *O. schultzei* differs in indistinctly punctate elytral marginalia but the character is variable. I have observed specimens with marginalia from completely impunctate to distinctly, shallowly punctate. Similar variation in puncturation of marginalia was observed also in *O. cruenta*, the closest relative. Thus, the character is also not diagnostic. As a result, in this monograph all the three Afrotropical taxa described by SPAETH are treated as one variable species, the point of view adopted also in my world catalogue of Cassidinae (BOROWIEC 1999).

MATERIAL EXAMINED

BURKINA FASO: Pundu, 3, OLSUFIEW (NRS, LB).

NIGER: Boti, II 1895, 2 (LB).

NIGERIA: Dure, 31 X 1903, 1, SCHULTZE (holotype of *schultzei*, MM).

SENEGAL: Bambey, 6, J. RISBEC (IFAN, LB); Ht. Senegal, Khayu, 17 (LB); Senegal, 1 (syntype of *senegalensis*, MM); Senegal, 1, TARNIER (syntype of *senegalensis*, NRS); Thies, 1 (LB).

SUDAN: Gendettu, 12 XII 1923, 1, 3 III 1925, 1, XI 1925, 1, W.E. GIFFARD (syntypes of *sudanensis*, MM, BMNH).

Genus: *Orobiocassis* SPAETH, 1934

Orobiocassis SPAETH, 1934: 392 (type species: *Cassida gabonica* SPAETH, 1933, by original designation); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 18, 1999: 313.

Small to moderately large cassids, body length 5-7 mm. Body oval, very convex. Pronotum reversely trapezoidal, with maximum width in or slightly before middle. Pronotal disc indistinctly separated from explanate margin, punctate, or granulate, or wrinkled. Explanate margin broad, rough, not transparent. Elytral base only slightly wider than pronotum. Elytral disc with postscutellar impression, sometimes with longitudinal costae. Punctuation of disc completely irregular. Marginal row distinct. Explanate margin of elytra broad, strongly deflexed, rough, not transparent. Clypeus broad, flat, punctate, with distinct clypeal grooves converging in triangle. Venter of pronotum without antennal grooves, but area close to lateral sides of head impressed. Prosternal collar without lateral emargination. Antennae stout, third segment distinctly longer than the second, segments 8-10 usually wider than long. Last segment of tarsi as long as the third, bilobate segment. Claws simple.

It is well characterized by not transparent marginalia, strongly convex body, venter of pronotum without distinct antennal grooves and clypeus with deep clypeal grooves. A similar body shape is found in *Chelysida* FRM. and *Ischiocassis* SP. The former genus distinctly differs in toothed claws, prosternal collar with lateral emargination, and venter of pronotum with distinct antennal grooves, the latter in venter of pronotum with distinct antennal grooves and mostly regular elytral punctuation.

Three species in South Africa.

KEY TO SPECIES

1. Elytra at least in position of 3rd interval with longitudinal elevation or costa; postscutellar point connected with the elevation by more or less marked transverse ridge. Postscutellar impressions deep.
..... 2.
- Elytra without distinct longitudinal elevations, only in position of 3rd interval in posterior half and position of 5th in middle with impunctate line. Postscutellar point not connected with the impunctate line. Postscutellar impressions shallow, barely visible.
..... *consimilis*

2. Elytra in position of 3rd interval on whole length and 5th interval in middle with low elevation, in position of 7th interval without or in middle with barely marked elevation. Postscutellar impressions shallower, no principal impression.

..... *gabonica*

- . Elytra in position of 3rd interval on whole length and 5th interval in middle with sharp costa, in position of 7th interval in middle at least with obtuse elevation. Postscutellar impressions deeper, principal impression present.

..... *testudinea*

***Orobiocassis consimilis* (BOHEMAN, 1854)**

(figs 229-234, pl. 10: 1-2)

Cassida consimilis BOHEMAN, 1854: 477 (HT in NRS), 1856: 144, 1862: 346; GEMMINGER and HAROLD, 1876: 3652.

Cassida (*Cassida*) *consimilis*: SPAETH, 1914: 118.

Orobiocassis consimilis SPAETH, 1939: 19; BOROWIEC, 1999: 313.

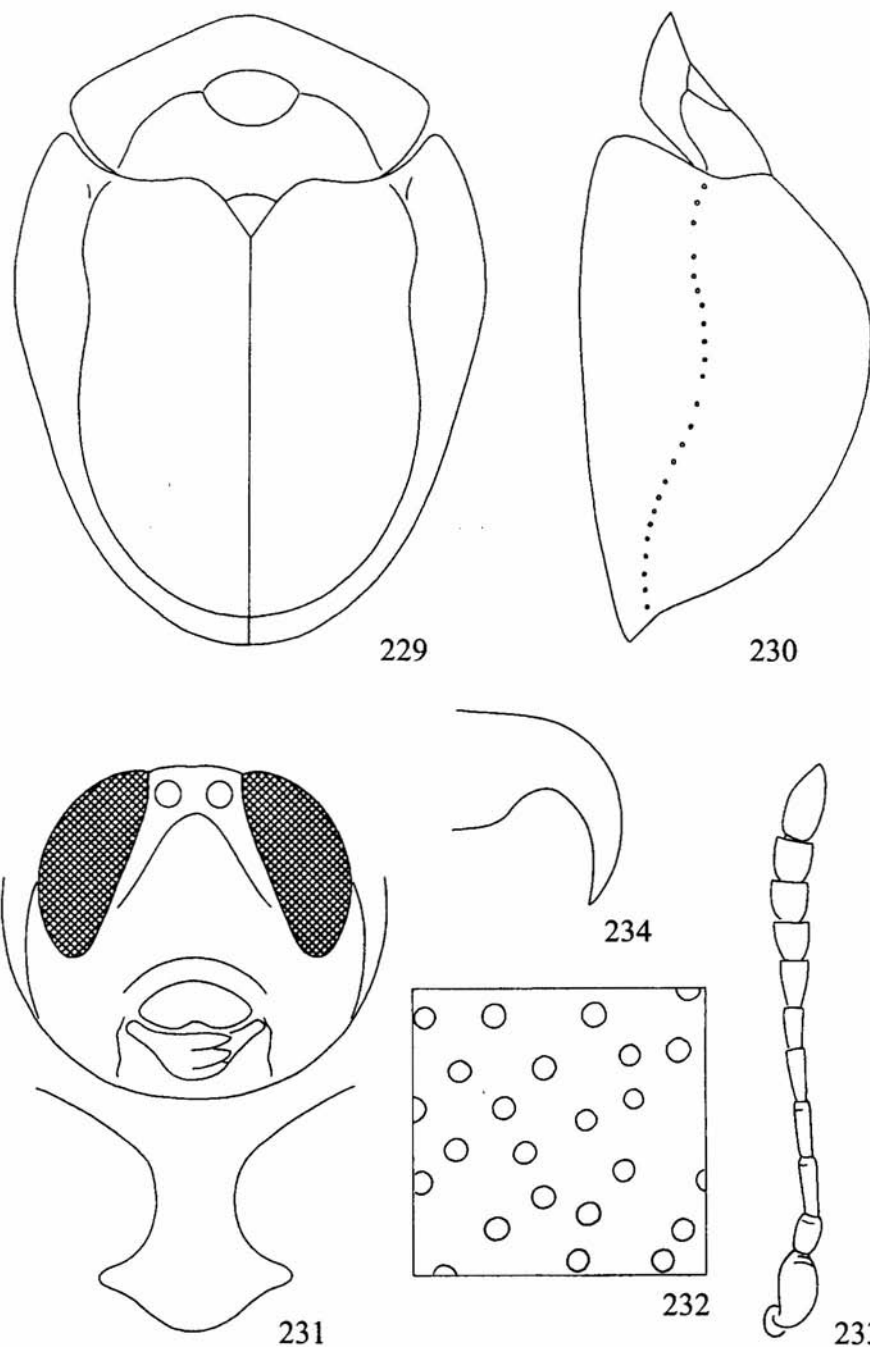
DESCRIPTION

Le: 6.6 mm, Wi: 4.75 mm, Lp: 2.1 mm, Wp: 3.55 mm, Le/Wi: 1.39, Wp/Lp ratio: 1.69. Body oval, strongly convex (fig. 229).

Pronotum and elytra brown, ventrites, legs and antennae yellowish-brown.

Pronotum reversely trapezoidal, with maximum width in anterior fourth, anterior margin only slightly rounded, anterior corners well marked, angulate. Disc only slightly convex, indistinctly separated from explanate margin; area above head smooth, top and sides of disc finely wrinkled, finer than in both congeners, surface appears slightly irregular. Explanate margin quite broad, impunctate, its surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra only slightly wider than pronotum, humeri strongly protruding anterad, obtuse. Basal margin of each disc indistinctly crenulate. Disc strongly, evenly convex, with top of convexity before middle (fig. 230), postscutellar impressions very shallow, barely marked, principal and lateral impressions absent. Punctuation completely irregular (fig. 232), moderately coarse and moderately dense, distance between punctures from slightly narrower to 1.5 times as wide as puncture diameter, surface of disc appears regular. In position of 3rd interval in posterior half, and position of 5th interval in middle run impunctate lines, first line only in apical part slightly elevated. Marginal interval and marginal row well marked in anterior 1/3 length, then vanishing between punctuation of disc and explanate margin. Explanate margin broad, almost perpendicular to surface of abdomen, in the widest part as wide as 1/4 width of disc, in apical part as wide as diameter of two to three punctures of disc combined. Surface of explanate margin distinctly, shallowly



229-234. *Orobiocassis consimilis*: 229 – dorsal, 230 – lateral, 231 – head, pronotum and venter of pronotum, 232 – puncturation of central part of elytral disc, 233 – antenna, 234 – claw

punctate, punctures distinctly coarser but sparser than on disc, completely irregular, surface appears slightly irregular. Slope and apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.3 times as wide as long, with deep clypeal lines converging in triangle (fig. 231). Surface of clypeus flat, in anterior part with short grooves and few small punctures, dull. Labrum not emarginate. Venter of pronotum along sides of head deeply impressed, deeper than in both congeners. Prosternal collar short, without lateral emargination. Prosternal process between coxae narrow, strongly expanded apically, in middle flat, apex slightly swollen, on sides with few shallow punctures, surface appears regular. Antennae moderately slim, segments 9 and 10 slightly longer than wide, length ratio of antennal segments: 100:67:100:100:93:73:80:67:67:70:133. Segments 3 and 4 c. 1.5 times as long as segment 2 (fig. 233).

Legs stout, covered by sparse, adherent setae. Claws simple (fig. 234).

DISTRIBUTION

South Africa: Cape.

REMARKS

It is well distinguished by its regular surface of elytral disc, without elevations or costae.

MATERIAL EXAMINED

SOUTH AFRICA: Cap. B. Spei, 1, DREGE (holotype, NRS).

***Orobiocassis gabonica* SPAETH, 1933**

(figs 235-241, pl. 10: 3-4)

Cassida gabonica SPAETH, 1933: 348 (ST in MM).

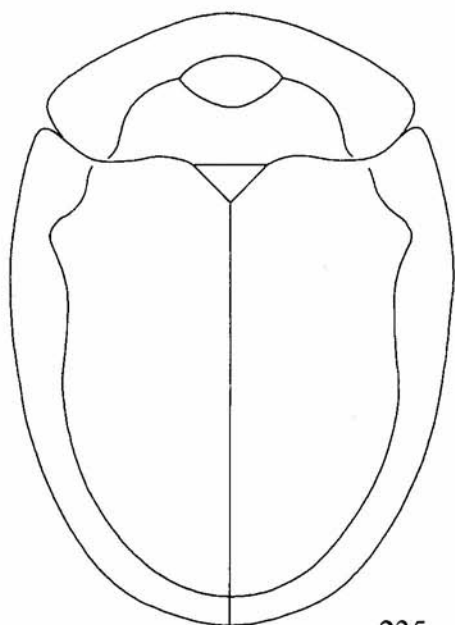
Orobiocassis gabonica: SPAETH, 1934: 392; BOROWIEC, 1999: 313.

DESCRIPTION

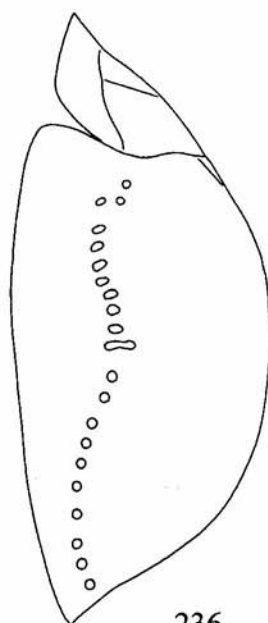
Le: 5.9-6.8 mm, Wi: 4.3-4.8 mm, Lp: 2.0-2.2 mm, Wp: 3.6-3.95 mm, Le/Wi: 1.37-1.42, Wp/Lp ratio: 1.73-1.80. Body oval, moderately convex (fig. 235).

Pronotum and elytra brown, clypeus black basally, brown apically; pro- and mesothorax completely black, metathorax, except brownish lateral plates, and central part of abdomen black. Legs yellowish-brown, bases of femora narrowly black. Antennae yellowish-brown, sometimes last segment infuscate.

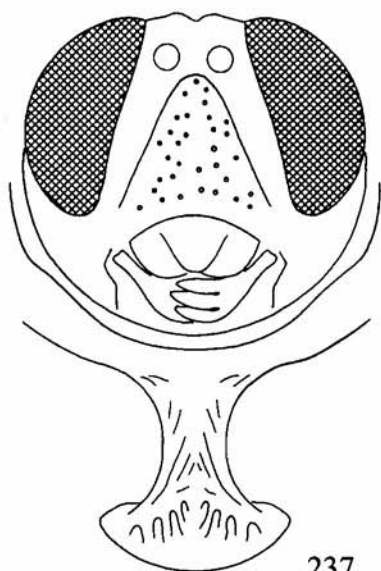
Pronotum reversely trapezoidal, with maximum width in anterior third, anterior margin slightly more rounded than in related *O. consimilis*, anterior corners well marked, angulate. Disc only slightly convex, indistinctly separated from explanate margin; area above head smooth, top and sides of disc finely wrinkled, slightly more so than in *O. consimilis* but less so than in *O. testudinea*, surface



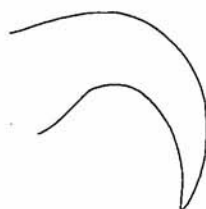
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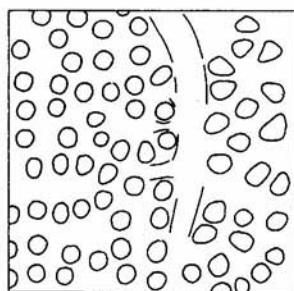
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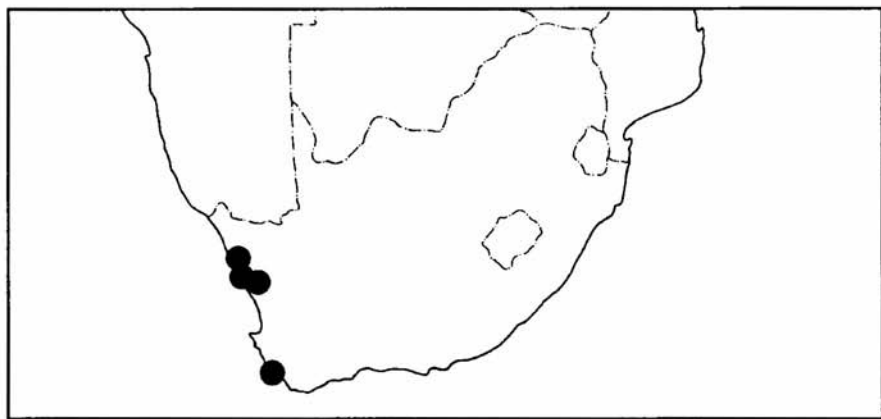
235-240. *Orobiocassis gabonica*: 235 – dorsal, 236 – lateral, 237 – head and prosternum, 238 – punctuation of central part of elytral disc, 239 – antenna, 240 – claw

appears irregular. Explanate margin quite broad, impunctate, its surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra only slightly wider than pronotum, humeri strongly protruding anterad, obtuse. Basal margin of each disc finely crenulate. Disc strongly, evenly convex, with top of convexity before middle (fig. 236), postscutellar impressions shallow, well marked, principal and lateral impressions absent. Punctuation completely irregular (fig. 238), slightly coarser and denser than in *O. consimilis*, distance between punctures mostly narrower than puncture diameter, surface of disc appears regular. In position of 3rd interval on almost whole length, and position of 5th interval in middle run impunctate narrow elevations, the inner elevation connected with top of postscutellar point by obtuse ridge. Marginal interval visible only in anterior 1/3 length, marginal row distinct on almost whole length, with punctures twice coarser than on disc. Explanate margin broad, almost perpendicular to surface of abdomen, but slightly less perpendicular than in *O. testudinea*, in the widest part as wide as 1/4 width of disc, in apical part as wide as diameter of two to three punctures of disc together. Surface of explanate margin very shallowly punctate, surface appears slightly irregular. Slope and apex of elytral epipleura bare.

Clypeus broad, c. 1.4 times as wide as long, with very deep clypeal lines converging in triangle (fig. 237). Surface of clypeus flat, in anterior part with short grooves and few small punctures, dull. Labrum not emarginate. Venter of pronotum along sides of head impressed, less deep than in *O. consimilis*. Prosternal collar short, without lateral emargination. Prosternal process between coxae narrow, strongly expanded apically, before apex impressed, surface with longitudinal and oblique folds, appears irregular. Antennae moderately slim, segments 9 and 10 c. 1.2 times as long as wide, length ratio of antennal segments: 100:58:88:76:82:65:70:58:62:62:118. Segment 3 c. 1.5 times as long as 2 and c. 1.2 times as long as segment 4 (fig. 239).

Legs stout, covered by sparse, adherent setae. Claws simple (fig. 240).



241. Distribution of *Orobiocassis gabonicola*

DISTRIBUTION

South Africa: Cape (fig. 241).

REMARKS

The holotype specimen has probably been mislabelled or original name of the true *terra typica* has been distorted. Members of the genus *Orobiocassis* are exclusively South African and associated with dried habitats of SW part of South Africa.

O. gaboncola is intermediate between *O. consimilis* and *O. testudinea*. Its surface of elytral disc is quite regular, with only low, obtuse elevations – in position of 3rd interval on whole length of disc, and in position of 5th interval in middle, sometimes in position of 7th interval in middle with barely marked elevation, while in *O. testudinea* these elevations are high and sharp and surface of elytra appears slightly irregular, and in *O. consimilis* there are only impunctate lines, no elevations. Elytral disc in *O. gaboncola* is slightly less convex than in *O. testudinea* and *O. consimilis*.

MATERIAL EXAMINED

?GABON: Gabon, 1 (holotype, MM).

SOUTH AFRICA: Cape Muizenberg, 10-25 X 1989, 1, R. LEGG (MRAC); Cape, Namaqualand., Hoekbaai 2 km ENE, 27 VIII 1979, 2, S. ENDRÖDY-YOUNGA (TM); Cape, Seweputs farm, 31.39 S 18.22 E, 22 VIII 1981, 1, S. ENDRÖDY-YOUNGA (LB); Namaqua coast, Soutpan dunes, 13 IX 1987, 1, ENDRÖDY-YOUNGA (TM).

***Orobiocassis testudinea* (BOHEMAN, 1854)**

(figs 242-247, pl. 10: 5-6)

Cassida testudinea BOHEMAN, 1854: 469 (LT and PLT in NRS), 1856: 142, 1862: 344; GEMMINGER and HAROLD, 1876: 3659.

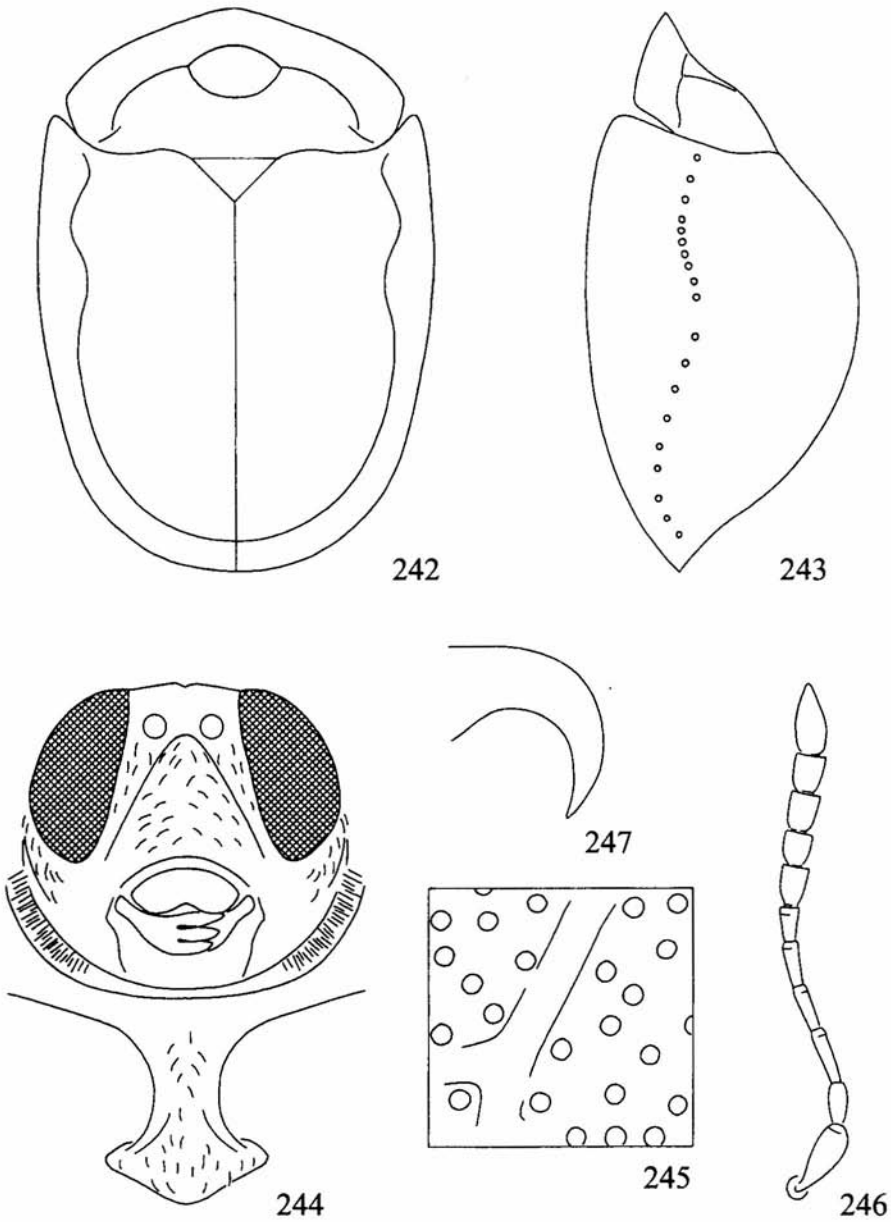
Chelysida testudinea: SPAETH, 1914: 86.

Orobiocassis testudinea: SPAETH, 1934: 392; BOROWIEC, 1999: 313.

DESCRIPTION

Le: 5.2-7.01 mm, Wi: 3.8-5.5 mm, Lp: 1.9-2.3 mm, Wp: 3.2-4.3 mm, Le/Wi: male 1.27-1.30, female 1.43-1.48, Wp/Lp ratio: 1.60-1.87. Body oval, extremely convex (fig. 242).

Pronotum and elytra brown, elevated parts of elytral disc usually marked with numerous small black spots, sometimes markings reduced to only spot on postscutellar elevation and one to two spots on border elevations of postscutellar impressions; ventrites from mostly yellow with black spot only in middle of metathorax, to mostly black with only apical half of clypeus brown, lateral parts of metathorax and margins of abdomen; legs brown, only bases of femora narrowly black; antennae yellowish-brown, sometimes distal five to seven segments infusate.

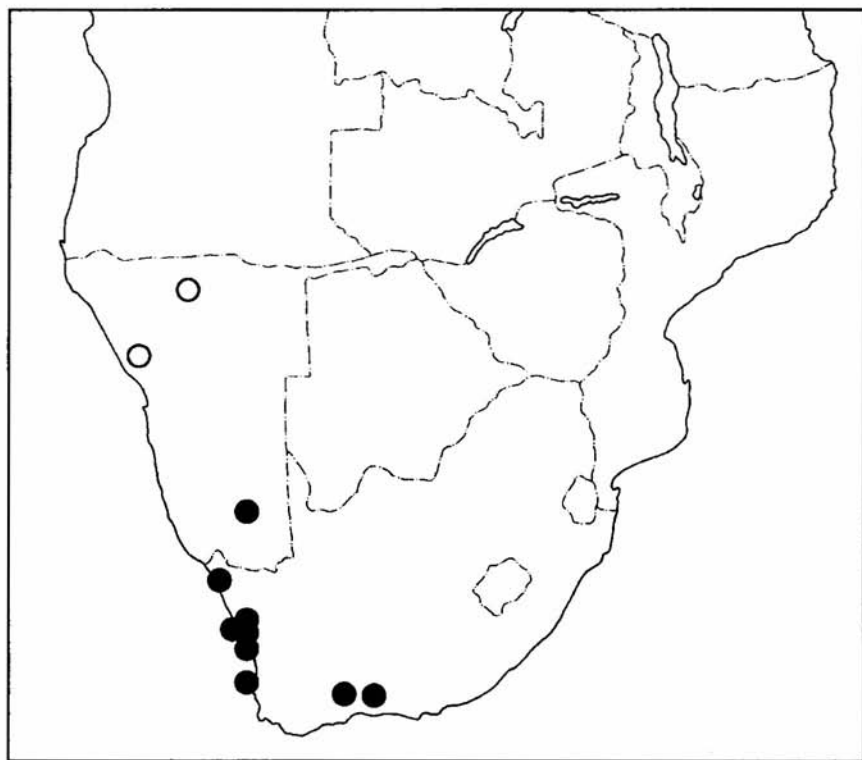


242-247. *Orobiocassis testudinea*: 242 – dorsal, 243 – lateral, 244 – head and prosthernum, 245 – puncturation of central part of elytral disc, 246 – antenna, 247 – claw

Specimens from Namibia have ventrites darker coloured than specimens from Cape.

Pronotum reversely trapezoidal, with maximum width in anterior fourth or third, anterior margin from almost straight to slightly unevenly rounded, anterior corners well marked, angulate. Disc only slightly convex, indistinctly separated from explanate margin; area above head smooth or slightly granulate, top and sides of disc finely to moderately wrinkled, stronger than in both congeners, surface appears more or less irregular. Explanate margin quite broad, impunctate, its surface appears slightly irregular. Specimens from Namibia have pronotal sculpture stronger developed than specimens from Cape.

Scutellum triangular, without punctures or sulci. Base of elytra only slightly wider than pronotum, humeri strongly protruding anterad, obtuse. Basal margin of each disc distinctly crenulate. Disc strongly, evenly convex, with top of convexity in postscutellar point (fig. 243), postscutellar impressions distinct, distinctly deeper than in congeners, bordered by elevations, principal and lateral impressions absent. Puncturation completely irregular (fig. 245), moderately coarse and dense, distance between punctures mostly narrower than puncture diameter, surface of



248. Distribution of *Orobiocassis testudinea* (black circles) and *Oxylepus intermedius* (white circles)

disc appears regular. In position of 3rd interval, and position of 5th interval in middle run sharp costae, also in position of 7th interval in middle runs obtuse elevation. Inner costa connected with border elevation of postscutellar impressions, and by transverse ridge connected with postscutellar point. Marginal interval visible only in anterior 1/3 length, marginal row distinct on almost whole length, with punctures twice coarser than on disc. Explanate margin broad, almost perpendicular to surface of abdomen, in the widest part as wide as 1/4 width of disc, in apical part as wide as diameter of two to three punctures of disc together. In large specimens from Namibia external fourth of explanate margin has tendency to become horizontal, less deflexed than inner parts of the margin. Surface of explanate margin very shallowly punctate, surface appears slightly irregular. Whole surface of disc, especially in fresh specimens, covered by very short and sparse, barely visible adherent setae. Apex of elytral epipleura bare.

Clypeus broad, c. 1.4 times as wide as long, with moderately deep clypeal lines converging in triangle (fig. 244). Surface of clypeus flat, from almost impunctate to distinctly punctate (in specimens from Namibia), dull. Labrum shallowly emarginate. Venter of pronotum along sides of head deeply impressed. Prosternal collar short, without lateral emargination. Prosternal process between coxae narrow, strongly expanded apically, in middle flat, apex slightly swollen, with few elongate punctures and folds, surface appears regular. Antennae moderately slim, segments 9 and 10 only slightly longer than wide, length ratio of antennal segments: 100:68:93:75:68:56:68:56:62:62:118. Segment 3 c. 1.4 times as long as 2 and c. 1.2 times as long as segment 4 (fig. 246).

Legs stout, covered by sparse, adherent setae. Claws simple (fig. 247).

DISTRIBUTION

Southern Africa: Namibia and Cape (fig. 248).

REMARKS

O. tesudinea is the most convex species, with the best developed sculpture of elytral disc forming sharp, longitudinal elevations – in position of 3rd interval on whole length of disc, and in position of 5th interval in middle, also in position of 7th interval in middle with obtuse elevation.

MATERIAL EXAMINED

NAMIBIA: Klein Karas, 1 (LB); Ovambi, 1, PÉRINGUEY (NRS).

SOUTH AFRICA: Cap. B. Spei, 2 (lectotype and paralectotype, NRS), 1 (MCSNM); Cape, Karroo, Zwartskraal farm, 1 II 1979, 1, R. OOSTHUIZEN (TM); Cape SW, Lamberts Bay, 7-9 X 1999, 1, 28 X 1999, 1, M. SNIZEK (MS, LB); Cape SW, Langebaanweg, 24 VIII 1983, 1, ENDRÖDY & PENRITH (TM); Cape, Namaqualand, Kotzersrus, 23 VIII 1979, 1, S. ENDRÖDY-YOUNGA (TM); Cape, Papendorp dunes, 31.38 S 18.12 E, 21 VIII 1981, S. ENDRÖDY-YOUNGA (LB); Cape Prov., Spektakelberg, 29.41 S 17.40 E, 13-15 IX 1982, 1, M.-L. PENRITH (WM), on Schaap Rivier, Namaqualand, 13-15 IX 1982, 1, S. LOUW (BM); Cape

Prov., Titiesbaai, 12 IX 1985, 1, ENDRÖDY-YOUNGA (TM); Cape SW, Verlorerlei farm, 28 VIII 1981, 2, S. ENDRÖDY-YOUNGA (TM); Cape, Willowmore, 1, Dr. BRAUNS (LB); Cape Prov., Zandkraal farm, 12 IX 1987, 1, ENDRÖDY-YOUNGA (TM).

Genus: *Oxylepus* DESBROCHERS, 1884

Oxylepus DESBROCHERS, 1884: 170 (type species: *Oxylepus capucinus* DESBROCHERS, 1884 = *Cassida deflexicollis* BOHEMAN, 1862, designated by HINCKS, 1952: 338); SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 18, 1999: 313.

Oxylepis DESBROCHERS, 1891: 6 (emend.); SPAETH, 1914: 86; HINCKS, 1952: 338.

Oxylepis sgen. *Embolocassis* SPAETH, 1936: 11 (type species: *Oxylepis (Embolocassis) cuneipennis* SPAETH, 1936, by monotypy); HINCKS, 1952: 338 (as subgenus); SEENO and WILCOX, 1982: 176 (as subgenus); BOROWIEC, 1999: 313 (as syn.).

Very small cassids, body length 3-4 mm. Body cylindrical, or converging posterad but extremely convex. Pronotum angulate on sides, with maximum width usually before middle. Pronotal disc indistinctly separated from explanate margin, sometimes gibbous, usually punctate. Explanate margin strongly deflexed, punctate. Elytral base only slightly wider than pronotum. Elytral disc extremely convex, sometimes with gibbositities or tubercles, or with deep impressions. Punctuation of disc sparse, irregular. Marginal row usually absent or barely marked in anterior third of elytron, occasionally distinct along whole border of disc. Explanate margin of elytra very broad, strongly deflexed, almost perpendicular to surface of abdomen, punctate. Clypeus moderately broad to broad, flat, clypeal lines indistinct or fine, converging in circle or triangle, sometimes visible only in their basal half. Venter of pronotum without antennal grooves. Prosternal collar without lateral emargination. Prosternal process between coxae very narrow, narrower than width of second antennal segment. Antennae stout, third segment not longer than the second, segments 8-10 wider than long or at most equal in length and width. Last segment of tarsi from slightly shorter to slightly longer than the third, bilobate segment. Claws short, simple.

A very distinct genus, well characterized by very small body and extremely convex pronotum and elytra. Some small species of *Cassida* L. of *C. litigiosa* group are similar but no species has such wide and as strongly deflexed elytral marginalia as in *Oxylepus*. *Limnocassis* Sp. has similar size and strongly convex elytra, but differs in very narrow explanate margin of elytra and rounded sides of pronotum. Members of the genus *Trichaspis* Sp. have also similar body size but differ in pubescent or/and setose pronotum and elytra. The genus *Oxylepus* is also unique in its association with saline plants.

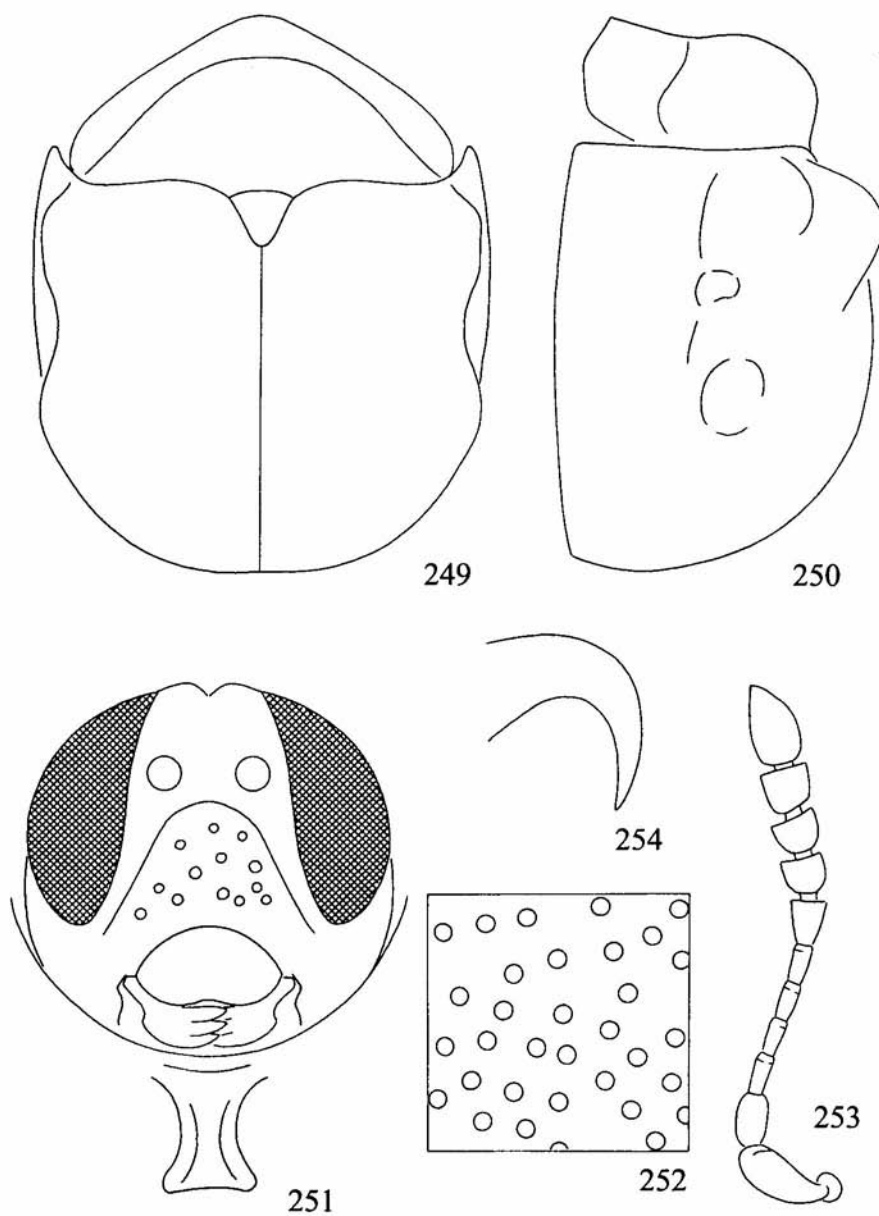
The genus has a disjunct distribution. One group of species occurs in the Mediterranean Subregion, Arabian Peninsula and NE Africa, the second group of species occurs in the south-western part of South Africa. The disjunction is caused by the biological preferences, because the genus is associated exclusively with saline plants of the family Chenopodiaceae distributed mostly on sea coasts or saline semideserts.

SPAETH (1936) proposed a new subgenus for *O. cuneipennis* Sp. based on its different body shape in comparison with other South African species. The number of new species described below shows that the genus is very diverse in general body shape and its division into subgenera is unnecessary.

KEY TO SPECIES

1. Elytral surface regular, without tubercles or impressions 2.
- Elytral surface with tubercles or/and distinct impressions. 5.
2. Elytra oval in outline, only slightly converging posterad. Base of elytra not or only slightly wider than pronotum. Pronotal disc finely and shallowly punctate, sometimes appears impunctate. 3.
- Elytra cuneiform in outline, distinctly converging posterad. Base of elytra distinctly wider than pronotum. Pronotal disc coarsely and deeply punctate. *cuneipennis*
3. Punctuation of elytra extremely dense, completely irregular, punctures almost touching each other. Elytra never maculate. South African species. 4.
- Punctuation of elytra moderately dense, often with tendency to form rows, distance between punctures partly or mostly wider than puncture diameter. Elytra often with dark spots on suture. NE Africa, Tanzania, and Arabian Peninsula. *kossmati*
4. Larger: Le 4.1-4.3 mm. Body stouter: Le/Wi 1.41-1.43, elytra slightly more rounded on sides. *cicatricosus*
- Smaller: Le 3.5-3.9 mm. Body slimmer: Le/Wi 1.45-1.63, elytra slightly less rounded on sides. *capensis*
5. Elytra with at least four tubercles. 6.
- Elytra with at most two tubercles, or without tubercles but with oblique impressions. 8.

6. Elytra with at least six tubercles.
..... 7.
- Elytra with only four tubercles, two in mid part of elytra often very low.
Namibia.
..... *intermedius*
7. Pronotal disc moderately gibbous. W and S Cape Province.
..... *sextuberculatus*
- Pronotal disc extremely gibbous. Namibia and W Cape Province.
..... *convexicollis*
8. Elytral disc distinctly swollen between humeral callus and scutellum, forms
two broad tubercles. Posterior border of these tubercles not or shallowly
impressed, punctures in impressions not coarser than in neighbouring parts of
disc.
..... 9.
- Elytral disc not or only slightly swollen between humeral callus and scutellum
but with oblique impression running from postscutellar point to posthumeral
area. Punctures in impressions distinctly coarser than in neighbouring parts of
disc.
..... 10.
9. Pronotal disc strongly gibbous.
..... *bituberculatus*
- Pronotal disc only slightly convex.
..... *planicollis*
10. Elytral impressions deep but with a fewer coarse punctures. Impunctate inter-
val 2 well visible in anterior 2/3 part of disc. Anterior margin of pronotal disc
distinctly separated from explanate margin by an elevation. Puncturation of
pronotal disc dense, but distance between punctures usually as wide as to
slightly wider than puncture diameter. Namibia, Cape and Oranje Provinces in
South Africa.
..... *grobelaarae*
- Elytral impression shallow but with great number of coarse punctures.
Impunctate interval 2 well visible only in impressed area. Anterior margin of
pronotal disc indistinctly separated from explanate margin. Puncturation of
pronotal disc extremely dense, punctures almost touching each other. Na-
mibia.
..... *impressipennis*



249-254. *Oxylepus bituberculatus*: 249 – dorsal, 250 – lateral, 251 – head and prosternum, 252 – punctuation of central part of elytral disc, 253 – antenna, 254 – claw

Oxylepus bituberculatus n. sp.

(figs 249-255, pl. 11: 9-10)

ETYMOLOGY

Named after two gibbosities in anterior part of elytral disc.

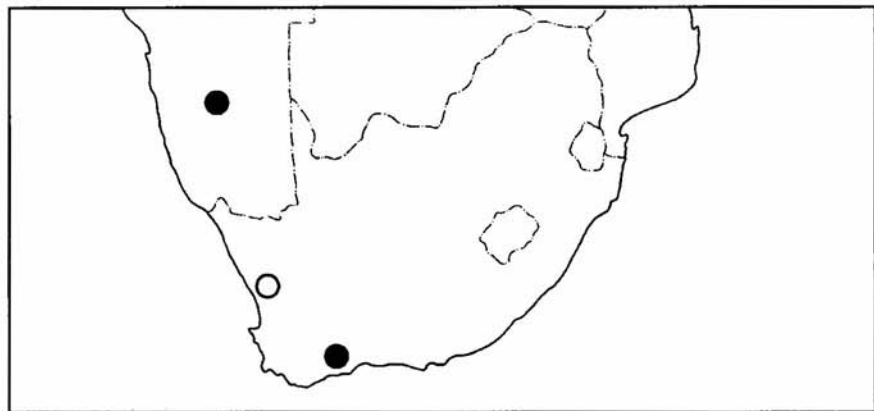
DESCRIPTION

Le: 3.5-3.6 mm, Wi: 2.6-3.0 mm, Lp: 1.5-1.6 mm, Wp: 2.20-2.35 mm, Le/Wi: 1.20-1.35, Wp/Lp: 1.38-1.57. Body short-oval (fig. 249)

Body uniformly pale yellow.

Pronotum reversely trapezoidal. Anterior margin distinctly concave in middle, anterior corners well marked but obtuse. Disc convex, gibbous, on top of the gibbosity shallowly canaliculate. Punctuation coarse, shallowly impressed, dense, distance between punctures mostly as wide as puncture diameter, surface appears slightly irregular. Explanate margin not separated from disc, punctured like disc, transparent anterior margin narrow.

Scutellum triangular, slightly longer than wide, smooth, impunctate. Elytra as wide as pronotum. Each elytron between humeral callus and scutellum with large, obtuse tubercle, posterior border of the gibbosity not or very shallowly impressed (fig. 250). Each elytron on slope with low, indistinct, elevated transverse line. Punctuation of disc moderately coarse and very dense (fig. 252). Distance between punctures mostly narrower than puncture diameter. Surface between punctures appears slightly irregular. Marginal row invisible, area behind humeral callus deeply impressed. Explanate margin very broad, as wide as 1/3 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, slightly coarser than on disc, especially area below humeral callus coarser but sparser punctate than disc. Humeral angles moderately protruding anterad, obtuse.



255. Distribution of *Oxylepus bituberculatus* (white circle) and *Oxylepus convexicollis* (black circles)

Clypeus broad, c. 1.3 times wider than long (fig. 251). Clypeal grooves fine but distinct, converging in triangle. Surface of clypeus coarsely densely punctate, punctures almost touching each other, surface appears irregular. Antennae stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:75:55:50:47:47:60:50:50:57:110. Segment 2 c. 1.4 times as long as segment 3, and c. 1.5 times as long as segment 4 (fig. 253).

Claws simple (fig. 254). Ventrites without diagnostic characters.

HOST PLANT

Chenopodiaceae: *Salsola zeyheri* (new record).

DISTRIBUTION

South Africa: Cape (fig. 255).

REMARKS

It is well distinguished by elytra with only one elytral tubercle placed between humeral callus and scutellum. Only *O. planicollis* has similar characters but differs in less convex pronotal disc, denser puncturation of pronotal disc and explanate margin of elytra, and more obtuse and lower basal elytral tubercles. *O. sextuberculatus* and *O. convexicollis* differ in at least three tubercles on each elytron, *O. intermedius* differs in two tubercles on each elytron. Pronotal disc in *O. bituberculatus* is distinctly more gibbous than in *O. sextuberculatus*, like in *O. convexicollis* and *O. intermedius*. Anterior tubercles of *O. intermedius* are smaller and less distinctly separated from disc than in *O. bituberculatus*, while anterior tubercles of *O. convexicollis* and *O. sextuberculatus* are smaller but higher than in *O. bituberculatus*.

MATERIAL EXAMINED

SOUTH AFRICA: holotype: "C.P. 4 k W Vanrhynsdorp, 31.37S 18.42E, 17 IX 1986, R. OBERPRIELER" "collected on *Salsola zeyheri*" (NIC); 4 paratypes: the same data (NIC, LB).

Oxylepus capensis SPAETH, 1933

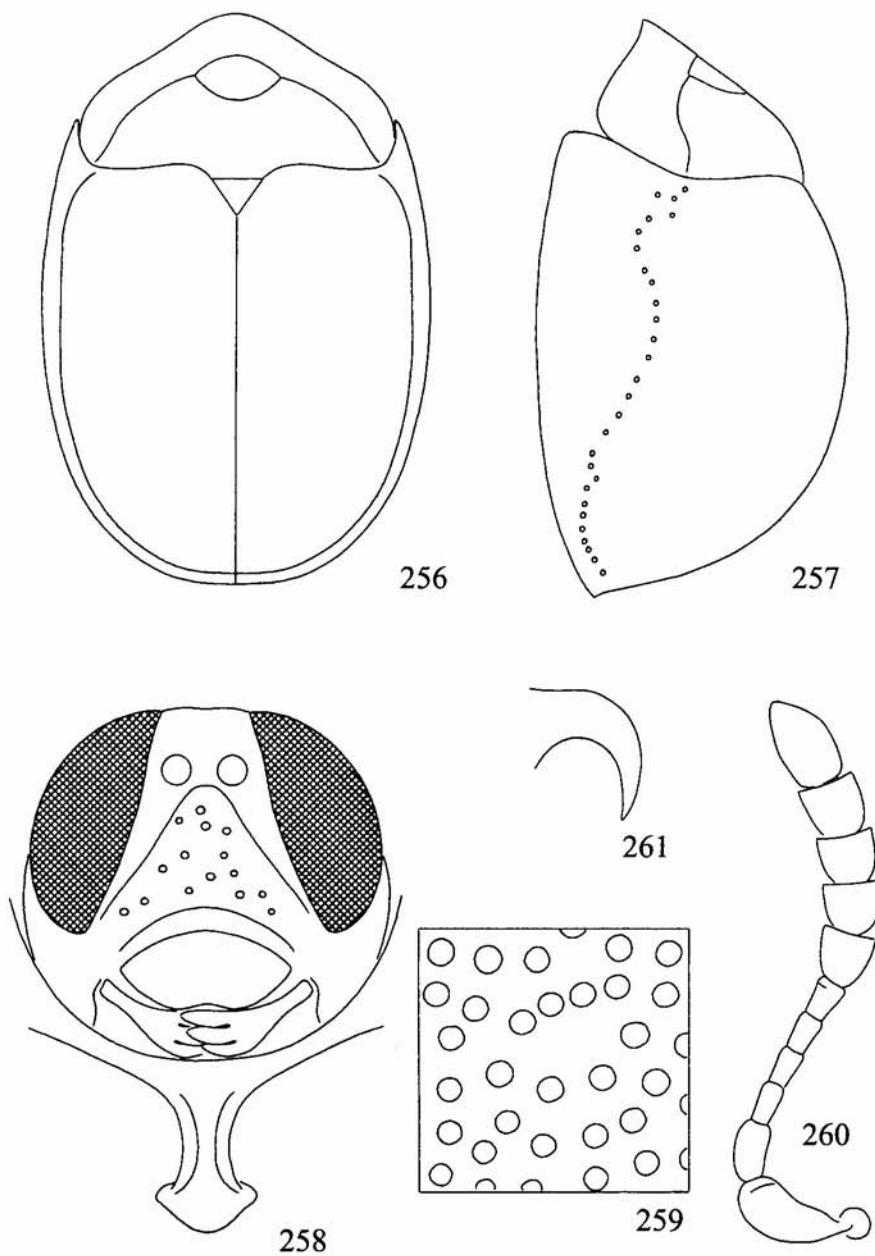
(figs 256-262, pl. 11: 1-2)

Oxylepus capensis SPAETH, 1933: 357 (HT in BMNH); HERON and BOROWIEC, 1997: 633; BOROWIEC, 1999: 313.

DESCRIPTION

Le: 3.5-3.9 mm, Wi: 2.35-2.6 mm, Lp: 1.4-1.5 mm, Wp: 1.9-2.05 mm, Le/Wi: 1.45-1.63, Wp/Lp: 1.30-1.41. Body short-oval (fig. 256).

Body uniformly pale yellowish-green.



256-261. *Oxylepus capensis*: 256 – dorsal, 257 – lateral, 258 – head and prosternum, 259 – puncturation of central part of elytral disc, 260 – antenna, 261 – claw

Pronotum reversely trapezoidal. Anterior margin straight, anterior corners well marked but obtuse. Disc moderately, regularly convex, impunctate, dull, but surface in some specimens appears slightly irregular. Explanate margin not separated from disc, impunctate, transparent anterior margin from moderately broad to broad.

Scutellum triangular with rounded apex, smooth, impunctate. Base of elytra not wider from pronotum. Disc regularly convex, with top of convexity in mid length of elytra, surface of disc with no tubercles, elevations or impressions, humeral calli barely marked (fig. 257). Puncturation of disc coarse and very dense, distance between punctures from narrower to slightly wider than puncture diameter (fig. 259). Surface between punctures appears slightly irregular, dull. Marginal row invisible, area behind humeral callus not impressed, but impunctate marginal interval visible in anterior half of disc. Explanate margin broad, slightly wider than 1/4 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, like on disc. Humeral angles moderately protruding anterad, subangulate.

Clypeus broad, c. 1.5 times wider than long (fig. 258). Clypeal grooves vary from indistinct, to well visible especially in its basal half, converging in triangle. Surface of clypeus with several moderately coarse punctures, distance between punctures distinctly wider than puncture diameter, interspaces smooth and shiny. Antennae stout, length ratio of antennal segments : 100:54:45:36:40:40:52:50:50:58:100. Segment 2 c. 1.2 times as long as segment 3, and c. 1.5 times as long as segment 4 (fig. 260).

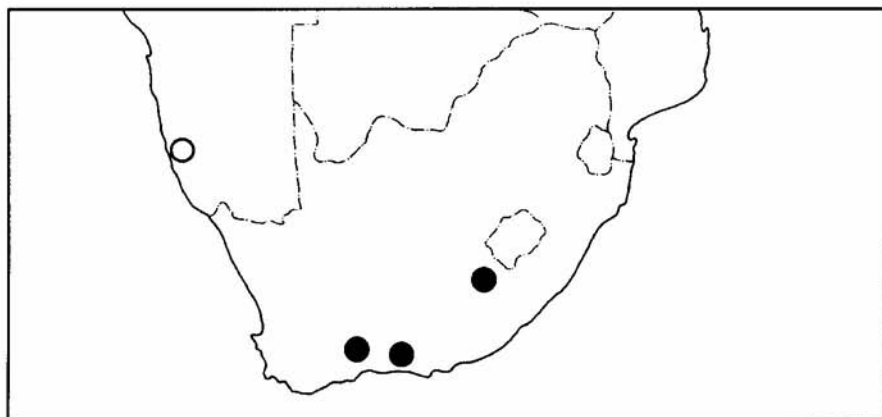
Claws simple (fig. 261). Ventriles without diagnostic characters.

HOST PLANT

Chenopodiaceae: *Salsola* sp. (HERON and BOROWIEC, 1997).

DISTRIBUTION

South Africa: Cape (fig. 262).



262. Distribution of *Oxylepus capensis* (black circles) and *Oxylepus impressipennis* (white circle)

REMARKS

It belongs to the group of species with unmodified elytra, without tubercles or impressions. The group comprises also *O. cicatricosus*, *O. kossmati* and *O. cuneipennis*. The last species is the most distinct, it differs in cuneiform body, base of elytra distinctly wider than pronotum, and pronotum transversely rhomboidal, widest in middle, coarsely punctate. *O. kossmati* differs in finer and sparser elytral puncturation, often with tendency to form irregular rows, with distance between punctures mostly wider than puncture diameter. In *O. kossmati* elytral suture is often marked by brown or black spots. Both species are separated geographically, *O. kossmati* occurs in Arabian Peninsula and NE Africa while *O. capensis* is a strictly southern African species. *O. cicatricosus* is the most similar, and maybe represents only a local geographical form of *O. capensis* from Namibia. It differs only in slightly larger and stouter body (Le 4.1-4.3 mm, in *capensis* 3.5-3.9, Le/Wi 1.41-1.43, in *capensis* 1.45-1.63), and elytra slightly more rounded on sides.

MATERIAL EXAMINED

SOUTH AFRICA: Cape Prov., Aliwal North, XII 1922, 1, R.E. TURNER (holotype, BMNH); Cape Prov., Willowmore, 33.16S 23.29E, 29 XI 1988, 9, B. GROBBELAAR (NIC, LB); Cape-Karoo, Zwartskraal Farm, 18 II 1981, 2 (LB).

Oxylepus cicatricosus SPAETH, 1936

(figs 263-268, pl. 11: 3-4)

Oxylepis cicatricosa SPAETH, 1936: 10 (HT in BMNH, PT in MM).

Oxylepus cicatricosa: BOROWIEC, 1999: 313.

DESCRIPTION

Le: 3.9-4.3 mm, Wi: 2.7-3.0 mm, Lp: 1.4-1.6 mm, Wp: 2.1-2.5 mm, Le/Wi: 1.41-1.43, Wp/Lp: 1.52-1.56. Body short-oval (figs 263-268)

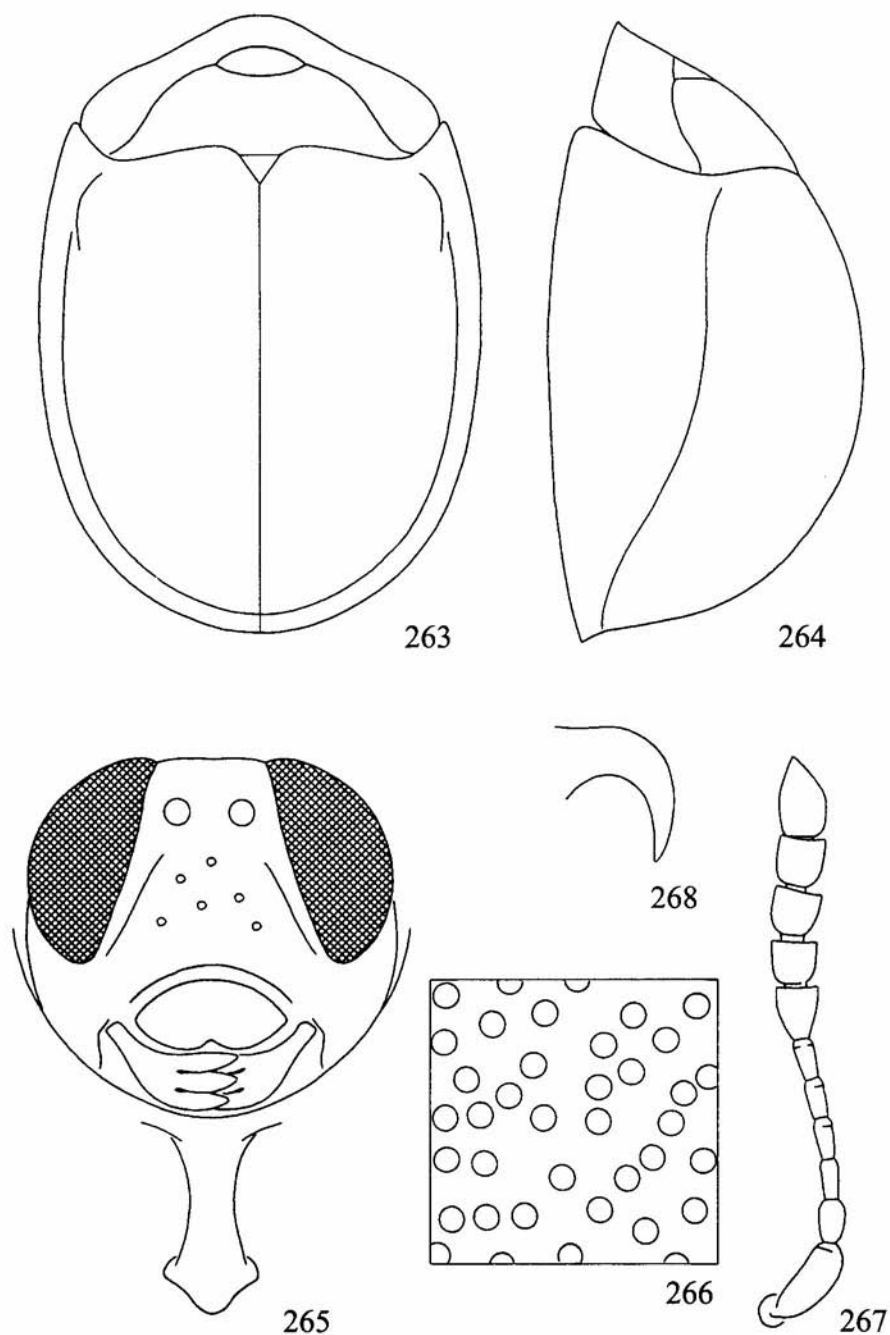
In all characters very similar to *O. capensis*, may be only its local geographical form from Namibia. Slightly larger and stouter, with elytra slightly more rounded on sides than in *O. capensis*. SPAETH (1936) suggested that elytral puncturation of *O. cicatricosus* is slightly coarser than in *O. capensis*, but within series of the latter species I found specimens as coarsely punctate as holotype of *O. cicatricosus*.

DISTRIBUTION

Namibia. The type locality is Aus (cited in the original description but not marked on labels of the type series), c. 900 km NW from known localities of *O. capensis*.

REMARKS

See remarks under *O. capensis*. SPAETH (1936), in his original description suggested that *O. cicatricosus* differed from *O. capensis* in clypeus lacking clypeal



263-268. *Oxylepus cicatricosus*: 263 – dorsal, 264 – lateral, 265 – head and prosternum, 266 – puncturation of central part of clytral disc, 267 – antenna, 268 – claw

lines but in the type series two specimens have fine but visible clypeal lines in the basal part of clypeus. Also in series of *O. capensis* there are specimens with well visible clypeal lines besides specimens which practically lack these lines. I observed that the degree to which clypeal lines are pronounced depended on the maturity of insects. Not fully sclerotized specimens have well marked clypeal lines, while mature beetles have clypeal lines indistinct, often visible only in basal part of clypeus.

MATERIAL EXAMINED

NAMIBIA: SW Afr., XII 1929, 1, R.E. TURNER (holotype and 2 paratypes, BMNH, 1 paratype MM).

Oxylepus convexicollis n. sp.

(figs 255, 269-274, pl. 12: 3-4)

ETYMOLOGY

Named after strongly convex, gibbous pronotal disc.

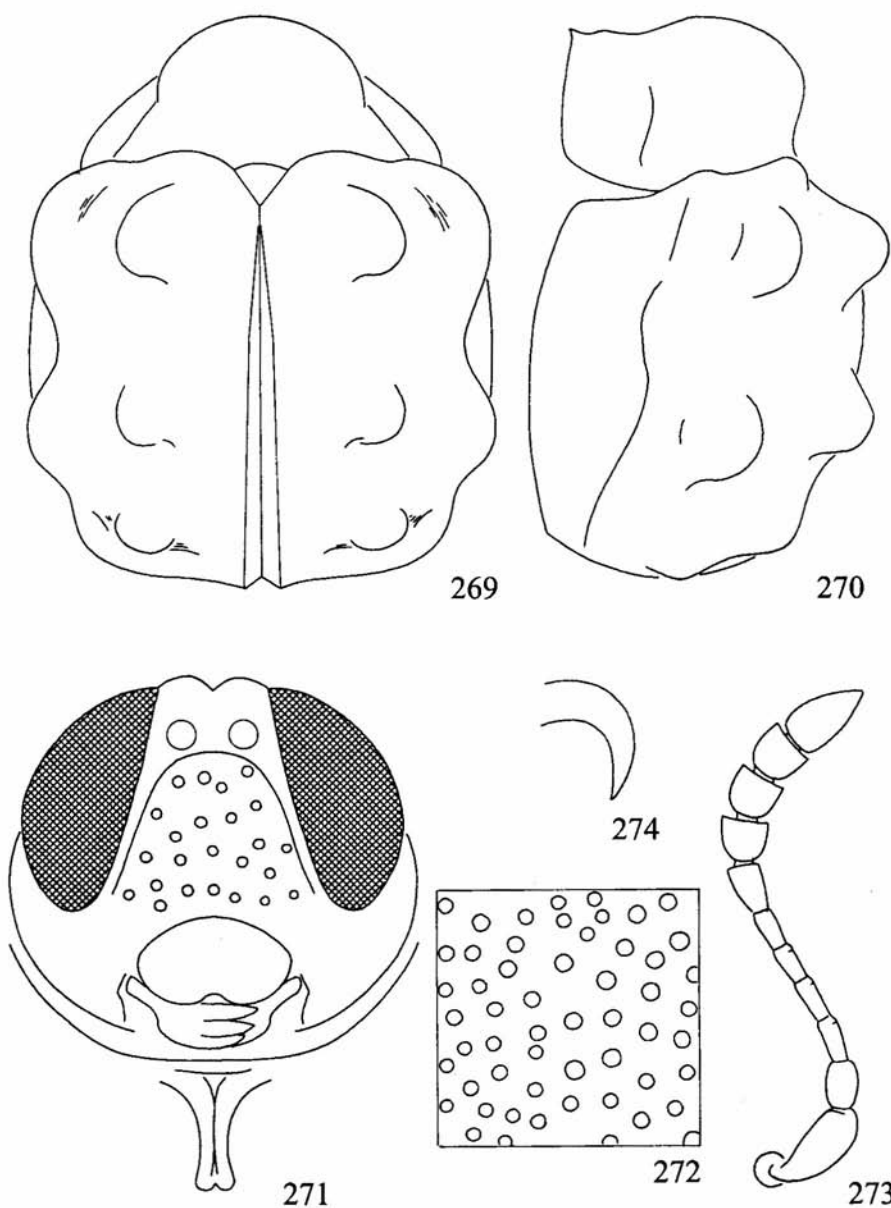
DESCRIPTION

Le: 2.6-3.2 mm, Wi: 2.0-2.5 mm, Lp: 1.3-1.5 mm, Wp: 1.7-1.9 mm, Le/Wi: 1.20-1.33, Wp/Lp: 1.13-1.31. Body short-oval, tuberculate (fig. 269)

Body uniformly pale yellow.

Pronotum reversely trapezoidal. Anterior margin straight or in middle slightly convex, anterior corners well marked but obtuse. Disc convex, extremely gibbous, with coarse, dense puncturation, distance between punctures mostly narrower than puncture diameter, punctures deeply impressed, surface appears irregular. Explanate margin not separated from disc, punctured like disc, transparent anterior margin broad.

Scutellum triangular, distinctly longer than wide, smooth, impunctate. Elytra as wide as pronotum. Each elytron with a number of tubercles, also humeral calli tuberculate (fig. 270). The biggest tubercle between humeral callus and scutellum, one smaller in middle of disc, close to suture, another small behind median tubercle but placed much outwards, and the last in posterolateral part of disc. Tubercles vary in size, in smaller specimens usually smaller and lower than in big specimens, especially apical and posterolateral tubercles sometimes very low. Puncturation of disc moderately coarse and very dense (fig. 272). Distance between punctures mostly narrower than puncture diameter. Surface between punctures appears slightly irregular. Marginal row invisible, area behind humeral callus deeply impressed. Explanate margin very broad, as wide as 1/3 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, puncturation as coarse as on disc. Humeral angles moderately protruding anterad, obtuse.



269-274. *Oxylepus convexicollis*: 269 – dorsal, 270 – lateral, 271 – head and prosternum, 272 – puncturation of central part of clytral disc, 273 – antenna, 274 – claw

Clypeus broad, c. 1.5 times wider than long (fig. 271). Clypeal grooves fine, well visible, converging in triangle. Surface of clypeus flat, shiny, with several coarse punctures. Antennae stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:55:50:48:45:45:60:50:50:48:100. Segment 2 c. 1.1 times as long as segments 3 and 4 (fig. 273).

Claws simple (fig. 274). Ventrites without diagnostic characters.

HOST PLANT

Chenopodiaceae: *Salsola* sp. (new record).

DISTRIBUTION

Southern Africa: Namibia and Cape (fig. 255).

REMARKS

It belongs to the group of species with tuberculate elytra. It differs from all its relatives in extremely gibbous pronotal disc.

MATERIAL EXAMINED

NAMIBIA: holotype: "SOUTH WEST AFRICA, Maltahöhe, 24.50S 16.58E, 16 II 1988, B. GROBBELAAR" "collected on *Salsola* sp." (NIC); 18 paratypes: the same data (NIC, LB, MM).

SOUTH AFRICA: 4 paratypes: "Cape P., Knuyrivier, 16 km SW Ladismith, 33.37S 21.10E, 1 XII 1988, B. GROBBELAAR (NIC, LB).

Oxylepus cuneipennis SPAETH, 1936

(figs 275-281, pl. 10: 7-8)

Oxylepis (Embolocassis) cuneipennis SPAETH, 1936 b: 11 (ST in BMNH, MM).

Oxylepus cuneipennis: BOROWIEC, 1999: 314.

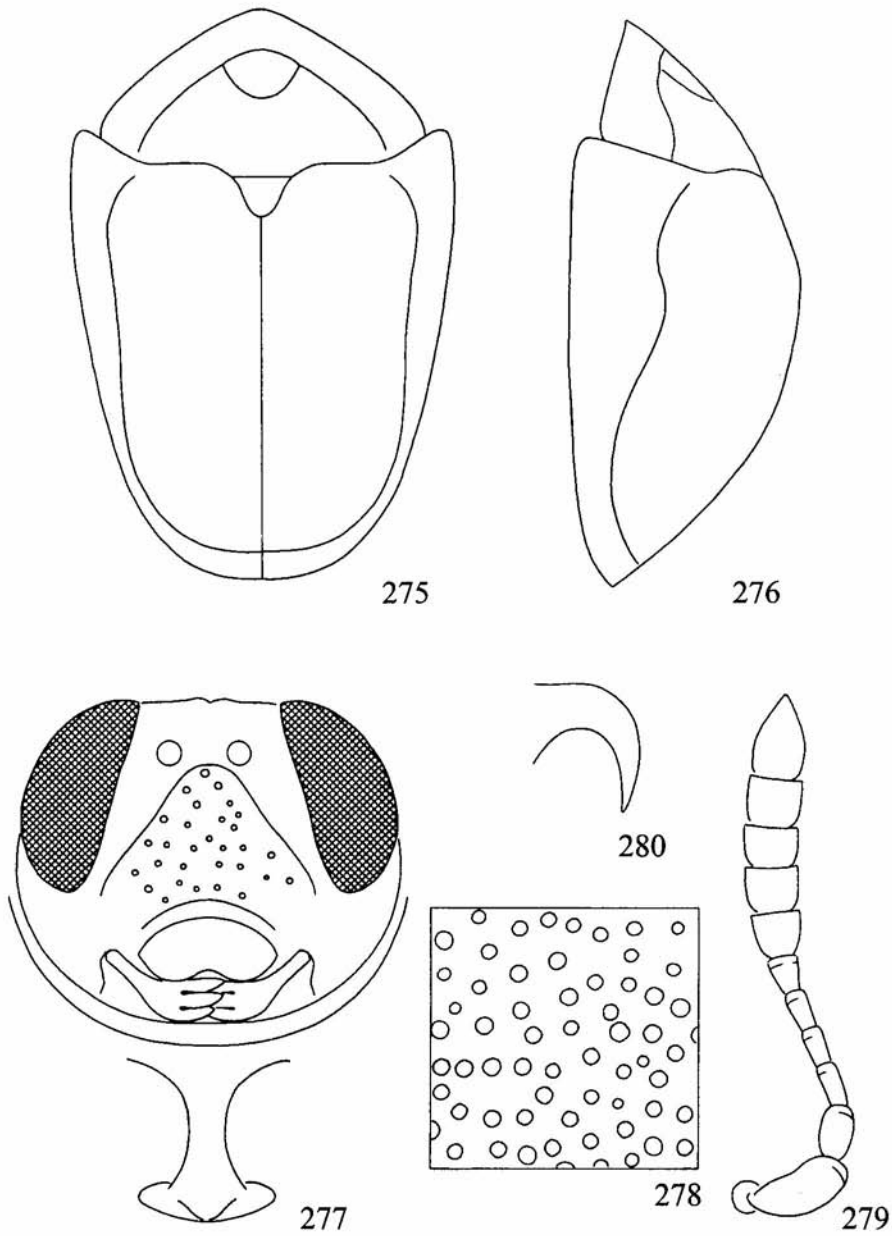
DESCRIPTION

Le: 4.1 mm, Wi: 2.7 mm, Lp: 1.5 mm, Wp: 2.25 mm, Le/Wi: 1.52, Wp/Lp: 1.50. Body cuneiform (fig. 275).

Body uniformly pale yellowish-green.

Pronotum transversely rhomboidal, widest in middle, sides angulate. Anterior margin convex, distinctly angulate in middle. Disc and explanate margin moderately and evenly convex, with no border between disc and margin. Punctuation coarse, on top of disc slightly finer than on its sides and on explanate margin, dense, distance between punctures from narrower to slightly wider than puncture diameter, surface appears regular. Transparent anterior margin very narrow.

Scutellum triangular with rounded apex, smooth, impunctate. Base of elytra distinctly wider than pronotum. Disc regularly convex, with top of convexity in postscutellar point (fig. 276), surface of disc with no tubercles, elevations or

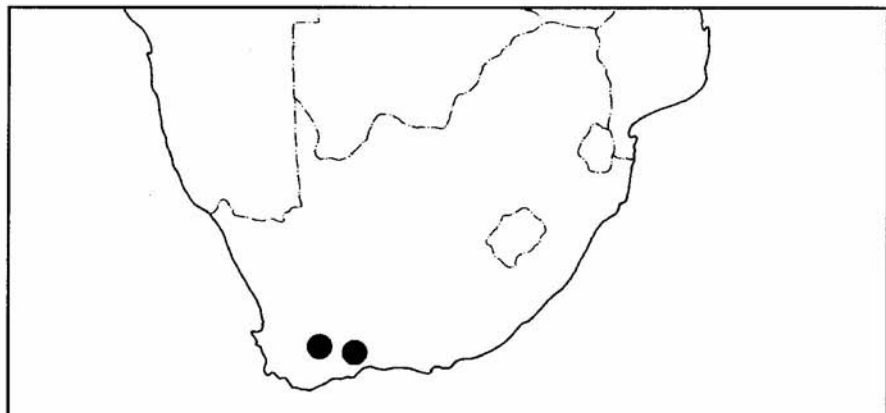


275-280. *Oxylepus cuneipennis*: 275 – dorsal, 276 – lateral, 277 – head and prosternum, 278 – puncturation of central part of elytral disc, 279 – antenna, 280 – claw

impressions, humeral calli barely marked. Punctuation of disc coarse and very dense (fig. 278), distance between punctures mostly narrower than puncture diameter. Surface between punctures appears regular, shiny. Marginal row invisible, area behind humeral callus not impressed. Explanate margin broad, as wide as 1/4 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, like disc. Humeral angles strongly protruding anterad, angulate.

Clypeus very broad, c. 1.6 times wider than long (fig. 277). Clypeal grooves distinct only in their basal half. Surface of clypeus coarsely but moderately densely punctate, distance between punctures mostly wider than puncture diameter. Antennae very stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:65:50:42:50:42:52:50:47:55:100. Segment 2 c. 1.3 times as long as segment 3 and c. 1.5 times as long as segment 4 (fig. 279).

Claws simple (fig. 280). Ventriles without diagnostic characters.



281. Distribution of *Oxylepus cuneipennis*

DISTRIBUTION

South Africa: Cape (fig. 281).

REMARKS

It is well distinguished by its cuneiform body shape. From among all species of the genus it has the widest base of elytra in relation to pronotal width. It is the only member of the genus with maximum width of pronotum in middle (distinctly before middle in other species).

MATERIAL EXAMINED

SOUTH AFRICA: Cape Prov., Matjassfontein, 6-15 X 1928, 1, R.E. TURNER (syntype, BMNH); Cape Prov., Oudtshoorn, 21 X 1994, 1 (LB).

Oxylepus grobbelaarae n. sp.

(figs 282-288, pl. 12: 1-2)

ETYMOLOGY

Dedicated to E. GROBBELAAR (National Collection of Insects, Pretoria, South Africa) for her help in obtaining many interesting Cassidinae from South Africa.

DESCRIPTION

Le: 2.9-3.8 mm, Wi: 2.2-2.5 mm, Lp: 1.25-1.5 mm, Wp: 1.7-2.1 mm, Le/Wi: 1.35-1.52, Wp/Lp: 1.33-1.40. Body short-oval (fig. 282)

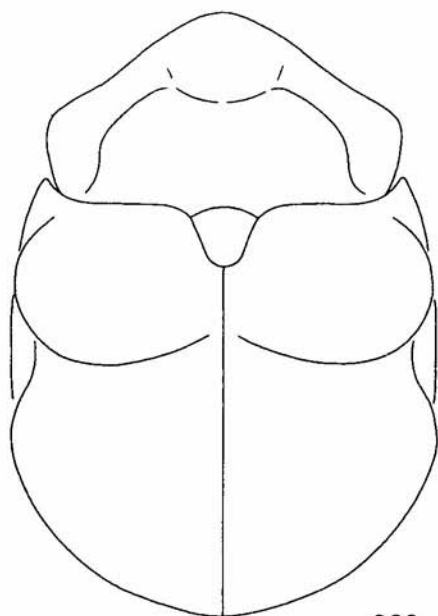
Body yellowish-green, elevated parts of elytra, especially transverse elevation on slope usually paler yellow than the remaining parts of disc.

Pronotum reversely trapezoidal. Anterior margin almost straight, in middle shallowly bisinuate, anterior corners well marked but obtuse. Disc distinctly convex, slightly gibbous, finely but dense punctate, distance between punctures as wide as puncture diameter, surface of disc appears slightly irregular. Explanate margin distinctly separated from disc, also in area above head, transparent anterior margin from moderately broad to broad. Puncturation of explanate margin coarse and dense, distinctly coarser than on disc, surface appears slightly irregular.

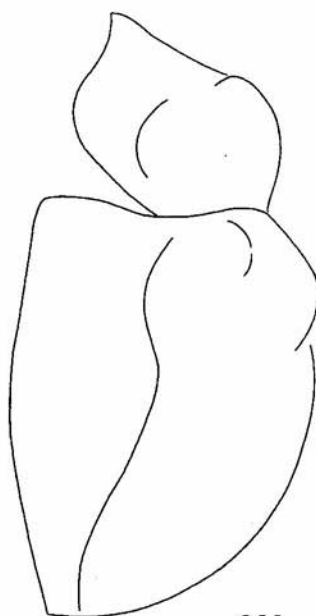
Scutellum triangular with rounded apex, smooth, impunctate. Base of elytra not wider than pronotum. Disc slightly unevenly convex (fig. 283), area between humeral callus and scutellum slightly swollen, separated from other part of disc by deep impression, humeral calli prominent. Puncturation in impression distinctly coarser than on other parts of disc, the impression broken by elevated interval 2 and usually also interval 4. Puncturation of disc coarse (fig. 285), forms more or less regular rows, punctures in rows very dense, distance between punctures in rows mostly narrower, between rows usually slightly wider than puncture diameter. Numerous additional punctures disturb regularity of rows, especially on slope and sides of disc; in some specimens only three sutural rows more or less regular, rest of disc irregularly punctate. Surface between punctures appears regular, slightly shiny. In position of 2nd interval runs elevated line, extending to 1/2-2/3 length of disc. In posterolateral part of disc, on slope, usually a short, transverse elevation, sometimes barely visible. Marginal row and marginal interval at least in anterior 1/4 length well marked, area behind humeral callus deeply impressed; in some specimens marginal row and interval are visible up to half length of border of disc. Explanate margin broad, as wide as 1/4 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, coarse like on disc. Humeral angles moderately protruding anterad, subangulate.

Clypeus moderately broad, c. 1.3 times as wide as long (fig. 284). Clypeal grooves fine, converging in arch. Surface of clypeus coarsely and densely punctate, punctures almost touching each other, surface appears irregular. Antennae stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:60:47:40:42:45:60:45: 45:43:45:100. Segment 2 c. 1.3 times as long as segment 3, and 1.5 times as long as segment 4 (fig. 286).

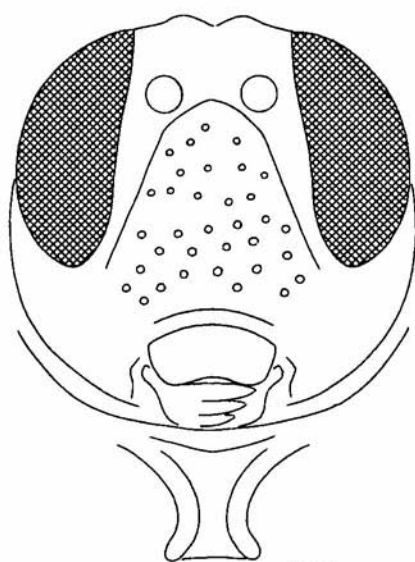
Claws simple (fig. 287). Ventrites without diagnostic characters.



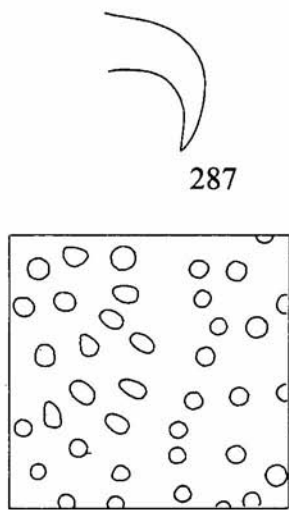
282



283



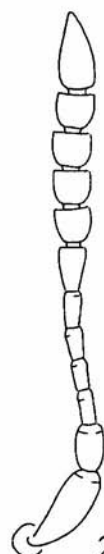
284



285



287



286

282-287. *Oxylepus grobbelaarae*: 282 – dorsal, 283 – lateral, 284 – head and prosternum, 285 – punctuation of central part of elytral disc, 286 – antenna, 287 – claw

HOST PLANT

Chenopodiaceae: *Salsola* sp. (new record).

DISTRIBUTION

Southern Africa: Namibia, Oranje, and Cape (fig. 288).

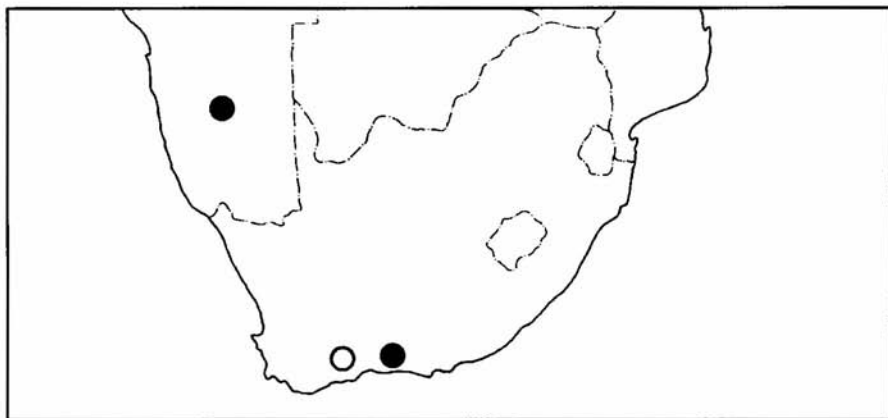
REMARKS

O. grobbelaaræ with *O. impressipennis* form a group of species with elytra without distinct tubercles but with distinct impressions in basal part of disc. In *O. grobbelaaræ* impressions are deeper, and disc area between humeral callus and scutellum slightly swollen. Pronotal disc is more convex, well separated from area above head, while in *O. impressipennis* pronotal disc with area above head and anterior part of explanate margin form regular surface. Impunctate interspace in position of 2nd interval in *O. grobbelaaræ* is narrower but extending at least to half length of disc, while in *O. impressipennis* it is wider but usually limited only to impression area and extending at most to 1/3 length of elytra. The most similar species to both *O. grobbelaaræ* and *O. impressipennis* is Palearctic *O. boroveci* BOR. described recently from Tunisia (BOROWIEC 2001), but it differs from both its southern African congeners in very fine, barely visible, pronotal puncturation.

MATERIAL EXAMINED

NAMIBIA: 2 paratypes: "South West Africa, Maltahöhe, 24.50S 16.58E, 16 II 1988, B. GROBBELAAR" "collected on *Salsola* sp." (NIC).

SOUTH AFRICA: holotype: "Hendrik Verwserd Dam, OVS, 20 XI 1969, A.L. CAPENER" (NIC); 22 paratypes: the same data (NIC, LB, MM); 2 paratypes: "Cape P., Willowmore, 33.16S 23.29E, 29 XI 1988, B. GROBBELAAR" "beaten from *Salsola* sp." (NIC, LB).



288. Distribution of *Oxylepus grobbelaaræ* (black circles) and *Oxylepus planicollis* (white circle)

Oxylepus impressipennis n. sp.

(figs 262, 289-294, pl. 11: 15-16)

ETYMOLOGY

Named after two oblique impressions on elytral disc.

DESCRIPTION

Le: 3.2-4.1 mm, Wi: 2.5-2.9 mm, Lp: 1.3-1.6 mm, Wp: 2.0-2.5 mm, Le/Wi: 1.28-1.43, Wp/Lp: 1.52-1.68. Body short-oval (fig. 289)

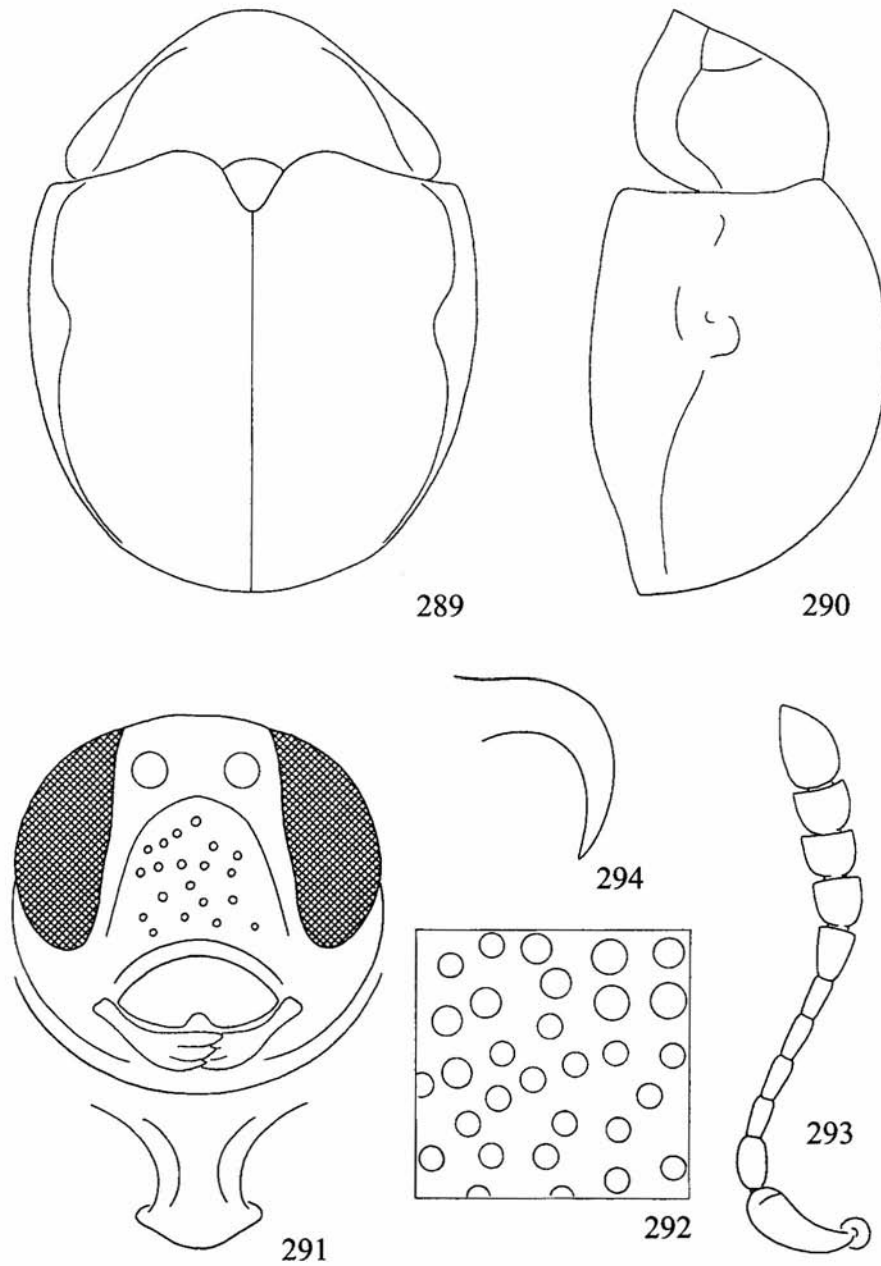
Body uniformly pale yellow.

Pronotum reversely trapezoidal. Anterior margin almost straight, in middle not or very shallowly bisinuate, anterior corners well marked but obtuse. Disc moderately convex, not gibbous, finely but very densely punctate, punctures almost touching each other, surface of disc appears irregular. Explanate margin distinctly separated from disc only on pronotal sides, in area above head and in anterior part of pronotum disc and explanate margin form regular surface; transparent anterior margin from moderately broad to broad. Puncturation of explanate margin coarse, distinctly coarser but sparser than on disc, surface appears mostly regular.

Scutellum triangular with rounded apex, smooth, impunctate. Base of elytra not wider than pronotum. Disc evenly convex (fig. 290), area between humeral callus and scutellum slightly swollen, but separated from other part of disc by deep impression, humeral calli prominent. Puncturation in impression distinctly coarser than on other parts of disc, the impression broken by elevated interval 2 and sometimes also interval 4. Puncturation of disc coarse (fig. 292), mostly irregular, only in sutural area sometimes forms one or two more or less regular rows, punctures dense, distance between punctures from slightly narrower to twice wider than puncture diameter. On slope a group of coarser punctures, similar in size to those in anterior impression. Surface between punctures appears regular, slightly shiny. In position of 2nd interval runs impunctate, slightly elevated line, extending to 1/3 length of disc, sometimes also in apical part of disc more or less marked, not elevated 2nd interval. Marginal row and marginal interval at least in anterior 1/4 length well marked, area behind humeral callus deeply impressed; in some specimens marginal row and interval are visible up to half length of border of disc. Explanate margin broad, slightly narrower than 1/4 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, coarse like on disc. Humeral angles moderately protruding anterad, subangulate.

Clypeus moderately broad, c. 1.3 times as wide as long (fig. 291). Clypeal grooves fine, converging in arch. Surface of clypeus coarsely punctate, surface appears irregular. Antennae stout, segments 9 and 10 slightly transverse, length ratio of antennal segments: 100:48:44:48:48:44:52:48:46:48:96. Segment 2 only slightly longer than segment 3, and as long as segment 4 (fig. 293).

Claws simple (fig. 294). Ventrites without diagnostic characters.



289-294. *Oxylepus impressipennis*: 289 – dorsal, 290 – lateral, 291 – head and prosternum, 292 – puncturation of central part of elytral disc, 293 – antenna, 294 – claw

HOST PLANT

Chenopodiaceae: *Salsola* sp. (new record).

DISTRIBUTION

Namibia (fig. 262).

REMARKS

It belongs to the group of species with elytral disc lacking tubercles but with distinct impressions. The group includes also *O. grobbelaarae* and Palaearctic *O. boroveci*. See remarks under *O. grobbelaarae*.

MATERIAL EXAMINED

NAMIBIA: holotype: "S.W. AFRICA/NAMIBIA, 5 km NE Klinghardtberge, 27.14S 15.47E, 20 IV 1988, R. OBERPIELER" "collected on *Salsola* sp." (NIC); 23 paratypes: the same data (NIC, LB, MM).

***Oxylepus intermedius* n. sp.**

(figs 248, 295-300, pl. 11: 13-14)

ETYMOLOGY

Named after its intermediate position between multituberculate *O. sextuberculatus* and bituberculate *O. bituberculatus*.

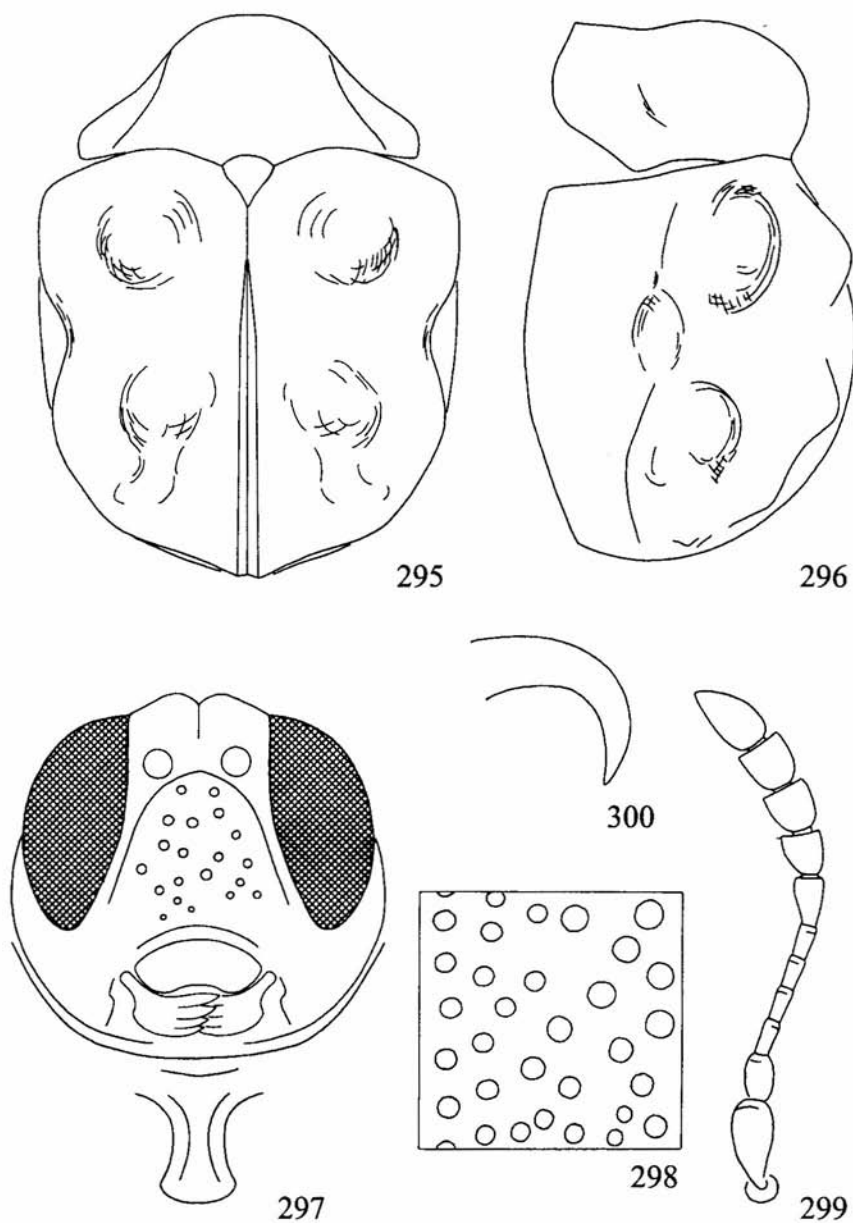
DESCRIPTION

Le: 3.1-3.6 mm, Wi: 2.45-2.7 mm, Lp: 1.4-1.65 mm, Wp: 1.9-2.2 mm, Le/Wi: 1.27-1.33, Wp/Lp: 1.33-1.36. Body short-oval (fig. 295)

Body uniformly pale yellow.

Pronotum reversely trapezoidal. Anterior margin straight to distinctly concave in middle, anterior corners well marked but obtuse. Disc convex, very gibbous, almost as gibbous as in *O. convexcollis*. Puncturation coarse, distinctly impressed, dense, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Explanate margin not separated from disc, punctured like disc, transparent anterior margin narrow.

Scutellum triangular, slightly longer than wide, smooth, impunctate. Elytra as wide as pronotum. Each elytron between humeral callus and scutellum with low tubercle, and in the middle of disc close to suture with small, very low, barely marked tubercle (fig. 296). Puncturation of disc moderately coarse and very dense (fig. 298). Distance between punctures mostly narrower than puncture diameter. Surface between punctures appears mostly regular. Marginal row invisible, area behind humeral callus deeply impressed. Explanate margin very broad, as wide as 1/3 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, slightly coarser than on disc, especially area below humeral callus



295-300. *Oxylepus intermedius*: 295 – dorsal, 296 – lateral, 297 – head and prosternum, 298 – punctation of central part of elytral disc, 299 – antenna, 300 – claw

coarser but less densely punctate than disc. Humeral angles moderately protruding anterad, subangulate.

Clypeus broad, c. 1.4 times wider than long (fig. 297). Clypeal grooves fine but distinct, converging in triangle. Surface of clypeus coarsely densely punctate, punctures almost touching each other, surface appears irregular. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:65:55:52:45:50:72:60:65:67:115. Segment 2 c. 1.2 times as long as segments 3 and 4 (fig. 299).

Claws simple (fig. 300). Ventrites without diagnostic characters.

DISTRIBUTION

Namibia (fig. 248).

REMARKS

It is intermediate between strongly tuberculate *O. sextuberculatus* and *O. convexicollis*, and less tuberculate *O. bituberculatus*. It has strongly gibbous pronotal disc, like *O. convexicollis* and *O. bituberculatus*, distinctly more gibbous than in *O. sextuberculatus*, but differs from the first species in only four very low elytral tubercles (six large tubercles in *O. convexicollis*), from the second species in smaller, four elytral tubercles (only two, but big tubercles in *O. bituberculatus*), and from the last species, apart from more gibbous pronotum, in the presence of only four very low elytral tubercles (at least six large tubercles in *O. sextuberculatus*).

MATERIAL EXAMINED

NAMIBIA: holotype: "NAMIBIA, Ugab River, 10 km of Anichab, 2 XI 1996, on plants" (LB); two paratypes: "S.W. Afr., Etosha Pan, Halali camp, 19°03' 16°30'E" "26.12.1974, E-Y: 524, grass netting leg. ENDRÖDY-YOUNGA" (LB, TM - labelled as paratype of *O. sextuberculatus*!).

Oxylepus kossmati SPAETH, 1901

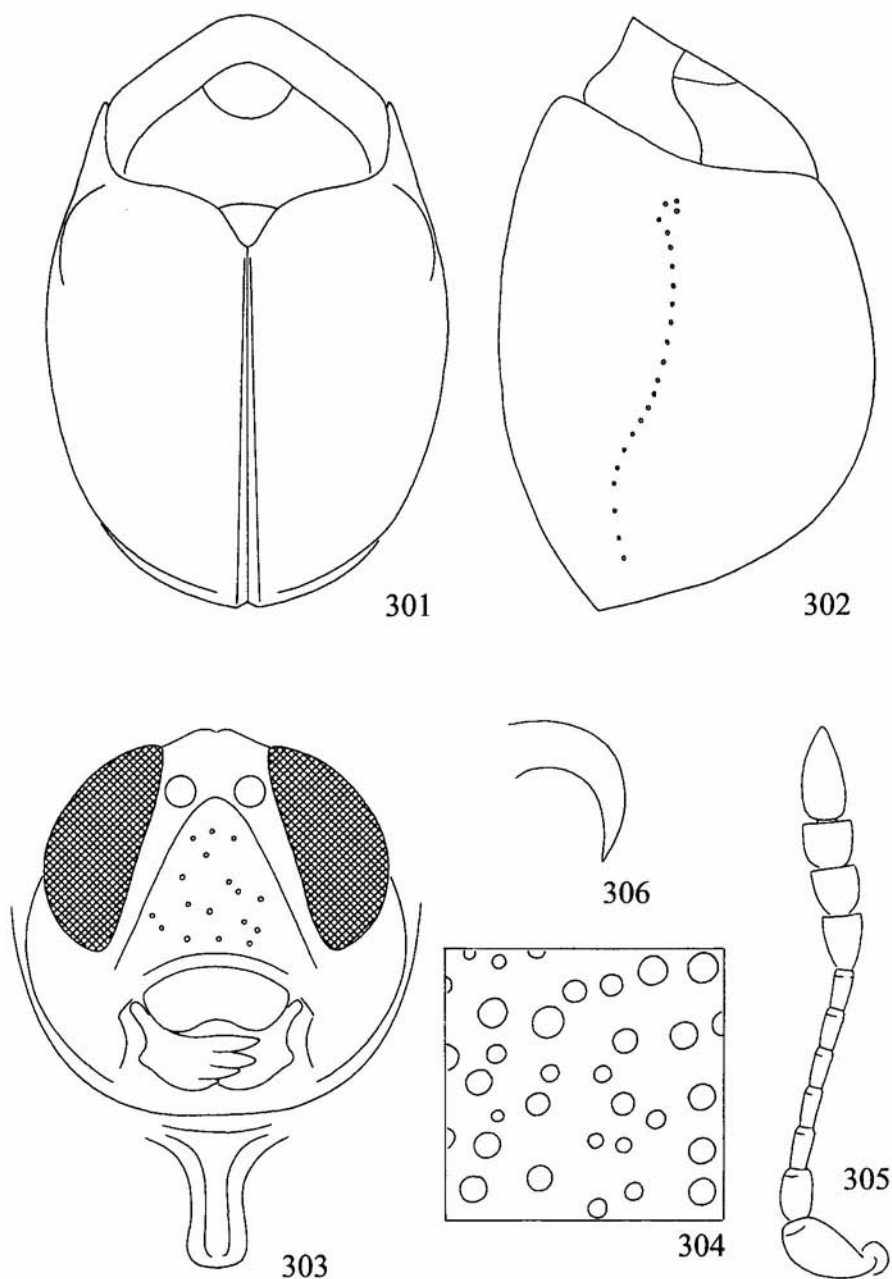
(figs 301-307, pl. 11: 5-8)

Oxylepus Kossmati SPAETH, 1901 b: 752 (ST in MM, NMW); BOROWIEC, 1986: 804, 1999: 314.
Oxylepis Kossmati: SPAETH, 1914: 87.

DESCRIPTION

Le: 3.2-3.9 mm, Wi: 2.2-2.6 mm, Lp: 1.4-1.6 mm, Wp: 1.7-1.95 mm, Le/Wi: 1.45-1.50, Wp/Lp: 1.13-1.31. Body short-oval (fig. 301)

Body yellow to yellowish-brown, elytra sometimes with dark pattern. Specimens from type series have large, dark brown, cordiform spot at base of elytra, and transverse spot on slope. Basal spot often is darker brown around margins and yellowish pale brown in middle, apical spot is often reduced to small, brown spot

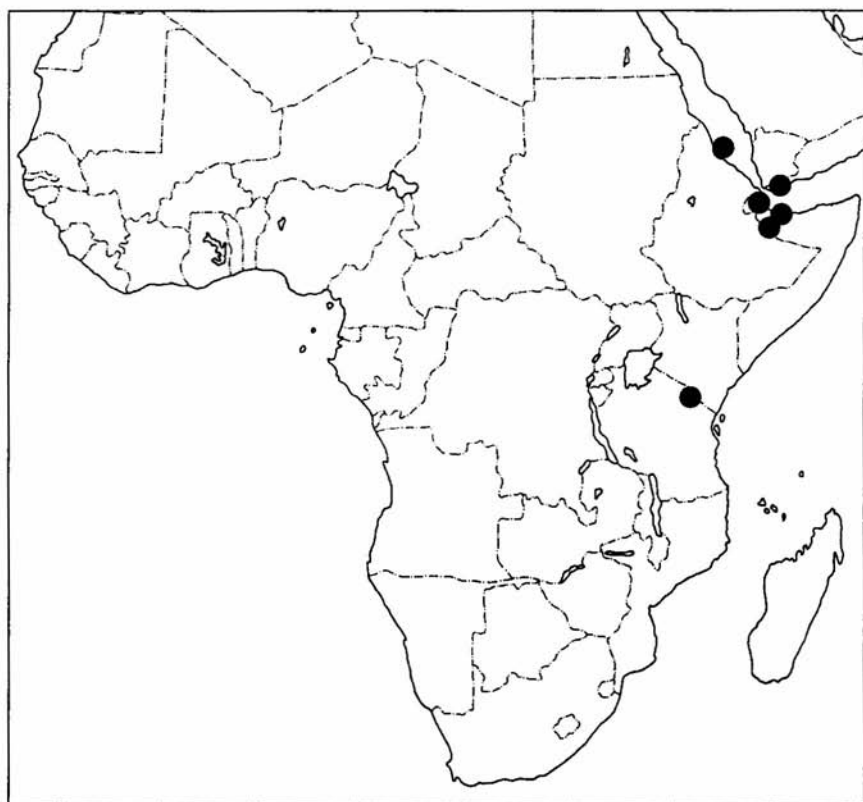


301-306. *Oxylepus kossmati*: 301 – dorsal, 302 – lateral, 303 – head and prosternum, 304 – puncturation of central part of elytral disc, 305 – antenna, 306 – claw

on sutural elevation. In some specimens basal spot is obsolete but spot on slope is more or less developed, sometimes the apical spot is placed more anteriorly, in $2/3$ length of suture. At last, in some specimens elytra without pattern. Maculate specimens were observed only in populations from the Arabian Peninsula (apart from immaculate specimens), in African populations specimens are always without pattern.

Pronotum reversely trapezoidal. Anterior margin straight, anterior corners well marked but obtuse. Disc moderately, regularly convex, finely and sparsely punctate, sometimes appears impunctate, its surface regular, from slightly shiny to slightly dull. Explanate margin not separated from disc, finely, sparsely and shallowly punctate, often appears impunctate, transparent anterior margin moderately broad.

Scutellum slightly lanceolate, longer than wide, with obtuse apex, smooth, impunctate. Base of elytra not wider than pronotum. Disc regularly convex, with top of convexity in mid length of elytra (fig. 302), surface of disc with no



307. Distribution of *Oxylepus kossmati*

tubercles, elevations or impressions, humeral calli well marked. Punctuation of disc moderately coarse, sparse, distance between punctures usually wider than puncture diameter. Punctuation never completely irregular (fig. 304), in some populations punctures form quite regular rows and only in middle of disc additional punctures disturb the regularity; in other populations punctures along middle of disc are completely irregular but punctures along suture and above margin of disc form 4-6 regular rows; at least only sutural and marginal rows appearing regular, rest of elytra is mostly irregularly punctate. Surface between punctures regular, from slightly shiny to slightly dull. Marginal row at least in anterior half well marked, in specimens with mostly regular punctuation marginal row distinct on whole length, then also marginal interval well marked; area behind humeral callus not impressed. Explanate margin broad, slightly wider than 1/4 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, punctures distinctly finer than those on disc. Surface of explanate margin usually regular but sometimes finely wrinkled. Humeral angles moderately protruding anterad, subangulate.

Clypeus broad, c. 1.4 times wider than long (fig. 303). Clypeal grooves distinct, converging in triangle. Surface of clypeus smooth and shiny, with only few larger punctures, especially in apical part. Antennae stout, segments 9 and 10 as wide as long or slightly wider than long, length ratio of antennal segments: 100:55:55:50:47:50:50:65:55:55:110. Segment 2 as long as segment 3 and slightly longer than segment 4 (fig. 305).

Claws simple (fig. 306). Ventrites without diagnostic characters.

DISTRIBUTION

Aden, Oman, Erythrea, Somalia, Djibouti, and Tanzania (fig. 307).

REMARKS

It belongs to the group of species with unmodified elytra, without tubercles or impressions. It is more related to Palaearctic *O. deflexicollis* (BOH.) than to other African species. It differs from African congeners in sparser elytral punctuation, with punctures tending to form regular rows, especially in sutural and lateral parts of disc. *O. capensis* and *O. cicatricosus* are similarly shaped, but differ in very dense, completely irregular elytral punctuation. *O. cuneipennis* differs in cuneiform body, rhomboidal, coarsely punctate pronotum and coarsely punctate elytra. Other African species differ in elytra possessing tubercles or impressions. *O. kossmati* differs from the most similar Palaearctic *O. deflexicollis* in distinctly longer scutellum and often maculate elytra. *O. kossmati* is the only member of the genus with some specimens having dark maculate elytra.

MATERIAL EXAMINED

ADEN: Aden, 7 (MNH), 1 (BMNH); Cheik Ottoman, 2 (MNH); env. Sh. Othman, III 1987, 14, MATERLIK (ZMHU, LB).

DJIBOUTI: Djibouti, salines est, 9 IV 1985, 3, M. SECQ (SD, LB).

ERYTHREA: Dahlak Arch., Kundabilu, 9 II 1960, 1 (LB).

OMAN: Salalah, South Dahariz, 13 X 1986, 1 (LB).

SOMALIA: Hargeisa-Berbera, 25-27 VI 1963, 2, R. LINNAVUORI (ZMUH).

TANZANIA: S.C. Kilimandjaro, 20-21 I 06, 1 (LB).

***Oxylepus planicollis* n. sp.**

(figs 288, 308-313, pl. 11: 11-12)

ETYMOLOGY

The name refers to only slightly convex pronotal disc.

DESCRIPTION

Le: 2.85-3.2 mm, Wi: 2.35-2.4 mm, Lp: 1.45-1.5 mm, Wp: 2.0-2.1 mm, Le/Wi: 1.21-1.33, Wp/Lp: 1.33-1.40. Body short-oval (fig. 308)

Body uniformly pale yellow, only last four antennal segments gradually infusate.

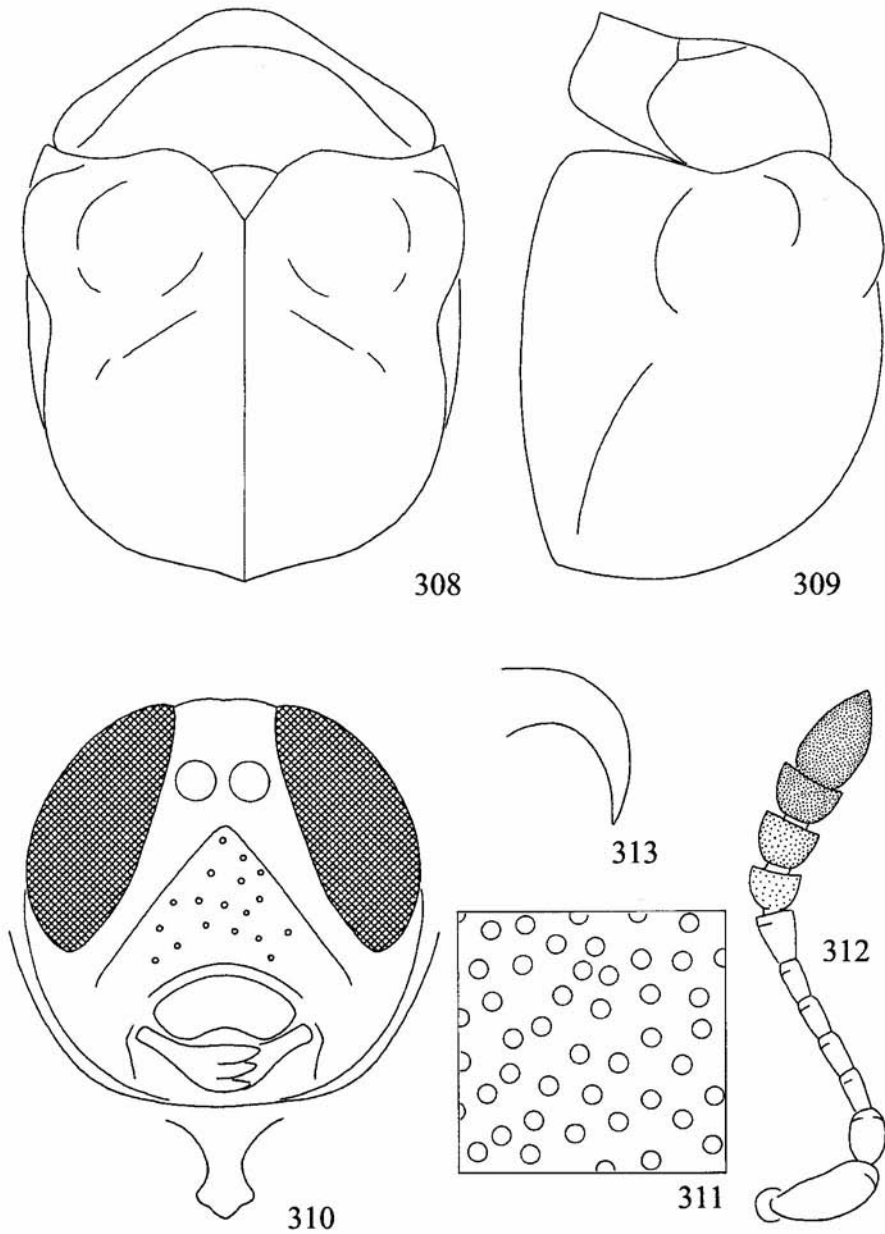
Pronotum reversely trapezoidal. Anterior margin distinctly concave, in middle shallowly bisinuate, anterior corners well marked but obtuse. Disc only slightly convex. Punctuation coarse, shallowly impressed, very dense, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Explanate margin not separated from disc, punctured like disc, transparent anterior margin narrow.

Scutellum regularly triangular, smooth, impunctate. Elytra as wide as pronotum. Each elytron between humeral callus and scutellum with large, obtuse tubercle, posterior border of the gibbosity deeply impressed (fig. 309). Each elytron on slope with fine transverse elevated line.

Punctuation of disc moderately coarse and very dense (fig. 311). Distance between punctures narrower than puncture diameter. Surface between punctures appears slightly irregular. Marginal row invisible, area behind humeral callus deeply impressed. Explanate margin very broad, as wide as 1/3 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, slightly coarser than on disc, especially area below humeral callus very coarse and dense punctate, distance between punctures mostly narrower than puncture diameter. Humeral angles moderately protruding anterad, obtuse.

Clypeus broad, c. 1.4 times wider than long (fig. 310). Clypeal grooves fine but distinct, converging in triangle. Surface of clypeus moderately, sparsely punctate. Antennae very stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:55:45:45:45:55:45:48:45:110. Segment 2 c. 1.2 times as long as segments 3 and 4 (fig. 312).

Claws simple (fig. 313). Ventriles without diagnostic characters.



308-313. *Oxylepus planicollis*: 308 – dorsal, 309 – lateral, 310 – head and prosternum, 311 – puncturation of central part of elytral disc, 312 – antenna, 313 – claw

HOST PLANT

Chenopodiaceae: *Salsola* sp. (new record).

DISTRIBUTION

South Africa: Cape (fig. 288).

REMARKS

Two basal elytral tubercles and deep impression behind the tubercles place it close to *O. bituberculatus*. At first glance, *O. planicollis* differs in only slightly convex pronotal disc, the least convex from among tuberculate species of the genus. Punctuation of pronotal disc and explanate margin of elytra in *O. planicollis* is more dense than in *O. bituberculatus*, basal tubercles bigger but lower and more regularly rounded on top. *O. sextuberculatus* and *O. convexicollis* differ in at least three tubercles on each elytron, *O. intermedius* differs in two tubercles on each elytron.

MATERIAL EXAMINED

SOUTH AFRICA: holotype: "SOUTH AFRICA, CP, Knuyrivier, 16 km SW Ladismith, 33.37S 21.10E, 1 XII 1988, B. GROBBELAAR" "collected off *Salsola* sp." (NIC); 7 paratypes: the same data (NIC, LB).

***Oxylepus sextuberculatus* n. sp.**

(figs 314-320, pl. 12: 5-6)

ETYMOLOGY

Named after elytral disc armed with six large tubercles.

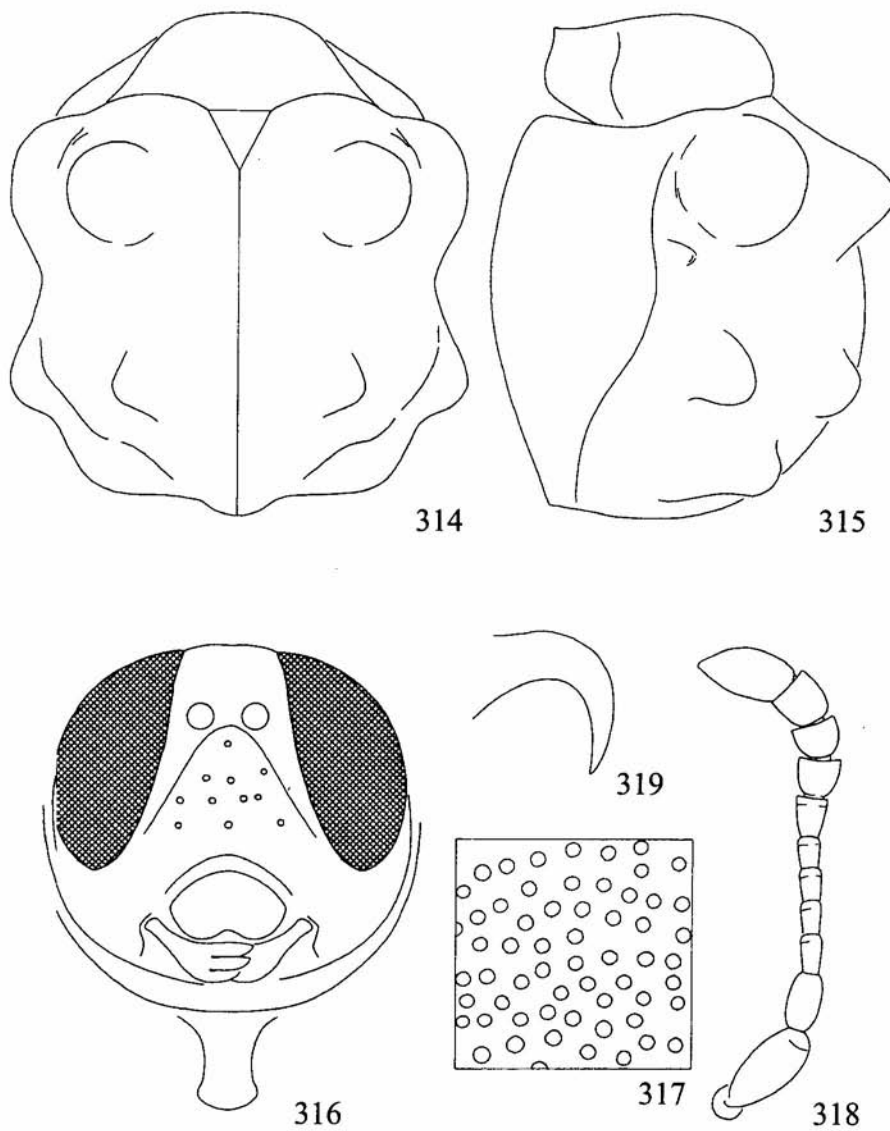
DESCRIPTION

Le: 2.7-3.8 mm, Wi: 2.3-3.3 mm, Lp: 1.3-1.8 mm, Wp: 1.7-2.3 mm, Le/Wi: 1.10-1.1, Wp/Lp: 1.28-1.40. Body short-oval, tuberculate (fig. 314)

Body uniformly pale yellow.

Pronotum reversely trapezoidal. Anterior margin straight to slightly concave, anterior corners well marked but obtuse. Disc convex, slightly gibbous, with coarse, dense punctuation, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Explanate margin not separated from disc, punctured like disc, transparent anterior margin broad.

Scutellum triangular, slightly longer than wide, smooth, impunctate. Elytra as wide as pronotum. Each elytron with a number of tubercles (fig. 315), also humeral calli tuberculate. The biggest tubercle between humeral callus and scutellum, one smaller in middle of disc, close to suture, another small behind median tubercle but placed much outwards, and the last in posterolateral part of



314-319. *Oxylepus sextuberculatus*: 314 – dorsal, 315 – lateral, 316 – head and prosternum, 317 – punctuation of central part of elytral disc, 318 – antenna, 319 – claw

disc. Tubercles vary in size, in smaller specimens usually smaller and lower than in big specimens, especially apical and posterolateral tubercles sometimes very low. Punctuation of disc moderately coarse and very dense (fig. 317). Distance between punctures mostly narrower than puncture diameter. Surface between punctures appears slightly irregular. Marginal row invisible, area behind humeral callus deeply impressed. Explanate margin very broad, as wide as 1/3 width of disc, strongly deflexed, perpendicular to abdomen, its surface irregularly punctate, as coarse as on disc. Humeral angles moderately protruding anterad, obtuse.

Clypeus broad, c. 1.5 times wider than long (fig. 316). Clypeal grooves fine, barely visible. Surface of clypeus flat, shiny, with few coarse punctures, especially in apical part. Antennae stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:68:45:36:34:32:43:40:38:50:109. Segment 2 c. 1.5 times as long as segment 3, and c. 1.9 times as long as segment 4 (fig. 318).

Claws simple (fig. 319). Ventrites without diagnostic characters.

HOST PLANT

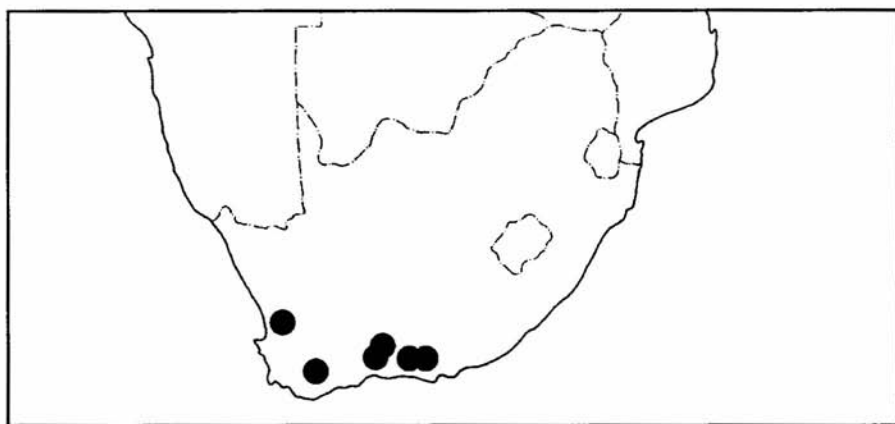
Chenopodiaceae: *Salsola zeyheri* (new record).

DISTRIBUTION

South Africa: Cape (fig. 320).

REMARKS

O. sextuberculatus and *O. convexicollis* are the only members of the genus with elytra armed with at least six tubercles. *O. convexicollis* differs in extremely gibbous pronotal disc and smaller size (mean size 2.92 mm, $n = 7$; in *O. sextuberculatus* 3.18 mm, $n = 8$).



420. Distribution of *Oxylepus sextuberculatus*

MATERIAL EXAMINED

SOUTH AFRICA: holotype: "S. Afr., Willowmore, 22 I 1982, J.G. THERON" (CTM); 8 paratypes: "Cape P., 4 km W Vanrhynsdorp, 31.37S 18.42E, 17 IX 1986, R. Oberprieler" "on *Salsola zeyheri*" (NIC, LB); paratype: "S. Afr., Cape-Karoo, Zwartskraal farm, 33°10'S 22°32'E" "18.2.1981, E-Y: 1740, on ground and vegetation leg. ENDRÖDY-YOUNGA" (TM); paratype: "S.Afr., Ladismith, 19 I 1982, J.G. THERON" (CTM); paratype: "S.Afr., Montagu, 3 VII 1979, I, J.G. THERON" (CTM); paratype: "S.Afr., Steytleville, 22 I 1982, J.G. THERON" (CTM); four paratypes: "S.Afr., Vanrhynsdorp, 31 I 1978, J.G. THERON" (CTM); two paratypes: "South Africa, Willowmore, 22 I 1982, J.G. THERON" (LB); 152 paratypes: "South Africa, Willowmore, 33.16S 23.29E, 29 XI 1988, B. GROBBELAAR" (NIC, LB, MM); two paratypes: "20 mls W of Willowmore, 23 X 1964" (NIC).

Genus: *Psalidoma* SPAETH, 1899

Psalidoma SPAETH, 1899: 217 (type species: *Psalidoma holubi* SPAETH, 1899, by monotypy), 1914: 85; HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 16, 1999: 315.

Moderately large to large cassids, body length 9-12 mm. Body elongate-oval to subtrapezoidal, strongly convex. Pronotum with broadly rounded sides. Pronotal disc not separated from explanate margin, coarsely punctate. Explanate margin broad, coarsely punctate. Elytral base wider than pronotum. Elytral disc with more or less marked postscutellar impression and sometimes with low postscutellar tubercle. Punctuation of disc coarse, irregular. Marginal row absent. Explanate margin of elytra steeply deflexed, coarsely punctate. Clypeus broad, flat, coarsely punctate, with moderately deep clypeal grooves. Labrum with small spine on each side of median emargination. Venter of pronotum with deep antennal grooves bordered laterally by obtuse to sharp carina. but prosternal collar without lateral emargination. Prosternal alae with deep pit. Antennae moderately elongate, third segment distinctly longer than the second, segments 8-10 slightly longer than wide. Last segment of tarsi not or slightly longer than the third, bilobate segment. Claws with large basal tooth.

Distinct genus, well characterized by large size, spinose labrum, and prosternal alae with deep pit. Only *Basipta* has similar shape and size but differs in pubescent body.

Four species in Zambezi region of southern Africa.

KEY TO SPECIES

1. Body elongate-oval, Le/Wi 1.47-1.63.
..... 2.
- . Body stout, subtrapezoidal, Le/Wi 1.31-1.45.
..... 3.

2. Elytra only slightly elevated in postscutellar point, postscutellar impression shallow. Punctures on clypeus dense but without tendency to coalesce, surface of clypeus does not appear rugose.

..... *holubi*

- . Elytra distinctly elevated in postscutellar point, postscutellar impression deep. Punctures on clypeus very dense, surface of clypeus appears irregular.

..... *oblonga*

3. Postscutellar tubercle high, angulate in profile.

..... *knirschi*

- . Postscutellar tubercle low, obtuse in profile.

..... *contracta*

***Psalidoma contracta* SPAETH, 1926**

Psalidoma contracta SPAETH, 1926 a: 9 (HT in NMML); BOROWIEC, 1999: 315.

Unknown to me. According to the original description the type was kept at the Leyden Museum. The curator of the museum several times ignored my request to borrow the specimen. It was described only of a short diagnosis in a key to the genus *Psalidoma* (SPAETH 1926) – see remarks.

DISTRIBUTION

W Angola.

REMARKS

Like *P. knirschi* it has stout body, with Le/Wi below 1.46; differs from its congeners in elytral disc only obtusely elevated in postscutellar area, while *P. knirschi* has angulate postscutellar tubercle.

MATERIAL EXAMINED

Distr.: Angola occidentalis: Catumbella.

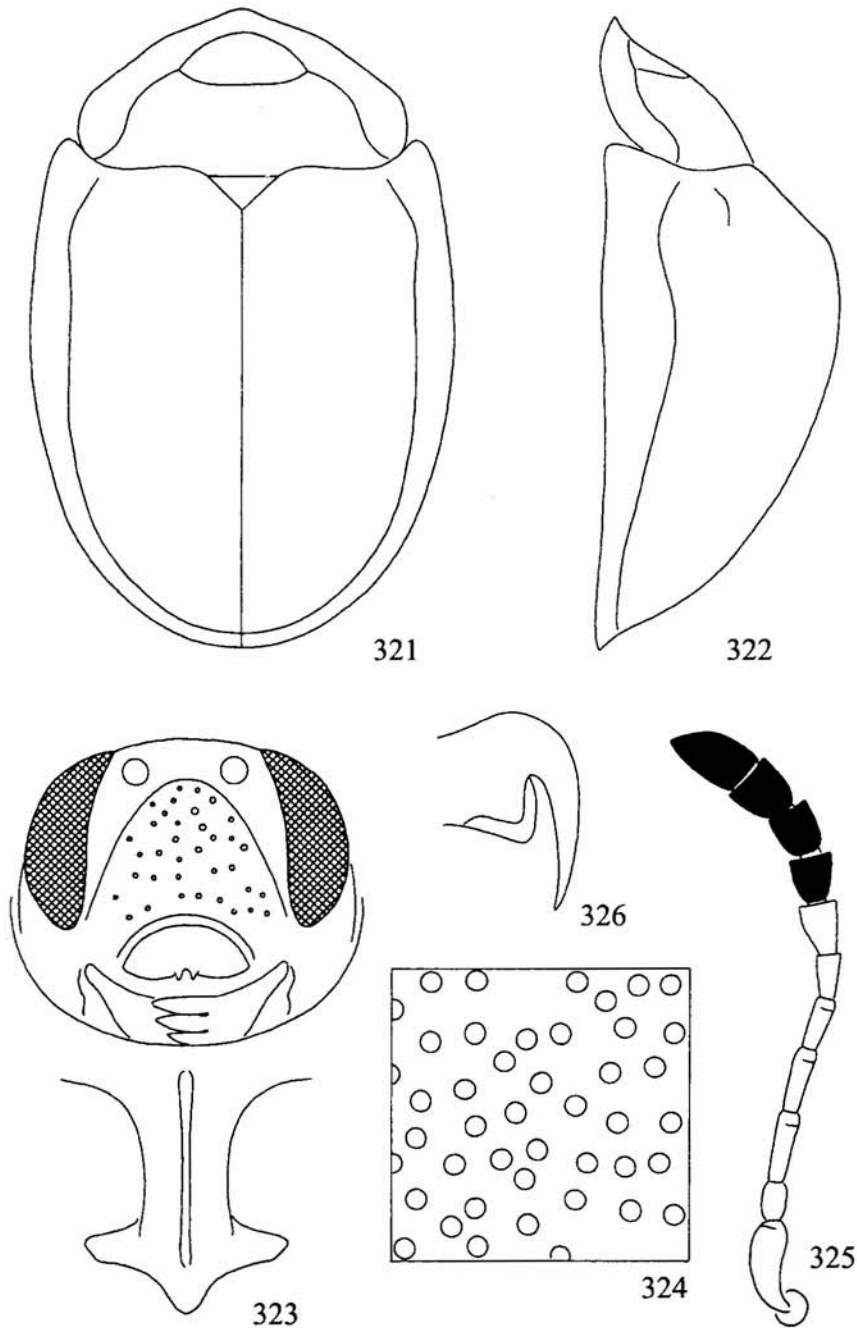
***Psalidoma holubi* SPAETH, 1899**

(figs 321-327, pl. 14: 1-3)

Psalidoma Holubi SPAETH, 1899: 218 (LT in NMP, PLT in MM, ITZ, NMP), 1899: taf. 5 (fig.), 1914: 85, 1926: 10; BOROWIEC, 1999: 315.

DESCRIPTION

Le: 9.7-11.1 mm, Wi: 6.4-6.8 mm, Lp: 3.4-3.9 mm, Wp: 5.1-5.65 mm, Le/Wi: 1.47-1.63, Wp/Lp: 1.45-1.51 Body elongate-oval (fig. 321), slightly cylindrical, males slightly stouter than females (L/W 1.47-1.53, female 1.55-1.63).



321-326. *Psalidoma holubi*: 321 – dorsal, 322 – lateral, 323 – head and prosternum, 324 – puncturation of central part of elytral disc, 325 – antenna, 326 – claw

Pronotum and elytra yellowish-brown to brown. Clypeus yellowish-brown, prosternum from uniformly yellowish brown to mostly black, often only prosternal alae darkened, brown to black, and prosternal process yellowish brown; metathorax usually completely dark brown, or only in anterior part slightly paler, yellowish-brown; abdomen at least in middle with large dark brown spot, often almost whole abdomen dark brown except paler extreme margins, sometimes first one or two abdominal sternites paler brown than remainder. Legs yellowish-brown, femora in middle darkened, brown to dark brown, in extreme cases almost whole femora dark brown, with only basal and distal parts narrowly yellowish-brown, or almost whole femora yellowish-brown, only in middle with narrow brown ring. Basal seven antennal segments yellowish-brown, distal four segments black.

Pronotum elliptical, but with maximum width in anterior $2/5$ length, anterior margin less rounded than posterior, sides narrowly rounded. Disc only slightly convex, indistinctly separated from explanate margin; area above head coarsely but sparsely punctate, with surface regular, shiny, top and sides of disc coarsely and densely punctate, distance between punctures mostly narrower than puncture diameter, surface appears from more or less irregular to slightly rugose. Explanate margin moderately broad, as coarse as but distinctly sparser punctate than on disc, surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra wider than pronotum, humeri protruding anterad, form obtuse angle. Basal margin of each disc distinctly crenulate. Disc strongly, almost evenly convex, only slightly elevated in postscutellar point (fig. 322), postscutellar impressions shallow but distinct, not bordered by elevations, principal and lateral impressions absent. Puncturation completely irregular, moderately coarse and dense (fig. 324), distance between punctures from slightly narrower to slightly wider than puncture diameter, surface of disc appears mostly regular, interspaces shiny. Sometimes, in position of 3rd interval, on slope, runs impunctate, narrow elevation. Marginal interval and marginal row barely marked, usually completely vanishing between punctures of disc and explanate margin, sometimes in $1/3$ length of margin of disc runs short, impunctate fragment of marginal interval; punctures in position of marginal row usually slightly coarser than on disc. Explanate margin narrow, almost perpendicular to surface of abdomen, in the widest part c. 5-6 times narrower than half width of disc, in apical part as wide as combined diameter of two punctures of disc. Surface of explanate margin usually as coarsely and densely punctate as disc, surface appears mostly regular; usually punctures close to border of disc coarser than along lateral margin of elytra. Apex of elytral epipleura bare.

Clypeus broad, c. 1.4 times as wide as long, with fine clypeal lines converging in arch (fig. 323), anterior margin of clypeal plate before antennal insertions slightly elevated. Surface of clypeus slightly convex, coarsely punctate, but punctures distant, surface appears regular, shiny. Labrum in middle of anterior margin with two large spines. Venter of pronotum along sides of head deeply impressed, forms antennal grooves bordered externally by sharp carina. Prosternal

collar in middle short, on sides prominent, without lateral emargination, but prosternal alae with deep and large pit. Prosternal process between coxae broad, almost parallelsided, strongly expanded apically, deeply canaliculate along whole length, central part of apex distinctly higher than expanded sides; surface of prosternal process impunctate, shiny. Antennae moderately slim, length ratio of antennal segments: 100:40:75:72:55:45:55:47:50:50:100. Segment 3 c. 1.9 times as long as 2, and only slightly longer than segment 4 (fig. 325).

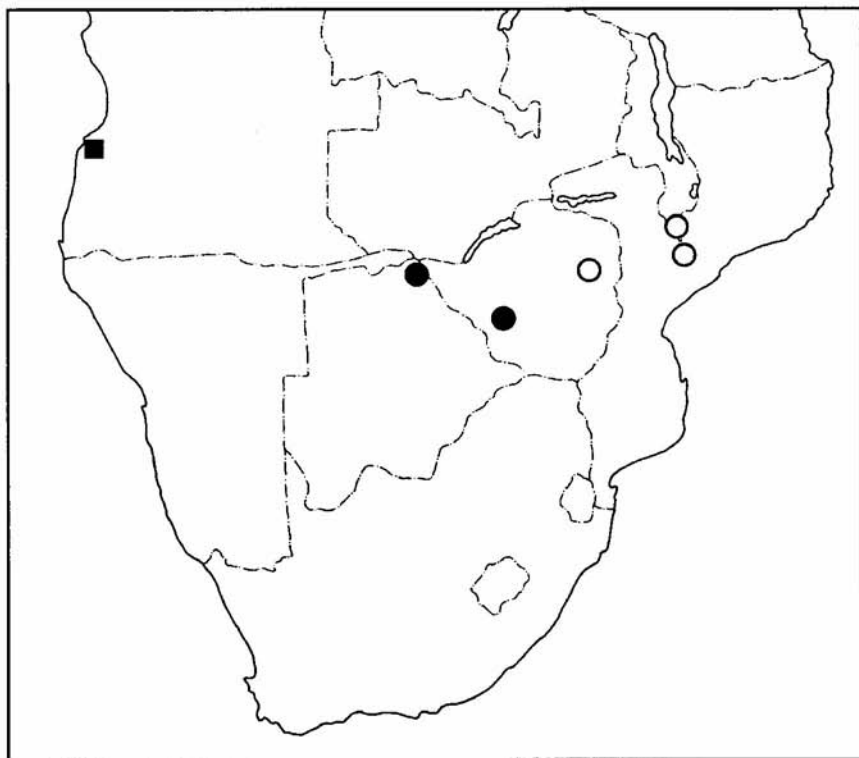
Legs quite slim, covered by sparse, adherent setae. Claws with large basal tooth (fig. 326).

DISTRIBUTION

Zimbabwe and Botswana (fig. 327).

REMARKS

In its elongate body it is similar only to *P. oblonga*; it differs in almost regularly convex elytral disc, while in *P. oblonga* it is distinctly elevated in postscutellar area.



327. Distribution of *Psalidoma contracta* (black square), *Psalidoma holubi* (white circles), and *Psalidoma knirschi* (black circles)

MATERIAL EXAMINED

ZIMBABWE: Sawmills, 31 XII 1921, 1, 12 II 1923, 1, N. JONES (NMM).

BOTSWANA: Panadamatinka [Panda Ma Tenga], 5 (paralectotypes, MM); Sogosse Tsepe, 4-7 XII 1906, 24, SEINER (ZMHU).

VARIA: Africa mer. centr., 1, KRANTZ (ZMHU); Caffraria, 7, HOLUB (lectotype and 6 paralectotypes, NMP); Zambesi, 1878, 20, BRADSHAW (ITZ).

***Psalidoma knirschi* SPAETH, 1919**

(figs 327-333, pl. 14: 4-6)

Psalidoma Knirschi SPAETH, 1919: 184 (ST in MM), 1926 a: 10; BOROWIEC, 1999: 315.

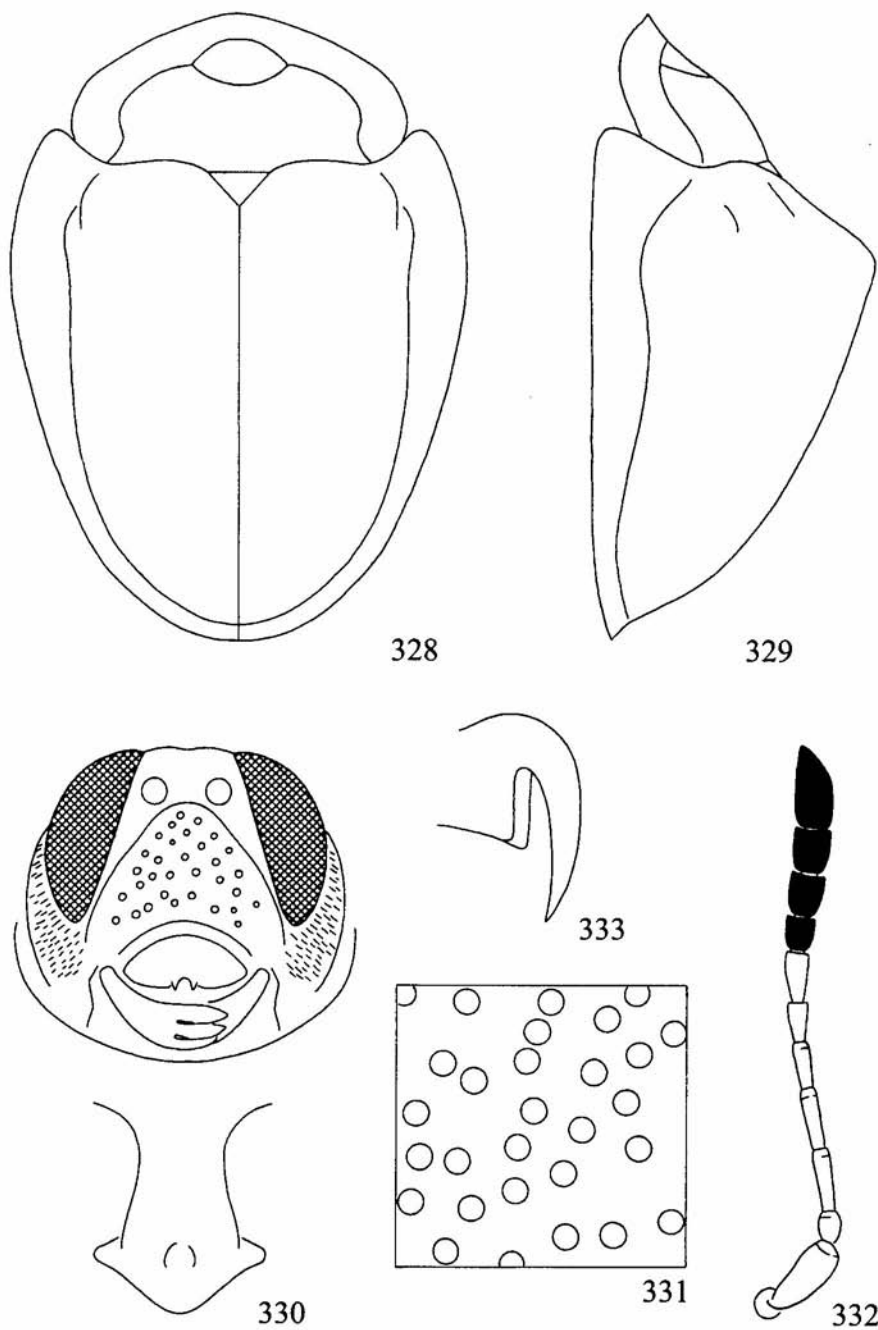
DESCRIPTION

Le: 9.3-11.7 mm, Wi: 7.0-8.6 mm, Lp: 3.1-3.7 mm, Wp: 5.2-6.2 mm, Le/Wi: 1.31-1.45, Wp/Lp: 1.98-2.07. Body subtriangular, distinctly converging posterad (fig. 328), males slightly stouter than females (L/W 1.31-1.39, female 1.41-1.45).

Pronotum and elytra yellowish-brown to brown, sometimes along suture runs reddish-brown band. Ventrites usually mostly brown, with only clypeus and sides of abdomen paler, yellowish-brown. In the palest specimens ventrites uniformly yellowish brown, in the darkest form uniformly dark brown. Legs usually the same colour like ventrites, femora sometimes in middle slightly darkened, but not as distinctly as in related *P. holubi*. Basal six antennal segments yellowish-brown, distal five segments black, sometimes 7th segment at base pale, dark distally.

Pronotum elliptical, more regular than in *P. holubi*, with maximum width slightly before middle, sides broadly rounded. Disc only slightly convex, indistinctly separated from explanate margin; area above head coarsely but sparsely punctate, with surface regular, shiny, top and sides of disc coarsely and densely punctate, distance between punctures mostly narrower than puncture diameter, often punctures almost touching each other, surface appears distinctly irregular to rugose. Explanate margin moderately broad, as coarsely as but slightly sparser punctate than disc, surface appears more or less irregular.

Scutellum triangular, without punctures or sulci. Base of elytra wider than pronotum, humeri protruding anterad, form obtuse angle. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, angulate in profile (fig. 329), postscutellar impressions shallow but distinct, not or indistinctly bordered by elevations, principal and lateral impressions usually absent, but in some specimens posterolateral part of disc shallowly impressed. Punctuation completely irregular, moderately coarse and dense (fig. 331), distance between punctures in various populations varies from slightly narrower to distinctly wider than puncture diameter, surface of disc in some specimens appears completely rugose, in other only slightly irregular; usually in posterolateral part of disc punctuation denser than in other parts of disc, often forms rugose field. Sometimes, in position of 3rd interval, on slope, runs impunctate, narrow line or elevation, but it is never



328-333. *Psalidoma knirschi*: 328 – dorsal, 329 – lateral, 330 – head and prosternum, 331 – puncturation of central part of elytral disc, 332 – antenna, 333 – claw

as distinct as in some specimens of *P. holubi*. Marginal interval and marginal row barely marked, usually completely vanishing between punctures of disc and explanate margin, sometimes in 1/3 length of margin of disc runs short, impunctate fragment of marginal interval; punctures in position of marginal row usually slightly coarser than on disc. Explanate margin narrow, almost perpendicular to surface of abdomen, in the widest part c. 4-5 times narrower than half width of disc, in apical part as wide as combined diameter of two punctures of disc. Surface of explanate margin usually as coarsely and densely punctate as disc, surface appears mostly regular; usually punctures close to border of disc coarser than along lateral margin of elytra. Apex of elytral epipleura bare.

Clypeus broad, c. 1.4 times as wide as long, with fine clypeal lines converging in arch (fig. 330), anterior margin of clypeal plate before antennal insertions not elevated. Surface of clypeus slightly convex, coarsely punctate, in some specimens puncturation very dense, with distance between punctures mostly narrower than puncture diameter and surface appears irregular, in other specimens puncturation sparse, punctures distant, surface appears regular, shiny. Labrum in middle of anterior margin with two large spines. Venter of pronotum along sides of head deeply impressed, forms antennal grooves bordered externally by sharp carina. Prosternal collar in middle short, on sides prominent, without lateral emargination, but prosternal alae with deep and large pit. Prosternal process between coxae broad, almost parallelsided, strongly expanded apically, very deeply canaliculate along whole length, central part of apex distinctly higher than expanded sides; surface of prosternal process from almost impunctate, shiny to finely punctate and wrinkled. Antennae moderately slim, length ratio of antennal segments: 100:35:75:75:60:50:57:40:50:50:100. Segment 3 c. 2.1 times as long as 2, and c. as long as segment 4 (fig. 332).

Legs stout, covered by sparse, adherent setae. Claws with large basal tooth (fig. 333).

HOST PLANT

Two specimens were collected on *Ipomoea shirensis* (Convolvulaceae).

DISTRIBUTION

Malawi, Mozambique and Zimbabwe (fig. 327).

REMARKS

Well distinguished by its stout body and elytral disc angulate in profile. Only *P. contracta* has similarly shaped body but differs in lower postscutellar elevation, obtuse in profile.

MATERIAL EXAMINED

MALAWI: Chiromo, 2, R.C. WOOD (BMNH).

MOZAMBIQUE: Boroma, Zambesi, 3, BRANCSIK (lectotype and two paralectotypes, MM).

ZIMBABWE: Umtali, 2 ex. *Ipomoea shirens* (BMNH); Umtali, Greenside, 23 XI 1965, 1, PALGRAVE (NMM).

***Psalidoma oblonga* SPAETH, 1926**

(figs 334-338)

Psalidoma oblonga SPAETH, 1926 a: 10 (HT in MM); BOROWIEC, 1999: 315.

DESCRIPTION

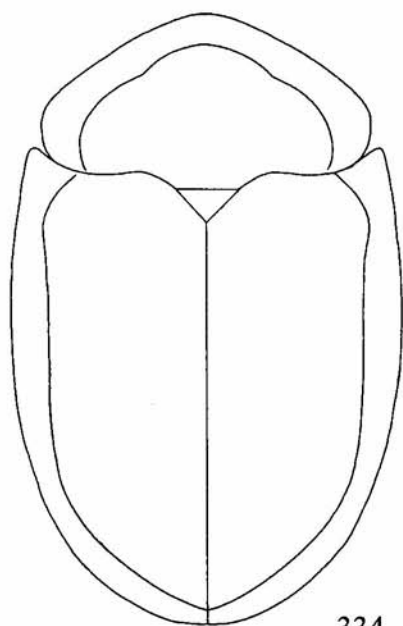
Le: 10.8 mm, Wi: 6.6 mm, Lp: 3.6 mm, Wp: 5.3 mm, Le/Wi: 1.64, Wp/Lp: 1.47. Very similar to *P. holubi*, body elongate oval, slightly cylindrical (fig. 334).

Pronotum and elytra yellowish-brown to brown. Clypeus yellowish-brown, prosternum, metathorax and abdomen mostly dark brown. Legs yellowish-brown, femora in middle darkened. Basal seven antennal segments yellowish-brown, distal four segments black.

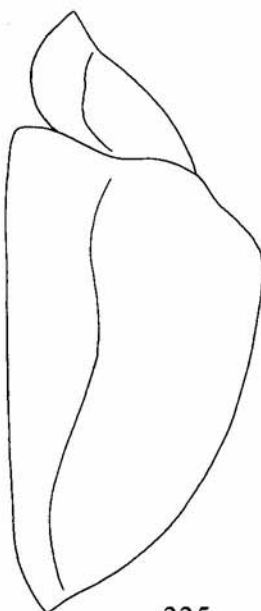
Pronotum elliptical, but with maximum width slightly before middle, anterior margin slightly more rounded than in *P. holubi*. Disc only slightly convex, indistinctly separated from explanate margin; area above head coarsely but sparsely punctate, with surface regular, shiny, top and sides of disc coarsely and densely punctate, distance between punctures mostly narrower than puncture diameter, surface appears from more or less irregular to slightly rugose. Explanate margin moderately broad, as coarse as but distinctly sparser punctate than disc, surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra wider than pronotum, humeri protruding anterad, form obtuse angle. Basal margin of each disc distinctly crenulate. Disc strongly, unevenly convex, distinctly elevated in postscutellar point (fig. 335), postscutellar impressions shallow but distinct, slightly deeper than in *P. holubi*, not bordered by elevations, principal and lateral impressions absent. Puncturation completely irregular, moderately coarse and dense, distance between punctures from slightly narrower to slightly wider than puncture diameter, surface of disc appears mostly regular, interspaces shiny. Marginal interval and marginal row barely marked, usually completely vanishing between punctures of disc and explanate margin, sometimes in 1/3 length of margin of disc runs short, impunctate fragment of marginal interval; punctures in position of marginal row usually slightly coarser than on disc. Explanate margin narrow, almost perpendicular to surface of abdomen, in the widest part c. 5-6 times narrower than half width of disc, in apical part as wide as diameter of two punctures of disc combined. Surface of explanate margin usually as coarsely and densely punctate as disc, surface appears mostly regular; usually punctures close to border of disc coarser than along lateral margin of elytra. Apex of elytral epipleura bare.

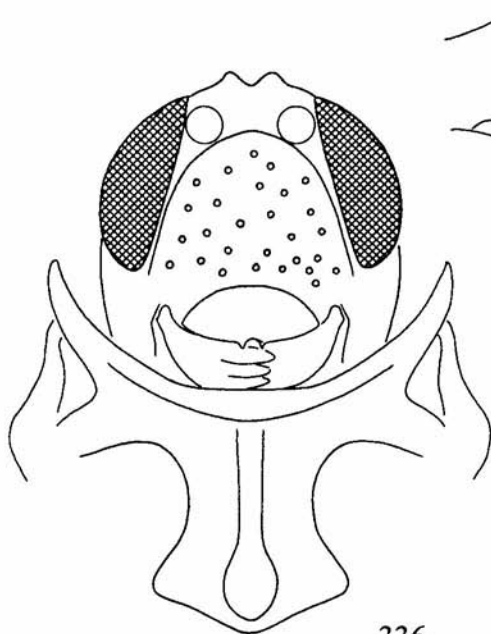
Clypeus broad, c. 1.4 times as wide as long, with fine clypeal lines converging in arch (fig. 336), anterior margin of clypeal plate before antennal insertions



334



335



336



338



337

334-338. *Psalidoma oblonga*: 334 – dorsal, 335 – lateral, 336 – head and prothorax, 337 – antenna, 338 – claw

slightly elevated. Surface of clypeus slightly convex, coarsely punctate, punctures slightly denser than in *P. holubi*, surface appears slightly irregular. Labrum in middle of anterior margin with two large spines. Venter of pronotum along sides of head deeply impressed, forms antennal grooves bordered externally by sharp carina. Prosternal collar in middle short, on sides prominent, without lateral emargination, but prosternal alae with deep and large pit. Prosternal process between coxae broad, almost parallelsided, strongly expanded apically, deeply canaliculate along whole length, central part of apex distinctly higher than expanded sides; surface of prosternal process impunctate, shiny. Antennae moderately slim, segments 9 and 10 slightly longer than wide, length ratio of antennal segments: 100:65:75:95:65:50:55:65:65:100. Segment 3 c. 1.2 times as long as segment 2 and segment 4 c. 1.3 times as long as segment 3 (fig. 337).

Legs quite slim, covered by sparse, adherent setae. Claws with large basal tooth (fig. 338).

DISTRIBUTION

South Africa?. The only known specimen is labelled "S. Afrika", with no details.

REMARKS

At first glance it is very similar to *P. holubi*, especially in its elongate body, but differs in elytral disc distinctly elevated in its postscutellar part, while in *P. holubi* elytral disc is almost regularly convex. SPAETH (1926 d) in his original description suggested that puncturation of clypeus in *P. oblonga* was distinctly denser than in *P. holubi*, with a tendency to form grooves, but in the examined holotype (the only known specimen) puncturation of clypeus is only slightly denser than in members of *P. holubi*, surface of clypeus without grooves, only slightly irregular.

MATERIAL EXAMINED

VARIA: S. Afrika, coll. WAGENER (holotype, MM).

Genus: *Rhytidocassis* SPAETH, 1941

Rhytidocassis SPAETH, 1941: 316 (type species: *Cassida limbiventris* BOHEMAN, 1854, by original designation); HINCKS, 1952: 339; SEENO and WILCOX, 1982: 177 (as subgenus of *Cassida*); BOROWIEC, 1994 a: 15, 1999: 316.

Chloocassis SPAETH in HINCKS, 1952: 347 (type species: *Odontionycha indicola* DUVIVIER, 1892, by monotypy), proposed as subgenus of *Cassida*; HINCKS, 1952: 339; SEENO and WILCOX, 1982: 177 (as subgenus of *Cassida*); BOROWIEC, 1990: 4 (as syn. of *Rhytidocassis*).

Small cassids, body length 3.5-8.0 mm. Body subtriangular or oval. Pronotum with broadly rounded sides. Pronotal disc indistinctly separated from explanate

margin, punctate. Explanate margin narrow, punctate. Elytral base wider than pronotum. Elytral disc usually more or less angulate in profile, sometimes regularly convex. Punctuation of disc coarse, irregular. Marginal row and marginal interval visible only in anterior third of elytra. Explanate margin of elytra moderately broad, strongly narrowed posterad, punctate. Clypeus broad, with fine clypeal grooves. Venter of pronotum with short antennal groove separated externally by sharp or obtuse carina. Prosternal collar with lateral emargination. Antennae stout, third segment c. twice shorter than the second, segments 8-10 not longer than wide. Last segment of tarsi not longer than the third, bilobate segment. Claws simple or with small basal tooth.

Rhytidocassis Sp. belongs to a probably natural group of genera with more or less distinct antennal grooves and prosternal collar emarginate laterally. The group comprises also *Acrocassis* Sp., *Erbolaspis* Sp., *Trigonocassis* HINCKS and Palaearctic *Hypocassida* WEISE. *Acrocassis* and *Erbolaspis* distinctly differ in semicircular pronotum with distinct posterior angles. *Trigonocassis* is the most similar, it differs in large size (length above 6 mm), marginal row of elytra distinct on whole length of elytron and variegate body colouration.

Widespread genus, with five species in Africa except Madagascar, one species in India, and two in Iran. Iranian species form a different group (BOROWIEC and ŚWIĘTOJĄSKA 2001), the species from India is very close to African *R. limbiventris* (BOH.).

KEY TO THE SPECIES

1. Elytra uniformly yellow or green.
..... 2.
- Elytra at base with more or less developed triangular, red or brown spot, sometimes reduced to small spots at basal margin and on the top of postscutellar elevation. Arid part of Africa south of Sahara from Senegal to Ethiopia, isolated locality in N Angola.
..... *scutellaris*
2. Elytra subtriangular in outline with shallow postscutellar impressions.
..... 3.
- Elytra slightly cylindrical, without postscutellar impressions. Cape Prov. in South Africa.
..... *minuta*
3. Pronotum elliptical, widest in or behind middle, sides broadly rounded. Elytra less angulate in profile.
..... 4.

- Pronotum reversely trapezoidal, widest in anterior third, sides strongly converging posterad. Elytra strongly angulate in profile.
..... *angulipennis*
- 3. Pronotal disc impunctate or very shallowly, indistinctly punctate, surface of pronotum appears mostly regular. Elytra strongly converging posterad. Humeral angles acute. Whole Africa south of Sahara except extreme south.
..... *limbiventris*
- Pronotal disc coarsely punctate and wrinkled, surface of sides of disc appears irregular. Elytra less converging posterad. Humeral angles less marked, subangulate. Only Erythrea and Djibuti.
..... *muelleri*

***Rhytidocassis angulipennis* n. sp.**

(figs 339-344, pl. 12: 7-8)

ETYMOLOGY

The name refers to elytra angulate in profile.

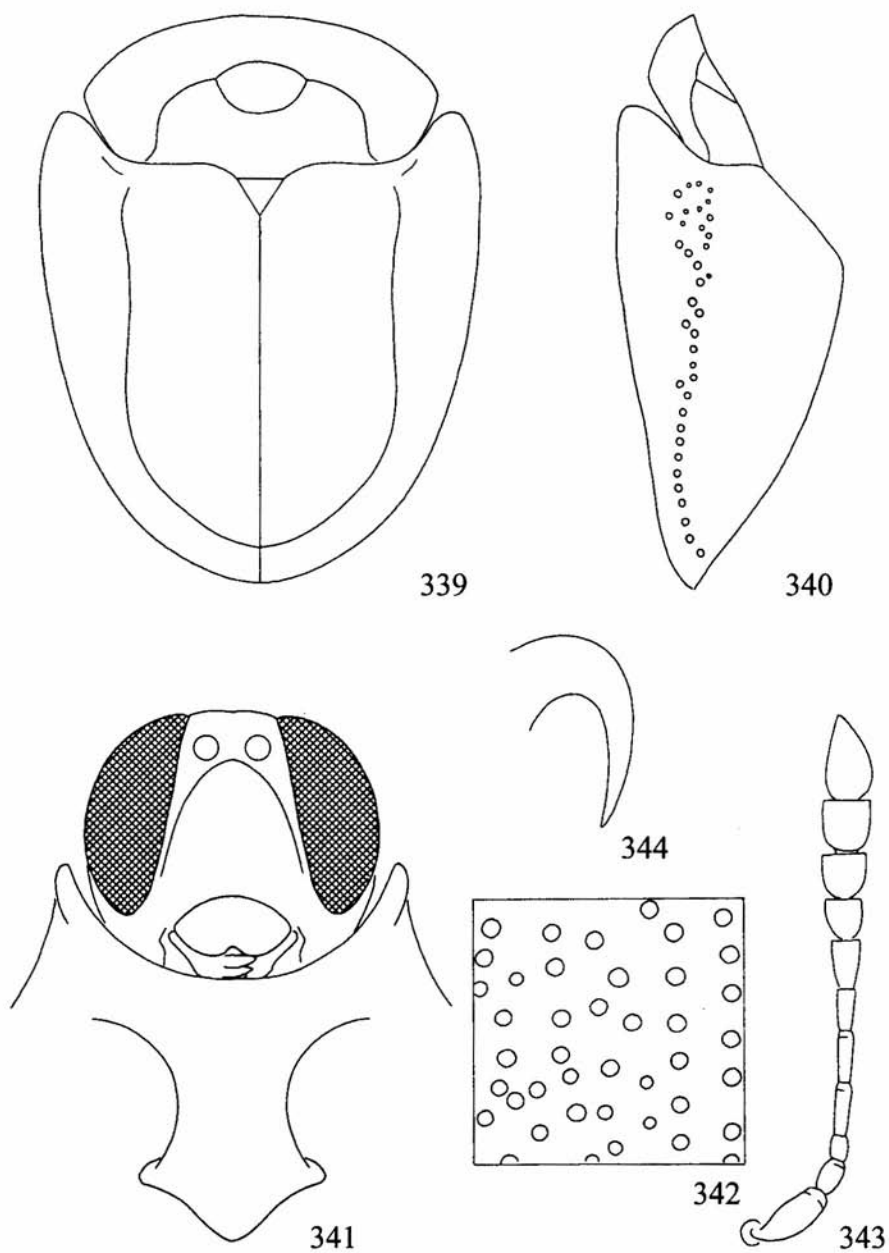
DESCRIPTION

Le: 4.7 mm, Wi: 3.5 mm, Lp: 1.45 mm, Wp: 2.8 mm, Le/Wi: 1.35, Wp/Lp ratio: 1.93. Body subtriangular, distinctly converging posterad (fig. 339).

Whole body, including ventrites, legs and antennae, uniformly yellow.

Pronotum reversely trapezoidal, with maximum width before middle, anterior margin almost straight, sides rounded. Disc slightly convex, indistinctly separated from explanate margin; area above head mostly impunctate, top of disc shallowly punctate, punctures tend to form grooves, surface appears wrinkled. Explanate margin moderately broad, shallowly but coarsely punctate, punctures distinctly coarser than on disc but sparse, with distance between punctures mostly wider than puncture diameter, interspaces not wrinkled, surface appears regular.

Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to mid length of pronotum, angulate. Basal margin of each disc finely crenulate. Disc unevenly convex, angulate in profile (fig. 340), postscutellar impressions barely marked, but bordered by elevated postscutellar area, principal and lateral impressions absent. Punctuation completely irregular, moderately coarse and moderately dense (fig. 342), distance between punctures slightly wider to slightly narrower than puncture diameter, surface of disc appears mostly regular. In position of 3rd interval runs impunctate, slightly elevated line. Marginal interval well marked in anterior 1/3 length of elytron. Marginal row completely vanishing between coarse punctuation of explanate margin. Explanate margin narrow but wider than in other species, strongly deflexed, in the widest part c. 5.6 times narrower than

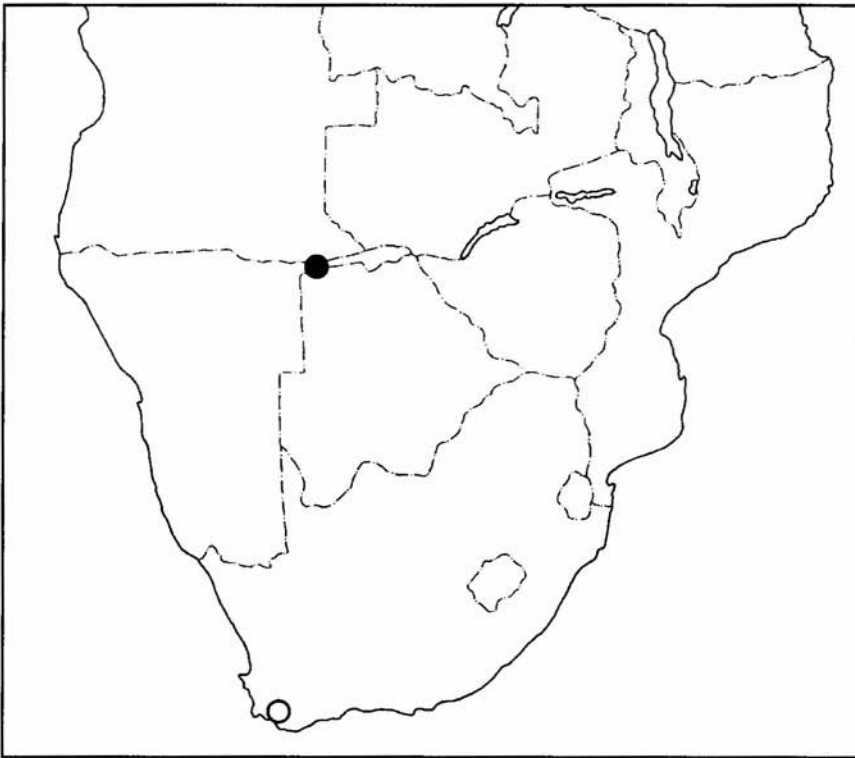


339-344. *Rhytidocassis angulipennis*: 339 – dorsal, 340 – lateral, 341 – head and prosternum, 342 – puncturation of central part of elytral disc, 343 – antenna, 344 – claw

width of disc, in apical part as wide as combined diameter of three punctures of disc. Surface of explanate margin distinctly punctate, punctures distinctly coarser than on disc, completely irregular, but surface appears mostly regular. Slope without setae. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.2 times as wide as long, with distinct clypeal lines converging in arch (fig. 341). Surface of clypeus flat, without groove, only in apical part with few shallow punctures, appears impunctate, smooth and shiny. Labrum very shallowly emarginate. Venter of pronotum with short but deep antennal grooves, separated externally by a sharp carina. Prosternal collar prominent with shallow lateral emargination, lateral angles of the collar obtuse, without plate above the emargination. Prosternal process narrow, moderately expanded apically, slightly impressed along middle, apex smooth and shiny. Antennae stout, length ratio of antennal segments: 100:54:40:63:63:45:72:54:72:72:118. Segment 2 c. 1.3 times as long as segment 3, and segment 4 c. 1.4 times as long as segment 3 (fig. 343).

Legs stout, covered by sparse, adherent setae. Claws on fore legs with small basal tooth, on mid and hind legs untoothed but with slightly swollen base (fig. 344).



345. Distribution of *Rhytidocassis angulipennis* (white circle) and *Rhytidocassis minuta* (black circle)

DISTRIBUTION

Namibia (fig. 345).

REMARKS

It is well distinguished by its elytra, strongly angulate in profile, and reversely trapezoidal pronotum with maximum width before middle.

MATERIAL EXAMINED

NAMIBIA: holotype: Okavango riv., Bagani, Popa Falls, 25 I-4 II 1995, 1, M. SNIZEK (LB).

***Rhytidocassis limbiventris* (BOHEMAN, 1854)**

(figs 346-352, pl. 13: 1-3)

Cassida limbiventris BOHEMAN, 1854: 479 (HT in BMNH), 1856: 144, 1862: 346; GEMMINGER and HAROLD, 1876: 3655.

Cassida (Odontionycha) limbiventris: SPAETH, 1914 g: 93.

Rhytidocassis limbiventris: SPAETH, 1941: 317; BOROWIEC, 1995: 372, 1999: 316.

Cassida (Rhytidocassis) limbiventris: SHAW, 1956 a: 271, 1961: 33.

Cassida morata BOHEMAN, 1862: 347 (HT in NRS); GEMMINGER and HAROLD, 1876: 3655; WEISE, 1896 c: 19 (as syn. of *Aspidomorpha confinis* KLUG); SPAETH, 1898: 277, 1933: 348 (as syn. of *limbiventris*).

Cassida (Cassida) morata: SPAETH, 1914: 119.

Chirida puberula CHAPUIS, 1880: 30 (HT in MCSNG); BOROWIEC, 1999: 316 (as syn. of *limbiventris*).

Cassida (Odontionycha) puberula: SPAETH, 1909: 272.

Cassida pubescens [sic]: SPAETH, 1912 b: 501 (error).

Cassida (Cassida) puberula: SPAETH, 1914: 119.

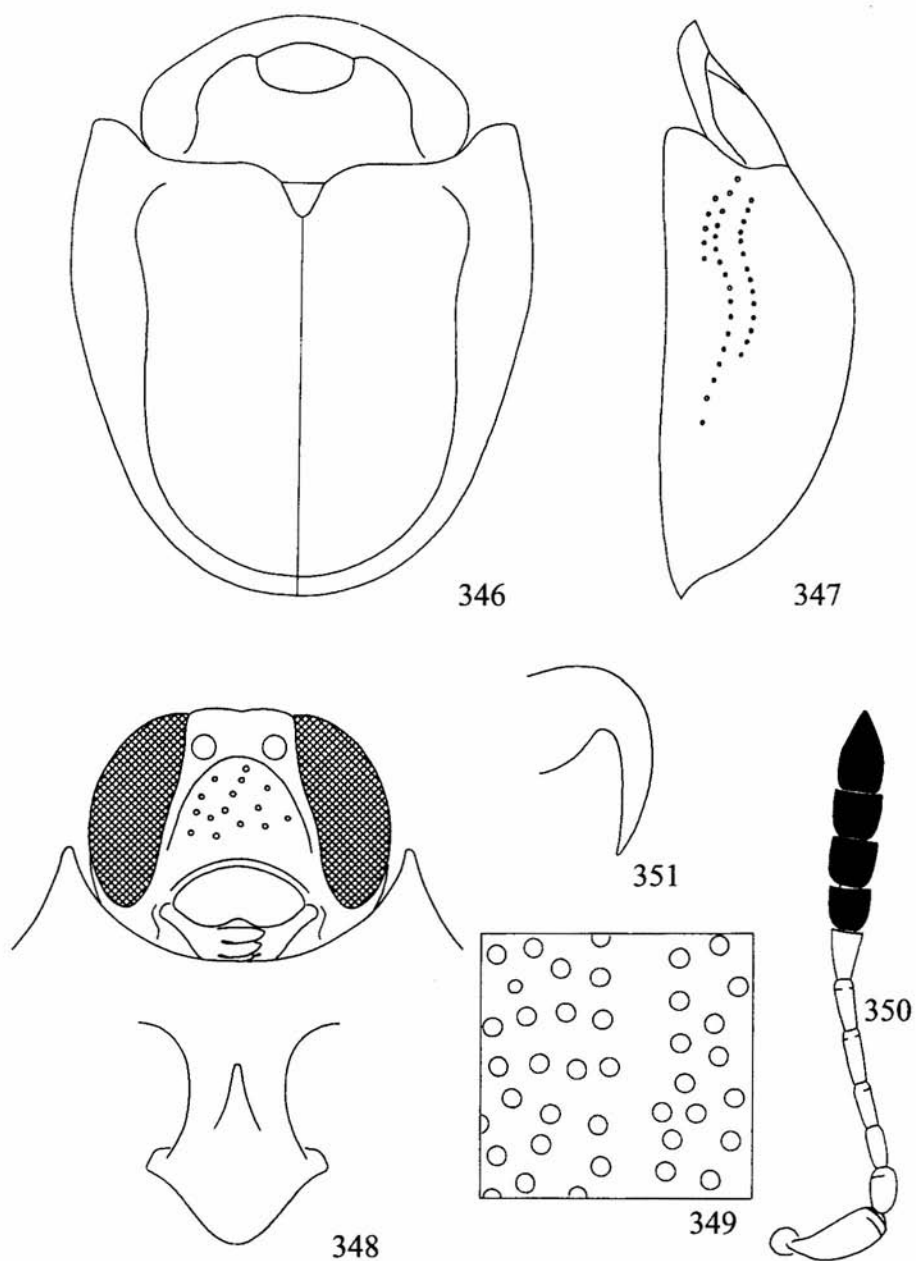
Cassida (Odontionycha) inornata SPAETH, 1910: 271 (HT in NRS), 1912 b: 501, 1914: 93, 1924: 314, 1941: 316 (as syn. of *limbiventris*).

Cassida (Odontionycha) Kristenseni SPAETH, 1912 b: 501 (ST in MM, IZPAS, NRS, ZMHU), 1914: 93, 1924: 314 (as syn. of *inornata*), 1941: 316 (as syn. of *limbiventris*).

DESCRIPTION

Le: 3.9-5.3 mm, Wi: 3.3-3.8 mm, Lp: 1.40-1.70 mm, Wp: 2.35-3.00 mm, Le/Wi: 1.28-1.37, Wp/Lp ratio: 1.68-1.82. Body subtriangular, distinctly converging posterad (fig. 346), males slightly stouter than females (L/W 1.28-1.35, female 1.34-1.37).

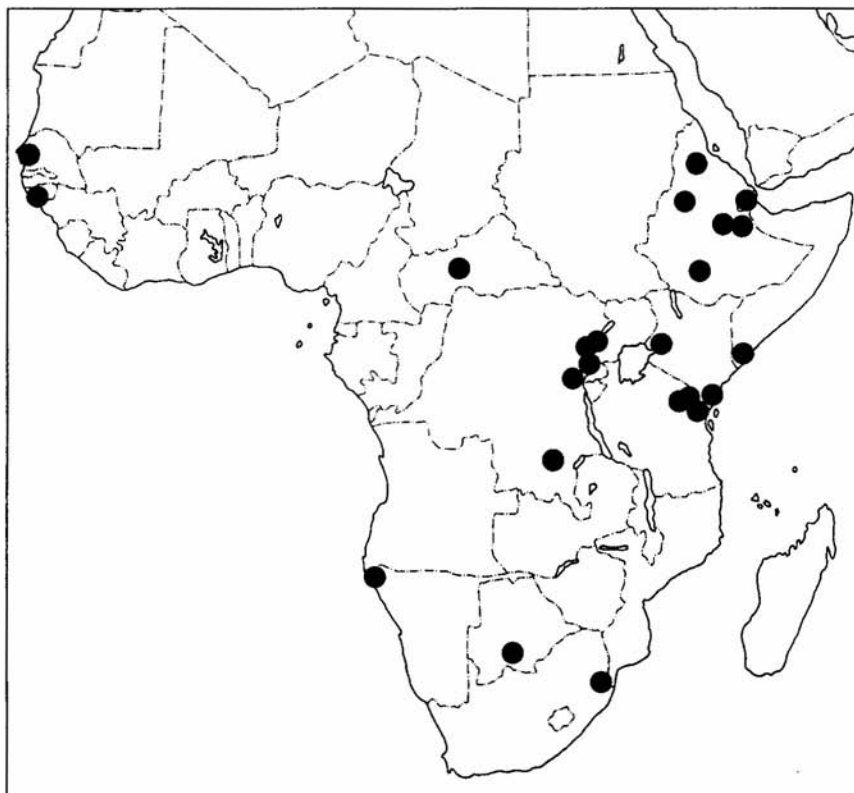
Pronotum and elytra yellow. Ventrites variable, from almost uniformly yellow to mostly black. Clypeus usually dark brown to black, sometimes with paler spot in middle, in extreme case clypeus yellow and only its base above labrum narrowly black; thorax from uniformly yellow to uniformly black. Abdomen usually in middle brownish-black, on sides gradually paler, up to yellowish margin, in extreme cases abdomen almost completely black with narrowly yellow margins or uniformly yellow. Antennae yellow, four last segments infusate to black. Legs yellow. Forms with mostly dark ventrites predominate, 90% of examined specimens had clypeus, thorax and abdomen partly dark.



346-351. *Rhytidocassis limbiventris*: 346 – dorsal, 347 – lateral, 348 – head and prosternum, 349 – puncturation of central part of elytral disc, 350 – antenna, 351 – claw

Pronotum elliptical, with maximum width in or slightly behind middle, anterior margin straight to shallowly emarginate, sides broadly rounded. Disc moderately convex, indistinctly separated from explanate margin; area above head impunctate, top of disc usually only slightly granulate, or indistinctly, very shallowly punctate, sometimes, especially in northern populations, puncturation more distinct but surface never appears wrinkled or rugose like in related *R. muelleri*. Explanate margin moderately broad, shallowly, sparsely punctate, sometimes with short, indistinct radial folds, its surface appears regular to slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, acute. Basal margin of each disc finely crenulate. Disc unevenly convex, with top of convexity in postscutellar point (fig. 347), postscutellar impressions shallow, without or only on elytral angulation with slightly elevated borders, occasionally whole borders slightly elevated, principal and lateral impressions barely marked or absent. Puncturation completely irregular, moderately coarse and dense (fig. 349), distance between punctures mostly narrower than puncture diameter, surface of disc



352. Distribution of *Rhytidocassis limbiventris*

appears slightly rugose. In position of 3rd interval often runs impunctate, slightly elevated line, in postscutellar area connected with elevated border of postscutellar impression, but sometimes the line absent or partly vanishing between elytral puncturation. Marginal interval usually present in anterior half of elytron. Marginal row well marked in anterior 1/3 length, sometimes to half length, but in some specimens both marginal row and marginal interval behind 1/3 length completely vanishing between puncturation of disc and explanate margin. Explanate margin narrow, strongly deflexed, in the widest part as wide as 1/5 width of disc, in apical part as wide as combined diameter of two punctures of disc. Surface of explanate margin distinctly punctate, punctures distinctly coarser but sparser than on disc, completely irregular, surface appears slightly irregular. Slope in fresh specimens covered by very short, mostly adherent setae, well visible in profile, but in older specimens setation mostly worn off. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.3 times as wide as long, with distinct clypeal lines converging in arch (fig. 348). Surface of clypeus flat, along middle without groove, with several punctures, interspaces slightly shiny. Labrum very shallowly emarginate to 1/6 length. Venter of pronotum with very deep antennal grooves, separated externally by a sharp carina. Prosternal collar prominent with very deep lateral emargination, lateral angles of collar angulate, without plate above the emargination. Prosternal process narrow, moderately expanded apically, shallowly impressed along middle, apex with few shallow punctures, surface appears from almost regular to slightly irregular. Antennae stout, segments 9 and 10 equal in length and width, length ratio of antennal segments: 100:55:50:55:65:60:57:47:55:55:100. Segment 3 slightly shorter than segments 2 and 4 (fig. 350).

Legs stout, covered by sparse, adherent setae. Claws with small basal tooth (fig. 351).

DISTRIBUTION

Widespread species, known from whole Africa except extreme south (fig. 352).

REMARKS

The most common and widespread Afrotropical species. At first glance similar to *R. scutellaris* but differs in unicolour elytra, without basal spot. See also remarks under *R. muelleri*.

MATERIAL EXAMINED

BOTSWANA: Kuke Pan, 14 IV 1972, 1, Southern Afr. Exp. (BMNH).

DJIBOUTI: Djibouti, 6 VI 1984, 1, M. SECQ (SD).

ERITHREA: Bogos, Keren, 1870, 1, O. BECCARI (holotype of *C. puberula*, MCSNG).

ETHIOPIA: D. Bauoa, 1 (LB); Erer Vall., 1 (LB); Harrar, 4, KRISTENSEN (paralectotypes of *Cassida kristenseni* SPAETH, IRSN, ZMHU, MM, NRS); Harrar, 4 (ZMHU), 1 (MRAC); Lake Tana, 1, coll. LE MOULT (IRSN); Maraquo, 1 (IRSN), 1912, 1, KOVACS (HNHM); Walamo, III 1912, 1, KOVACS (HNHM).

GUINEA BISSAU: Bafatá, VII 1953, 1, BENASSI (OSU).

KENYA: Baricho, 75 km NW Malindi, sabaki river, 10 X 1992, 1, L. BARTOLOZZI (MZUF); Kabete, III 1922, 1, H.E. BOX (BMNH); Kisumu, 2 VI 1975, 1, H. GRNGET (ZMC).

NAMIBIA: Kaokoveld, Hoarusib R.M., 8 X 1968, 16, 18 X 1970, 22 (WM); Rundu, Kavango River, 1090 m, 11 I 1995, 1, WIESNER & WORM (SMNS).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 3 (IRSN, LB).

SENEGAL: Senegal, 1 (holotype of *limbiventris*, BMNH), 1, SIGNORET (holotype of *morata*, NRS).

SOMALIA: Ganale Doria Rd., E of Sidambale Bridge, 1150 m, 9 V 1974, 1, R.O.S. CLARKE (MRAC).

TANZANIA: Arusha-ju, 1905, 1, KATONA (HNHM); Dar-es-Salaam, VI 1932, 1, J. OGILVIE (BMNH); SO Kilimandjaro, 20-21 I 1906, 1, SCHRÖDER (ZMHU), Kilimandjaro, Kibonoto, 1000-1200 m, 1 XI, 1, SJÖSTEDT (holotype of *inornata*, NRS); Mombo or., 9-11 I 1996, 39, M. SNIZEK (DS, LB, MS).

ZAIRE (REPUBLIC OF CONGO): Albert Nat. Park, L. Eduard, Bitshumbi, 10/11/14 II 1936, 1, H. DAMAS (MRAC); Albert Nat. Park, L. Eduard, r. Rwindi, 1000 m, 25 IV 1936, 2, L. LIPPENS (MRAC, LB); Albert Nat. Park, Ishango, 912 m, 13 XII 1935, 1, 14 XII 1935, 1, H. DAMAS (MRAC); Albert Nat. Park, Kamande, 925 m, 1 X 1935, 2, L. LIPPENS (MRAC, LB); Albert Nat. Park, Secteur Nord, Katanda, sur rive dr. Semliki, 912 m, 6 VIII 1956, 1, P. VANSCHUYTBROECK (MRAC); Kivu, Luvungi, XII 1932, 2, L. BURGEON (MRAC); Upemba Nat. Park, Masombwe, 1120 m, 6-9 VII 1948, 1, DE WITTE (MRAC).

Rhytidocassis minuta (BOHEMAN, 1854)

(figs 345, 353-358, pl. 12: 9-10)

Cassida minuta BOHEMAN, 1854: 431 (HT in ZMHU), 1856: 136, 1862: 334; GEMMINGER and HAROLD, 1876: 3655.

Cassida (Cassida) minuta: SPAETH, 1914: 119.

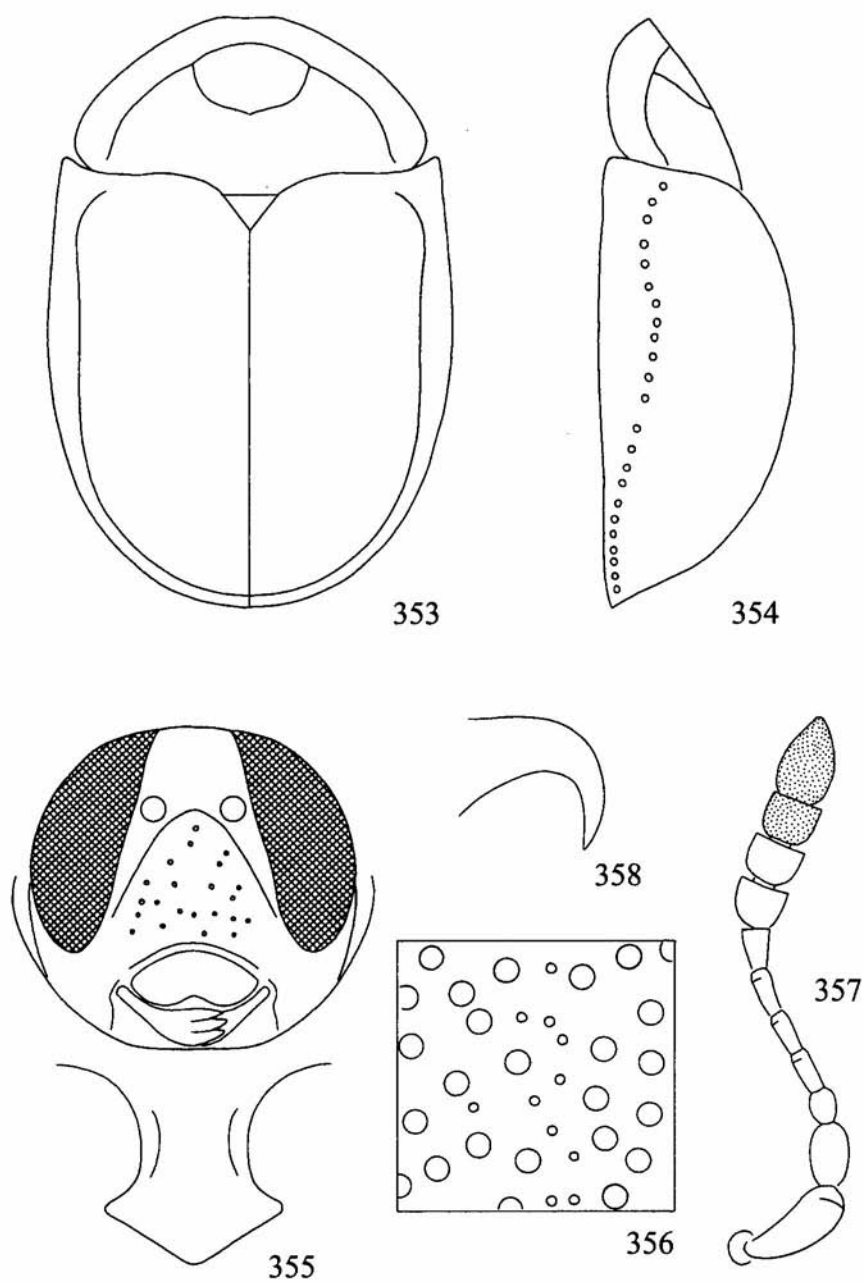
Rhytidocassis minuta: BOROWIEC, 1999: 316.

DESCRIPTION

Le: 4.5 mm, Wi: 3.0 mm, Lp: 1.5 mm, Wp: 2.5 mm, Le/Wi: 1.5, Wp/Lp ratio: 1.67. Body oval, slightly cylindrical (fig. 353).

Pronotum and elytra yellow. Clypeus yellow, prosternal collar in middle, and sides of prosternal process black; metathorax in middle with transverse black spot. Abdomen and legs uniformly yellow. Antennae yellow, only two last segments on dorsal side slightly infuscate.

Pronotum elliptical, with maximum width slightly behind middle, anterior margin almost straight, sides broadly rounded. Disc moderately convex, indistinctly separated from explanate margin; area above head mostly impunctate, top of disc and sides distinctly, moderately coarsely punctate, distance between punctures at top of disc as wide as to slightly wider, on sides mostly narrower than



353-358. *Rhytidocassis minuta*: 353 – dorsal, 354 – lateral, 355 – head and prosternum, 356 – puncturation of central part of elytral disc, 357 – antenna, 358 – claw

puncture diameter. At the top of disc elongate impunctate line, on sides punctures do not form grooves, surface appears regular. Explanate margin moderately broad, shallowly, slightly coarser but distinctly sparser punctate than on disc, its surface appears regular.

Scutellum triangular, without punctures or sulci. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, rounded. Basal margin of each disc finely crenulate. Disc evenly convex, with top of convexity slightly before middle (fig. 354), without impressions. Puncturation completely irregular, moderately coarse and moderately dense (fig. 356), distance between punctures from slightly wider to slightly narrower than puncture diameter, only in posterolateral part of disc distinctly narrower than punctures, surface of disc appears completely regular. In position of 3rd interval runs impunctate, not elevated line. Marginal interval present in anterior half length of elytron. Marginal row well marked in anterior half length, then vanishing between puncturation of disc and explanate margin. Explanate margin very narrow, strongly deflexed, in the widest part c. eight times narrower than width of disc, in apical part as wide as diameter of two punctures of disc combined. Surface of explanate margin distinctly punctate, punctures as coarse and dense as on disc, completely irregular, but surface appears mostly regular. Slope covered by extremely short, barely visible setae. Apex of elytral epipleura bare.

Clypeus broad, c. 1.4 times as wide as long, with distinct clypeal lines converging in arch (fig. 355). Surface of clypeus flat, without groove, with few shallow punctures, appears shiny. Labrum very shallowly emarginate to 1/6 length. Venter of pronotum with deep but short antennal grooves, separated externally by a sharp carina. Prosternal collar prominent with moderately deep lateral emargination, lateral angles of the collar angulate, without plate above the emargination. Prosternal process narrow, moderately expanded apically, mostly flat, apex with few shallow punctures, its surface appears regular. Antennae stout, length ratio of antennal segments: 100:57:30:38:42:38:30:38:38:38:69. Segment 2 c. 1.9 times as long as segment 3, and c. 1.5 times as long as segment 4 (fig. 357).

Legs stout, covered by sparse, adherent setae. Claws untoothed, only base of each claw slightly swollen (fig. 358).

DISTRIBUTION

South Africa: Cape Prov. (fig. 345).

REMARKS

It is well distinguished by its cylindrical body shape (other Afrotropical species are more or less triangular).

MATERIAL EXAMINED

SOUTH AFRICA: Cape, Caledon, 20 IX 1992, 1 (LB); Cap, 1, KREBS (holotype, ZMHU).

***Rhytidocassis muelleri* SPAETH, 1941**

(figs 359-364, 371, pl. 13: 4-5)

Rhytidocassis mülleri SPAETH, 1941: 317 (HT in MCSNT); BOROWIEC, 1986: 805, 1999: 316.

DESCRIPTION

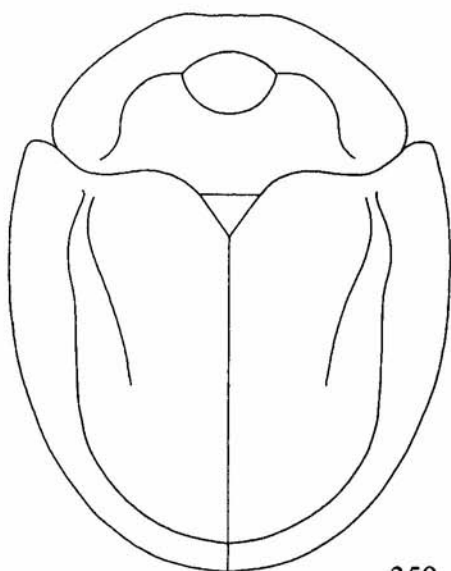
Le: 4.4 mm, Wi: 3.4 mm, Lp: 1.60 mm, Wp: 2.75 mm, Le/Wi: 1.29, Wp/Lp ratio: 1.72. Body less triangular than in related *R. limbiventris*, moderately converging posterad (fig. 359).

Pronotum and elytra yellow. Clypeus dark brown with paler brown margins, prothorax dark-brown to black, except yellow alae and yellowish brown part between procoxae; metathorax mostly brownish-black, except yellowish postero-lateral parts. Abdomen in middle brownish-black, on sides gradually paler, up to yellowish margin. Antennae yellow, only two last segments slightly infuscate.

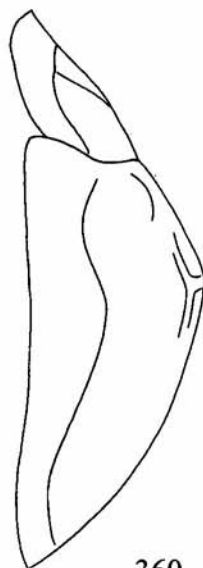
Pronotum elliptical, with maximum width slightly behind middle, anterior margin shallowly emarginate, sides broadly rounded. Disc moderately convex, distinctly separated from explanate margin; area above head impunctate, top of disc coarsely punctate, distance between punctures mostly narrower than puncture diameter, on sides punctures tend to form grooves, surface appears wrinkled and rugose. Explanate margin moderately broad, shallowly, less dense than on disc punctate, its surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, angulate, but less than in related *R. limbiventris*. Basal margin of each disc finely crenulate. Disc unevenly convex, with top of convexity in postscutellar point (fig. 360), postscutellar impressions distinct, with slightly elevated borders, principal and lateral impressions very shallow but visible. Puncturation completely irregular, moderately coarse and very dense (fig. 362), distance between punctures mostly narrower than puncture diameter, surface of disc appears slightly rugose. In position of 3rd interval runs impunctate, slightly elevated line, in postscutellar area connected with elevated border of postscutellar impression. Marginal interval present only in anterior 1/3 length of elytron. Marginal row well marked in anterior 1/3 length, then vanishing between puncturation of disc and explanate margin. Explanate margin very narrow, strongly deflexed, in the widest part c. six times narrower than width of disc, in apical part as wide as combined diameter of three punctures of disc. Surface of explanate margin distinctly punctate, punctures as coarse as but sparser than on disc, completely irregular, surface appears slightly irregular. Slope covered by very short, mostly adherent setae, well visible in profile, longer than in related *R. limbiventris*. Apex of elytral epipleura bare.

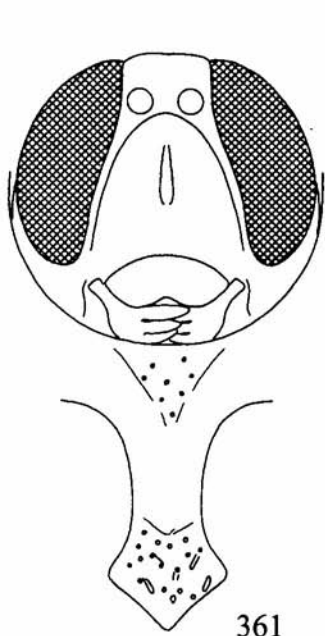
Clypeus moderately broad, c. 1.2 times as wide as long, with distinct clypeal lines converging in arch (fig. 361). Surface of clypeus flat, along middle with short groove, on sides with few shallow punctures, interspaces slightly shiny. Labrum very shallowly emarginate to 1/6 length. Venter of pronotum with very deep antennal grooves, separated externally by a sharp carina. Prosternal collar



359



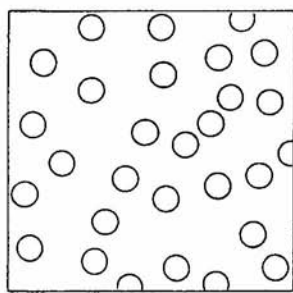
360



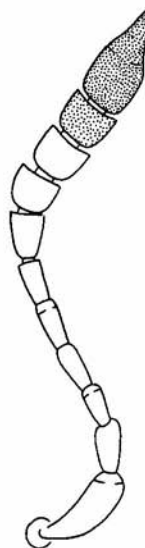
361



364



362



363

359-364. *Rhytidocassis muelleri*: 359 – dorsal, 360 – lateral, 361 – head and prosternum, 362 – punctuation of central part of elytral disc, 363 – antenna, 364 – claw

prominent with very deep lateral emargination, lateral angles of the collar angulate, without plate above the emargination. Prosternal process narrow, moderately expanded apically, mostly flat, apex with few shallow punctures and short grooves, but surface appears regular. Antennae stout, segments 9 and 10 slightly transverse, length ratio of antennal segments: 100:60:50:65:65:55:55:45:50:125. Segment 2 c. 1.2 times, segment 4 c. 1.3 times as long as segment 3 (fig. 363).

Legs stout, covered by sparse, adherent setae. Claws with small basal tooth (fig. 364).

DISTRIBUTION

Erythrea and Djibouti (fig. 371).

REMARKS

I have some doubts about its specific rank. It only slightly differs from *R. limbiventris* in elytra less converging posterad, pronotal disc more coarsely punctate, dorsal setae on elytral slope well visible (the character depends on the age of the beetle; fresh specimens have elytral setation longer, in old specimens the setation is often shorter worn; three examined specimens of *R. muelleri* looked fresh but their setation is slightly longer than in fresh specimens of *R. limbiventris*), and humeral angles less marked, subangulate; but analysing geographical variation of *R. limbiventris* I observed that its populations from NE Africa were generally more coarsely punctate. It is possible that *R. muelleri* represents only an extreme form of widespread and variable *R. limbiventris*.

MATERIAL EXAMINED

DJIBOUTI: 5°R.I.A.O.M., 6 VI 1984, 1, M. SECQ (SD).

ERYTHREA: Asmara, 31 V 1963, 1, R. LINNAVUORI (ZMUH); Dongollo inf., 4 XII 1939, 1, MÜLLER (holotype, MCSNT).

Rhytidocassis scutellaris (KLUG, 1835)

(figs 365-371, pl. 12: 11-12)

Cassida scutellaris KLUG, 1835: 48 (ST in ZMHU, NRS); BOHEMAN, 1854: 478, 1856: 144, 1862: 346; GEMMINGER and HAROLD, 1876: 3658; ZAJCEV, 1989: 301 (larva).

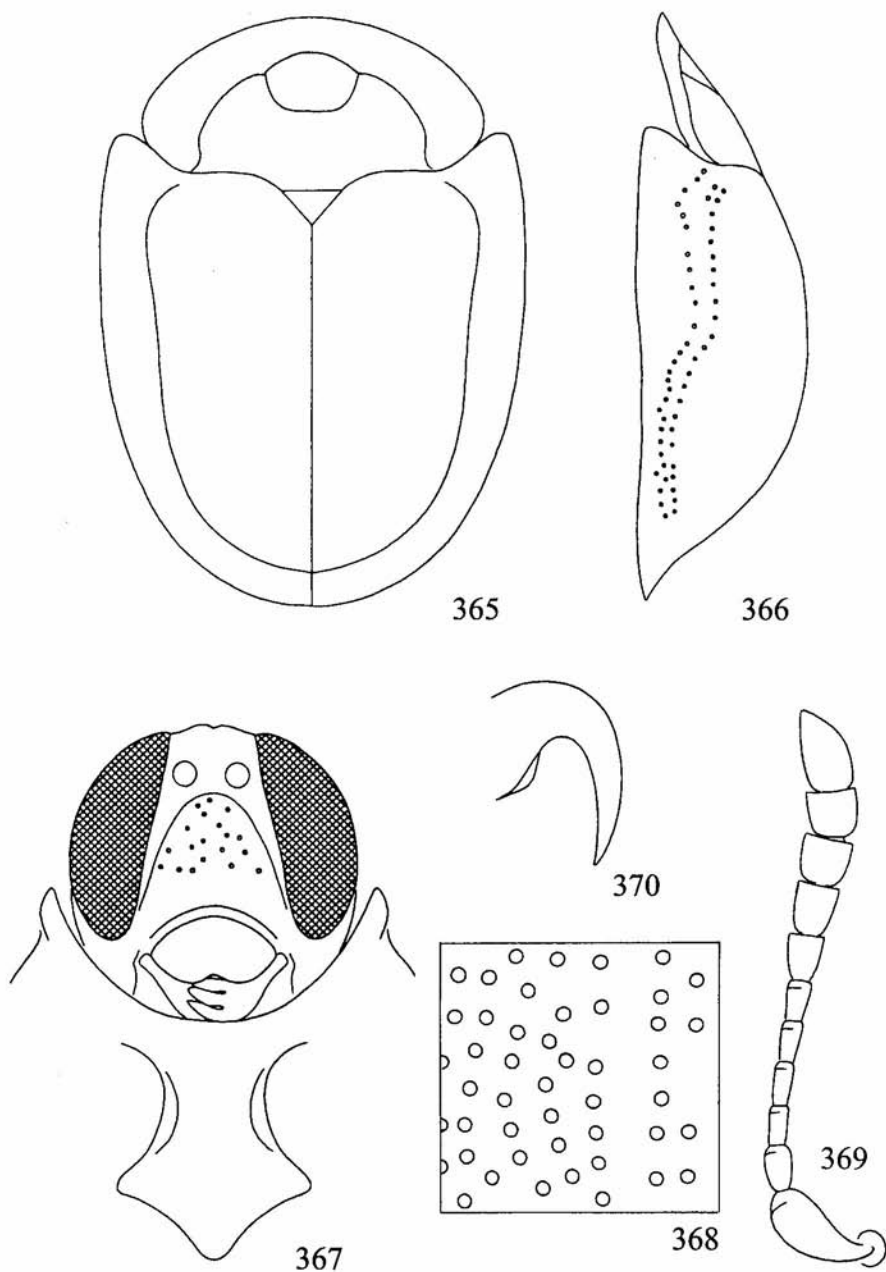
Cassida (*Cassida*) *scutellaris*: SPAETH, 1914: 119.

Rhytidocassis scutellaris: SPAETH, 1941: 316; BOROWIEC, 1999: 316.

Cassida (*Rhytidocassis*) *scutellaris*: TIBERGHEN, 1976: 180.

DESCRIPTION

Le: 4.55-5.90 mm, Wi: 3.35-4.40 mm, Lp: 1.60-2.05 mm, Wp: 2.7-3.4 mm, Le/Wi: 1.31-1.46, Wp/Lp ratio: 1.50-1.78. Body subtriangular, distinctly converging posterad (fig. 365), males slightly stouter than females (L/W ratio 1.31-1.35, female 1.36-1.46).

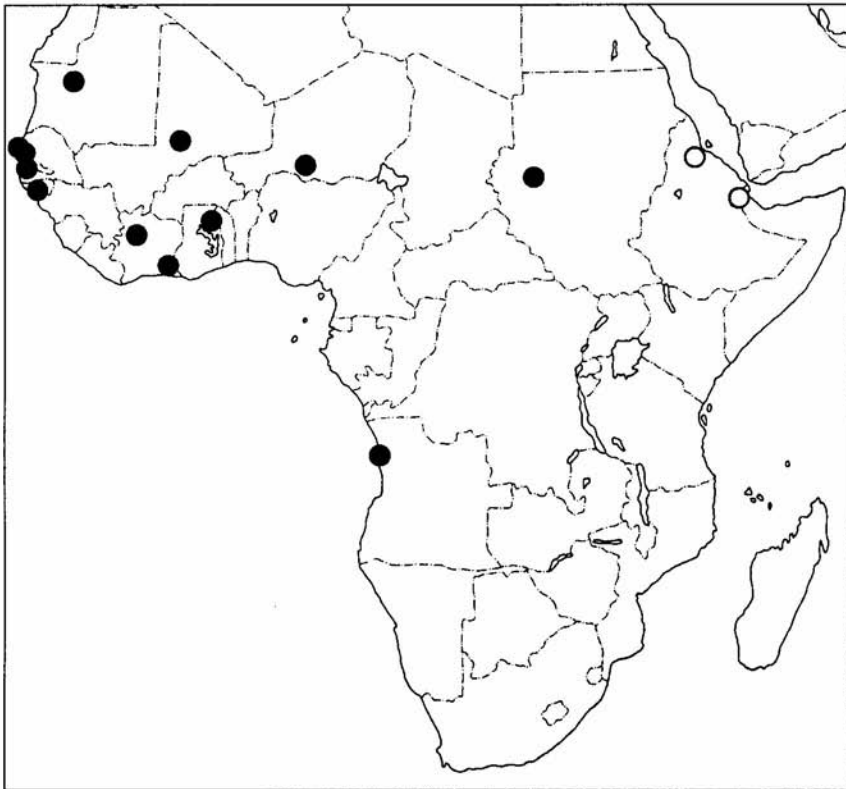


365-370. *Rhytidocassis scutellaris*: 365 – dorsal, 366 – lateral, 367 – head and prosternum, 368 – puncturation of central part of elytral disc, 369 – antenna, 370 – claw

Pronotum yellow. Elytra at base, between basal margin and postscutellar elevation with more or less developed reddish to brown triangular spot. Sometimes the spot in middle partly yellow, in extreme case markings reduced to small spot at base of each elytron and small spot on the top of postscutellar tubercle. Clypeus, thorax, abdomen, and legs always uniformly yellow. Antennae uniformly yellow, or last segment partly to completely infusate, but never black.

Pronotum elliptical, with maximum width in middle, anterior margin usually regularly rounded, sides broadly rounded. Disc moderately convex, more or less distinctly separated from explanate margin; area above head impunctate or finely punctate, top of disc moderately coarsely punctate, distance between punctures from narrower to slightly wider than puncture diameter, sometimes on sides of disc punctures tend to form grooves, but surface appears only slightly irregular. Explanate margin moderately broad, shallowly, coarser but sparser punctate than on disc, its surface appears only slightly irregular.

Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, angulate. Basal margin of each disc finely crenulate. Disc slightly unevenly convex, with top of convexity



371. Distribution of *Rhytidocassis scutellaris* (black circles) and *Rhytidocassis muelleri* (white circles)

in postscutellar point (fig. 366), postscutellar impressions distinct, usually with slightly elevated borders, principal and lateral impressions absent. Puncturation completely irregular, moderately coarse and dense (fig. 368), distance between punctures mostly narrower than puncture diameter, surface of disc appears slightly rugose. In position of 3rd interval runs impunctate, slightly elevated line, in postscutellar area connected with elevated border of postscutellar impression but no elevation between the top of disc and the impunctate line. Marginal interval and marginal row usually well marked in anterior half length, sometimes to 2/3 or only to 1/3 length, then vanishing between puncturation of disc and explanate margin. Explanate margin very narrow, strongly deflexed, in the widest part c. six times narrower than width of disc, in apical part as wide as combined diameter of three punctures of disc. Surface of explanate margin distinctly punctate, punctures distinctly coarser but sparser than on disc, completely irregular, surface appears slightly irregular. Slope and apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.3 times as wide as long, with distinct clypeal lines converging in arch (fig. 367). Surface of clypeus flat, without groove, impunctate or with only few shallow, indistinct punctures. Labrum very shallowly emarginate to 1/6 length. Venter of pronotum with very deep antennal grooves, separated externally by a sharp carina. Prosternal collar prominent with very deep lateral emargination, lateral angles of collar angulate, with small plate above the emargination. Prosternal process narrow, moderately expanded apically, mostly flat or shallowly impressed along middle, apex with few shallow punctures, surface appears regular. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:48:43:48:43:46:50:52:50:52:100. Segment 2 and 4 slightly longer than segment 3 (fig. 369).

Legs stout, covered by sparse, adherent setae. Claws with very small basal tooth (fig. 370).

HOST PLANT

Convolvulaceae: *Ipomoea asarifolia* (E. OBERMAIER, letter inf.).

DISTRIBUTION

Widespread in western Africa and Subsaharian region east to Sudan (fig. 371). Record from Angola needs confirmation, or based on introduced specimens.

REMARKS

It distinctly differs from African congeners in its maculate elytra, with large, red or brown triangle at base of elytra.

MATERIAL EXAMINED

ANGOLA: Luanda, 1965, 4, GIRAUDET (3 MRAC, 1 LB).

GAMBIA: Bathurst, 1 (DEI); Fajara, 18-19 III 1975, 4, E. MÖNCH (ZSM).

GHANA: Northern region, Nyankpala, 15 V 1970, 4, S. ENDRÖDY-YOUNGA (HNHM, LB).

- GUINEA BISSAU: Catió, 1955, 1, ANDREOLETTI (PMNH); Suzana, X 1952, 1 (MCSNM), VIII 1958, 1, ANDREOLETTI (PMNH).
- IVORY COAST: Bouaké, II 1963, 3, G. SCHMITZ (2 MRAC, 1 LB); Comoé, VI 1995, 1, on *Ipomoea* sp., E. OBERMAIER (EO).
- MALI: Douentza, 1907, 1, J. DECORSE (MNHN).
- MAURETANIA: Atar, V 1911, 1, R. CHUDEAU (MNHN).
- NIGER: Tarna, IX 1958, 4, W. AMADOU (IFAN, LB).
- SENEGAL: Bambey, 1958, 1, W. AMADOU (IFAN); Dakar, VIII 1927, 32, BAUM (NMP); Dakar-Fann, 10 X 1959, 1, R. ROY (IFAN); Palmarin (Chassot), XI 1960, 1 (MRAC); Richard-Toll, XI 1967, 6, A. DESCARPENTRIES et al. (MNHN); Senegal, 10 (ZMHU, LB), 2, THIROT (IRSN), 1889, 1 (IRSN), 1 (probably syntype, NRS), 3 (MRAC), 1 (IRSN); Thies, 6 (LB).
- SUDAN: Darfur Prov., El Fasher, 31 VII 1977, 5, 5 VIII 1977, 1, H. BREMER (ZSM).
- VARIA: no locality, 2 (lectotype and paralectotype, ZMHU).

Genus: *Seminabatheia* BOROWIEC, 1994

- Seminabatheia* BOROWIEC, 1994 a: 14 (type species: *Nabathaea arabica* SPAETH, 1911 = *Nabathaea pygmaea*: sensu BOROWIEC, 1994 - misidentification), 1999: 316.
- Neonabathaea* BOROWIEC, 1994 b: 158 (type species: *Nabathaea arabica* SPAETH, 1911, by monotypy), objective synonym.

Very small cassids, body length below 5 mm. Body oval, distinctly narrowed posterad, convex. Pronotum subpentagonal, with broadly rounded sides and maximum width c. in middle. Pronotal disc distinctly separated from explanate margin, coarsely but sparsely punctate. Explanate margin narrow, rugose punctate. Elytral base wider than pronotum. Elytral disc regularly convex, each elytron with two longitudinal elevations. Puncturation coarse, mostly irregular, but punctures on sides tend to form partly regular rows. Marginal row irregular. Explanate margin of elytra very narrow, strongly deflexed, irregularly punctate. Clypeus broad, punctate, without clypeal lines. Venter of pronotum with short but deep antennal grooves separated externally by obtuse carina. Prosternal collar with distinct lateral emargination and small plate above the emargination. Third antennal segment c. as long as second. Last segment of tarsi longer than third, bilobate segment but not reaching behind marginal setae of the third segment. Claws simple.

Distinct genus, well distinguished from all Afrotropical genera, except *Nabathaea*, by elongate last segment of tarsi, distinctly extending behind margin of the third tarsal segment. Other Afrotropical genera with antennal grooves and simple claws differ in angulate elytra (*Acrocassis* Sp., *Rhytidocassis* Sp., *Trigonocassis* Sp.) or in pronotum with distinct posterior corners (*Erbolaspis* Sp.). At first glance the most similar is *Nabathaea* Sp., sympatric in Arabian Peninsula, but differs in venter of pronotum without antennal grooves, prosternal collar without lateral emargination and last segment of tarsi c. twice longer than the third, bilobate segment. In my key to the Afrotropical genera of Cassidinae

(BOROWIEC 1994 a) I characterized the genus *Seminabathea* by labrum with small median tubercle, well developed in the holotype. Examination of the paratype and another specimen from Oman showed that the character is variable and has no diagnostic value.

Only one species in Arabian Peninsula.

When I created the genus *Seminabathea* (BOROWIEC 1994 a) I designated *N. pygmaea* Sp. as its type species. But, in fact, I studied a specimen of *N. arabica* Sp. not *N. pygmaea* Sp. Because *N. pygmaea* had been designated earlier as type species of *Nabathaea* I thought that *Seminabathea* was an objective synonym of *Nabathaea*. Thus, in the same year (BOROWIEC 1994 b) I proposed a new name *Neonabathaea* for true *N. arabica* Sp. However, according to the International Code of Zoological Nomenclature, if type species was misidentified, then the type for the generic name should be a real, correctly identified species, not misidentified name. Consequently, the type species for *Seminabathea* is *N. arabica* Sp. not *N. pygmaea* Sp. and the name *Neonabathaea* is an objective synonym of *Seminabathea*.

Seminabathea arabica (SPAETH, 1911)

(figs 372-378, pl. 9: 5-6)

Nabathaea arabica SPAETH, 1911: 273 (HT in MM), 1914: 86.

Neonabathaea arabica: BOROWIEC, 1994 b: 158.

Seminabathea arabica: BOROWIEC, 1999: 316.

Seminabathea pygmaea: BOROWIEC, 1994 a: 14 (misidentification).

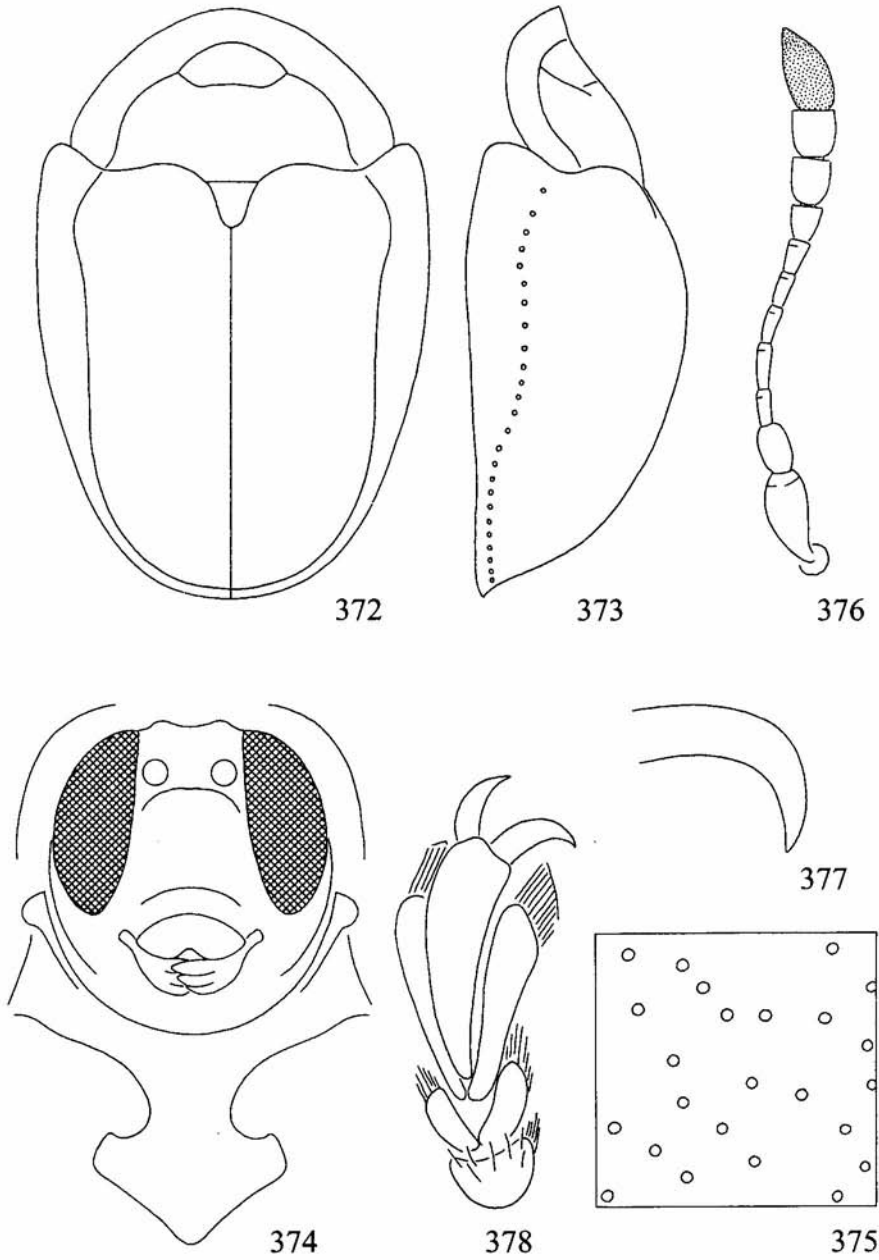
DESCRIPTION

Le: 4.9 mm, Wi: 3.1 mm, Lp: 1.8 mm, Wp: 2.65 mm, Le/Wi: 1.58, Wp/Lp ratio: 1.47. Body elongate oval, slightly converging posterad (fig. 372).

Body uniformly yellow, including legs and antennae, only last antennal segment slightly infusate, and basal crenulation of elytral disc black.

Pronotum elliptical, with broadly rounded sides, broadest in basal 1/3 length. Disc moderately convex, sparsely, moderately coarsely punctate, distance between punctures twice to thrice wider than puncture diameter. Surface between punctures microreticulate, slightly dull. Border between disc and explanate margin shallowly impressed. Explanate margin narrow, in external half with extremely dense, elongate punctures, appears rugose. Anterior margin of pronotum with very narrow, transparent margination. Surface of explanate margin of pronotum with very short, very sparse, hard visible setae.

Scutellum triangular, without punctures or sulci, its surface slightly dull. Base of elytra wider than pronotum, anterior margin of disc finely crenulate, humeri moderately protruding anterad, form almost straight but blunt angle. Disc unevenly convex, with top of convexity in postscutellar point, but not gibbous or tuberculate (fig. 373), without impressions. Each elytron with three longitudinal elevations; first, the longest in position of third interval, second, the shortest in



372-378. *Seminabathea arabica*: 372 – dorsal, 373 – lateral, 374 – head and prosternum, 375 – punctuation of central part of elytral disc, 376 – antenna, 377 – claw, 378 – tarsus

middle of disc in position of fifth interval, and third in position of 9th interval; sometimes also in position of 7th interval, in posterior half of disc there is very low, barely visible elevation. Punctuation between elevations mostly irregular, only in area between suture and first costa tends to form regular rows. Punctuation dense, distance between punctures shorter than puncture diameter (fig. 375), and punctured areas of disc appear slightly irregular. Punctures in marginal row only slightly coarser than in central part of disc. Border between disc and marginalia in anterior half shallowly impressed. Explanate margin strongly deflexed, very narrow, in the widest part not wider than distance between second and third elytral elevation, in apex of disc only as wide as marginal interval. Surface of explanate margin with punctuation c. twice finer but similarly dense like on disc, appears slightly irregular. Sides of disc, slope, and marginalia with very sparse, very short, barely visible setae. Apex of elytral epipleura with sparse, short setae.

Clypeus moderately broad, c. 1.2 times wider than long, flat, with fine clypeal lines, running parallel to inner margin of eyes (fig. 374). Surface of clypeus shiny, with several moderately coarse punctures, and very fine secondary punctuation. Labrum transverse, anterior margin shallowly emarginate, surface in middle with more or less developed round tubercle. Venter of pronotum with short but deep antennal groove, separated externally by a sharp carina. Prosternal collar prominent with shallow lateral incision. Prosternal process narrow, moderately expanded apically, shallowly canaliculate longitudinally, apex with few shallow punctures. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:54:42:50:45:42:38:38:50:50:96. Segment 2 c. 1.3 times as long as segment 3, and segment 4 c. 1.2 times as long as segment 3 (fig. 376).

Last segment of tarsi slightly extending behind marginal seate of third segment of tarsi (fig. 378). Claws large, simple (fig. 377).

DISTRIBUTION

Arabian Pen.: Yemen and Oman. Known only from three specimens mentioned below.

MATERIAL EXAMINED

OMAN: Mahdah, 30 III 1999, 1 (LB).

YEMEN: Arabia, Yemen, 1, MILLINGEN, coll. BALY (holotype, MM); Arabia, MILLIN., 1 (paratype, BMNH).

Genus: *Smeringaspis* SPAETH, 19254

Smeringaspis SPAETH, 1924: 312 (type species: *Cassida setifera* BOHEMAN, 1854, by monotypy); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994: 13, 1999: 317.

Smeringaspis sgen. *Luimbelia* SPAETH in HINCKS, 1952: 345 (type species: *Smeringaspis* (*Luimbelia*) *hirsuta* SPAETH in HINCKS, 1952, by monotypy); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176, n. syn.

Small cassids, body length 4.5-5.2 mm. Body elongate, parallelsided to broadly oval. Whole surface of pronotum and elytra pubescent or/and with erect setae. Pronotum with angulate or subangulate sides. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin moderately broad, not transparent, punctate. Elytral base not or only slightly wider than pronotum. Elytral disc regularly convex. Punctuation of disc coarse, regular, sometimes rows disturbed by elytral impressions. Marginal row distinct. Explanate margin of elytra in anterior half moderately broad, in posterior half very narrow, punctate, not transparent. Clypeus broad, punctate, with deep clypeal grooves. Venter of pronotum with short antennal groove separated externally by obtuse carina. Prosternal collar with lateral emargination. Antennae stout, third segment longer than the second, segments 8-10 not longer than wide. Last segment of tarsi slightly shorter than third, bilobate segment. Claws simple.

A very distinct genus, well distinguished from most other genera with antennal channel and with lateral emargination of prosternal collar by its pubescent and setose body. Only *Trichaspis* Sp. has body also setose and pubescent but differs in toothed claws, venter of pronotum without antennal grooves, and prosternal collar without lateral emargination. Members of the genus *Trichaspis* are distinctly smaller, with body length below 4.0 mm.

SPAETH in HINCKS (1952) divided the genus *Smeringaspis* into two monotypic subgenera based mostly on different body shape: elongate in nominotypical subgenus and broadly oval in *Luimbella*. In my opinion the division is unjustified, body shape varies within genera of Cassidini - elongate and stout species occurs within *Cassida* L., *Rhytidocassis*, *Psalidoma* and *Ischiocassis*. Other generic characters in *Smeringaspis* s. str. and *Luimbella* are the same and, in my opinion, *Luimbella* should be synonymized with nominotypical subgenus.

Only two species in Africa south of Sahara, except Madagascar.

KEY TO SPECIES

1. Body elongate, cylindrical, Le/Wi 1.57-1.85.

.....*setifera*

- . Body broadly oval, Le/Wi 1.34.

.....*hirsuta*

***Smeringaspis hirsuta* SPAETH, 1952**

(figs 379-383, 390, pl. 13: 6-7)

Smeringaspis (*Luimbella*) *hirsuta* SPAETH in HINCKS, 1952: 346 (HT in MM).

Smeringaspis hirsuta: BOROWIEC, 1999: 317.

DESCRIPTION

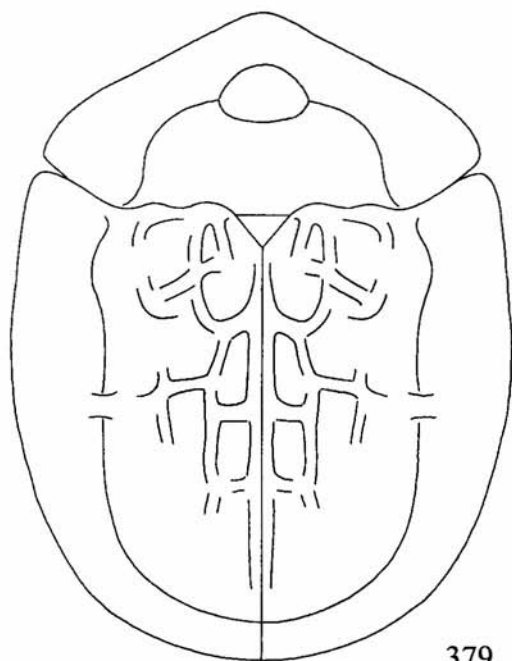
Le: 5.15 mm, Wi: 3.85 mm, Lp: 2.0 mm, Wp: 3.3 mm, Le/Wi: 1.34, Wp/Lp ratio: 1.65. Body broadly oval (fig. 379).

Pronotum and elytra brown, only extreme margins pale brown, elytral punctures marked with dark brown. Head, thorax and abdomen black, only sides of last two sternites narrowly pale brown. Femora in basal 3/4 length black, pale brown apically, tibiae and tarsi pale brown. Antennae broken in examined holotype but according to original description basal six segments yellowish-brown, remainder black; first segment partly infuscate.

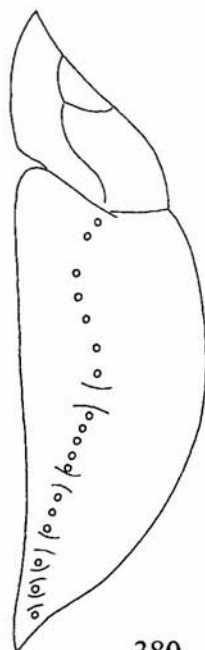
Pronotum reversely subtrapezoidal, widest in middle, sides angulate. Pronotal disc strongly convex, at top shiny, on sides with slightly irregular surface, finely punctate. Each puncture with short, partly adherent and partly erect, seta of acute apex. Space between punctures with extremely fine secondary puncturation. Explanate margin indistinctly separated from disc, its surface slightly irregular, covered with setae similar to those on disc, only anterior and lateral margins of pronotum with erect setae of truncate apex.

Scutellum triangular, with irregular surface, covered by adherent setae. Base of elytra as wide as pronotum, humeral angles moderately protruding anterad, rounded. Basal margin of each disc of elytra finely crenulate. Disc regularly convex, without tubercles or gibbosities (fig. 380), with deep postscutellar and principal impressions. Puncturation coarse (fig. 382), regular, punctures in rows very dense, partly touching each other, but some spaces between punctures broad and slightly elevated, form short, transverse folds. Intervals narrow, from slightly wider to slightly narrower than rows, in sutural half of disc running slightly irregularly, especially the second interval making a zigzag. Surface of intervals mostly shiny. Whole surface of disc covered by two kinds of setae - first partly adherent, distributed almost uniformly on whole disc, second erect, groups in 5-10 together, forming several brushes. Tops of all setae acute. Marginal row distinct, with punctures c. twice coarser than in central rows. Marginal interval broad, c. twice wider than submarginal interval, with several transverse folds. Explanate margin moderately deflexed, in widest part slightly narrower than 1/4 width of disc, its surface mostly covered with partly adherent setae, similar to those on disc, only external third of marginalia covered by erect, long setae of truncate apex. Elytral epipleura on whole surface with long, erect setae of acute apex.

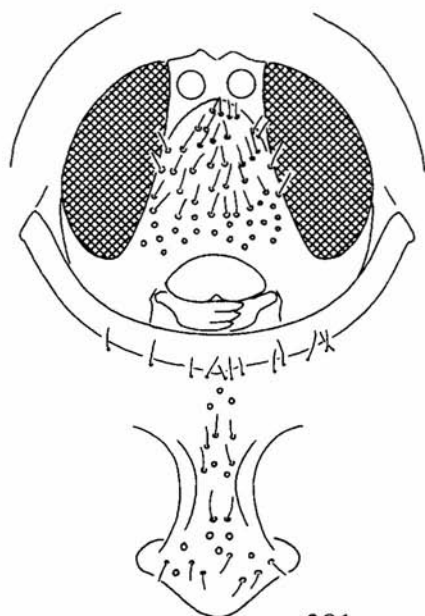
Clypeus c. as wide as long, with deep clypeal grooves converging in triangle (fig. 381). Surface of clypeus microreticulate, moderately coarsely and moderately densely punctate, and erectly setose. Labrum narrowly emarginate to 1/4 length. Venter of pronotum with short but deep antennal grooves, separated externally by sharp carina. Prosternal collar long, with distinct lateral emargination, and small triangular plate above the emargination. Prosternal process narrow, expanded apically, canaliculate longitudinally. Antennae broken in the only examined specimen. According to the original description, antennae stout, with third



379



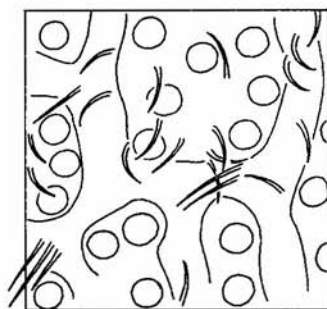
380



381



383



382

379-383. *Smeringaspis hirsuta*: 379 – dorsal, 380 – lateral, 381 – head and prothorax, 382 – punctation of central part of elytral disc, 383 – claw

segment c. 1.5 times longer than the second, and segments 4-6 of equal length, only slightly longer than segment 3, and segment 10 slightly wider than long.

Legs stout, tarsi broad with densely pubescent sole. Claws large, simple (fig. 383).

DISTRIBUTION

Angola. Known only from holotype.

REMARKS

S. hirsuta distinctly differs from his only congener *S. setifera* in stout, oval body, with Le/Wi above 1.36 (1.57-1.85 in *S. setifera*).

MATERIAL EXAMINED

ANGOLA: Luimbale, Mt. Moco, 1800-1900 m, III 1934, 1, K. JORDAN (holotype, MM).

Smeringaspis setifera (BOHEMAN, 1854)

(figs 384-390, pl. 13: 8-10)

Cassida setifera BOHEMAN, 1854: 426 (ST in NRS), 1856: 135, 1862: 333; GEMMINGER and HAROLD, 1876: 3658.

Cassida (Cassida) setifera: SPAETH, 1914: 119.

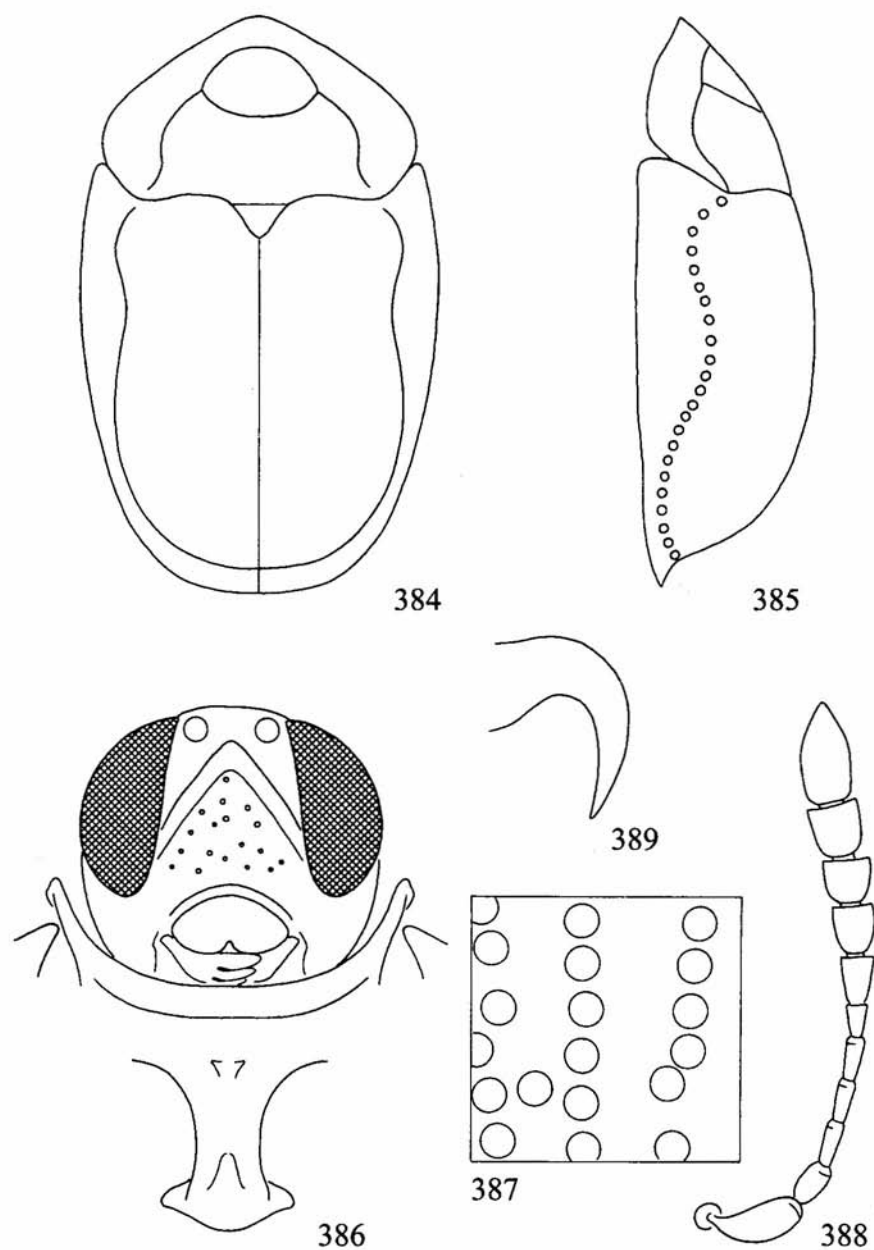
Smeringaspis setifera: SPAETH, 1924: 312, 1935: 174; BOROWIEC, 1986: 804, 1995: 372, 1999: 317.

DESCRIPTION

Le: 4.4-6.1 mm, Wi: 2.8-3.3 mm, Lp: 1.70-2.05 mm, Wp: 2.55-3.05 mm, Le/Wi: 1.57-1.85, Wp/Lp ratio: 1.38-1.64. Body elongate-oval (fig. 384), slightly cylindrical, males slightly stouter than females (L/W 1.57-1.66, female 1.68-1.85).

Pronotum and scutellum yellowish-brown to brown. Elytra usually uniformly yellowish-brown to brown, sometimes punctures along suture and sides of elytral disc marked with dark brown or black. Occasionally punctures have also dark areola and along suture and sides of disc occurs more or less marked longitudinal stripes. In extreme case elytral disc mostly dark brown to black, with only few yellowish-brown spots, especially at base of disc and on third interval. Explanate margin of elytra yellowish-brown to brown. Head, ventrites and legs usually yellowish to yellowish-brown, occasionally thorax partly dark brown. Antennae yellowish, sometimes last segment slightly infuscate apically.

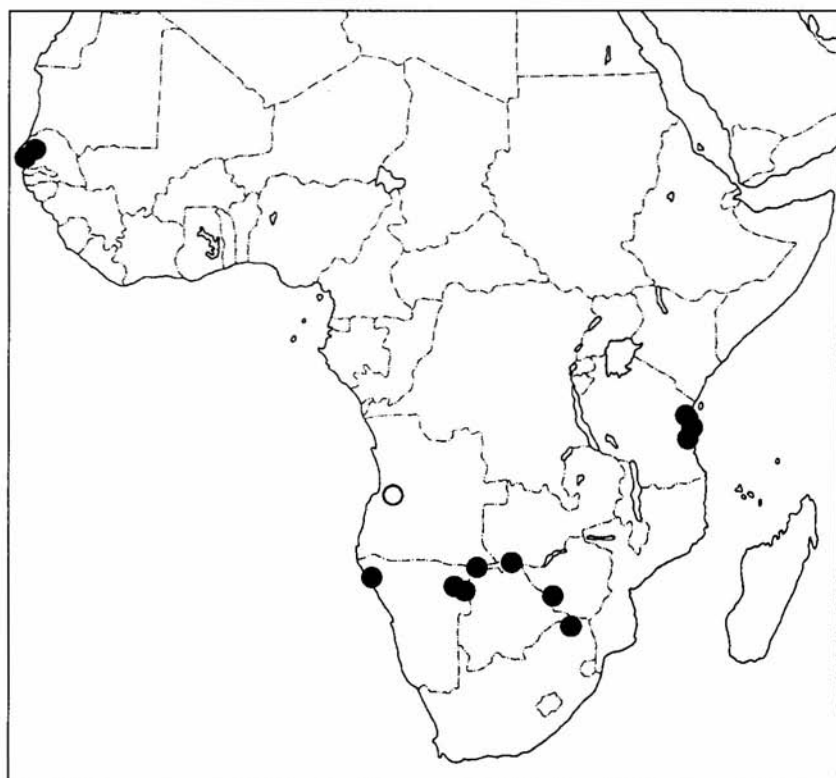
Pronotum reversely subtrapezoidal, widest before middle, sides angulate. Pronotal disc convex, in most specimens coarsely but moderately densely punctate, surface above head regular, at basal part of disc slightly irregular, spaces between punctures slightly dull. Occasionally disc at top with shiny surface and with only few small punctures. Each puncture with short, adherent seta of subacute or truncate apex. Explanate margin indistinctly separated from disc, coarsely



384-389. *Smeringaspis setifera*: 384 – dorsal, 385 – lateral, 386 – head and prothorax, 387 – punctation of central part of elytral disc, 388 – antenna, 389 – claw

but shallowly punctate, punctures mostly touching each other, surface appears slightly irregular, covered with setae similar to those on disc.

Scutellum triangular, with irregular surface, covered by adherent setae. Base of elytra as wide as or only slightly wider than pronotum, humeral angles moderately protruding anterad, more or less angulate. Basal margin of each disc of elytra finely crenulate. Disc regularly convex (fig. 385), without tubercles, gibbosities, or impressions. Punctuation coarse (fig. 387), regular, rows impressed, especially on slope, punctures in rows very dense, partly touching each other. Intervals narrow, from slightly wider to slightly narrower than rows, only third interval distinctly wider than neighbouring rows. Intervals 2, 4 and part of lateral intervals with additional irregular coarse punctures, as coarse as punctures in rows. In some specimens additional punctures in lateral intervals is so many, that sides of disc appear partly irregularly punctate. Surface of intervals from slightly shiny to slightly dull. Whole surface of disc covered by adherent setae of subacute to truncate apex. In some specimens setae at base of disc, and occasionally on slope, grouped in small, felt spots. Marginal row distinct, with punctures c. twice coarser than in central rows. Marginal interval broad, in anterior part c. twice wider than



390. Distribution of *Smeringaspis setifera* (black circles) and *Smeringaspis hirsuta* (white circle)

submarginal interval. Explanate margin strongly deflexed, almost perpendicular to surface of abdomen, in widest part as wide as 1/8 width of disc, its surface mostly covered with adherent setae, similar to those on disc. Elytral epipleura with short, adherent setae.

Clypeus c. 1.2 times as wide as long, with deep clypeal grooves converging in triangle (fig. 386). Surface of clypeus microreticulate, coarsely and moderately densely punctate, and erectly setose. Labrum narrowly emarginate to 1/4 length. Venter of pronotum with deep antennal grooves, separated externally by obtuse carina. Prosternal collar long, with distinct lateral emargination, and small triangular plate above the emargination. Prosternal process narrow, strongly expanded apically, canaliculate longitudinally. Antennae stout, segment 9 slightly wider than long, segment 10 equal in length and width, length ratio of antennal segments: 100:55:60:55:52:40:60:60:55:60:125. Segment 3 slightly longer than segments 2 and 4 (fig. 388).

Legs stout, tarsi broad with densely pubescent sole. Claws large, simple (fig. 389).

DISTRIBUTION

Hitherto known from three disjunctive areas - Senegal in western Africa, Tanzania in eastern Africa, and Namibia and Transvaal in southern Africa. Probably widespread in open habitats of arid part of Africa (fig. 390).

REMARKS

S. setifera distinctly differs from its only congener *S. hirsuta* in elongate cylindrical body, with Le/Wi above 1.56 (1.34 in *S. hirsuta*).

MATERIAL EXAMINED

NAMIBIA: Bushmanland, Klein Dobe, 19-21 II 1992, 2, V. GÖLLNER (ZMHU); Caprivi Zipfel, Katima Mulilo, 15-24 I 1995, 2, M. SNIZEK (MS); Okavango riv., Bagani Popa Falls, 25-30 I 1995, 1, F. KANTNER (FK); Samengegei, Kaukau-Kungv., VI 1951, 11, C. KOCH (TM, LB); Skeleton Coast, Hoanib River-Mowe Bay, 20 VI 1979, 3, M.J. PENRITH & B. KENSLEY (WM).

SENEGAL: M'Bambey, 24 VI 1939, 1, M. RISBEC (MRAC); M'Bao, I 1946, 1 (LB); Senegal, 1, BUQUET (probably syntype, NRS).

SOUTH AFRICA: N Transvaal, Mmabolela, 8 III 1993, 1 (LB).

TANZANIA: Bagamoyo, 1 (MNHN); Dar-es-Salaam, 1, V. SYDOW (DEI); Utete-Rufiji, Kindwitvi, 10-14 XII 1993, 1, M. SNIZEK (MS).

Genus: *Sphenocassis* SPAETH, 1911

Sphenocassis SPAETH, 1911: 261 (type species: *Laccoptera humerosa* FAIRMAIRE, 1898, by monotypy). 1914: 85; HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994: 13, 17, 1999: 317.

Torbinia SPAETH, 1911: 262 (type species: *Torbinia incisicollis* SPAETH, 1911, by monotypy), 1914: 85; HINCKS, 1952: 338 (as subgenus); SEENO and WILCOX, 1982: 176 (as subgenus); BOROWIEC, 1999: 317 (as syn.).

Small to moderately large cassids, body length 5.5-8.5 mm. Body oval to subtriangular, elytra covered by very short, erect setae. Pronotum elliptical to reversely trapezoidal, with narrowly rounded to angulate sides, with maximum width in or before middle. Base of pronotum before each humerus in most species with deep emargination. Pronotal disc indistinctly separated from explanate margin, coarsely punctate, often rugose. Explanate margin deflexed, coarsely punctate, not transparent. Elytral base only slightly to moderately wider than pronotum. Elytral disc form regularly convex to angulate in profile. Puncturation completely irregular. Marginal row, if present, distinct only in anterior third of elytra. Explanate margin of elytra from narrow to moderately broad, strongly deflexed, irregularly punctate. Humeral angles strongly protruding anterad. Clypeus broad, with shallow lateral grooves. Venter of pronotum in larger species with distinct antennal grooves, in smaller species they are indistinct or obsolete. Prosternal process canaliculate along middle, moderately expanded apically. Antennae stout to moderately elongate, third segment usually slightly longer than second, segments 8-10 from slightly wider than long to slightly longer than wide. Last segment of tarsi slightly longer than third, bilobate segment. Claws simple.

It is close to *Cassida* L., especially to irregularly punctate species from S Africa. Large species of *Sphenocassis* distinctly differ from *Cassida* in base of pronotum before humerus with deep emargination, and in the presence of deep antennal grooves. Small species, without pronotal emargination and without antennal grooves are very similar to members of *Cassida litigiosa* group from S Africa (see BOROWIEC and ŚWIĘTOJAŃSKA 2002). At first glance, members of *Sphenocassis* differ in setose elytra and rugosely punctate pronotal disc. Also prosternal collar in members of *Sphenocassis* is distinctly longer than in members of *Cassida*. SPAETH (1911) described two closely related genera *Sphenocassis* and *Torbinia*, but HINCKS (1952) placed *Torbinia* SPAETH within subgenus of *Sphenocassis* SPAETH. In my opinion type species of both names represent only a specialized lineage within the simple, heterogenous genus, characterized by distinct evolutionary trend from the most plesiomorphic *S. punctatissima* to the most apomorphic *S. humerosa*. Thus, in my world catalogue of Cassidinae (BOROWIEC 1999) I synonymized *Torbinia* with *Sphenocassis*.

Eight species only in Madagascar.

KEY TO THE SPECIES

1. Elytra with deep postscutellar impressions separated by distinct, sharp or obtuse, elevation. Pronotal emargination very deep. Body brown.
..... 2.

- Elytra without or with shallow postscutellar impressions, not separated by sharp elevation. Pronotal emargination moderately deep, or shallow, or obsolete. Body green (yellow in dried specimens).
..... 3.
- 2. Elytral disc more angulate in profile. Postscutellar impressions deeper, separated by sharp elevation, from the elevation runs posterad more or less developed longitudinal costa, thus in postscutellar elevation there is a distinct H-shaped sculpture. Puncturation of elytra dense, on slope and on sides of disc appears rugose. Body stouter, L/W ratio below 1.35.
..... *humerosa*
- Elytral disc less angulate in profile. Postscutellar impressions shallower, separated by distinct elevation but without additional costa, thus in postscutellar elevation there is an arch-shaped sculpture. Puncturation of elytra sparser, at least on sides of disc does not appear rugose. Body slimmer, L/W ratio above 1.40.
..... *incisicollis*
- 3. Basal pronotal impressions distinct.
..... 4.
- Basal pronotal impressions very shallow, barely visible, or completely obsolete
..... 7.
- 4. Larger, length above 6.5 mm.
..... 5.
- Smaller, length 4.5 mm.
..... *rotundella*
- 5. Elytral disc with well marked postscutellar and principal impressions, also sides shallowly impressed. Puncturation of disc denser, surface of disc appears slightly irregular to slightly rugose. Antennal grooves deeper, separated externally by carina
..... 6.
- Elytral disc without or with only barely marked postscutellar and lateral impressions. Puncturation of disc sparser, surface at least on top of disc does not appear irregular. Antennal grooves less evident, separated externally by obtuse fold.
..... *anosibensis*
- 6. Basal part of pronotal disc rugoso-striate. Postscutellar impressions deeper, their borders higher elevated, elytral disc more angulate in profile. Pronotum very broad, width/length ratio 1.69-1.81.
..... *imerina*

- Basal part of pronotal disc densely punctate, but only few punctures tend to coalesce and form longitudinal striation. Postscutellar impressions shallow, their borders lower elevated, elytral disc less angulate in profile. Pronotum less transverse, width/length ratio 1.60-1.62.

.....*impressipennis*

- 7. Larger, length 7.8 mm. Pronotum very broad, width/length ratio 1.65. Body stouter, L/W ratio 1.47, more converging posterad. Basal pronotal emargination very shallow but visible.

.....*praerupta*

- Smaller, length below 7.3 mm. Pronotum moderately broad, width/length ratio 1.47-1.59. Body slimmer, L/W ratio 1.50-1.66, less converging posterad. Basal pronotal emargination completely obsolete.

.....*punctatissima*

Sphenocassis anosibensis n. sp.

(figs 391-396, pl. 15: 5-6)

ETYMOLOGY

Named after its locus typicus, Anosibe in Toamasina Prov. of Madagascar.

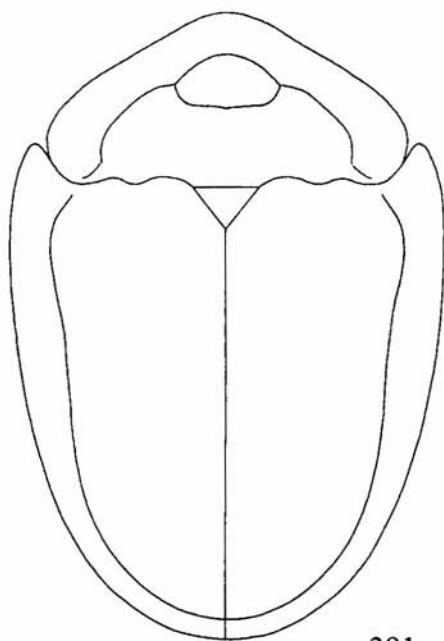
DESCRIPTION

Le: 6.9 mm, Wi: 4.6 mm, Lp: 2.45 mm, Wp: 3.8-3.85 mm, Le/Wi: 1.50, Wp/Lp ratio: 1.55-1.57. Body subtriangular, distinctly converging posterad (fig. 391).

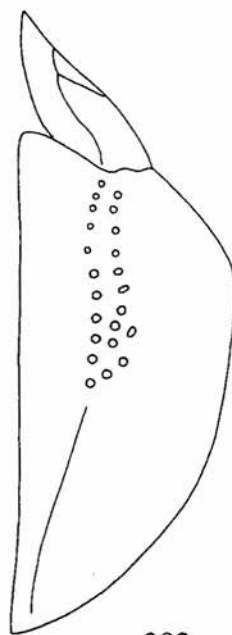
Pronotum yellow, only basal margin close to basal emargination narrowly black. Elytra yellowish-green, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennae yellow, with last four segments infuscate to black.

Pronotum reversely trapezoidal, with maximum width c. in middle, anterior margin moderately convex, lateral angles narrowly rounded, sides behind the angle straight, strongly converging posterad. Base of pronotum on each side, before pronotal callus, with moderately deep incision. Disc moderately convex, indistinctly separated from explanate margin, coarsely and densely punctate, punctures in basal part of disc tend to form longitudinal striation, in anterior part of disc punctures almost touching each other but without tendency to form striation. Explanate margin narrow, shallowly but very densely punctate, punctures almost touching each other, surface appears irregular. Surface of pronotum slightly opaque to slightly shiny.

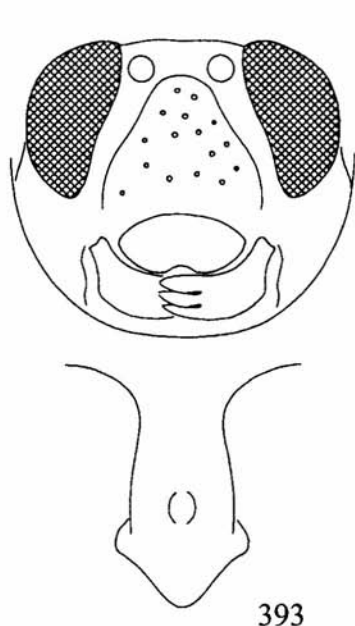
Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, but not exceeding half length of pronotum, angulate. Basal margin of each disc with row of teeth, the largest are placed opposite to pronotal basal emargination. Disc regularly convex



391



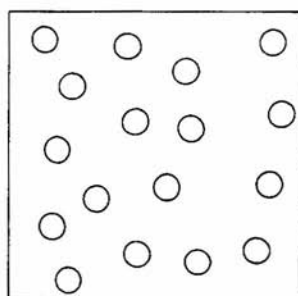
392



393



396



394



395

391-396. *Sphenocassis anosibensis*: 391 – dorsal, 392 – lateral, 393 – head and prosternum, 394 – punctuation of central part of elytral disc, 395 – antenna, 396 – claw

(fig. 392), postscutellar impressions barely marked or obsolete, without elevated borders, no principal impressions, lateral impressions barely marked to obsolete. Puncturation completely irregular, coarse and dense (fig. 394), distance between punctures slightly narrower to as wide as puncture diameter, interspaces mostly regular, surface of disc at least on top and anterior half of disc does not appear irregular, only on slope slightly rugose. Marginal interval present only in anterior half of elytron. Marginal row distinct, especially in anterior half of disc, its punctures twice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, in the widest part as wide as 1/8 width of disc, in apical part as wide as diameter of punctures of marginal row, coarsely, shallowly punctate, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Whole surface of elytra slightly dull. Apex of elytral epipleura only in area close to sutural angle with a few erect hair.

Clypeus broad, c. 1.5 times wider than long, with fine clypeal grooves, in basal half of clypeus parallel to inner margin of eyes, then slightly converging anterad (fig. 393). Surface of clypeus flat, with several shallow punctures, slightly shiny. Labrum emarginate to 1/6 length. Venter of pronotum with short and moderately deep antennal groove, separated externally by obtuse fold. Prosternal collar prominent with deep lateral emargination, and barely marked plate above the emargination. Prosternal process narrow, moderately expanded apically, apex shallowly impressed with few shallow punctures. Antennae stout, segments 9 and 10 slightly longer than wide, length ratio of antennal segments: 100:55:60:60:57:55:60:50:52:50:100. Segments 3 and 4 c. 1.1 times as long as 2 (fig. 395).

Claws large, simple (fig. 396).

DISTRIBUTION

Madagascar.

REMARKS

Sphenocassis anosibensis belongs to the group of species with distinct basal pronotal emargination. Like *S. rotundella* it has elytral disc almost regularly convex, without distinct postscutellar impressions. Both species distinctly differ in body size, *S. anosibensis* has length above 6.5 mm, while *S. rotundella* below 5.0 mm. In *S. anosibensis* antennal grooves are bordered externally by obtuse carina, while in *S. rotundella* the carina is sharp. Puncturation of elytral disc of *S. anosibensis* is sparser than in *S. rotundella*, and does not appear rugose. *S. praerupta* and *S. punctatissima* have elytral disc like in *S. anosibensis* but they differ in barely marked or obsolete basal pronotal emargination.

MATERIAL EXAMINED

MADAGASCAR: holotype: Anosibe, 21 XII 1963, 1, VIEU (LB); paratype: Lac Mantasoa, 29 VIII-1 IX 1997, 1 (LB).

***Sphenocassis humerosa* (FAIRMAIRE, 1898)**

(figs 397-402, pl. 14: 7-8)

Laccoptera humerosa FAIRMAIRE, 1898: 258 (ST in MNHN, MM).*Sphenocassis humerosa*: SPAETH, 1911: 261, 1914: 85, 1924: 311; BOROWIEC, 1999: 317.

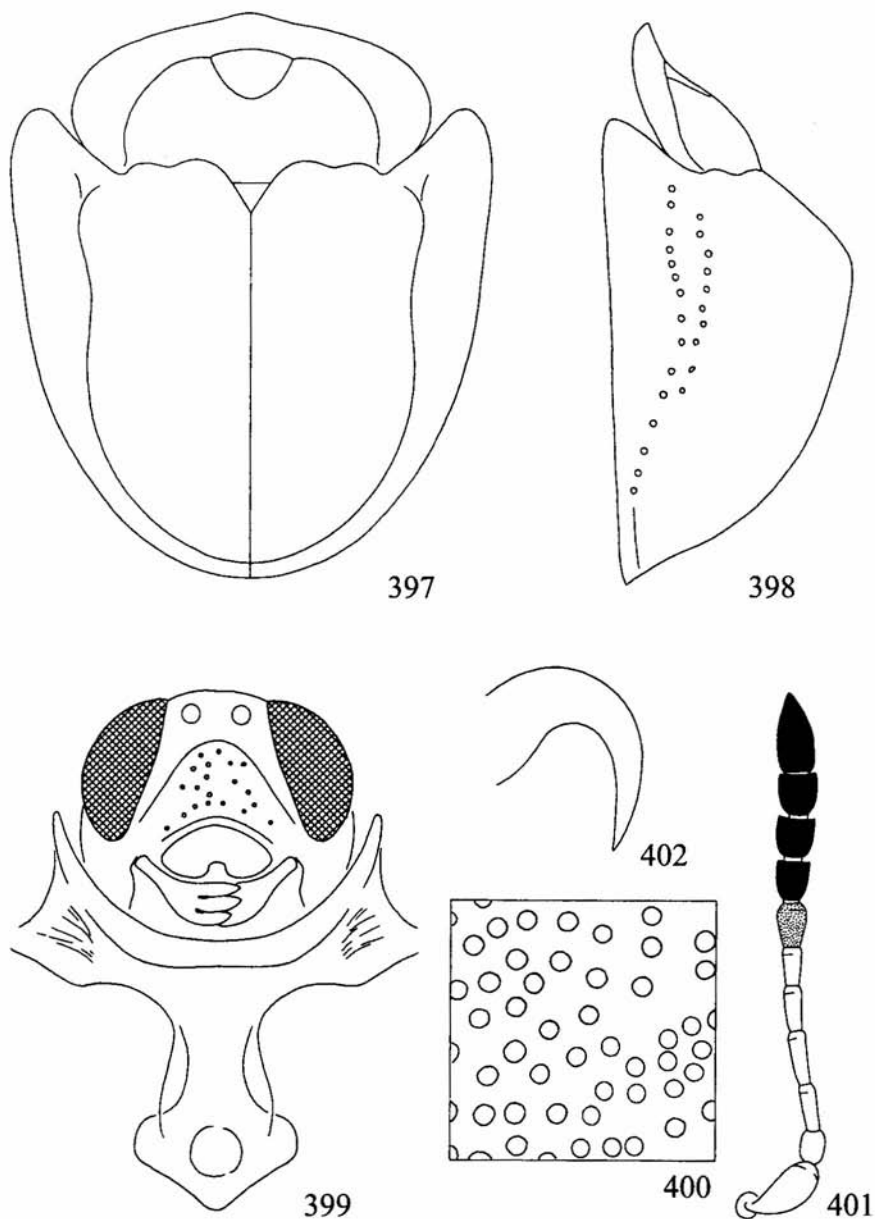
DESCRIPTION

Le: 7.1-8.5 mm, Wi: 5.7-6.85 mm, Lp: 2.5-2.9 mm, Wp: 4.4-5.15 mm, Le/Wi: male: 1.20-1.25, female: 1.29-1.33, Wp/Lp ratio: 1.71-1.78. The largest species of the genus, body subtriangular, strongly converging posterad (fig. 397).

Pronotum and elytra brown, basal margin of pronotum and basal crenulation of elytral disc narrowly black.. Head, ventrites and legs yellowish-brown. Antennal segments 1-6 yellowish, 8-11 black, segment 7 from yellowish to mostly infuscate.

Pronotum very broad, reversely trapezoidal, 1.71-1.78 wider than long, with maximum width slightly before middle, anterior margin moderately convex, lateral angles rounded. Base of pronotum on each side, before humeral callus, with very deep emargination. Disc moderately convex, coarsely and densely punctate, on top of disc distance between punctures narrower than puncture diameter; in area above head puncturation sparse and very shallow. In basal half of disc punctures tend to form longitudinal striation, sometimes whole surface of disc except area above head or only basal third of disc rugoso-striate. Explanate margin narrow, indistinctly separated from disc, shallowly, coarsely, and densely punctate, punctures almost touching each other. Intervals more regular than on disc, surface appears slightly irregular. Whole surface of disc slightly shiny.

Scutellum triangular, smooth or with transverse sulcus. Base of elytra much wider than pronotum, humeri extremely strongly protruding anterad, up to 1/3 length of pronotum, angulate. Basal margin of each disc with row of large teeth, the largest placed opposite to pronotal basal emargination. Disc extremely, unevenly convex, distinctly angulate in profile (fig. 398). Postscutellar impressions deep, the deepest in the genus, separated by high elevation, which runs from top of postscutellar convexity to impunctate elevations between scutellum and humeral impression. The elevated border of postscutellar impressions forms also two short costae running posterad, parallel to suture; as a result in postscutellar area there is a distinct H-shaped elevation. Puncturation of disc completely irregular, coarse and dense (fig. 400), distance between punctures mostly narrower than puncture diameter. Space between punctures partly convex and surface of disc appears irregular to rugose. Marginal interval distinct in anterior half of disc. Marginal row distinct only in anterior half of disc, its punctures c. twice coarser than punctures of central part of disc. Explanate margin narrow, strongly deflexed, but not perpendicular, in the widest part c. five times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin much coarser punctate than on disc but distinctly sparser, interspaces mostly flat, surface appears regular or only slightly irregular. Whole surface of elytra slightly shiny. Elytral epipleura only in apical area with short, sparse erect hair.



397-402. *Sphenocassis humerosa*: 397 – dorsal, 398 – lateral, 399 – head and prothorax, 400 – puncturation of central part of elytral disc, 401 – antenna, 402 – claw

Clypeus very broad, c. 1.6-1.7 times wider than long, flat, with few coarse punctures (fig. 399). Clypeal grooves moderately deep, softly converging in triangle but not connected apically. Labrum narrowly emarginate to 1/4 length. Venter of pronotum with short but deep antennal groove, separated externally by a sharp or obtuse carina. Prosternal collar prominent with deep lateral emargination, without or with small plate above the emargination. Prosternal process narrow, moderately expanded apically, apex with deep round or oval impression. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:47:70:82:70:61:70:58:58:62:129. Segment 3 c. 1.5 times as long as 2, and segment 4 c. 1.2 times as long as segment 3 (fig. 401).

Claws large, simple (fig. 402).

DISTRIBUTION

Madagascar.

REMARKS

Sphenocassis humerosa and *S. incisicollis* form a group of large species, reddish brown to brown, with deep postscutellar impressions separated by distinct, sharp or obtuse, carina and very deep basal pronotal emargination. Both species have also the most protruding anterad humeral angles. *S. incisicollis* differs in slimmer, more convex body, less convex postscutellar elevation, shallower postscutellar impressions, and elytral disc behind the elevated border of the postscutellar impression without additional costa, while *S. humerosa* has very stout body and postscutellar elevation very high, forming H-shaped figure. Puncturation of elytral disc in *S. humerosa* is more denser, on slope and on sides appears rugose (not rugose in *S. incisicollis*).

MATERIAL EXAMINED

MADAGASCAR: route d'Anosibé, XI-XII 1960, 4 (3 MRAC, 1 LB); Farafanojana, Midingy du sud, 600-1000 m, VIII 1926, 1, R. DECARY (MNHN); forêt de Fito, 6 (4 MRAC, 2 LB); Baie d'Antongil, 3 (MNHN); Madagascar, 1 (syntype, MNHN); Maromandia R., 1934, 5, MELLY (DEI, MM); Sambirano, NO Madagascar, 2 (MM); Suberbieville, 1 (MNHN), 3, DONCKIER (syntypes, MM).

Sphenocassis imerina (SPAETH, 1926)

(figs 403-408, pl. 15: 1-2)

Cassida imerina SPAETH, 1926 b: 23 (HT in BMNH).

Sphenocassis imerina: BOROWIEC, 1999: 317.

DESCRIPTION

Le: 7.0-7.6 mm, Wi: 5.4-5.75 mm, Lp: 2.5-2.6 mm, Wp: 4.4-4.7 mm, Le/Wi: 1.30-1.33, Wp/Lp ratio: 1.69-1.81. Body subtriangular, strongly converging posterad (fig. 403).

Pronotum yellowish-brown, only basal margin close to basal emargination narrowly black. Elytra yellowish-brown, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennal segments 1-6 yellow, 8-11 black, segment 7 from uniformly yellow to mostly infusate.

Pronotum elliptical, 1.69-1.81 times as wide as long, with maximum width c. in middle, anterior margin moderately convex, lateral angles narrowly rounded. Base of pronotum on each side, before humeral callus, with deep emargination. Disc moderately convex, almost whole surface distinctly rugoso-striate, only anterior part of area above head coarsely punctate. Explanate margin narrow, indistinctly separated from disc, shallowly but very coarsely punctate, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Whole surface of pronotum slightly shiny.

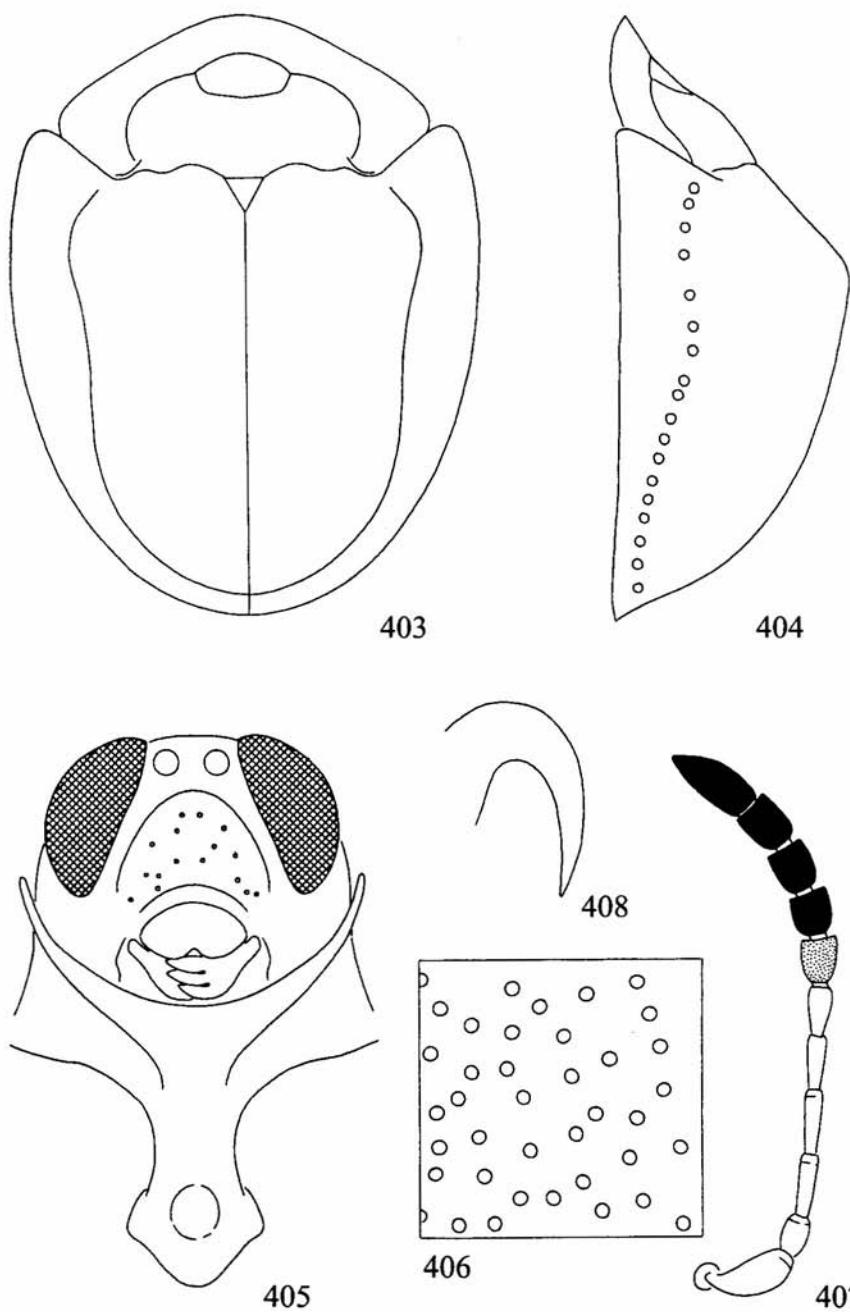
Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, up to half length of pronotum, angulate. Basal margin of each disc with row of teeth, the largest are placed opposite to pronotal basal emargination. Disc strongly, unevenly convex, angulate in profile (fig. 404), postscutellar impressions distinct, separated by low elevation, which runs from the top of postscutellar angulation to impunctate elevation close to each upper corner of scutellum. On each side of disc well marked longitudinal lateral impression. Puncturation completely irregular, coarse and dense (fig. 406), distance between punctures from slightly narrower to slightly wider puncture diameter, surface of disc appear irregular to slightly rugose. Marginal interval distinct only in anterior half length of elytron. Marginal row distinct, especially in anterior half of disc, its punctures 1.5-2.0 times coarser than punctures of central part of disc. Explanate margin narrow, strongly deflexed, in the widest part c. six times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin coarsely, shallowly punctate, appears irregular. Whole surface of elytra slightly shiny. Whole surface of elytral epipleura with a sparse but long hairs.

Clypeus broad, c. 1.6 times wider than long, with shallow clypeal lines, running in basal 2/3 length parallel to inner margin of eyes, slightly converging apically (fig. 405). Surface of clypeus flat, with few shallow punctures, slightly shiny. Labrum shallowly emarginate to 1/5 length. Venter of pronotum with short but deep antennal groove, separated externally by an obtuse carina. Prosternal collar prominent with deep lateral emargination and without or with barely marked plate above the emargination. Prosternal process narrow, moderately expanded apically, distinctly impressed longitudinally. Antennae stout, segments 9 and 10 c. 1.2 times as long as wide, length ratio of antennal segments: 100:58:88:94:76:70:65:58:70: 70:135. Segment 3 c. 1.5 times as long as segment 2, and segment 4 slightly longer than segment 3 (fig. 407).

Claws large, simple (fig. 408).

DISTRIBUTION

Madagascar.



403-408. *Sphenocassis imerina*: 403 – dorsal, 404 – lateral, 405 – head and prosternum, 406 – puncturation of central part of elytral disc, 407 – antenna, 408 – claw

REMARKS

Sphenocassis imerina belongs to the species group with distinct basal pronotal emargination. *S. imerina* and *S. impressipennis* are very similar, they are characterized by yellow to yellow-green elytra, and postscutellar impressions well marked, but not separated by distinct elevation. *S. impressipennis* differs in punctuation of pronotal disc without tendency to form a distinct longitudinal striation (rugoso-striate in *S. imerina*), and elytral disc less angulate in profile. Pronotum of *S. imerrina* is more transverse, with width/length ratio 1.69-1.81, while in *S. impressipennis* it is only 1.60-1.62.

MATERIAL EXAMINED

MADAGASCAR: Amber Geb., 1 (LB); Madagascar, 2 (syntypes, BMNH, MM); Madagascar int. austr., 1 (LB).

***Sphenocassis impressipennis* n. sp.**

(figs 409-414, pl. 15: 7-8)

ETYMOLOGY

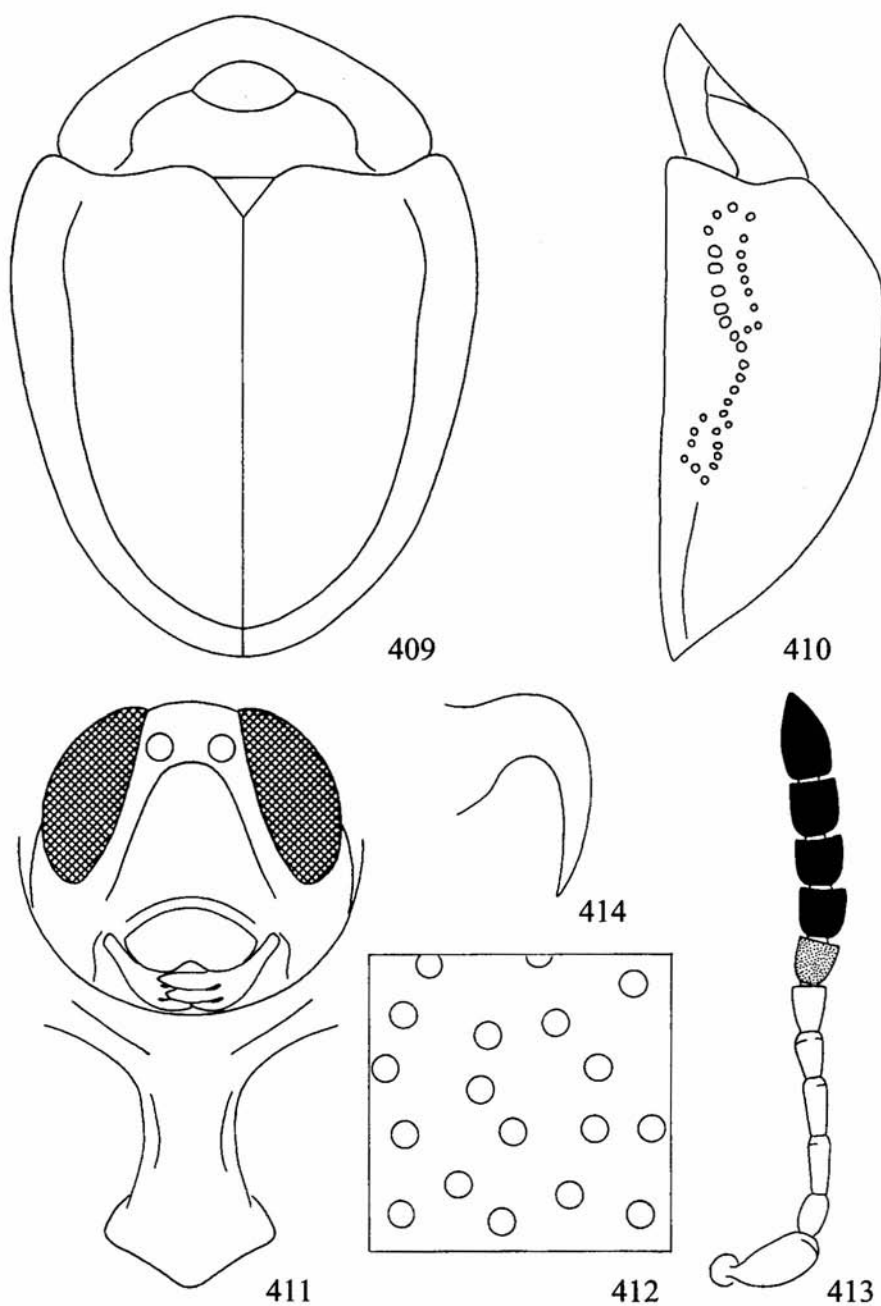
Named after shallow impressions on elytral disc.

DESCRIPTION

Le: 6.7-7.5 mm, Wi: 4.8-5.2 mm, Lp: 2.4-2.6 mm, Wp: 3.85-4.2 mm, Le/Wi: 1.40-1.44, Wp/Lp ratio: 1.60-1.62. Body subtriangular, distinctly converging posterad (fig. 409).

Pronotum yellow, only basal margin close to basal emargination narrowly black. Elytra yellowish or yellowish-green, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennal segments 1-6 yellow, segments 8-11 black. segment 7 partly infusate to black.

Pronotum elliptical, less transverse than in related species, 1.60-1.62 times wider than long, with maximum width in middle, anterior margin moderately convex, sides broadly rounded. Base of pronotum on each side with deep emargination. Disc moderately convex, indistinctly separated from explanate margin but with well defined, impressed area above head. Punctuation of elevated part of disc coarse and dense, punctures mostly touching each other, but only few tend to form longitudinal striation, surface appears mostly irregular to slightly rugose. Punctuation of impressed area above head coarse but distinctly sparser than on elevated part of disc, distance between punctures slightly wider than puncture diameter and surface appears regular. Explanate margin narrow, shallowly, but coarsely and densely punctate, distance between punctures mostly narrower than puncture diameter, surface appears irregular. Whole surface of pronotum slightly shiny.



409-414. *Sphenocassis impressipennis*: 409 – dorsal, 410 – lateral, 411 – head and prosternum, 412 – punctuation of central part of elytral disc, 413 – antenna, 414 – claw

Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, angulate. Basal margin of each disc with row of teeth, the largest are placed opposite to pronotal basal emargination. Disc unevenly convex, with top of convexity in postscutellar area (fig. 410), with shallow but well marked postscutellar, principal and lateral impressions; on slope, parallel to suture, there is an elongate shallow impression. Postscutellar impression not separated by elevation. Puncturation completely irregular, coarse and dense (fig. 412), distance between punctures mostly narrower than puncture diameter, surface of disc appears irregular to rugose. Marginal interval present only in anterior half of elytron. Marginal row distinct, especially in anterior half of disc, its punctures twice to thrice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, in the widest part c. 5.6 times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin coarsely punctate, punctures slightly coarser than on central part of disc but sparser, surface appears irregular. Whole surface of elytra slightly shiny. Elytral epipleura in apical half with sparse erect hairs.

Clypeus broad, c. 1.6 times as wide as long, with shallow but distinct clypeal lines, running parallel to inner margin of eyes (fig. 411). Surface of clypeus flat, with few shallow punctures, slightly shiny. Labrum shallowly emarginate to 1/6 length. Eyes shorter than in related *S. imerina*. Venter of pronotum with short but deep antennal groove, separated externally by a sharp carina. Prosternal collar prominent with deep lateral emargination but without plate above the emargination. Prosternal process narrow, moderately expanded apically, shallowly canaliculate longitudinally. Antennae stout, segments 9 and 10 approximately equal in length and width, length ratio of antennal segments: 100:52:82:76:65:65:58:64:64:70:117. Segment 3 c. 1.6 as long as segment 2, and slightly longer than segment 4 (fig. 413).

Claws large, simple (fig. 414).

DISTRIBUTION

Madagascar.

REMARKS

Sphenocassis impressipennis belongs to the species group with distinct basal pronotal emargination. *S. impressipennis* and *S. imerina* are very similar, they are characterized by yellow to yellow-green elytra, and postscutellar impressions well marked, but not separated by distinct elevation. For distinguishing characters see remarks under *S. imerina*.

MATERIAL EXAMINED

MADAGASCAR: holotype: Moramanga, 1 (LB); paratype: forêt de Fito, 1 (LB).

Sphenocassis incisicollis (SPAETH, 1911)

(figs 415-421, pl. 15: 3-4)

Torbinia incisicollis SPAETH, 1911: 262 (HT in MM), 1914: 85, 1924: 311.*Sphenocassis incisicollis*: BOROWIEC, 1999: 317.

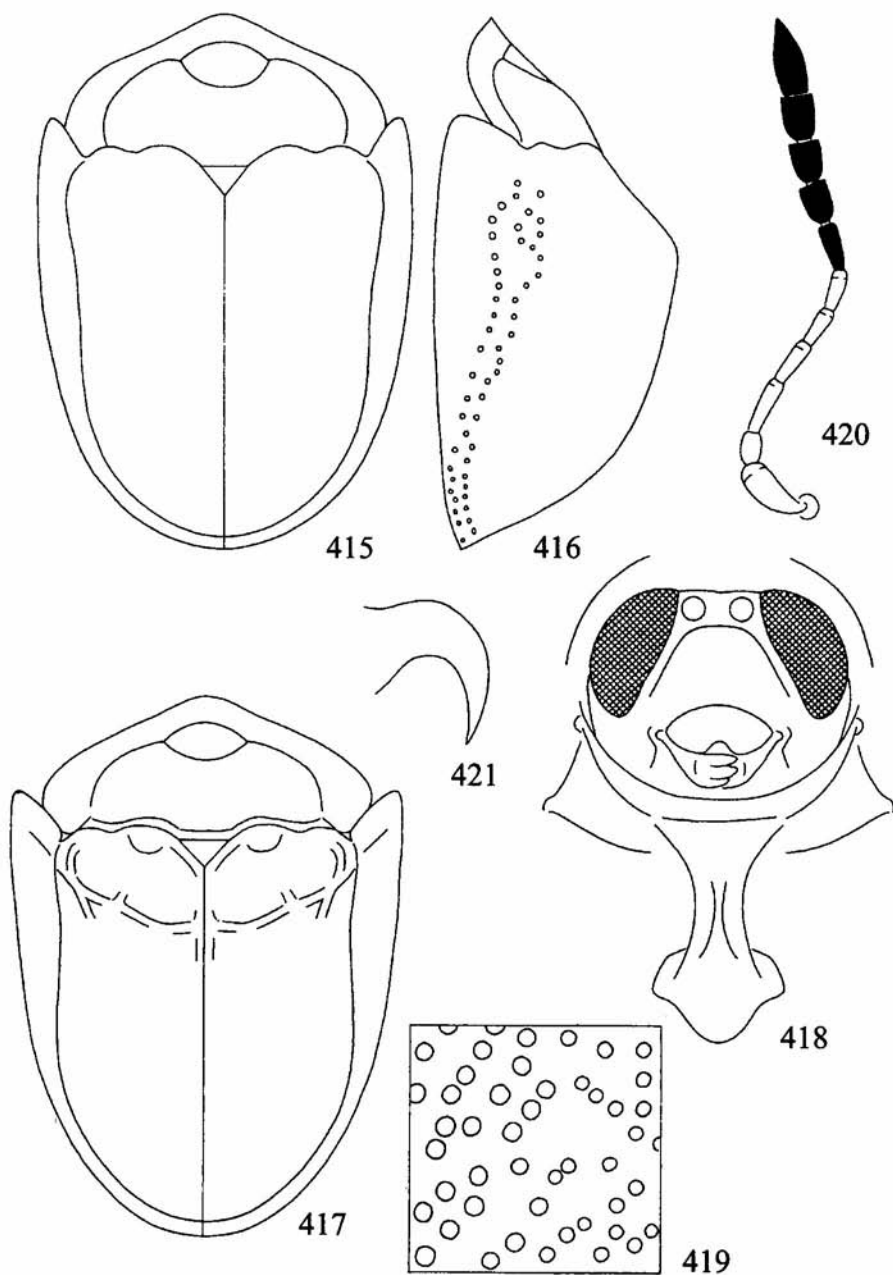
DESCRIPTION

Le: 7.25-8.6 mm, Wi: 4.9-6.1 mm, Lp: 2.5-2.8 mm, Wp: 4.3-5.1 mm, Le/Wi: 1.41-1.48, Wp/Lp ratio: 1.72-1.82. Body subtriangular, strongly converging posterad, male with more explanate margialia (fig. 417) than female (fig. 415).

Pronotum and elytra brown, basal margin of pronotum and basal crenulation of elytral disc narrowly black. Punctures of elytral disc with darker brown areola, especially punctures in postscutellar impression dark marked. Dark areolae at anterior side of postscutellar elevation sometimes coalescent, form small, blackish spot of indistinct borders. Head, ventrites and legs yellowish-brown. Antennal segments 1-6 yellowish, remainder brown to black.

Pronotum very broad, reversely trapezoidal, 1.72-1.82 wider than long, with maximum width in or slightly before middle, anterior margin moderately convex, lateral angles rounded. Base of pronotum on each side, before humeral callus, with deep emargination. Disc moderately convex, coarsely and densely punctate, on top of disc distance between punctures from slightly narrower to slightly wider than puncture diameter; only on praescutellar lobe punctures tend to form short longitudinal striation, on other parts of disc surface only slightly irregular or slightly rugose but shiny. Explanate margin narrow, indistinctly separated from disc, shallowly, coarsely, and densely punctate, with distance between punctures c. as wide as puncture diameter. Intervals more regular than on disc, mostly flat, and surface of explanate margin does not appear rugose, but slightly dull.

Scutellum triangular, smooth and shiny. Base of elytra much wider than pronotum, humeri strongly protruding anterad, up to half length of pronotum, angulate. Basal margin of each disc with row of large teeth, the largest placed opposite to pronotal basal emargination. Disc extremely, unevenly convex, obtusely angulate in profile (fig. 416). Postscutellar impressions deep, separated by elevation, which runs from top of postscutellar convexity to each humeral callus, forming an arch. Basal margin between scutellum and humeral callus in middle with impunctate elevation, which is sometimes connected with arch-shaped border of postscutellar elevation by slightly elevated interval. Puncturation of disc completely irregular, coarse and moderately dense (fig. 419), distance between punctures from slightly narrower to twice wider than puncture diameter. Space between punctures partly convex and surface of disc appears slightly irregular, or on slope slightly rugose. Marginal interval reduced to impunctate plate in 1/4 length of margin of disc. Marginal row distinct only in anterior half of disc, its punctures c. twice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, almost perpendicular, in the widest part c. eight times narrower than width of disc, in apical part as wide as diameter of punctures



415-421. *Sphenocassis incisicollis*: 415 – female dorsal, 416 – female lateral, 417 – male dorsal, 418 – head and prosternum, 419 – puncturation of central part of elytral disc, 420 – antenna, 421 – claw

of marginal row. Surface of explanate margin as coarsely punctate as disc but sparser, interspaces flat, surface appears regular. Whole surface of elytra slightly shiny. Apex of elytral epipleura only in area close to sutural angle with a few erect hair.

Clypeus very broad, c. 1.8 times wider than long, flat, with several fine punctures (fig. 418). Clypeal grooves moderately deep, run parallel to inner margin of eyes, not converging apically. Labrum shallowly emarginate to 1/6 length. Venter of pronotum with short but deep antennal groove, separated externally by an obtuse carina. Prosternal collar prominent with deep lateral emargination, and small plate above the emargination. Prosternal process narrow, moderately expanded apically, apex deeply canaliculate longitudinally. Antennae stout, length ratio of antennal segments: 100:50:83:66:58:55:66:55:60:60:116. Segment 3 c. 1.7 times as long as segment 2 and c. 1.3 times as long as segment 4 (fig. 420).

Claws large, simple (fig. 421).

DISTRIBUTION

Madagascar.

REMARKS

Sphenocassis incisicollis and *S. humerosa* form a group of large species, reddish brown to brown, with deep postscutellar impressions separated by distinct, sharp or obtuse, carina and very deep basal pronotal emargination. For distinguishing characters see remarks under *S. humerosa*.

MATERIAL EXAMINED

MADAGASCAR: Reg. d'Ambovombe, Plateau d'Androy, 1, coll. DONCKIER (holotype, MM); Madagascar, 1 (LB).

Sphenocassis praerupta (SPAETH, 1918)

(figs 422-427, pl. 15: 9-10)

Cassida praerupta SPAETH, 1918: 30 (ST in MM).

Sphenocassis praerupta: BOROWIEC, 1999: 317.

DESCRIPTION

Le: 7.8 mm, Wi: 5.3 mm, Lp: 2.7 mm, Wp: 4.45 mm, Le/Wi: 1.47, Wp/Lp ratio: 1.65. Body oval, softly converging posterad (fig. 422).

Pronotum yellowish-reddish-brown. Elytra brownish-green, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennal segments 1-7 yellow, remainder black.

Pronotum elliptical, very broad, c. 1.65 times wider than long, with maximum width in middle, sides rounded. Base of pronotum before humeral calli with very small, barely marked basal emargination. Disc only slightly convex, in basal half longitudinally punctato-striate, in area above head coarsely punctate, its surface

appears rugoso-striate. Explanate margin indistinctly separated from disc, densely, coarsely but shallowly punctate, its surface appears irregular; distance between punctures narrower than puncture diameter.

Scutellum triangular, its surface with few longitudinal, shallow striae. Base of elytra slightly wider than pronotum, humeri moderately protruding anterad, angulate. Basal crenulation of disc distinct. Disc almost evenly convex, with top of convexity in postscutellar area (fig. 423). Postscutellar impressions barely marked, without elevated borders, no principal or lateral impressions. Puncturation completely irregular, coarse and dense (fig. 425), distance between punctures slightly narrower to as wide as puncture diameter, surface of disc appears irregular to slightly rugose. Punctures at top of disc c. twice coarser than on slope. Marginal interval present only in anterior half of elytron. Marginal row distinct, especially in anterior half of disc, its punctures twice to thrice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, in the widest part c. eight times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin coarsely punctate, punctures slightly coarser but sparser than on central part of disc. Elytral epipleura along margin and in area close to sutural angle with short, erect hair.

Clypeus broad, c. 1.5 times as wide as long, flat, its surface shiny, with several fine punctures (fig. 424). Clypeal grooves deep, parallel to inner margin of eyes, but not converging apically. Labrum shallowly emarginate to 1/6 length. Venter of pronotum with short but deep antennal groove, separated externally by a sharp carina. Prosternal collar prominent with deep lateral emargination, but without plate above the emargination. Prosternal process narrow, moderately expanded apically, shallowly canaliculate in middle, apex smooth and shiny. Antennae stout, segment 9 as long as wide, segment 10 slightly transverse, length ratio of antennal segments: 100:60:67:93:73: 66:73:60:60:63:133. Segment 3 c. 1.1 times as long as 2 and segment 4 c. 1. times as long as segment 3 (fig. 426).

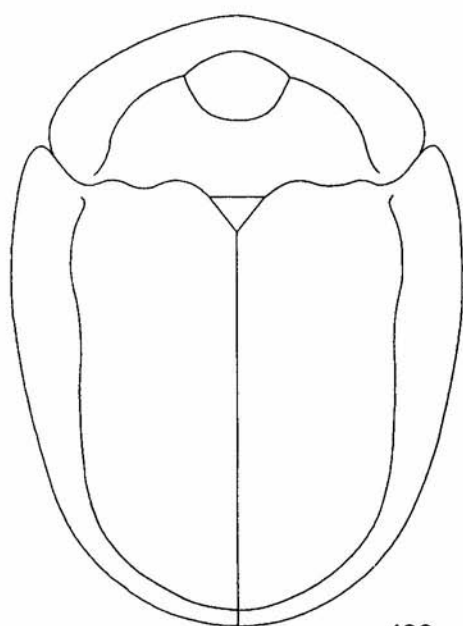
Claws large, simple (fig. 427).

DISTRIBUTION

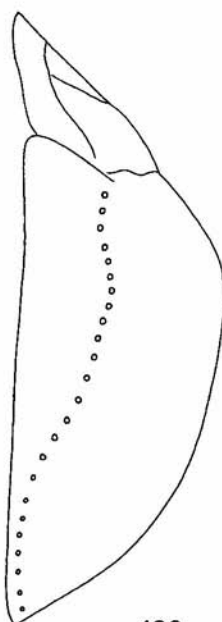
Madagascar.

REMARKS

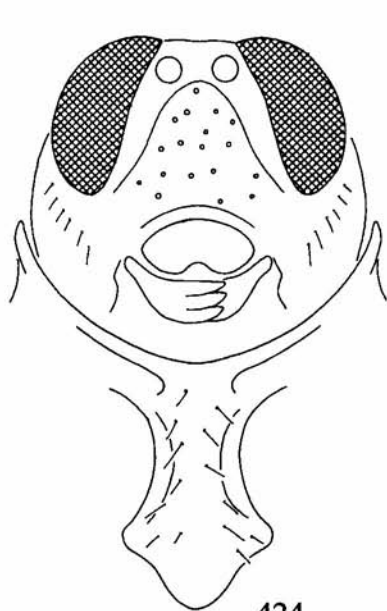
Sphenocassis praerupta with *S. punctatissima* are well distinguished from other member of the genus by very small but visible (in *S. praerupta*) or completely obsolete (in *S. praerupta*) basal pronotal impressions. *S. praerupta* differs from *S. punctatissima* in larger body, with length above 7.5 mm (below 7.5 in *punctatissima*), more transverse pronotum with width/length ratio above 1.64 (below 1.60 in *punctatissima*) and basal part of pronotal disc strongly punctato-striate (in *S. punctatissima* puncturation only tends to form striation, or it is completely irregular and dense, rugose but not distinctly punctato-striate). Dorsal colouration of *S. praerupta* is darker, especially pronotum is yellowish-reddish-brown, while in *S. punctatissima* it is yellowish-green or yellowish-pale brownish. *S.*



422



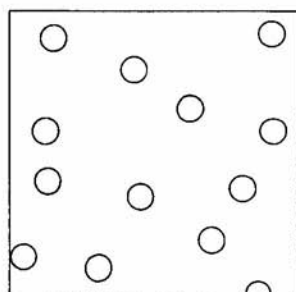
423



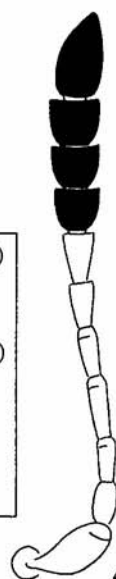
424



427



425



426

422-427. *Sphenocassis praerupta*: 422 – dorsal, 423 – lateral, 424 – head and prothorax, 425 – punctuation of central part of elytral disc, 426 – antenna, 427 – claw

rotundella and *A. anosibensis* are also similar, especially in almost regularly convex elytral disc, without impressions, but differ in well marked basal pronotal emargination; *S. rotundella* differs also in very small body with length below 4.6 mm.

MATERIAL EXAMINED

MADAGASCAR: Madagascar, 1902, 1, PLASON (syntype, MM).

Sphenocassis punctatissima (WEISE, 1910)

(figs 428-433, pl. 15: 11-12)

Cassidula punctatissima WEISE, 1910: 481 (TE in ?).

Cassida (*Cassida*) *punctatissima*: SPAETH, 1914: 116.

Sphenocassis punctatissima: BOROWIEC, 1999: 317.

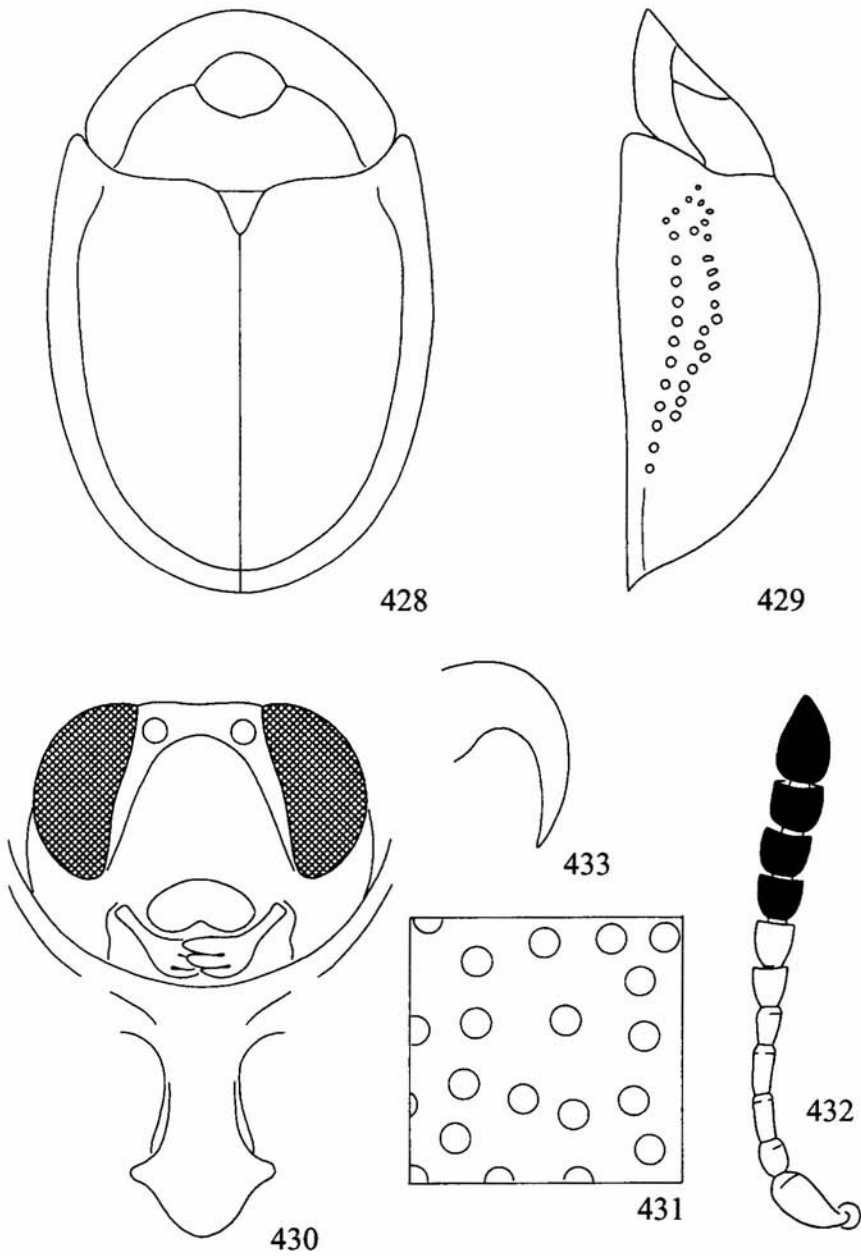
DESCRIPTION

Le: 5.7-7.25 mm, Wi: 3.65-4.55 mm, Lp: 2.15-2.55 mm, Wp: 3.15-3.8 mm, Le/Wi: 1.50-1.66, Wp/Lp ratio: 1.43-1.59. Body elongate-oval, softly converging posterad (fig. 428). The most plesiomorphic species within the genus, with intermediate position between the genera *Cassida* L. and *Sphenocassis* Sp.

Pronotum yellow to yellowish brown. Elytra yellowish or yellowish-green, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennae yellow, basal segments 1-7 yellowish, remainder black.

Pronotum elliptical, less transverse than other species, 1.47-1.59 times wider than long, with maximum width in or slightly behind middle, anterior margin regularly convex, sides broadly rounded. Base of pronotum on each side without emargination. Disc slightly convex, indistinctly separated from explanate margin, whole surface coarsely and densely punctate, punctures almost touching each other, tend to form longitudinal striation, and surface appears rugosostriate, also partly in area above head. Explanate margin narrow, shallowly but densely punctate, punctures almost touching each other, surface appears irregular. Whole surface of pronotum slightly shiny.

Scutellum triangular, its surface slightly irregular. Base of elytra slightly wider than pronotum, humeri moderately protruding anterad, angulate. Basal margin of each disc with row of very small teeth. Disc regularly convex, without impressions (fig. 429). Puncturation completely irregular, coarse and dense (fig. 431), distance between punctures mostly narrower than puncture diameter, surface of disc appears irregular to rugose, especially on slope. Marginal interval present only in anterior half of elytron. Marginal row distinct, especially in anterior half of disc, its punctures twice to thrice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, in the widest part c. eight times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin coarsely, shallowly punctate, punctures slightly coarser than on disc but sparser, surface appears



428-433. *Sphenocassis punctatissima*: 428 – dorsal, 429 – lateral, 430 – head and prosternum, 431 – punctation of central part of elytral disc, 432 – antenna, 433 – claw

irregular. Whole surface of elytra slightly shiny. Elytral epipleura in posterior half with short, sparse, erect hairs.

Clypeus broad, c. 1.4 times as wide as long, with shallow but distinct clypeal lines, run in basal part parallel to inner margin of eyes, slightly converging apically (fig. 430). Surface of clypeus flat, with few shallow punctures, slightly shiny. Labrum shallowly emarginate to 1/6 length. Venter of pronotum with very short and shallow antennal groove, separated externally by an obtuse fold. Prosternal collar prominent with shallow, barely marked lateral emargination. Prosternal process narrow, moderately expanded apically, not impressed, apex with few shallow punctures. Antennae stout, segments 9 and 10 transverse, distinctly wider than long, length ratio of antennal segments: 100:53:70:76:59:59:64:59:59:64:129. Segment 3 c. 1.3 times as long as 2, and segment 4 slightly longer than 3 (fig. 432).

Claws large, simple (fig. 433).

DISTRIBUTION

Madagascar.

REMARKS

Sphenocassis punctatissima and *S. praerupta* are well distinguished from other members of the genus by very small but visible (in *S. praerupta*) or completely obsolete (in *S. praerupta*) basal pronotal impressions. For distinguishing characters see remarks under *S. praerupta*. *S. punctatissima* has intermediate characters between the genera *Cassida* L. and *Sphenocassis* Sp. In general body shape, irregular elytral puncturation, simple claws, and pronotum without basal emargination it resembles members of *Cassida litigiosa* group. However, *S. punctatissima* has, like other members of the genus *Sphenocassis*, well defined antennal grooves, dorsal part of body with short, erect setae, rugose pronotal and elytral puncturation, broad clypeus with distinct clypeal grooves, well marked prosternal collar with shallow but present lateral emargination. Thus, its position within the genus *Sphenocassis* is not questionable.

MATERIAL EXAMINED

MADAGASCAR: Ambositra, 2 (MM, LB), 1, ex coll. SICARD (MNHN); Dano depression, km 102 Route Ankazobe, 6 II 1948, 1 (MNHN); Forêt de Fito, 1 (LB); Madagascar, 1 (LB); Madagascar int. austr., 1 (LB).

Sphenocassis rotundella n. sp.

(figs 434-438, pl. 14: 9)

ETYMOLOGY

Named after its regularly convex body with strongly deflexed explanate margin of elytra.

DESCRIPTION

Le: 4.5 mm, Wi: 3.0 mm, Lp: 1.65 mm, Wp: 2.6 mm, Le/Wi: 1.5, Wp/Lp ratio: 1.58. Body elongate oval, slightly cylindrical (fig. 434).

Pronotum yellow, only basal margin close to basal emargination narrowly black. Elytra yellowish-green, only teeth on basal margin of disc black. Clypeus, ventrites and legs yellow. Antennae yellow, with slightly infusate last four segments.

Pronotum trapezoidal, with maximum width slightly in front of the middle, anterior margin moderately convex, lateral angles rounded, sides behind the angle straight, strongly converging posterad. Base of pronotum on each side before humeral callus with deep emargination. Disc moderately convex, indistinctly separated from explanate margin, surface with irregular wrinkles. Explanate margin narrow, shallowly punctate, its surface appears irregular. Whole surface of pronotum slightly dull, only some wrinkles on top of disc slightly shiny.

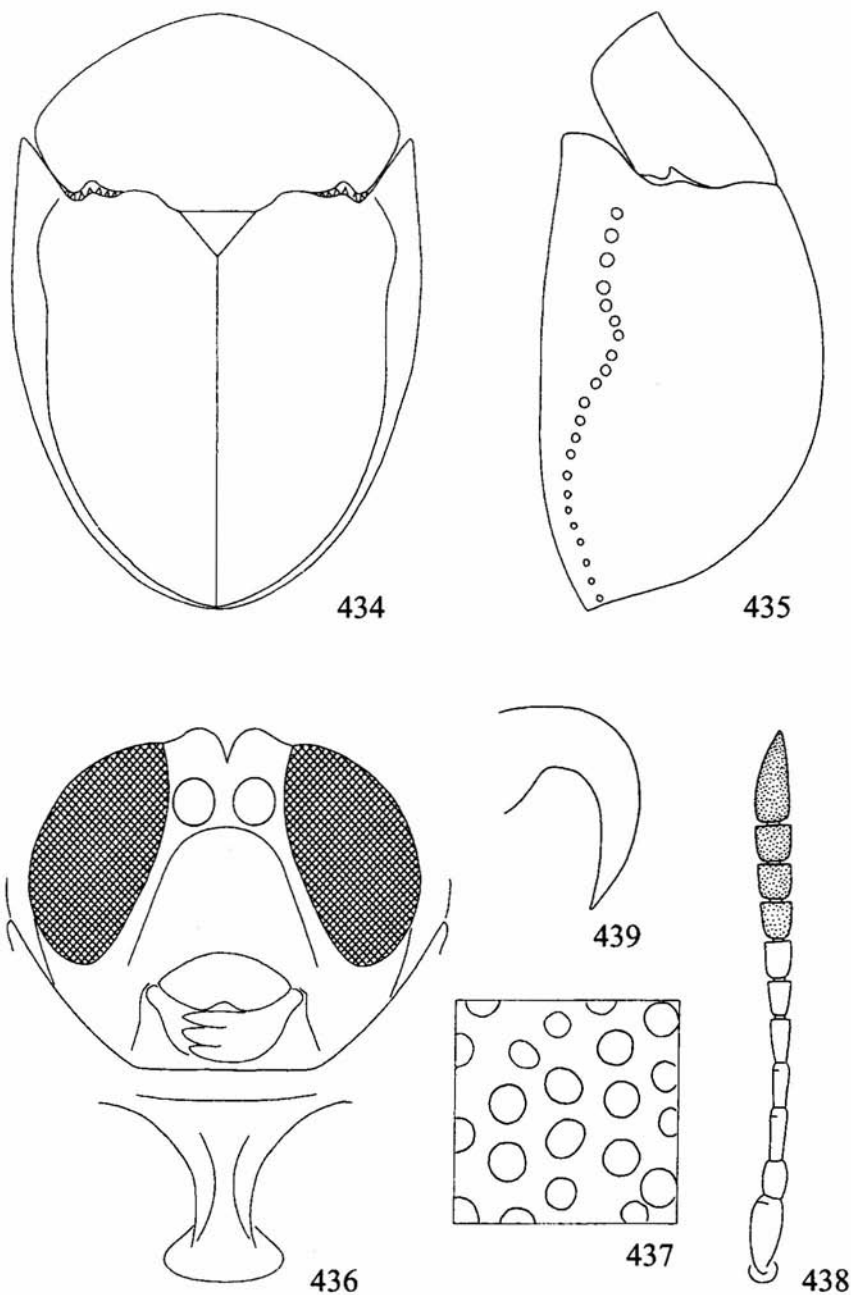
Scutellum triangular, without punctures or sulci. Base of elytra distinctly wider than pronotum, humeri strongly protruding anterad, angulate. Basal margin of each disc with row of teeth, the largest are placed opposite to pronotal basal incision. Disc regularly convex (fig. 435), postscutellar impressions barely marked, without elevated borders, no principal impressions. Puncturation completely irregular, coarse and dense (fig. 437), distance between punctures slightly narrower to as wide as puncture diameter, surface of disc appears irregular to slightly rugose. Marginal interval present only in anterior 1/3 of elytron. Marginal row distinct, especially in anterior half of disc, its punctures twice to thrice coarser than punctures of central part of disc. Explanate margin very narrow, strongly deflexed, in the widest part c. eight times narrower than width of disc, in apical part as wide as diameter of punctures of marginal row. Surface of explanate margin distinctly, shallowly punctate, appears irregular. Whole surface of elytra slightly dull. Apex of elytral epipleura only in area close to sutural angle with a few erect hair.

Clypeus very broad, c. 1.9 times as wide as long, with shallow but distinct clypeal lines, parallel to inner margin of eyes (fig. 436). Surface of clypeus flat, with few shallow punctures, slightly shiny. Labrum emarginate to 1/6 length. Venter of pronotum with short but deep antennal groove, separated externally by a sharp carina. Prosternal collar prominent with shallow lateral emargination, without plate above the emargination. Prosternal process narrow, moderately expanded apically, shallowly canaliculate longitudinally, apex with few shallow punctures. Antennae stout, segments 9 and 10 approximately as long as wide, length ratio of antennal segments: 100:60:87:73:73:53:60:57:55:55:146. Segment 3 c. 1.5 as long as segment 2 and c. 1.2 times as long as segment 4 (fig. 438).

Claws large, simple (fig. 439).

DISTRIBUTION

Madagascar.



434-438. *Sphenocassis rotundella*: 434 – dorsal, 435 – lateral, 436 – head and prosternum, 437 – puncturation of central part of elytral disc, 438 – antenna, 439 – claw

REMARKS

Sphenocassis rotundella distinctly differs from its congeners in its small size (in other species of the genus length usually above 5.0 mm). Only small specimens of *S. punctatissima* (WEISE) are at first glance similar, especially in almost cylindrical, regularly convex body and elytra without distinct impressions, but they differ in base of pronotum without basal emargination (with deep emargination in *S. rotundella*), and venter of pronotum with shallow antennal groove not separated externally by sharp carina (deep and bordered externally by sharp carina in *S. rotundella*). The new species was selected from Paris Museum materials in the sixties by W.D. HINCKS and labelled as "*Cassida rotundella* new species" but the name has never been published.

MATERIAL EXAMINED

Holotype: MADAGASCAR: Itampolo, 13.V.51, RP [R. PAULIAN], "*Cassida rotundella* HINCKS TYPE, det. W.D. HINCKS" (MNHN).

Genus: *Tegocassis* SPAETH, 1924

Tegocassis SPAETH, 1924: 310 (type species: *Cassida corpulenta* WEISE, 1904, by original designation); HINCKS, 1952: 338; SEENO and WILCOX, 1982: 177; BOROWIEC, 1994 a: 19, 1999: 317.

Moderately large cassids, body length 8-12 mm. Body almost circular. Pronotum very broad, with maximum width slightly before middle, sides rounded but posterior corners well marked. Pronotal disc not separated from explanate margin, microreticulate, with fine pricks, and sometimes with fine wrinkles. Explanate margin broad, microreticulate, impunctate with shallow striation. Elytral base only slightly wider than pronotum. Elytral disc angulate in profile. Punctuation completely irregular. Marginal row distinct in 1/3-1/2 length of elytra, in posterior half of elytra marginal row vanishing between coarse punctuation of disc and marginalia. Explanate margin of elytra very broad, moderately deflexed, irregularly punctate. Clypeus very short, c. as long as first antennal segment, no clypeal grooves only margins of clypeal triangle slightly elevated. Venter of pronotum without antennal grooves. Antennae elongate, third segment distinctly longer than second, segments 8-10 longer than wide. Last segment of tarsi slightly longer than third, bilobate segment. Claws simple.

It is close to *Cassida* L., especially to large species from Madagascar. *Tegocassis* differs in peculiar structure of prosternal collar which runs up to lateral sides of head cavity, but between head cavity collar and prosternal collar, at sides of head, there is a deep emargination. No species of *Cassida* has as short clypeus as *Tegocassis*. Members of *Cassida* are usually smaller, only few species exceed the size of 8 mm. Uniformly yellow or green, irregularly punctate elytra are also found in species of *Casida litigiosa* group from South Africa. They differ from *Tegocassis* in smaller size, short prosternal collar, and longer clypeus.

Only one species in Africa and Madagascar.

***Tegocassis corpulenta* (WEISE, 1904)**

(figs 440-445, pl. 17: 5-6)

Cassida corpulenta WEISE, 1904 b: 173 (HT in ZMHU).*Cassida* (*Cassida*) *corpulenta*: SPAETH, 1914: 118.*Tegocassis corpulenta*: SPAETH, 1924: 310, 1932: 233; BOROWIEC, 1999: 317.*Tegocassis corpulenta* ssp. *Salamensis* SPAETH, 1932: 233.*Cassida exsanguis* FAIRMAIRE, 1894: 470 (ST in MNHN); SPAETH, 1914: 115, not *C. exsanguis*

GERSTAECKER, 1884; BOROWIEC, 1999: 318 (as syn.).

Tegocassis exsanguis: SPAETH, 1924: 310.

DESCRIPTION

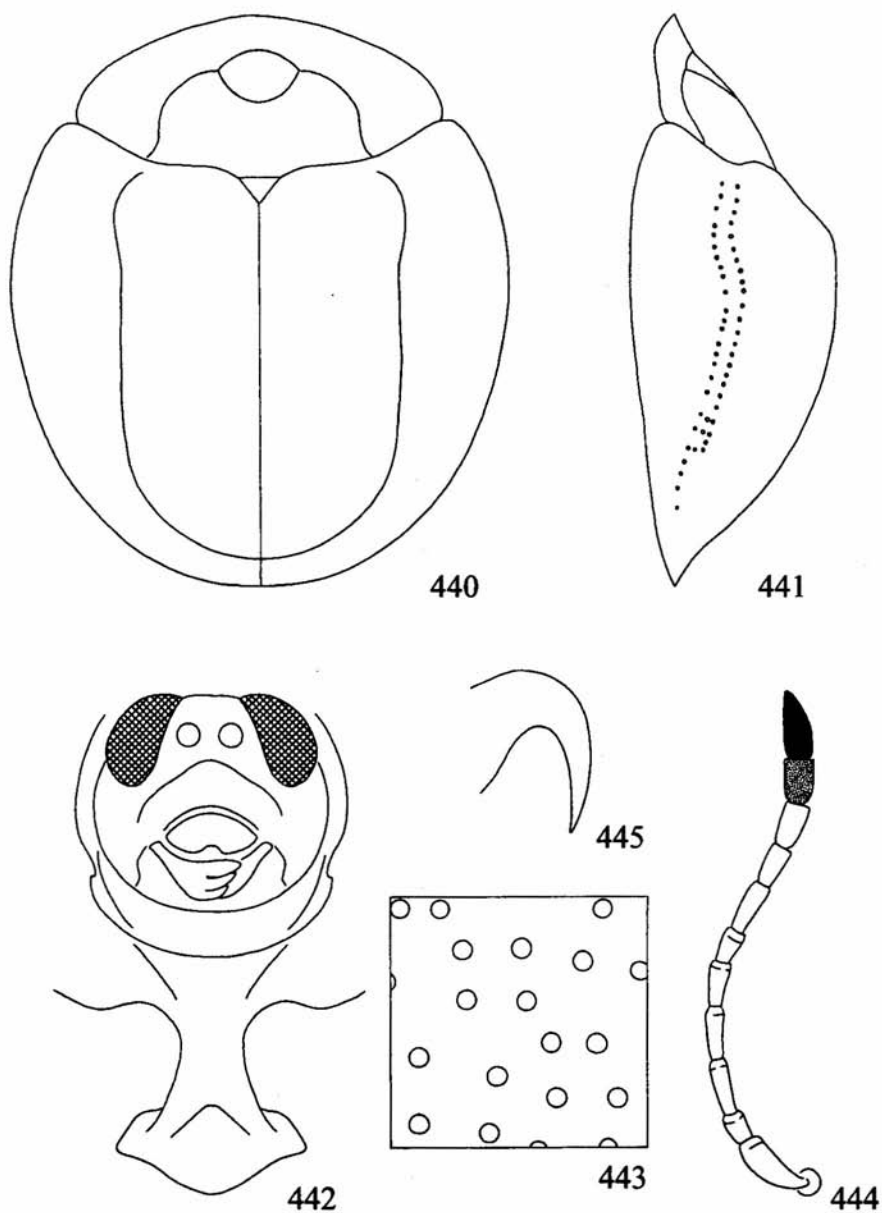
Le: 8.5-12.7 mm, Wi: 6.8-10.8 mm, Lp: 2.8-3.8 mm, Wp: 5.4-7.7 mm, Le/Wi: 1.13-1.27, Wp/Lp ratio: 1.83-2.06. Body almost circular (fig. 440).

Whole body, including head, ventrites and legs uniformly yellow (green in life). Antennae mostly yellow, in western populations usually last three segments brown to black, and segment 8 partly infusate, in eastern populations usually only last segment brownish to black and segment 10 partly infusate.

Pronotum very broad, 1.96-2.06 times wider than long, widest at base, posterior corners well marked. Disc only slightly convex, separated from explanate margin by shallow impression. Surface in western populations completely smooth, in populations from Madagascar usually with indistinct, very shallow, fine puncturation, especially on sides of disc, or impunctate but slightly irregular. Explanate margin broad, smooth. Whole surface of disc slightly dull.

Scutellum triangular, smooth and slightly shiny. Base of elytra only slightly wider than pronotum, humeri only slightly protruding anterad, rounded. Basal margin of disc not or indistinctly crenulate. Disc unevenly convex, obtusely angulate in profile (fig. 441), in populations from Cameroon slightly more angulate than in populations from Madagascar. Puncturation of disc completely irregular (fig. 443), fine to moderately coarse but dense, in sutural half of disc slightly finer and denser than on sides of disc. Distance between punctures in sutural half of disc from as wide as to twice, on sides to thrice wider than puncture diameter. Marginal interval distinct, but narrow, in anterior part c. thrice wider than three punctures combined. Marginal row distinct, its punctures not coarser than on disc. Explanate margin moderately deflexed, broad, in the widest part c. 2.6 times narrower than width of disc, shallowly punctate, punctures c. as coarse as on disc but distinctly sparse, surface appears slightly irregular. Whole surface of disc slightly dull. Apex of elytral epipleura with row of sparse, short, erect setae.

Clypeus very short, c. twice wider than long, slightly elevated but with depressed top, fine clypeal grooves visible only in basal corners of the depressed top (fig. 442). Surface of clypeus smooth, slightly dull. Labrum transverse, shallowly emarginate to 1/5 length. Eyes very short, gena as long as half length of eye. Prosternal collar long, its inner surface on sides densely pubescent, no lateral emargination. Head cavity on sides also with sharp collar, between head cavity collar and prosternal collar there is a deep emargination. Prosternal process



440-445. *Tegocassis corpulenta*: 440 – dorsal, 441 – lateral, 442 – head and prothorax, 443 – punctation of central part of elytral disc, 444 – antenna, 445 – claw

moderately broad in middle, strongly expanded apically, apex with large but shallow impression. Antennae slim, segments 9 and 10 c. 1.5 times as long as wide, length ratio of antennal segments: 100:50:83:77:72:55:80:64:66:66:105. Segment 3 c. 1.7 as long as segment 2, and slightly longer segment 4 (fig. 444).

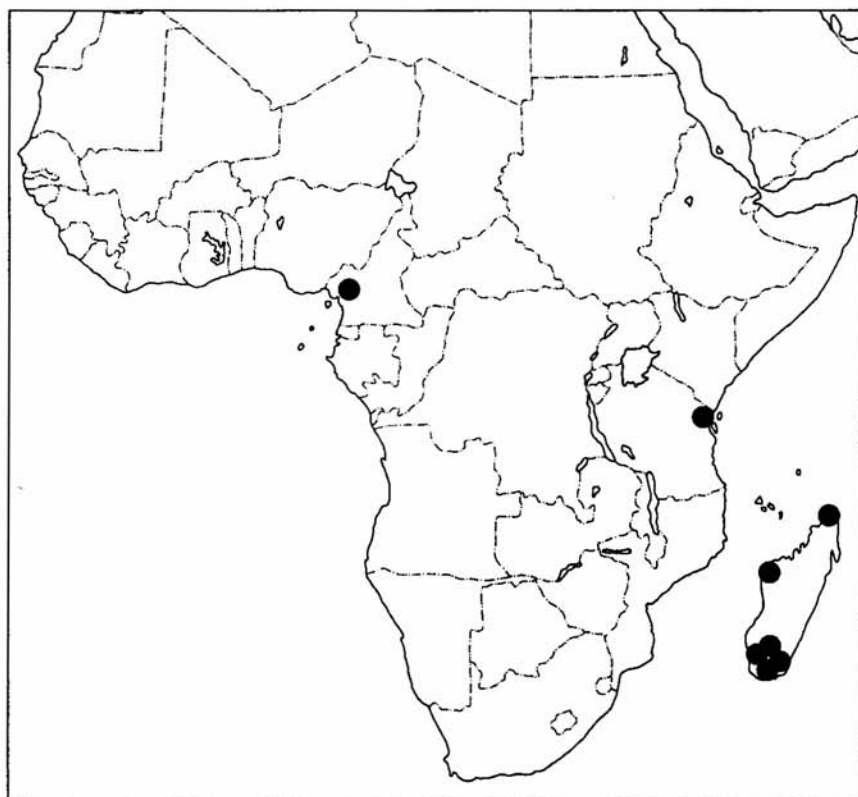
Claws large, simple (fig. 445).

DISTRIBUTION

Forest regions of Cameroon, Tanzania, and Madagascar.

REMARKS

Populations from Cameroon were described as a different species, *T. exsanguis*. They slightly differ from Madagascan populations described under the name *T. corpulenta* in pronotal disc completely smooth, with regular surface, slightly much convex elytral disc, and usually last four antennal segments infuscate to black, while specimens from Madagascar have pronotal surface slightly irregular, and usually only two last antennal segments infuscate to black. The differences



446. Distribution of *Tegocassis corpulenta*

were also emphasised by broad geographical disjunction. However, in materials from Tanzania I found specimens with intermediate characters between Cameroon and Madagascan populations. Thus, the name *T. exsanguis* should be synonymized with *T. corpulenta* and this point of view was presented in my world catalogue of Cassidinae (BOROWIEC 1999). Probably the species in the past was widely distributed in forests across African continent and Madagascar, but became extinct with extinction of humid forests in eastern Africa.

MATERIAL EXAMINED

CAMEROON: Barombi, 1 (LB); Joh.-Albrechtshöhe, 1 IX-31 X 1897, 1, 18 IX-8 X 1898, 1 (LB); Kamerun, 1 (holotype of *corpulenta*, ZMHU).

MADAGASCAR: Bas Mangoky Agric. Stat., 1 (MNHN); Beloka, 5 VIII 1948, 1 (MNHN), env. Beloka, 22 VI 1948, 1, CLÉMERT (MM); Diego Suarez, Analamerana, 80 m, 50 km SE Diego, I 1959, 1 (MNHN); Diego Suarez, Montagne des Français, II 1959, 1 (MNHN); Mandrare Moyen, De Besakoa a Bekily, 4 III 1901, 1, J. DECORSE (MNHN); Plateau d'Androy, Rég. Ambovombe, 1 (MM); Sakarana, Zombitsy, 11-12 IV 1956, 1 (MM).

TANZANIA: Nairobi n. Tanga, IV 1915, 3, METHNER (ZMHU); Tanga, IV 1915, 1, METHNER (ZMHU).

Genus: *Trichaspis* SPAETH, 1911

Trichaspis SPAETH, 1911: 269 (type species: *Cassida pilosula* BOHEMAN, 1862, by monotypy), 1914: 86; HINCKS, 1952: 338; SEENO and WILCOX, 1982: 176; BOROWIEC, 1994 a: 16, 1999: 320.

Crossocassis SPAETH, 1911: 274 (type species: *Crossocassis pilosa* SPAETH, 1911, by monotypy), 1914: 86; HINCKS, 1952: 338 (as subgenus); SEENO and WILCOX, 1982: 176 (as subgenus); HERON and BOROWIEC, 1997: 634 (as syn. of *Trichaspis*).

Capillocassis SHAW, 1961: 25 (type species: *Capillocassis hincksi* SHAW, 1961, by monotypy); SEENO and WILCOX, 1982: 176; BOROWIEC, 1999: 320 (as syn. of *Trichaspis*).

Very small cassids, body length 3.0-3.7 mm. Body oval. Whole surface of pronotum and elytra with erect setae or/and adherent pubescence. Pronotum with broadly rounded sides. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin moderately broad, partly transparent, usually rugose punctate. Elytral base slightly wider than pronotum. Elytral disc regularly convex. Puncturation of disc coarse, regular, intervals narrower than rows, sometimes linear. Marginal row distinct. Explanate margin of elytra very narrow, punctate, transparent. Clypeus broad, with fine clypeal grooves converging in circle. Venter of pronotum without antennal grooves, but usually slightly impressed along each side of head. Prosternal collar distinct. Antennae stout, third segment usually shorter than the second, segments 8-10 not longer than wide. Last segment of tarsi as long as to slightly shorter than third, bilobate segment. Claws with large basal tooth.

A very distinct genus, well distinguished from most genera without antennal channel and without lateral emargination of prosternal collar by its pubescent and setose body. Only *Smeringaspis* Sp. has body also setose and pubescent but differs in simple claws, venter of pronotum with antennal grooves, and prosternal collar with lateral emargination. Members of the genus *Smeringaspis* are distinctly larger, with body length above 4.0 mm.

SHAW (1961) described the genus *Capillocassis* and distinguished it from *Trichaspis* based on "presence of sensory pits on the antennal club...", but terminal pit occurs also in the genus *Trichaspis* and in most (if not all) of specialized genera of Cassidini. Two other distinguishing characters: clavate hairs and sharp, diverging claw tooth are not diagnostic at the generic level, because diverging basal tooth of claws is found also in *T. pilosula*, type species of the genus *Trichaspis* (in my opinion, SHAW compared his *C. hincksi* with misidentified specimens of *T. louwi*, possessing not diverging tooth of claws, not with true *T. pilosula*, externally very similar to *T. louwi*; in SPAETH's collection studied by SHAW under the name *T. pilosula* there is a mixed series of both true *T. pilosula* and *T. louwi*), and elytral setae vary from sharpened to clavate. Five new species described below show that the genus *Trichaspis* is much diverse and in my world catalogue of Cassidinae I synonymized *Capillocassis* SHAW with *Trichaspis* Sp. (BOROWIEC 1999). On the other hand, northern (*T. erinacea*, *T. hincksi*, and *T. minutissima*) and southern (remaining) species form two different groups. One is characterized by trapezoidal pronotum, clypeal plate not elevated, and dorsal setae clavate or at least truncate apically, while the second group has elliptical pronotum, clypeal plate slightly elevated and dorsum with sharpened setae. Also *Crossocassis*, described as a separate genus (SPAETH 1911) and later placed as a subgenus in *Trichaspis* (HINCKS 1952), represents only one distinct species within the diverse genus and HERON and BOROWIEC (1997) synonymized both names.

Eight species in Africa south of Congo.

KEY TO SPECIES

1. Elytral surface without tubercles, setae not forming brushes.
..... 2.
- Elytral surface with tubercles possessing setae grouped in brushes.
..... *pilosula*
2. Elytral disc covered mostly by only erect setae, adherent setae absent, or sparse, or grouped in a few intervals, elytral surface well visible.
..... 3.
- Elytral disc covered by both adherent and erect setae, adherent setae very dense, completely covering elytral surface.
..... *tomentosa*

3. Elytral erect setae mostly clavate.
..... 4.
- Elytral erect setae needle-shaped, or with truncate apex but not clavate.
..... 5.
4. Clavate elytral setae long and slim, longer than width of elytral intervals.
Pronotal disc yellow.
..... *hincksi*
- Clavate elytral setae short and very stout, shorter than width of elytral intervals. Pronotal disc yellowish-red to purple-red.
..... *erinacea*
5. Erect setae on elytral disc and surrounding margin of elytra long, distinctly longer than width of elytral intervals. Setae on pronotal disc with acute apex. Larger, length above 3.3 mm.
..... 6.
- Erect setae on elytral disc and surrounding margin of elytra short, shorter than to as wide as width of elytral intervals. Setae on pronotal disc mostly with truncate apex. Smaller, length below 3.1 mm.
..... *minutissima*
6. Elytral intervals convex, very narrow, in sutural half of disc slightly narrower than rows, on sides of disc linear, surface of elytra appears irregular to rugose. Namibia.
..... 7.
- Elytral intervals flat or only slightly convex, at least in sutural half of disc slightly wider than rows, surface of elytra appears regular. South Africa.
..... *louwi*
7. Elytral setae distributed regularly, no interval with group of dense setae. Setae surrounding elytral margin dense.
..... *pilosula*
- Elytral setae distributed partly irregularly, interval 3 in anterior part. and interval 5 in and behind middle with group of dense, partly adherent setae. Setae surrounding elytral margin sparse.
..... *brevicornis*

Trichaspis brevicornis n. sp.

(figs 447-453, pl. 16: 3-4)

ETYMOLOGY

Named after its stout antennae.

DESCRIPTION

Le: 3.4 mm, Wi: 2.15 mm, Lp: 1.2 mm, Wp: 1.75 mm; Le/Wi: 1.58, Wp/Lp: 1.46. Body oval, sides distinctly converging posterad (fig. 447).

Whole body yellow.

Pronotum elliptical, 1.46 times as wide as long, with maximum width in middle, sides broadly rounded, anterior margin in middle with shallow, triangular emargination, transparent margin broad. Disc moderately convex, indistinctly separated from explanate margin, in area above head impunctate, on top and on sides distinctly, coarsely punctate, distance between punctures mostly narrower than puncture diameter, surface appears slightly irregular. Explanate margin narrow, densely punctate, punctures slightly coarser than on top of disc. Whole surface of pronotum covered by long, adherent, chalk-white setae, not covering surface, border between punctate explanate margin and its transparent margin with row of long, erect, sharpened setae.

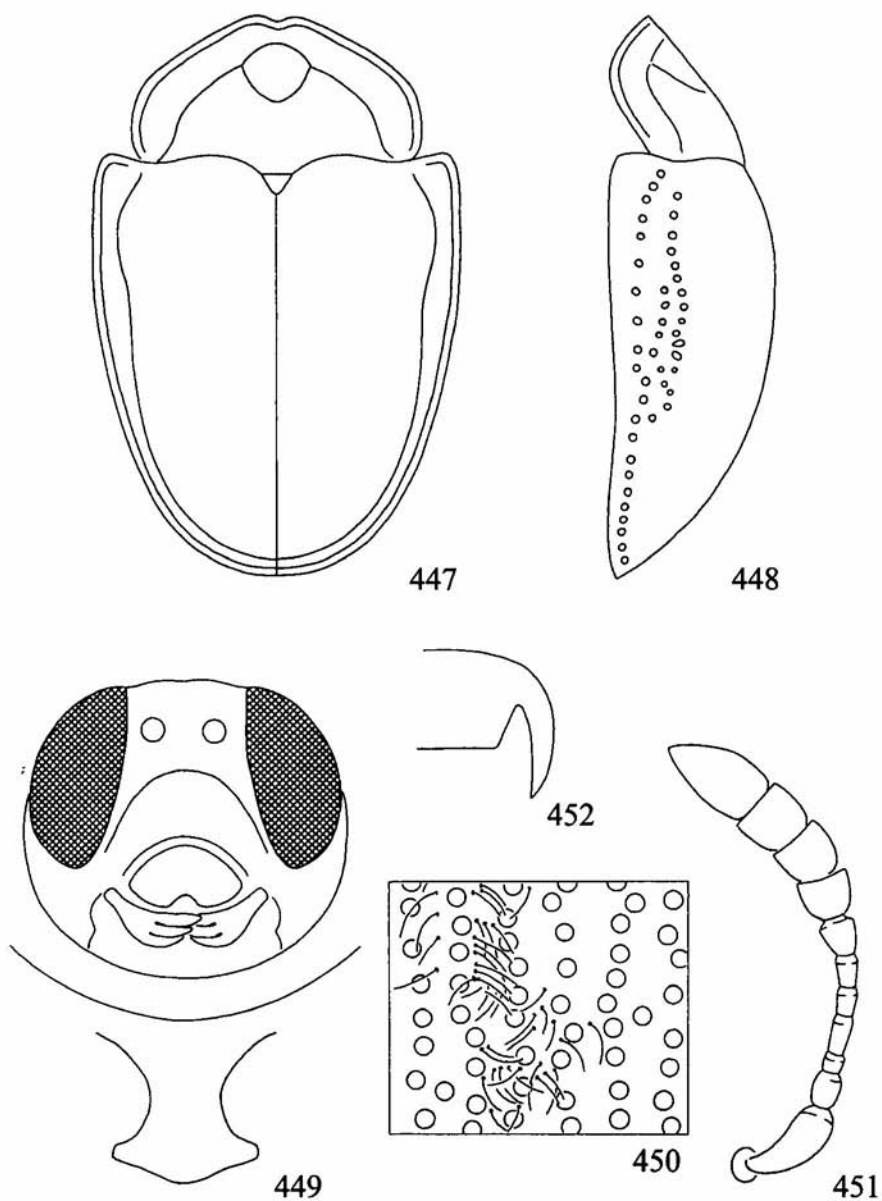
Scutellum triangular, impunctate. Base of elytra distinctly wider than pronotum, humeri moderately protruding anterad, obtuse, elytral margin finely serrate. Disc moderately, regularly convex, with top of convexity in middle (fig. 448), without impressions. Puncturation regular, coarse (fig. 450), rows impressed, running partly slightly irregularly, distance between punctures in rows from as wide as to narrower than puncture diameter. Punctures in marginal row distinctly coarser than on sides of disc. Intervals narrow to very narrow, slightly convex, mostly narrower than rows, only two sutural intervals as wide as rows, surface of elytral disc appears irregular. Explanate margin very narrow, only twice wider than marginal interval, strongly deflexed. Its surface with several irregular, coarse punctures. Surface of elytra covered by double, erect and adherent, sharpened setae. Erect setae long, distinctly longer than width of sutural intervals, distributed regularly on whole elytra, and around elytral margin. Adherent setae shorter, mostly sparse, not covering elytral surface, only in anterior part of 3rd, and in middle and posterior part of 5th interval adherent setae dense, forming white elongate bands covering surface of intervals.

Clypeus very broad, c. 1.7 times as wide as long, with fine but distinct clypeal lines converging in arch (fig. 449). Clypeal plate well separated, slightly elevated, but flat, finely punctate, covered with erect, short setae. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 distinctly wider than long, length ratio of antennal segments: 100:45:25:50:35:35:47:50:60:60:125. Segment 2 c. 1.8 times as long as segment 3 and slightly shorter than segment 4 (fig. 451).

Ventrites and legs covered by long adherent setae. Claws with very large, triangular basal tooth (fig. 452).

DISTRIBUTION

Namibia (fig. 453).



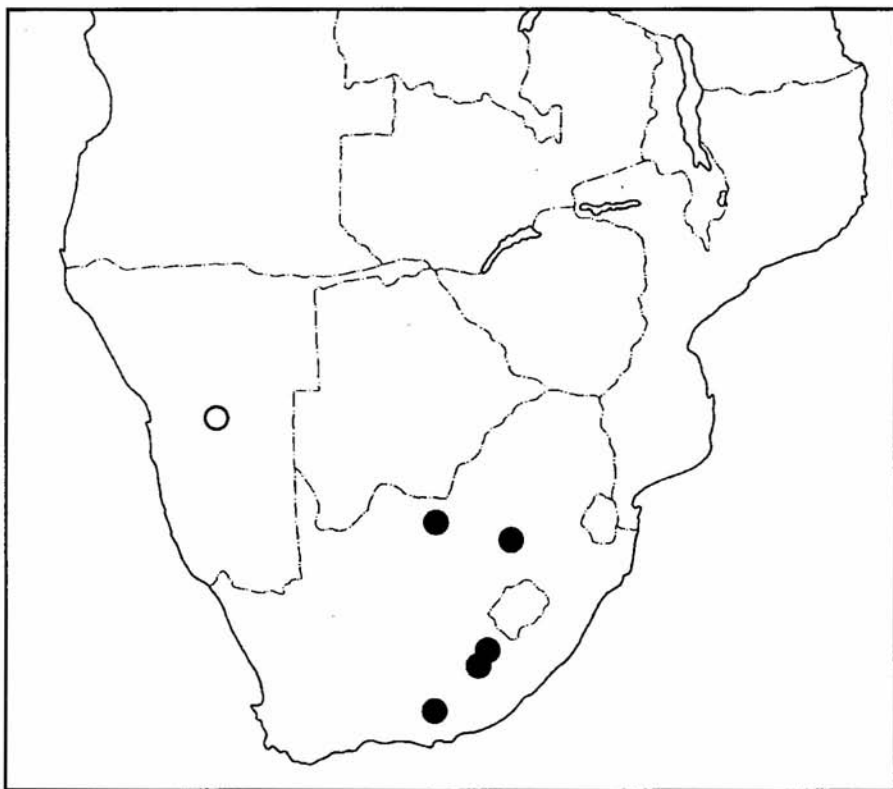
447-452. *Trichaspis brevicornis*: 447 – dorsal, 448 – lateral, 449 – head and prosternum, 450 – punctation of central part of elytral disc, 451 – antenna, 452 – claw

REMARKS

It belongs to the group of species with elytra possessing long, erect, acute setae. The group comprises also *T. pilosula* and *T. louwi*. *T. pilosula* at first glance is very similar, but differs distinctly in very narrow, linear elytral intervals, distinctly narrower than rows, while in *T. brevicornis* they are mostly as wide as rows. Setae surrounding elytra border in *T. pilosula* are distinctly denser than in *T. brevicornis*. Setae of elytral disc in *T. pilosula* are arranged regularly, never forming elongate spots of adherent setae, while in *T. brevicornis* elytra have along middle of 5th interval elongate spot groups of dense, adherent setae. *T. louwi* differs in less converging sides of elytra, elytral rows not or only slightly impressed, and intervals mostly wider than rows; surface of disc appears in *T. brevicornis* slightly irregular and in *T. louwi* almost regular. In *T. louwi* setae on whole disc are arranged regularly, or if forming elongate spots, they group in posterior half of 4th interval.

MATERIAL EXAMINED

NAMIBIA: holotype: "NAMIBIA, Windhoek, 14-23 I 1994" (LB).



453. Distribution of *Trichaspis brevicornis* (white circle) and *Trichaspis pilosa* (black circles)

Trichaspis erinacea n. sp.

(figs 454-459, 473, pl. 16: 9-10)

ETYMOLOGY

Latin "*erinaceus*" means hedgehog. Named after elytra covered by erect setae.

DESCRIPTION

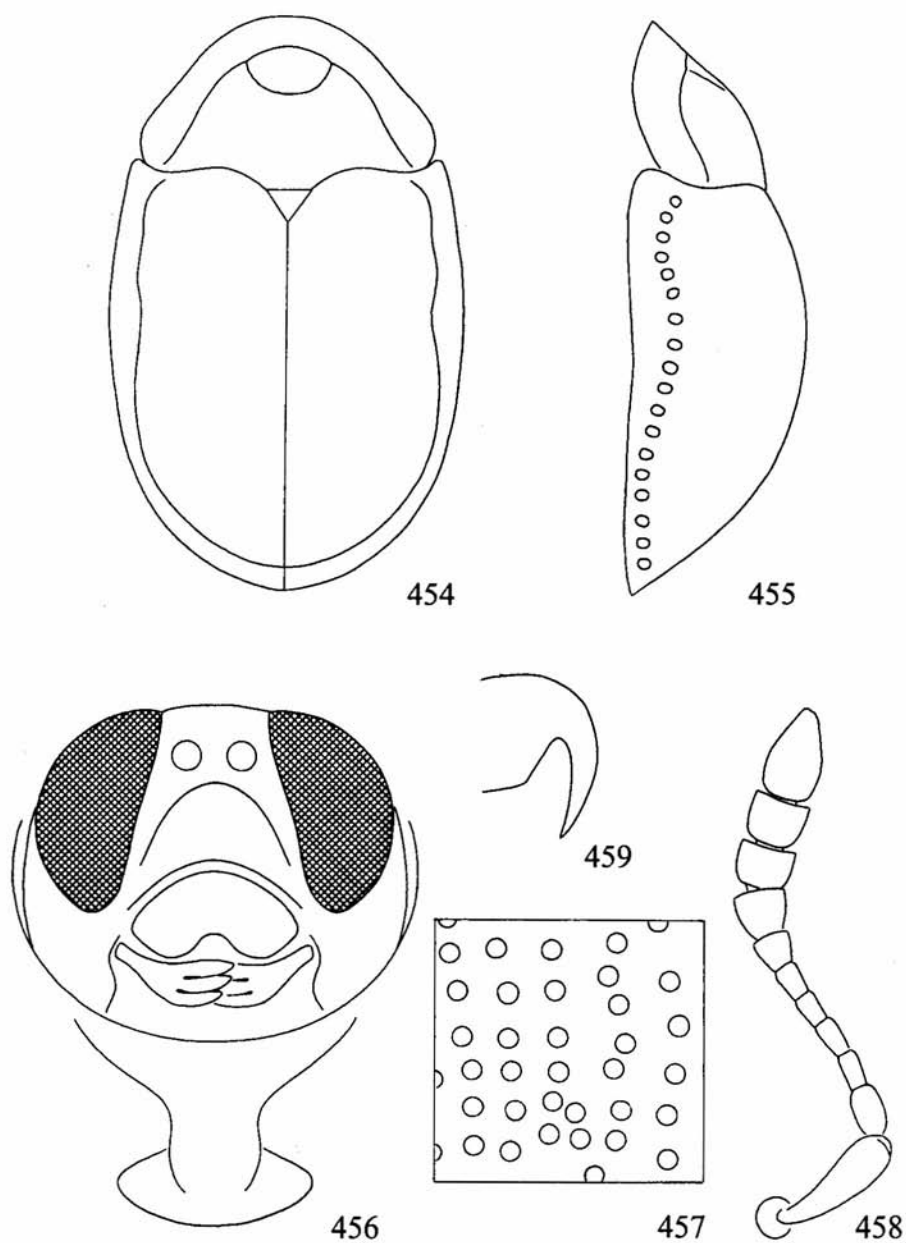
Le: 3.1-3.4 mm, Wi: 1.8-2.05 mm, Lp: 1.05-1.2 mm, Wp: 1.6-1.8 mm; Le/Wi: 1.60-1.72, width/length ratio of pronotum: 1.42-1.55. Body oval, regularly rounded on sides (fig. 454).

Pronotal disc yellowish-red to purple-red, explanate margin of pronotum yellow. Margins of mesothorax, and metathorax black. Head, antennae, and abdomen yellow.

Pronotum pentagonal, c. 1.42-1.55 times as wide as long, with maximum width almost at base, sides rounded. Disc moderately convex, indistinctly separated from explanate margin, distinctly, moderately coarsely punctate, distance between punctures mostly narrower than puncture diameter, surface between punctures microreticulate but shiny. Explanate margin narrow, densely punctate, punctures as coarse as on disc but denser, with tendency to form grooves. Whole surface of pronotum covered by short, exclusively erect, slightly clavate setae.

Scutellum triangular, impunctate. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, rounded. Disc moderately, regularly convex, with top of convexity in middle (fig. 455), without impressions. Punctuation regular (fig. 457), rows in anterior half of disc not, in posterior half slightly impressed, coarse on whole surface of disc, distance between punctures in rows narrower than puncture diameter. Punctures in marginal row only distinctly coarser than on sides of disc. Intervals in anterior half of disc flat, in posterior slightly convex, especially intervals 2, 3, and 7. Intervals mostly as wide as to slightly narrower than rows, only elevated parts of intervals 2, 3, and 7 slightly wider than rows. Surface of intervals slightly irregular but shiny. Explanate margin very narrow, in the widest part slightly wider than marginal interval, strongly deflexed. Its surface densely but shallowly punctate, appears slightly irregular. Whole surface of disc covered by short, erect, strongly clavate setae, the most clavate in the genus, only setae surrounding elytral borders not clavate, but with rounded or truncate top. Setae on disc shorter than width of intervals, apart from *T. minutissima*, the shortest in the genus *Trichaspis*.

Clypeus very broad, c. twice wider than long, with fine clypeal lines converging in arch (fig. 456), clypeal plate not elevated. Surface of clypeal plate smooth and shiny, with several coarse punctures. Prosternal collar short, slightly longer than length of second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:46:35:36:30:32:32:40:36:40:84. Segment 2 c. 1.3 times as long as segments 3 and 4 (fig. 458).



454-459. *Trichaspis erinacea*: 454 – dorsal, 455 – lateral, 456 – head and prosternum, 457 – puncturation of central part of elytral disc, 458 – antenna, 459 – claw

Ventrites and legs covered by short to moderately long, mostly adherent setae. Claws with extremely large, diverging basal tooth, appear bifid (fig. 459).

DISTRIBUTION

SE Zaire (Republic of Congo) (fig. 473).

REMARKS

T. erinaceaea, *T. hincksi* and *T. minutissima* are well characterized by erect elytral setae at least partly not acute apically, but truncate or clavate. *T. minutissima* distinctly differs in truncate setae, while in *T. erinaceaea* they are distinctly clavate. *T. hincksi* has also clavate setae but they are distinctly longer than in *T. erinaceaea*, longer than width of intervals, while in *T. erinaceaea* they are distinctly shorter than width of intervals.

MATERIAL EXAMINED

ZAIRE (REPUBLIC OF CONGO): holotype: "REPUBLIC OF CONGO (ZAIRE), Lubumbashi, 25 IV 1999" (LB); three paratypes: the same data (LB).

Trichaspis hincksi (SHAW, 1961)

(figs 460-465, pl. 16: 1-2)

Capillocassis hincksi SHAW, 1961: 26 (HT in MRAC, incl. fig.).

Trichaspis hincksi: BOROWIEC, 1999: 320.

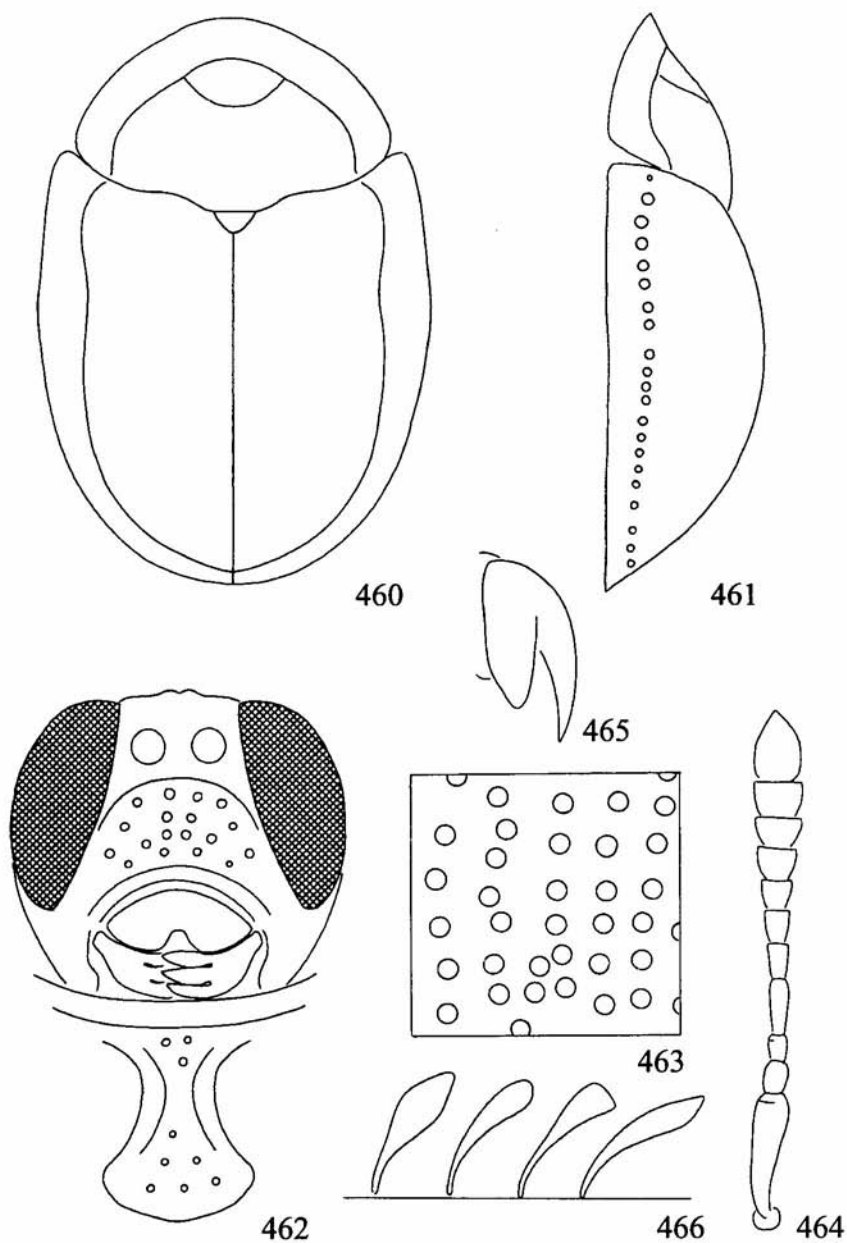
DESCRIPTION

Le: 3.5 mm, Wi: 2.4 mm, Lp: 1.3 mm, Wp: 2.0 mm; Le/Wi: 1.46, width/length ratio of pronotum: 1.54. Body oval, regularly rounded on sides (fig. 460).

Whole body yellow.

Pronotum pentagonal, c. 1.5 times as wide as long, with maximum width in basal third, sides rounded, transparent margin narrow. Disc moderately convex, indistinctly separated from explanate margin, distinctly, coarsely punctate, distance between punctures from as wide as to twice wider than puncture diameter, surface between punctures smooth and shiny. Explanate margin narrow, densely punctate, punctures tend to form grooves. Whole surface of pronotum covered by erect, slightly clavate, white setae.

Scutellum triangular, impunctate. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, form almost straight angle. Disc moderately, regularly convex, with top of convexity in middle (fig. 461), without impressions. Puncturation regular, very coarse on whole surface of disc, distance between punctures in rows narrower than puncture diameter (fig. 463). Punctures in marginal row only slightly coarser than on sides of disc. Intervals very narrow, linear, c. twice narrower than rows, its surface smooth and shiny. Explanate margin very narrow, only twice wider than marginal interval, strongly



460-465. *Trichaspis hincksi*: 460 – dorsal, 461 – lateral, 462 – head and prosternum, 463 – punctuation of central part of elytral disc, 464 – antenna, 465 – claw, 466 – dorsal setae

deflexed. Its surface densely but shallowly punctate, appears slightly irregular. Whole surface of disc covered by erect, clavate setae of various shape (fig. 466), only margin of disc with row of spiniform setae.

Clypeus very broad, c. twice wider than long, with fine clypeal lines converging in arch (fig. 462). Surface of clypeal plate with several coarse punctures. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:30:20:50:30:25:25:25:30:60. Segment 2 c. 1.5 times and segment 4 c. 2.5 times as long as segment 3 (fig. 464).

Ventrites with no diagnostic characters. Claws with very large, diverging basal tooth, appears bifid (fig. 465).

DISTRIBUTION

SE Zaire (Republic of Congo) (fig. 473).

REMARKS

Known only from holotype specimen, partly damaged. It is well distinguished by long, clavate dorsal setae. Two other species with partly clavate or truncate elytral setae, *T. erinaceae* and *T. minutissima*, differ in distinctly shorter elytral setae, not longer than width of sutural intervals, and partly brown or black metasternum (uniformly yellow in *T. hincksi*). *T. hincksi* is distinctly stouter than its both relatives, with Le/Wi below 1.47 (in *T. erinaceae* and *T. minutissima* above 1.59).

MATERIAL EXAMINED

ZAIRE (REPUBLIC OF CONGO): Upemba Nat. Park, Kiabwekanono, 1815 m, 30 IX 1948, 1, Miss. DE WITTE (holotype, MM).

Trichaspis louwi n. sp.

(figs 467-473, pl. 16: 5-6)

ETYMOLOGY

Dedicated to Dr. S. LOUW, the curator of Coleoptera in the Bloemfontain Museum, Bloemfontain, South Africa.

DESCRIPTION

Le: 3.0-4.0 mm, Wi: 2.0-2.5 mm, Lp: 1.2-1.5 mm, Wp: 1.85-2.15 mm; Le/Wi: 1.55-1.63, width/length ratio of pronotum: 1.37-1.52. Body oval, regularly rounded on sides (fig. 467).

Whole body yellow.

Pronotum elliptical, 1.55-1.63 times as wide as long, with maximum width in middle, sides broadly rounded, anterior margin not emarginate, transparent mar-

gin broad. Disc moderately convex, indistinctly separated from explanate margin, in area above head impunctate, on top and on sides shallowly punctate, in southern populations punctures distinct, dense, distance between punctures as wide as puncture diameter, surface appears granulate, in northern populations punctures very shallow, surface appears only slightly irregular or smooth. Explanate margin narrow, shallowly and densely punctate, punctures tend to form grooves. Whole surface of pronotum covered by long adherent and subadherent chalk-white setae, not covering surface, border between punctate explanate margin and its transparent margin with row of long, erect, sharpened setae. In some specimens setae along middle, and along each side of disc denser distributed than on other parts of pronotum, forming three longitudinal, white stripes.

Scutellum triangular, impunctate. Base of elytra moderately wider than pronotum, humeri moderately protruding anterad, obtuse, elytral margin in southern populations not, in northern populations finely crenulate. Disc moderately, regularly convex, with top of convexity in middle (fig. 468), without impressions. Puncturation regular, very coarse (fig. 470), rows not impressed, running regularly, punctures in rows dense, distance between punctures mostly wider than puncture diameter. Punctures in marginal row not or only slightly coarser than on sides of disc. Intervals flat, or only slightly convex, well marked, mostly as wide as to slightly wider than rows, surface of elytral disc appears completely regular. Explanate margin very narrow, only twice wider than marginal interval, strongly deflexed. Its surface shallowly punctate, surface appears slightly irregular. Surface of elytra covered by double, erect and subadherent, sharpened, chalk-white setae. Erect setae long, distinctly longer than width of sutural intervals, distributed regularly on whole elytra. Setae around elytral margin longer but sparser than in related *T. pilosula*. Subadherent setae shorter, mostly sparse, not covering elytral surface, mostly distributed regularly, but in some specimens behind middle of 4th interval dense, forming white stripe.

Clypeus very broad, c. 1.7 times as wide as long, with fine but distinct clypeal lines converging in arch (fig. 469). Clypeal plate well separated, slightly elevated, but flat, with only few small punctures, covered with erect, short setae, surface shiny. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 strongly transverse, length ratio of antennal segments: 100:50:35:50:40:40:57:43:45:100. Segment 2 c. 1.4 times as long as segment 3 and as long as segment 4 (fig. 471).

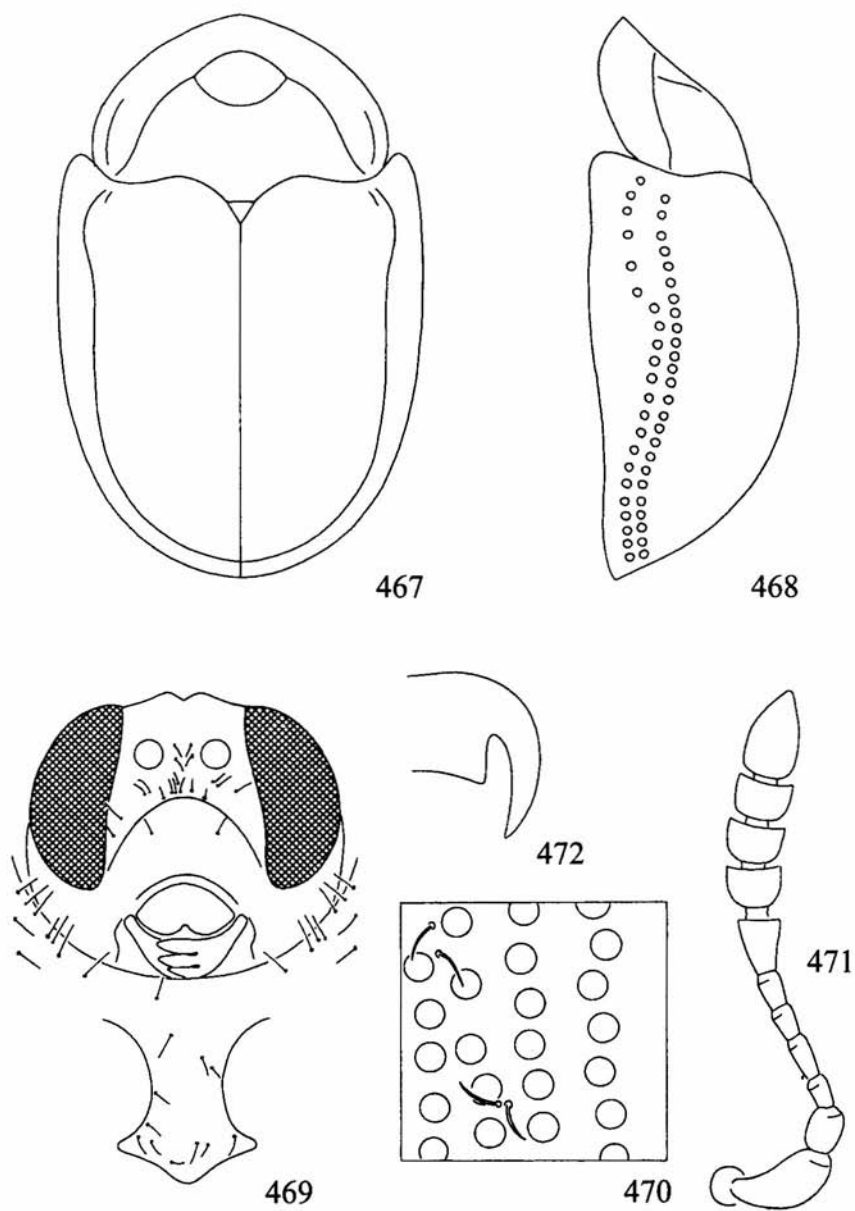
Ventrites and legs covered by long adherent setae. Claws with very large, triangular basal tooth, but do not appear bifid (fig. 472).

DISTRIBUTION

South Africa: Cape, Natal, Oranje F.S., Transvaal (fig. 473).

REMARKS

It belongs to the group of species with elytra possessing long, erect, acute setae. The group comprises also *T. pilosula* and *T. brevicornis*. *T. pilosula* at first

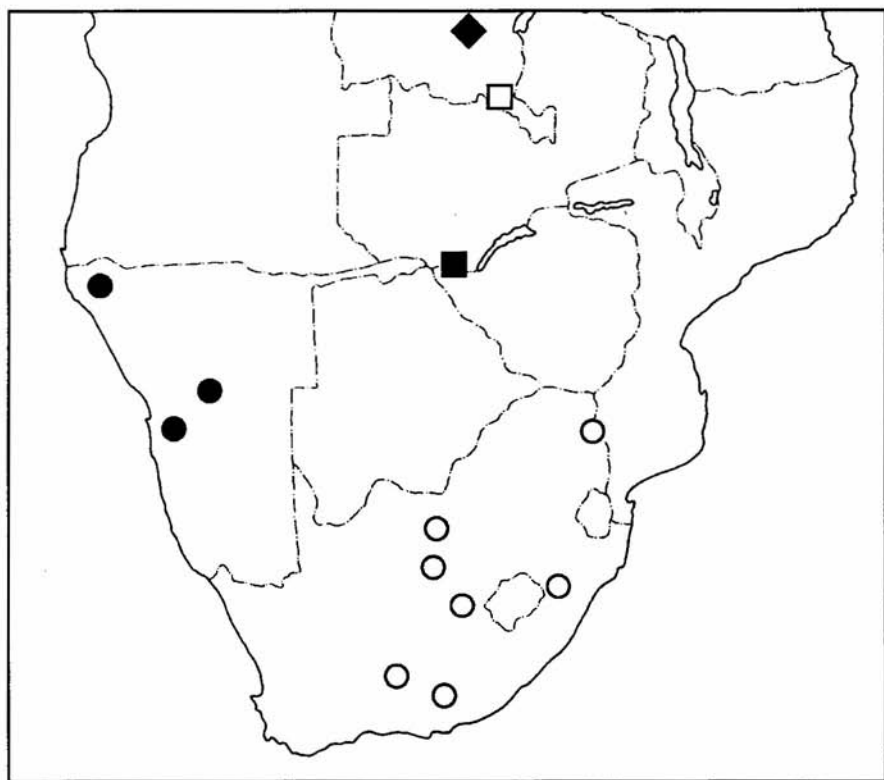


467-472. *Trichaspis louwi*: 467 – dorsal, 468 – lateral, 469 – head and prothorax, 470 – punctation of central part of elytral disc, 471 – antenna, 472 – claw

glance is very similar, but differs distinctly in very narrow, linear elytral intervals, distinctly narrower than rows, while in *T. louwi* they are well marked, mostly as wide as to slightly wider than rows. Surface of elytra in *T. pilosula* appears irregular to rugose, in *T. louwi* completely regular. Setae surrounding elytra border in *T. pilosula* are distinctly denser than in *T. louwi*. *T. brevicornis* differs in elytra more converging posterad, elytral rows more impressed, intervals partly narrower than rows (but wider than in *T. pilosula*), and elytra possessing along middle of 5th interval elongate spot of dense, adherent setae, while in *T. louwi* setae on whole disc are arranged regularly, or if forming elongate spots, they group in posterior half of 4th interval.

MATERIAL EXAMINED

SOUTH AFRICA: holotype: "Cape Province, Wellwood 518, Graff Reinet SE 3124 Dc" "14 Dec. 1983, LOUW, VAN RENSBURG" (BM); 9 paratypes: same data (BM, LB); paratype: "Cape Province, Somerset East, 23-31 XII 1930, R.E.



473. Distribution of *Trichaspis erinacea* (white square), *Trichaspis hincksi* (black diamond), *Trichaspis louwi* (white circles), *Trichaspis minutissima* (black square), and *Trichaspis pilosula* (black circles)

TURNER" (BMNH); paratype: "Cape Province, Somerset East, XI 1930, R.E. TURNER" (MM); 2 paratypes: "Cape Province, Somerset East, 1-26 I 1931, R.E. TURNER" (MM, LB); two paratypes: "S. Afr., Cape Prov., Warrenton, 28°08'S 24°51'E "1-30.9.1979. groundtrap, leg. F. DE MOOR" (TM); 14 paratypes: "Krug. Nas. Wildtuin N96, 8 XI 1962, H.A.D. VAN SCHALKWYK" (NIC, LB); paratype: "Natal, Estcourt, 1, G.A.K. MARSHALL" (BMNH); paratype: "RSA, North West prov., Vryburg env., 14.I.2001, lgt. M. SNIZEK" (MS); paratype: "OFS, Reddersburg, 29°40'S 26°10'E, 1 1979, S.J. V. TONDER" (NIC).

***Trichaspis minutissima* n. sp.**

(figs 474-479, pl. 16: 11-12)

ETYMOLOGY

Named after its small size. It is one of the smallest Cassidinae species.

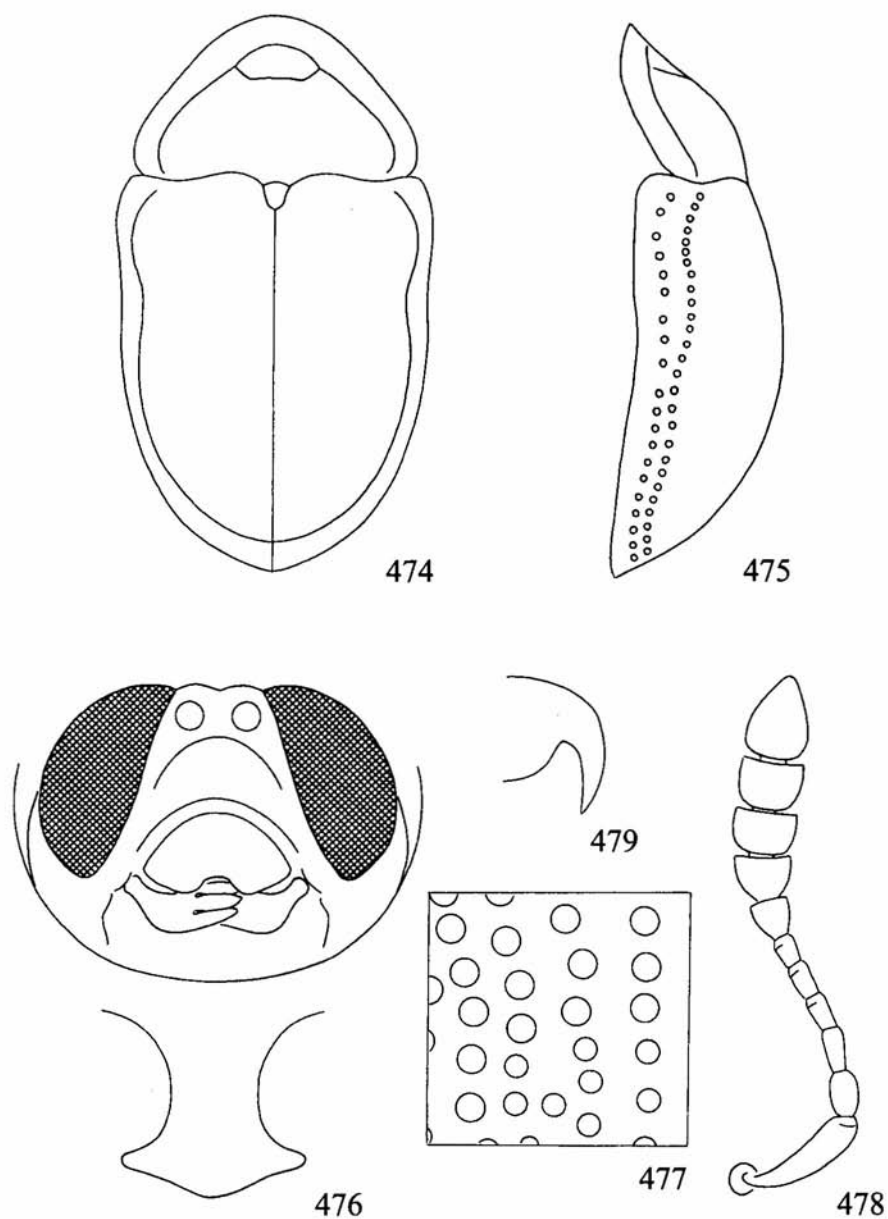
DESCRIPTION

Le: 3.05 mm, Wi: 1.7 mm, Lp: 1.15 mm, Wp: 1.6 mm; Le/Wi: 1.79, width/length ratio of pronotum: 1.39. Body oval, almost parallelsided (fig. 474).

Dorsum yellow. Procoxae and margins of prothorax, meso- and metathorax and midcoxae brown. Head, antennae, and abdomen yellow.

Pronotum pentagonal, c. 1.39 times as wide as long, with maximum width almost at base, sides rounded. Disc moderately convex, indistinctly separated from explanate margin, distinctly, moderately coarsely punctate, distance between punctures mostly narrower than puncture diameter, surface between punctures smooth and shiny. Explanate margin narrow, densely punctate, punctures as coarse as on disc but denser, without tendency to form grooves. Whole surface of pronotum covered by short, exclusively erect setae, slightly clavate, or at least with truncate apex.

Scutellum triangular, impunctate. Base of elytra only slightly wider than pronotum, humeri moderately protruding anterad, rounded. Disc moderately, regularly convex, with top of convexity in middle (fig. 475), without impressions. Punctuation regular (fig. 477), coarse on whole surface of disc, distance between punctures in rows narrower than puncture diameter, rows not or only slightly impressed. Punctures in marginal row only slightly coarser than on sides of disc. Intervals flat to slightly convex, from as wide as to 1.5 times wider than rows. Surface of intervals slightly irregular but shiny. Explanate margin very narrow, the narrowest within the genus, in the widest part only slightly wider than marginal interval, strongly deflexed. Its surface densely but shallowly punctate, appears slightly irregular. Whole surface of disc covered by short, erect, only slightly clavate setae, or at least setae with truncate apex, setae, setae surrounding elytral margin with truncate apex. Setae on disc shorter than width of intervals, apart from *T. erinacea*, the shortest in the genus *Trichaspis*.



474-479. *Trichaspis minutissima*: 474 – dorsal, 475 – lateral, 476 – head and prothorax, 477 – punctation of central part of elytral disc, 478 – antenna, 479 – claw

Clypeus very broad, c. twice wider than long, with fine clypeal lines converging in arch (fig. 476), clypeal plate not elevated. Surface of clypeal plate smooth and shiny, with several coarse punctures. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 strongly transverse, length ratio of antennal segments: 100:47:45:34:38:27:36:40:40:44:86. Segment 2 only slightly longer than segment 3 and c. 1.4 times as long as segment 4 (fig. 478).

Ventrites and legs covered by short to moderately long, mostly adherent setae. Claws with extremely large, diverging basal tooth, appear bifid (fig. 479).

DISTRIBUTION

Zambia (fig. 473).

REMARKS

T. minutissima, *T. erinaceaea*, and *T. hincksi* are well characterized by erect elytral setae at least partly not acute apically, but truncate or clavate. Both congeners distinctly differ in clavate dorsal setae, while in *T. minutissima* they are mostly not clavate, but truncate apically. In *T. minutissima* erect setae are short, shorter than width of elytral intervals, like in *T. erinaceaea*, and distinctly shorter than in *T. hincksi*. *T. minutissima* is the slimmest species, with Le/Wi 1.79, while in both congeners Le/Wi is below 1.73.

MATERIAL EXAMINED

ZAMBIA: holotype: "ZAMBIA, Livingstone, I 1942" (LB).

Trichaspis pilosa (SPAETH, 1911)

(figs 453, 480-485, pl. 17: 1-2)

Crossocassis pilosa SPAETH, 1911: 275 (HT in MM), 1914: 86.

Trichaspis pilosa: HERON and BOROWIEC, 1997: 634; BOROWIEC, 1999: 320.

DESCRIPTION

Le: 3.1-4.0 mm, Wi: 2.05-2.5 mm, Lp: 1.2-1.4 mm, width of pronotum: 1.75-2.00 mm; Le/Wi: 1.51-1.64, width/length ratio of pronotum: 1.42-1.46. Body oval, regularly rounded on sides (fig. 480).

Pronotum, except white transparent margin, brown. Elytra yellowish- or greenish-brown. Head, ventrites, legs and antennae yellowish-brown.

Pronotum elliptical, 1.42-1.46 times as wide as long, with maximum width behind middle, sides broadly rounded, anterior margin not emarginate, transparent margin very broad. Disc moderately convex, indistinctly separated from explanate margin, in area above head impunctate, on top and on sides distinctly, densely punctate, distance between punctures mostly narrower than puncture diameter, surface between punctures smooth and shiny. Explanate margin narrow,

distinctly and densely punctate, punctures tend to form grooves, surface of explanate margin appears irregular. Sides of pronotum covered by long, adherent, chalk-white setae, partly covering surface. Disc along sides and along middle with bands of dense, chalk-white setae, area between bands sparsely covered by chalk-white setae; border between punctate explanate margin and its transparent extreme margin with row of long, erect, sharpened setae.

Scutellum triangular, impunctate. Base of elytra distinctly wider than pronotum, humeri moderately protruding anterad, obtuse, elytral basal margin strongly, lateral indistinctly crenulate. Disc moderately, regularly convex, with top of convexity in middle (fig. 481), without impressions. Puncturation regular, coarse (fig. 483), rows not or only slightly impressed, running regularly but partly broken by elytral sculpture, punctures in rows almost touching each other. Punctures in marginal row not coarser than on sides of disc. Intervals 3 and 5 in anterior third broad and convex, distinctly wider than neighbouring intervals, and c. twice wider than rows, remainder intervals narrow, flat, as wide as to slightly wider than rows. Disc slightly behind middle and in 2/3 length, between intervals 3 and 5, with large, but low and obtuse tubercles, also apical part of interval 3 on slope distinctly swollen. Marginal interval behind humerus deeply impressed. Explanate margin very narrow, only twice wider than marginal interval, strongly deflexed. Its surface shallowly punctate, surface appears slightly irregular. Surface of elytra covered by double, erect and adherent, sharpened, chalk-white setae. Adherent setae group behind humeral callus, along sides, and apical fourth of first two intervals; in these areas setae partly covering surface. Erect setae long, form brushes on both sides of scutellum and on elytral tubercles. Sparse erect setae are also spread irregularly on whole elytral disc. Explanate margin with mostly adherent, sparse setae, not covering surface, and very sparse erect setae. Setae around elytral margin very long but sparse.

Clypeus broad, c. 1.5 times as wide as long, with fine but distinct clypeal lines converging in arch (fig. 482). Clypeal plate well separated, slightly elevated, but flat, with only few small punctures, covered with erect, short setae, surface shiny. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 strongly transverse, length ratio of antennal segments: 100:45:27:45:45:43:40:45:45:100. Segment 2 c. 1.5 times as long as segment 3 and as long as segment 4 (fig. 484).

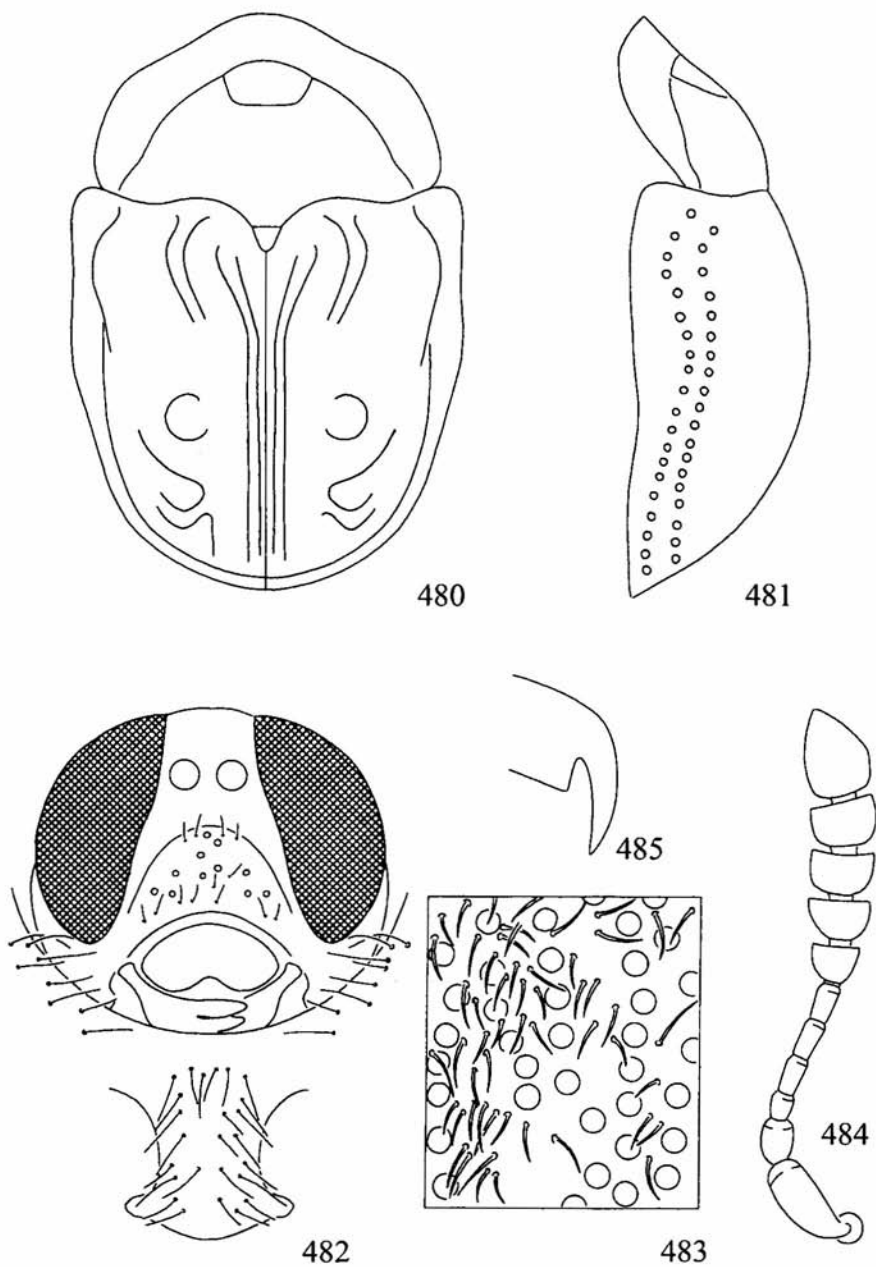
Ventrites and legs covered by long adherent setae. Claws with small basal tooth (fig. 485), the smallest within the genus *Trichaspis*.

HOST PLANT

Sapindaceae: *Pappea capensis* – adults only (HERON and BOROWIEC, 1997). The plant is probably only substitute host and larvae feed on a different plant family, with great probability Asteraceae.

DISTRIBUTION

South Africa: Cape and Oranje (fig. 453).



480-485. *Trichaspis pilosa*: 480 – dorsal, 481 – lateral, 482 – head and prosternum, 483 – punctuation of central part of elytral disc, 484 – antenna, 485 – claw

REMARKS

Unique species, well distinguished by its brown ground colour and elytra in posterior half of disc possessing tubercles armed with brushes of dense erect setae.

MATERIAL EXAMINED

SOUTH AFRICA: Cape prov., Aliwal North, XII 1922, 3, R.E. TURNER (BMNH, MM); Cape, Steynsburg, 1914, 1, R. ELLENSBERGER (MNHN); Dunbrody, 1, DONCKIER (holotype, MM); North-West P., Delareyville, 6 II 1969, 1, H.A. VAN SCHALKWYK (NIC); Oranje F. State, Heibron, Lulu, 4 II 1964, 1, H.A. VAN SCHALKWYK (NIC).

***Trichaspis pilosula* (BOHEMAN, 1862)**

(figs 473, 486-491, pl. 16: 7-8)

Cassida pilosula BOHEMAN, 1862: 332 (ST in NRS, MM); GEMMINGER and HAROLD, 1876: 3657.
Trichaspis pilosula: SPAETH, 1911: 270, 1914: 86; SHAW, 1961: 27; BOROWIEC, 1995: 372, 1999: 321; HERON and BOROWIEC, 1997: 634.

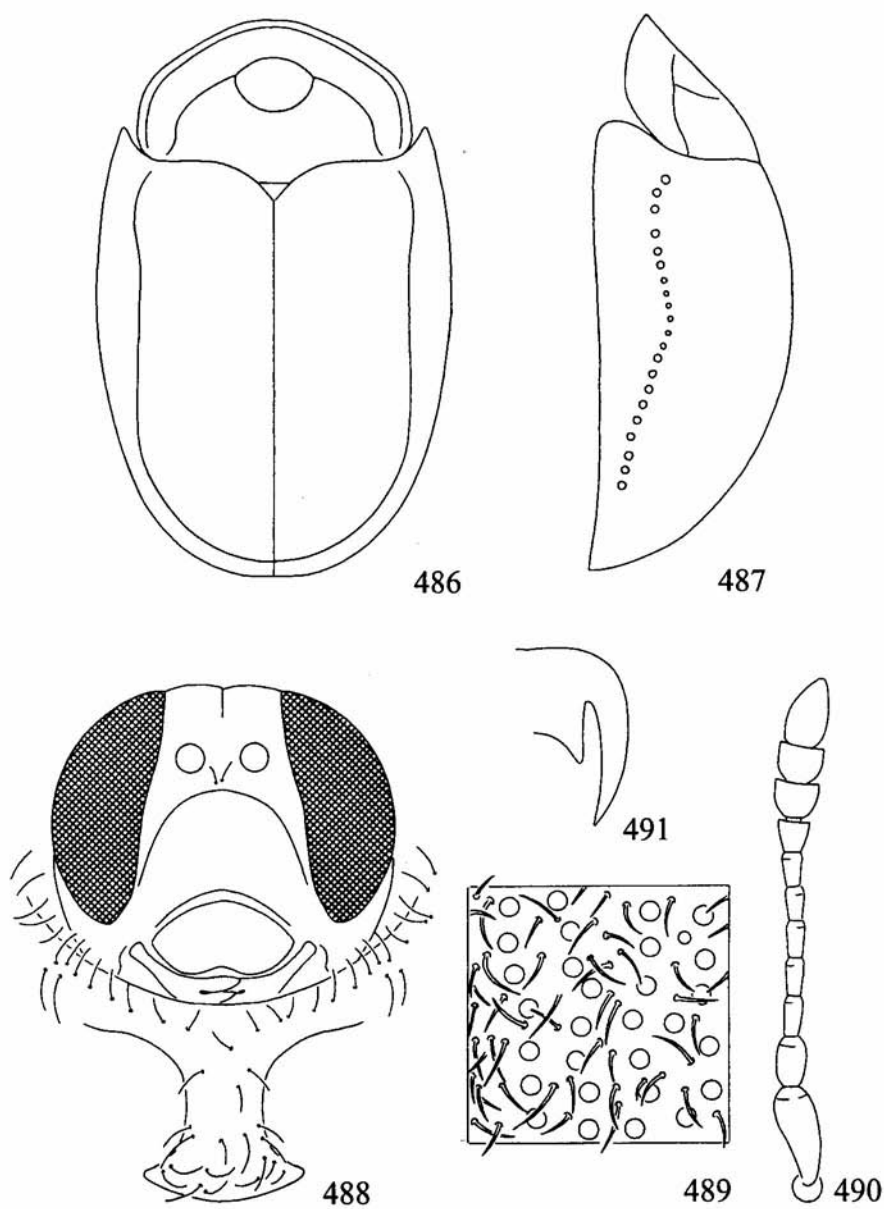
DESCRIPTION

Le: 3.4-3.9 mm, Wi: 2.05-2.4 mm, Lp: 1.25-1.3 mm, width of pronotum: 1.75-1.9 mm; Le/Wi: 1.59-1.72, width/length ratio of pronotum: 1.40-1.48. Body oval, sides slightly converging posterad (fig. 486).

Whole body yellow.

Pronotum elliptical, 1.59-1.72 times as wide as long, with maximum width in middle, sides broadly rounded, anterior margin not emarginate, transparent margin broad. Disc moderately convex, indistinctly separated from explanate margin, in area above head impunctate, on top and on sides distinctly, shallowly but densely punctate and granulate, surface appears irregular. Explanate margin narrow, shallowly and densely punctate and granulate, like on disc. Whole surface of pronotum covered by long adherent and subadherent, chalk-white setae, not covering surface, border between punctate explanate margin and its transparent margin with row of long, erect, sharpened setae.

Scutellum triangular, impunctate. Base of elytra moderately wider than pronotum, humeri moderately protruding anterad, obtuse, elytral margin finely crenulate. Disc moderately, regularly convex, with top of convexity in middle (fig. 487), without impressions. Puncturation regular, very coarse (fig. 489), rows impressed, running more or less regularly, punctures in rows almost touching each other. Punctures in marginal row distinctly coarser than on sides of disc. Intervals very narrow, slightly convex, always narrower than rows, linear, surface of elytral disc appears irregular to rugose. Explanate margin very narrow, only twice wider than marginal interval, strongly deflexed. Its surface densely, shallowly punctate and granulate, surface appears irregular. Surface of elytra covered by double, erect and subadherent, sharpened, chalk-white setae. Erect setae long, distinctly



486-491. *Trichaspis pilosula*: 486 - dorsal, 487 - lateral, 488 - head and prosternum, 489 - puncturation of central part of elytral disc, 490 - antenna, 491 - claw

longer than width of sutural intervals, but shorter than in related *T. brevicornis* and *T. louwi*, distributed regularly on whole elytra. Setae around elytral margin shorter but distinctly denser than in related *T. brevicornis* and *T. louwi*. Subadherent setae shorter, mostly sparse, not covering elytral surface, distributed regularly, not forming spots of dense setae.

Clypeus very broad, c. 1.7 times as wide as long, with fine but distinct clypeal lines converging in arch (fig. 488). Clypeal plate well separated, slightly elevated, but flat, with only few small punctures, covered with erect, short setae, surface shiny. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae stout, segments 9 and 10 transverse, length ratio of antennal segments: 100:55:42:40:45:40:40:38:40:40:80. Segment 2 c. 1.3 times as long as segments 3 and 4 (fig. 490).

Ventrites and legs covered by long adherent setae. Claws with very large, elongate basal tooth, appears bifid (fig. 491).

HOST PLANT

Asteraceae: *Pechuel-Loeschea leubnitziae* (HERON and BOROWIEC, 1997).

DISTRIBUTION

Namibia (fig. 473).

REMARKS

It belongs to the group of species with elytra possessing long, erect, acute setae. The group comprises also *T. louwi* and *T. brevicornis*. *T. pilosula* differs distinctly from both congeners in the narrowest, linear elytral intervals, distinctly narrower than rows. Setae surrounding elytra border are in *T. pilosula* distinctly denser than in both relatives. *T. louwi* and *T. brevicornis* differ also in elytra possessing on some intervals elongate spots of groups of dense, adherent setae, while in *T. pilosula* setae on whole disc are arranged regularly, not forming elongate spots.

MATERIAL EXAMINED

NAMIBIA: Gobabeb, Kuisib Riv., 8 II 1978, 1, O. LOMHOLDT (ZMC); Kaokoland, Ondorusu Falls, 23-26 VIII 1973, 1 (WM); Kuisip, 5, T. WAHLBERG (lectotype and 4 paralectotypes NRS, one paralectotype MM); Namib, Naukluft Park, Kuiseb R. nr Gobabeb, 23.34S 15.03E, 18 II-20 III 1983, 8, Kuiseb Survey (NIC, LB); Okahandja, 3-11 XII 1927, 2, 19-29 XII 1927, 2, R.E. TURNER (BMNH, MM).

Trichaspis tomentosa n. sp.

(figs 492-498, pl. 17: 3-4)

ETYMOLOGY

Named after dense adherent dorsal vestiture.

DESCRIPTION

Le: 3.2-3.8 mm, Wi: 2.05-2.45 mm, Lp: 1.2-1.4 mm, width of pronotum: 1.8-2.1 mm; Le/Wi: 1.49-1.58, width/length ratio of pronotum: 1.46-1.54. Body oval, regularly convex on sides (fig. 492).

Whole body yellow.

Pronotum elliptical, 1.46-1.54 times as wide as long, with maximum width in middle, sides broadly rounded, anterior margin not emarginate, transparent margin broad. Disc moderately convex, indistinctly separated from explanate margin, in area above head impunctate, on top and on sides finely, shallowly but densely punctate, surface appears regular, shiny. Explanate margin narrow, shallowly and densely punctate, on its sides surface slightly irregular. Whole surface of pronotum covered by long, dense adherent, chalk-white setae, almost completely covering surface. In some specimens along middle of disc setae denser than on sides, forming white stripe. Border between punctate explanate margin and its transparent margin with row of long, erect, sharpened setae.

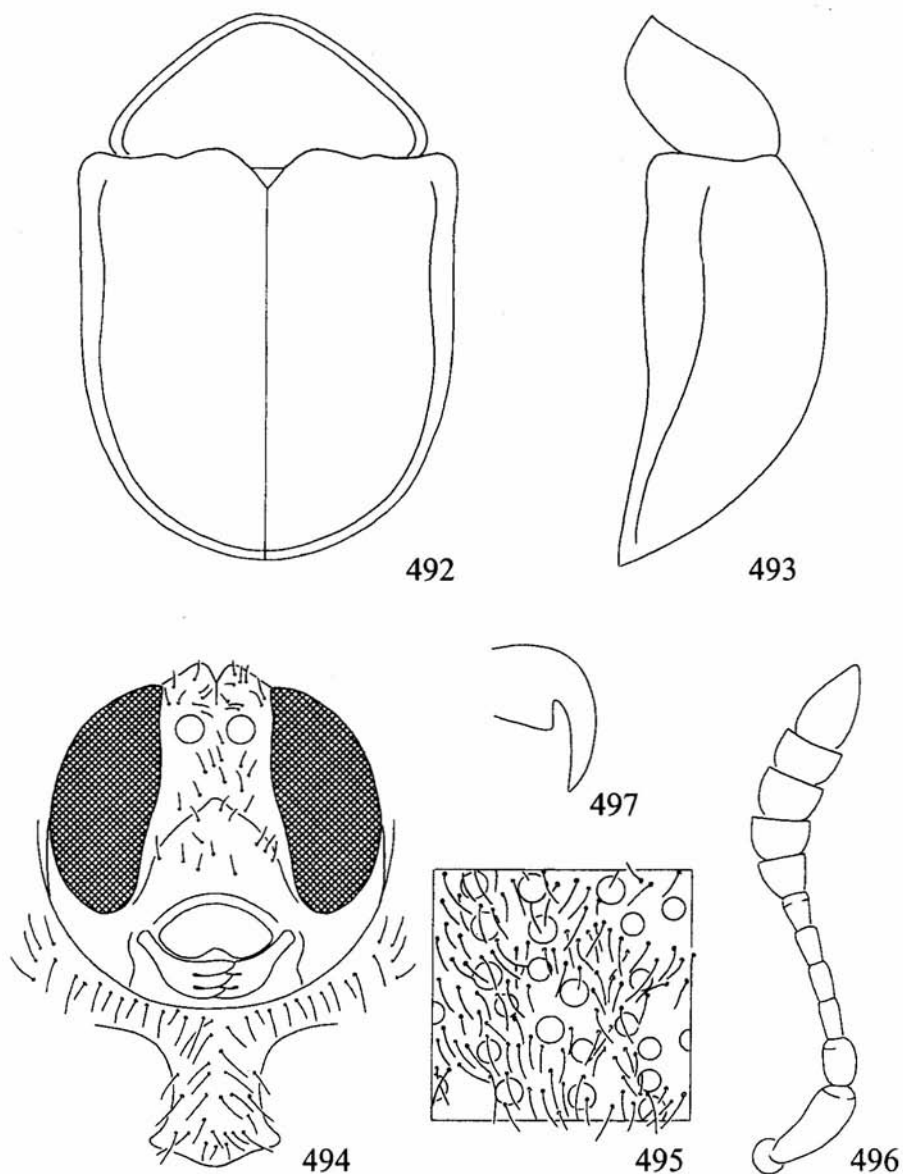
Scutellum triangular, impunctate. Base of elytra moderately wider than pronotum, humeri moderately protruding anterad, obtuse, elytral margin not to finely crenulate. Disc moderately, regularly convex, with top of convexity in middle (fig. 493), without impressions. Puncturation regular, moderately coarse (fig. 495), rows, not impressed, running mostly regularly, but some additional punctures on intervals slightly disturb the regularity. Punctures in rows dense, almost touching each other. Punctures in marginal row distinctly coarser than on sides of disc. Intervals flat, in sutural half of disc slightly wider, on sides as wide as rows, surface of elytral disc appears regular. Explanate margin very narrow, only twice wider than marginal interval, strongly deflexed. Its surface sparsely, shallowly punctate, surface appears only slightly irregular. Surface of elytra covered by double, erect and adherent, sharpened, chalk-white setae. Erect setae long, distinctly longer than width of sutural intervals, distributed regularly on whole elytra. Setae around elytral margin very long but sparser than in related *T. pilosula*. Adherent setae dense, mostly covering elytral surface, distributed regularly, not forming spots or stripes.

Clypeus very broad, c. 1.8 times as wide as long, with fine but distinct clypeal lines converging in arch (fig. 494). Clypeal plate well separated, slightly elevated, but flat, with only few small punctures, covered with erect, short setae, surface shiny. Prosternal collar short, slightly longer than second antennal segment, on sides only slightly angulate. Antennae very stout, segments 9 and 10 strongly transverse, length ratio of antennal segments: 100:60:50:50:45:45:47:50:54:50:110. Segment 2 c. 1.2 times as long as segments 3 and 4 (fig. 496).

Ventrites and legs covered by long adherent setae. Claws with moderately large, triangular basal tooth, do not appear bifid (fig. 497).

REMARKS

It is a distinct species, the only one with elytra covered, apart from erect setae, by a dense adherent vestiture, almost completely covering body surface. Only



492-497. *Trichaspis tomentosa*: 492 – dorsal, 493 – lateral, 494 – head and prothorax, 495 – punctuation of central part of clytral disc, 496 – antenna, 497 – claw

T. pilosa has sides of disc covered by dense, adherent vestiture, but it differs in elytral disc in posterior half possessing tubercles armed with brushes of dense erect setae, and brown ground colour of pronotum and elytra.

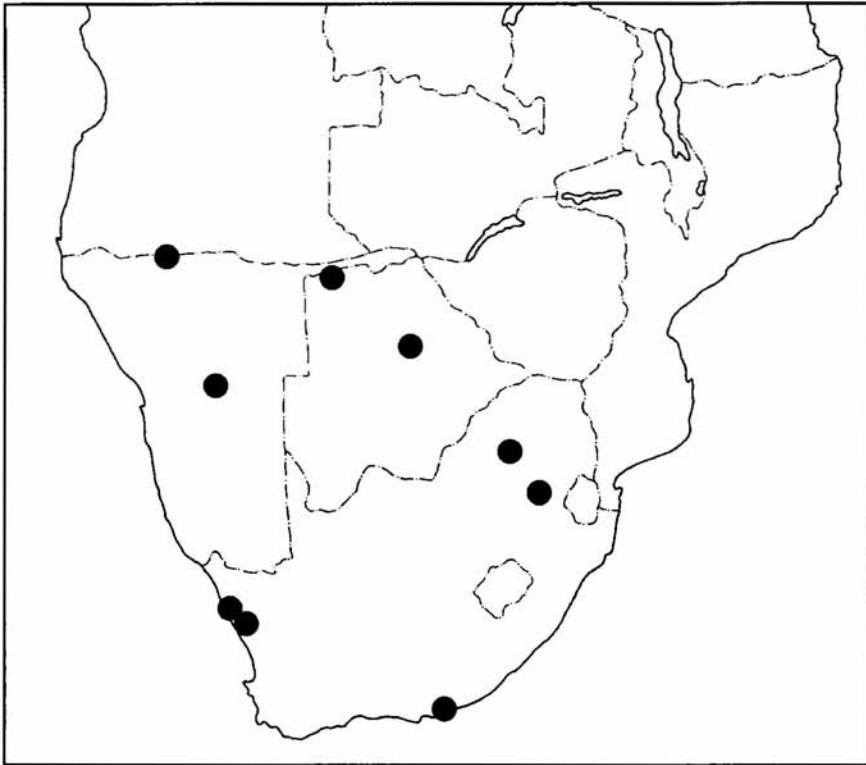
DISTRIBUTION

South Africa: Cape and Namibia (fig. 498).

MATERIAL EXAMINED

NAMIBIA: paratype: "DSW Afrika und Betschuanaland Periodischessumpfland des Okavango langs des Mabula-randes, 23 VIII-5 IX 05, SEINER S.G." (ZMHU); 2 paratypes: "Oshikango, Ovamboland, VII 1948, C. KOCH" (TM, LB); 2 paratypes: "Windhoek, Richthofen, 22.34 S 17.45 E, 1-31 I 1975, red sand dune" (WM, LB).

SOUTH AFRICA: holotype: "S. Afr., Namaq., coast Quaggafontein, 30°13'S 17°33'E" "29.8.1977; E-Y: 13566, ground trap, 60 days leg. ENDRÖDY-YOUNGA" "groundtrap with meat bait" (TM); paratype: "S. Afr., Namaqual., Kamieskroon,



498. Distribution of *Trichaspis tomentosa*

30.12 S – 18.01 E" "27.8.1977, E-Y: 1339, groundtraps, 60 days, S. ENDRÖDY-YOUNGA" "groundtrap with banana bait"; paratype: "Algoa Bay, Capland, Dr BRAUNS" (TM); paratype: "Transvaal, 10 km S Carolina on Chrissiesmeer Rd., 25.59S 30.01E, 19 I 1989, 1, N. VERHEIJEN" (NIC); 8 paratypes: "Transvaal, Settlers, VIII 1944, SN 2412" (NIC, LB).

Genus: *Trigonocassis* HINCKS, 1950

Trigonaspis SPAETH, 1924: 311 (type species: *Cassida conducta* BOHEMAN, 1862, by monotypy), nec *Trigonaspis* HARTIG, 1840.

Trigonocassis HINCKS, 1950: 512 (new name for *Trigonaspis* SPAETH, 1924 nec HARTIG, 1840); HINCKS, 1952: 339 (as subgen. of *Cassida*); SEENO and WILCOX, 1982: 177 (as subgenus of *Cassida*); BOROWIEC, 1994 a: 15.

Small cassids, body length 5.5-6.5 mm. Body oval. Whole surface of pronotum and elytra bare. Pronotum with broadly rounded sides. Pronotal disc indistinctly separated from explanate margin, punctate. Explanate margin not transparent, shallowly punctate. Elytral base much wider than pronotum. Elytral disc unevenly convex. Punctuation of disc coarse, completely irregular, intervals narrower than rows, sometimes linear. Marginal row distinct. Explanate margin of elytra broad, not transparent. Clypeus moderately broad, with fine clypeal grooves converging in arch. Venter of pronotum with short antennal grooves bordered externally by a sharp or obtuse carina. Prosternal collar distinct, with lateral emargination. Antennae stout, third segment as long as or slightly shorter than the second, segments 8-10 longer than wide. Last segment of tarsi as long as to slightly shorter than third, bilobate segment. Claws on fore legs with small basal tooth, mid and hind claws simple.

Distinct genus, well distinguished from most genera with antennal channel with lateral emargination of prosternal collar by fore claws with small basal tooth but mid and hind claws simple. Elytral base much wider than pronotum and broadly rounded pronotal sides place it close to *Rhytidocassis*. However, *Rhytidocassis* is smaller, with length usually below 5.5 mm, legs yellow and pronotum less transverse. In species of *Rhytidocassis* elytra are usually uniformly green (also in dried specimens) or at most with reddish triangular spot at base, while in *Trigonocassis* ground colour of elytra is dark yellow, often elytra with red to black pattern.

Only one species in woodland region of Central and West Africa.

Trigonocassis conducta (BOHEMAN, 1862)

(figs 499-505, pl. 17: 7-10)

Cassida conducta BOHEMAN, 1862: 90 (LT in NRS); GEMMINGER and HAROLD, 1876: 3652; WEISE, 1896 c: 29.

Hypocassida conducta: WEISE, 1893: 225; SPAETH, 1914: 90, 1916: 41.
Trigonaspis conducta: SPAETH, 1924: 311, 1929 a: 161, 1934: 391.
Trigonocassis conducta: HINCKS, 1950: 512; BOROWIEC, 1986: 806, 1999: 321.
Cassida (Trigonocassis) conducta: SHAW, 1972: 76.
Trigonaspis conducta ssp. *Burgeoni* SPAETH, 1934: 391 (ST in MM), n. syn.

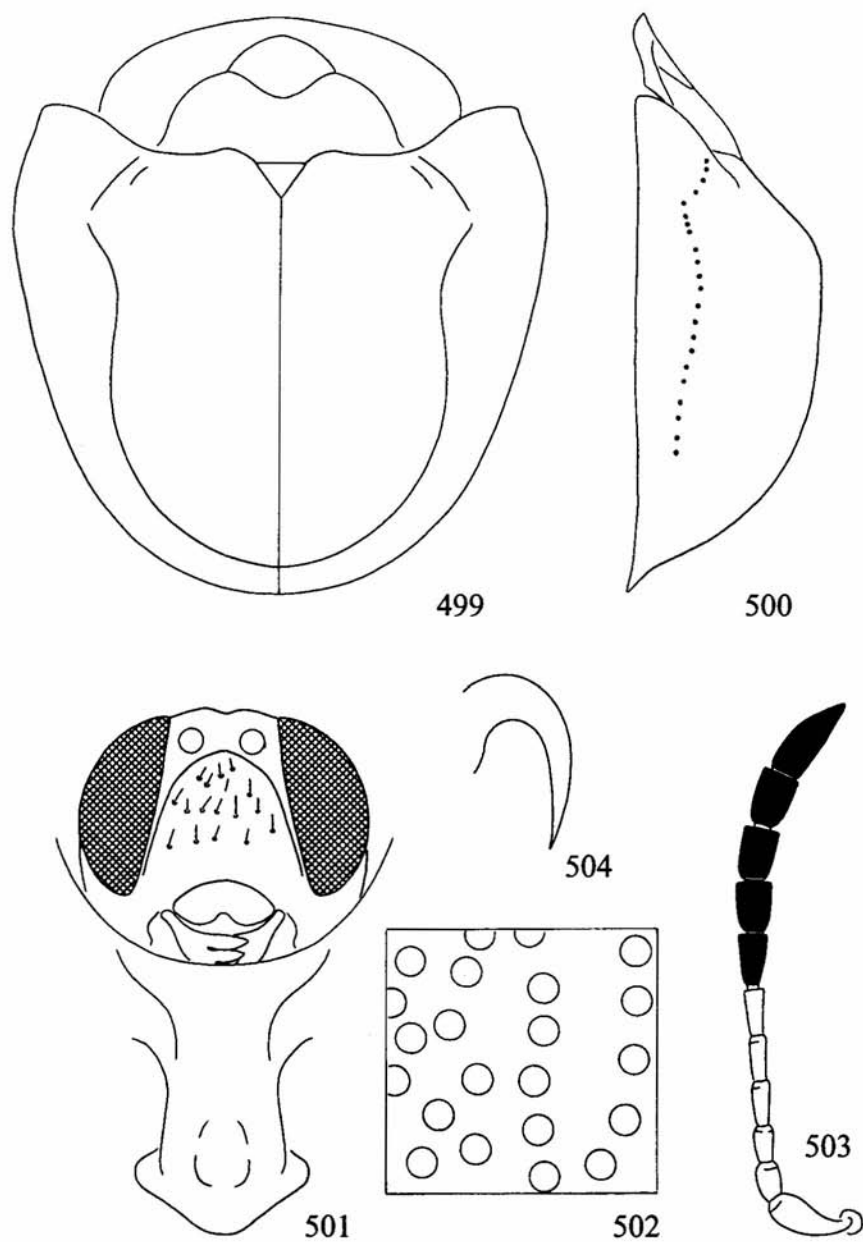
DESCRIPTION

Le: 5.45-6.55 mm, Wi: 4.70-5.85 mm, Lp: 1.85-2.20 mm, Wp: 3.45-4.10 mm, Le/Wi: 1.10-1.24, Wp/Lp ratio: 1.86-2.00. Body subtriangular, strongly converging posterad (fig. 499), males slightly stouter than females.

Extremely variable species. In the palest form pronotum and elytra yellow, in the darkest form whole pronotal and elytral disc deep black and marginalia yellow. Often pronotal and elytral disc with indistinct brownish borders, sometimes dark markings are purple red to dark brown. Dark margins can increase from borders of disc to central part of elytra and only top of elytral disc is yellowish. The variation has no polymorphic character and all intermediate forms were observed. Ventral part of body also variable, the palest specimens have head, legs and almost whole ventrites yellow, only thorax in middle with brownish spot, antennae in so coloured forms with basal segments 1-6 yellowish, remainder brown to black. In extreme dark forms head, legs, ventrites, and antennae uniformly black. The dark colouration of ventral part of body is usually not correlated with expression of dark margins of dorsal part of body, and uniformly yellow dorsally specimens may have mostly black ventrites, but forms with black thorax, mostly black abdomen and at least partly black legs generally predominate.

Pronotum very broad, elliptical, 1.86-2.00 times as wide as long, with maximum width in middle, anterior margin very softly convex, sides regularly, broadly rounded. Disc slightly convex, moderately coarsely and moderately densely punctate, on top of disc distance between punctures from as wide as to slightly wider than puncture diameter, but in specimens with completely black disc punctures are usually finer and sparser; punctures have no tendency to coalesce and do not form striation or rugosities, disc surface at most slightly irregular, usually dull, but in specimens with black disc can be shiny. Explanate margin broad, indistinctly separated from disc, very shallowly punctate, with distance between punctures wider than puncture diameter, the puncturation is correlated with distribution of cells of honeycomb structure and sometimes surface of explanate margin appears impunctate. Intervals flat, and surface appears regular, dull, also in specimens with black disc.

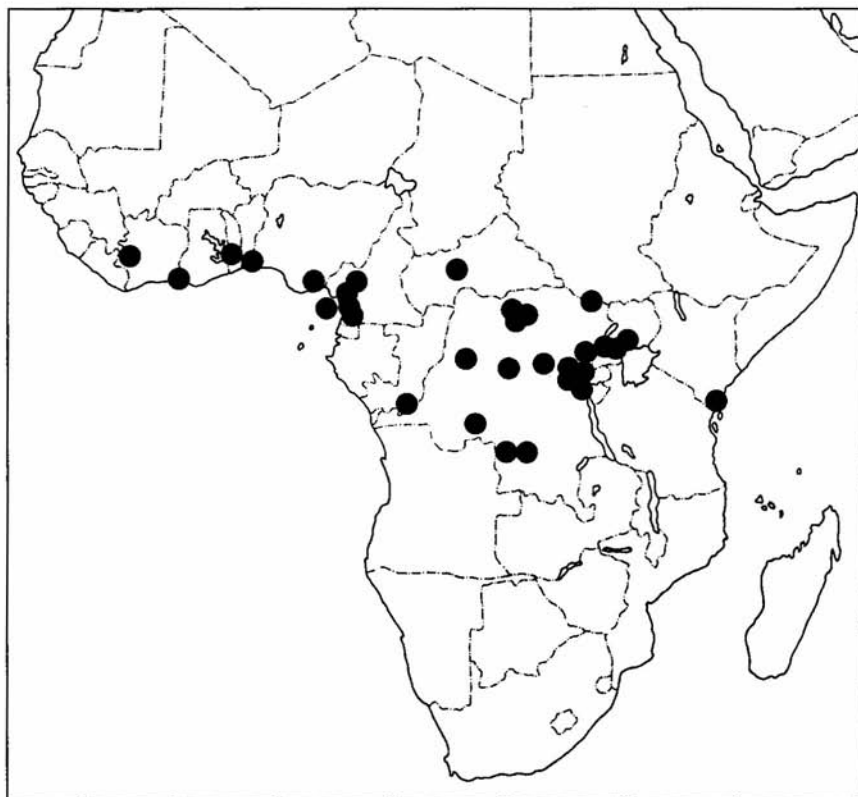
Scutellum triangular, usually with transverse sulcus or irregular surface. Base of elytra much wider than pronotum, humeri acute, moderately protruding anterad, margin behind humeral angle slightly emarginate. Basal margin of each disc slightly crenulate. Disc unevenly convex, obtusely angulate in profile (fig. 500). Postscutellar impressions deep, separated by low elevation, which runs from top of postscutellar convexity to small elevation close to scutellar upper corners. The elevation is connected with slightly elevated second interval. Puncturation of disc



499-504. *Trigonocassis conducta*: 499 – dorsal, 500 – lateral, 501 – head and prothorax, 502 – punctuation of central part of elytral disc, 503 – antenna, 504 – claw

completely irregular, coarse and dense (fig. 502), punctures almost touching each other. Space between punctures varies from almost regular to mostly irregular, especially in specimens with dark disc punctures have tendency to form longitudinal rugosities. Marginal interval distinct only in anterior half of margin of disc, narrow, in widest part from as wide as to twice wider than partly distinct submarginal interval. Marginal row distinct, its punctures from as coarse as to twice coarser than punctures of central part of disc. Explanate margin broad, moderately deflexed, in the widest part slightly wider than $1/4$ width of disc, in apical part as wide as combined diameter of four punctures. Surface of explanate margin slightly coarser punctate than disc but distinctly sparser and shallower, puncturation corresponds with cells of honeycomb structure, surface appears slightly irregular. Whole surface of elytra from slightly dull to slightly shiny. Apex of elytral epipleura bare.

Clypeus moderately broad, c. 1.2 times wider than long (fig. 501), flat, dull, with several fine punctures. Clypeal grooves moderately deep, converging in arch.



505. Distribution of *Trigonocassis conducta*

Labrum moderately emarginate to 1/4 length. Venter of pronotum with short but deep antennal groove, separated externally by sharp or obtuse carina. Prosternal collar prominent with very deep lateral emargination, but without plate above the emargination. Prosternal process broad, moderately expanded apically, deeply impressed along middle, surface irregular. Antennae slim, segments 9 and 10 distinctly longer than wide, length ratio of antennal segments: 100:55:55:61:64:66:72:69:72:75:138. Segment 3 approximately as long as segment 2, segment 4 c. 1.1 times as long as segment 3 (fig. 503).

Claws large, anterior claws with small basal tooth, mid and hind claws simple (fig. 504).

DISTRIBUTION

Forest regions of western and central Africa from Ivory Coast to eastern Kenya (fig. 505).

REMARKS

T. c. burgeoni represents only extremely dark colour aberration of this very variable species and was synonymized with nominotypical form.

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BENIN: env. Porto-Novo, 1908, 1, WATERLOT (MNHN).

CAMEROON: Efulen, VIII 1920, 1, H.L. WEBER (CMNH); Isongo, 27 II-7 III 1938, 1, Eisentraut (ZMHU); Joko, 2 (ZMHU, LB); Kamerun, 1, CONRADT (DEI); Lolodorf, 1, L. CONRADT (ZMHU), 19 II-7 VI 1895, 1, L. CONRADT (ZMHU), III 1914, 1, J.A. Reis (CMNH); Mt. Balmayo, 1 (LB); Neu-Kamerun, Johann-Albrechtshöhe, 2, L. CONRADT (ZMHU, LB).

EQUATORIAL GUINEA: Fernando Poo, Moka, 1300-1500 m, II 1908, 2, L. FEA (MCSNG).

IVORY COAST: Assinie, 1 (DEI); Man, 8 III 1931, 1, ALLUAUD & CHAPUIS (MNHN).

KENYA: Mombasa, 36 km S Lubero, VIII 1932, 2, L. BURGEON (syntypes of *burgeoni*, MM).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 1 (IRSN).

REPUBLIC OF CONGO: Brazzaville, 1904, 4, J. DECORSE (MNHN).

TOGO: Bismarckburg, 13 XI 1892-12 II 1893, 1, L. CONRADT (ZMHU); Bismarckburg, 2, L. CONRADT (ZMHU, LB).

UGANDA: Budongo Forest, 1000 m, 23-30 IX 1973, 1, H. GRNGET (ZMC); Kisubi, 28 XI 1971, 1 (LB); Mabira Forest, Chagwe, 16-25 VII 1911, 1 (LB).

ZAIRE (REPUBLIC OF CONGO): Bambesa, 14 V 1938, 1, J. VRYDAGH (MRAC); Bas Uele, 7-18 XI 1925, 1, Prince LEOPOLD (MRAC); Buta, Rubi, VIII 1906, 1, RIBOTTI (MCSNG); Equateur, Bokote, 1 IX 1926, 1, HULSTAERT (MRAC); Garamba Nat. Park, 30 IV 1932, 2, L. BURGEON (MRAC), 17 VII 1950, 1, G. Demoulin (MRAC), 19 I 1951, 1, DE SAEGER (IRSN); Kasai, Luisa, 1921, 1, L.

Achten (MRAC); Kivu, Irangi, 26 I 1967, 1, Dr. JILLY (SMNS); Kivu, riv. Luka, 1830 m, 4 VII 1956, 1 ab. *burgeoni*, J. HECQ (LB); Kivu, Nyamukubi Mts., XI 1932, 2600 m, 1, L. BURGEON (paratype ab. *burgeoni*, MRAC); Kivu, Tshibinda, XI 1932, 1, L. BURGEON (paratype ab. *burgeoni*, MRAC); Kivu, vall. de la Ruzizi, Kanambo, III 1959, 1, P.L.G. BENOIT (MRAC); Lomami, Mutombo Mukulu, III 1931, 1, P. QUARRÉ (MRAC); Lubero, N Lac Kivu, XII 1990-I 1991, 1, F. GALLIZIA (RR); Lubutu-Masua, 10 IX 1929, 1 (LB); Lulua, Kapanga, 10 XI 1932, 1, F.G. OVERLAET (MRAC); Mombasa, 36 km Sud Lubero, VIII 1932, 1, L. BURGEON (holotype ab. *burgeoni*, MRAC); Tshuapa, Ikela, XI 1956, 1, LOOTENS (MRAC); Uele, Dakwa, 9 VII 1933, 1, J.V. LEROY (LB); Uele, Dingila, VI 1933, 1, H.J. BREDO (MRAC).

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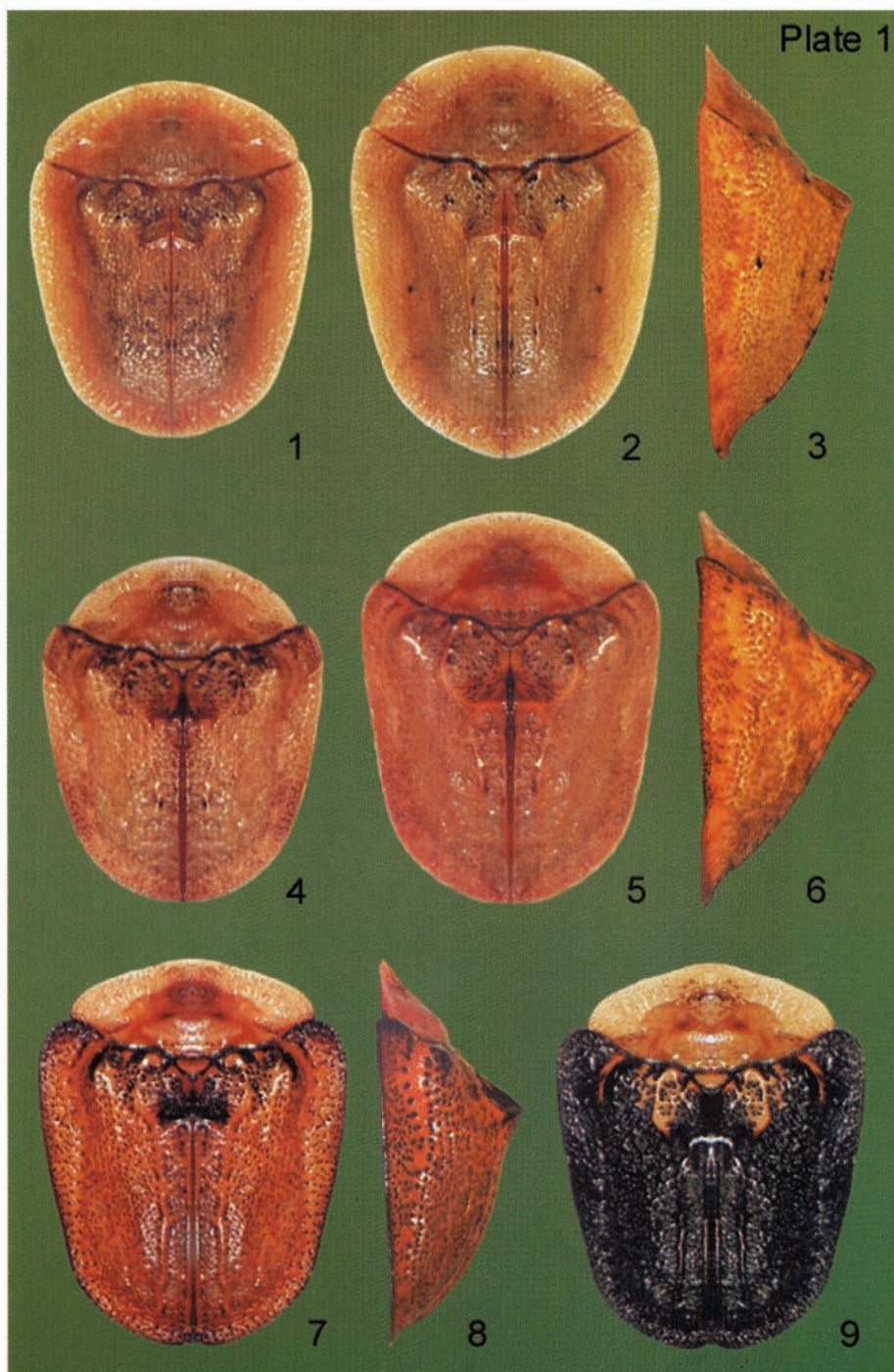


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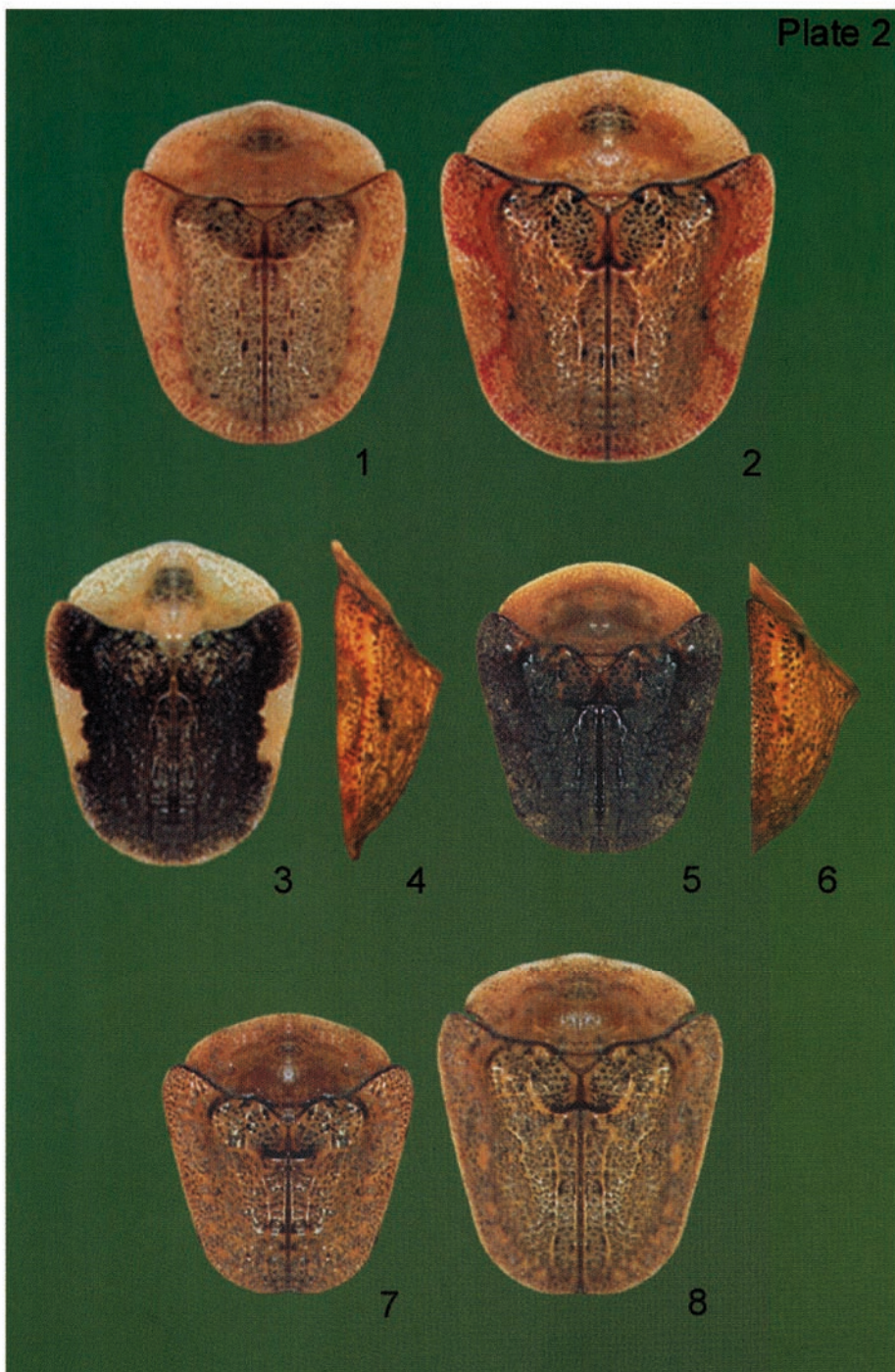


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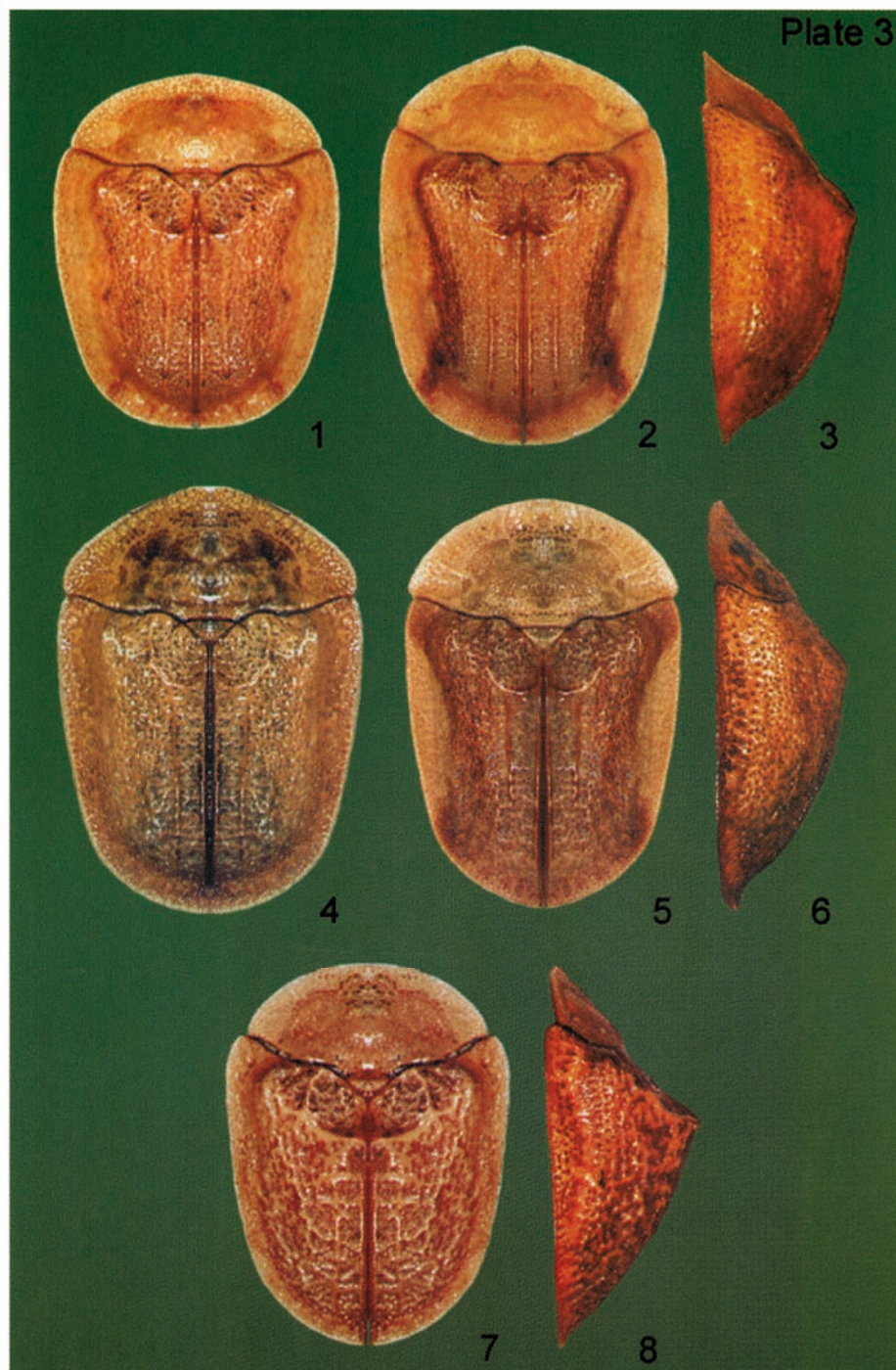


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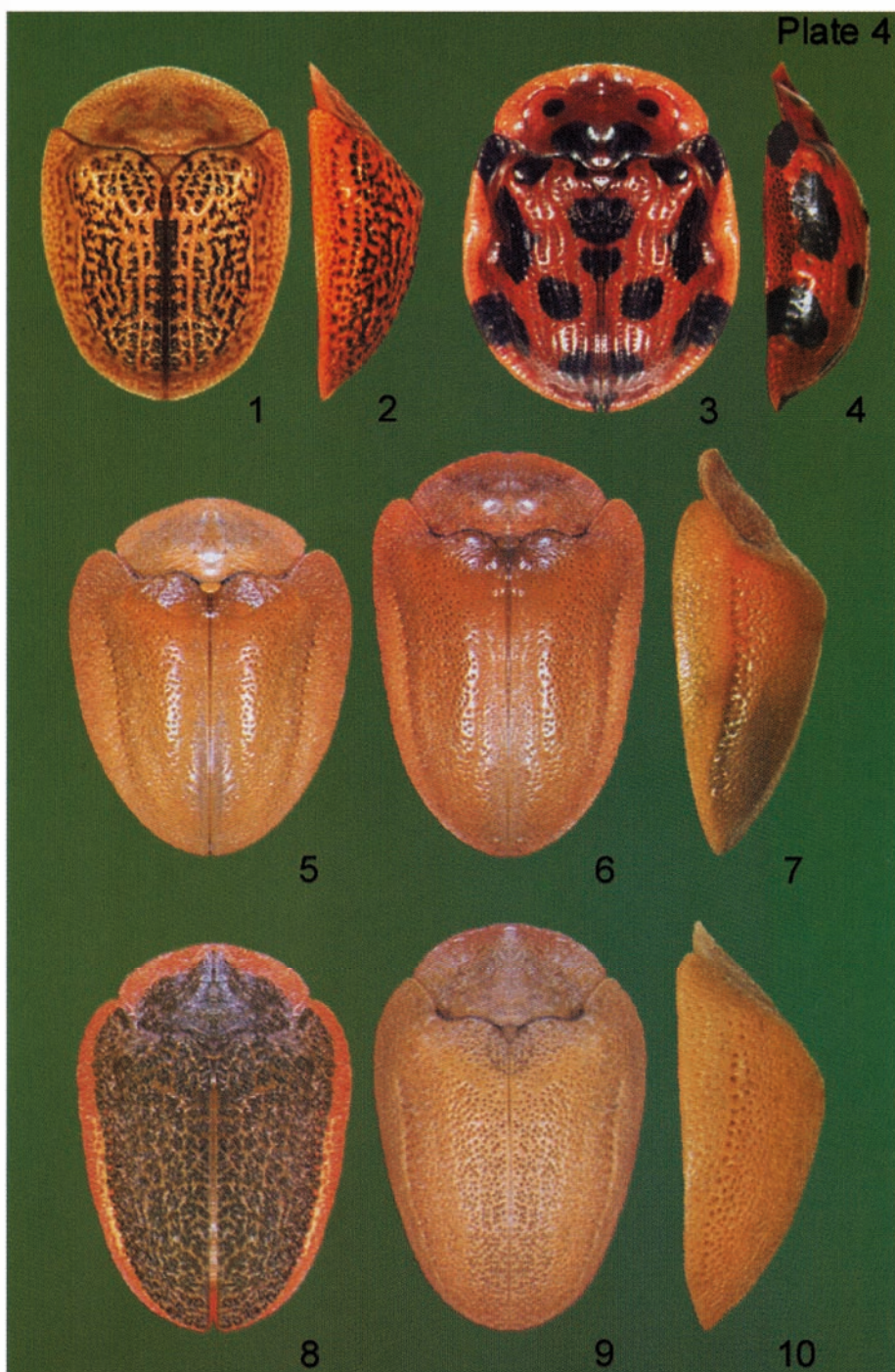


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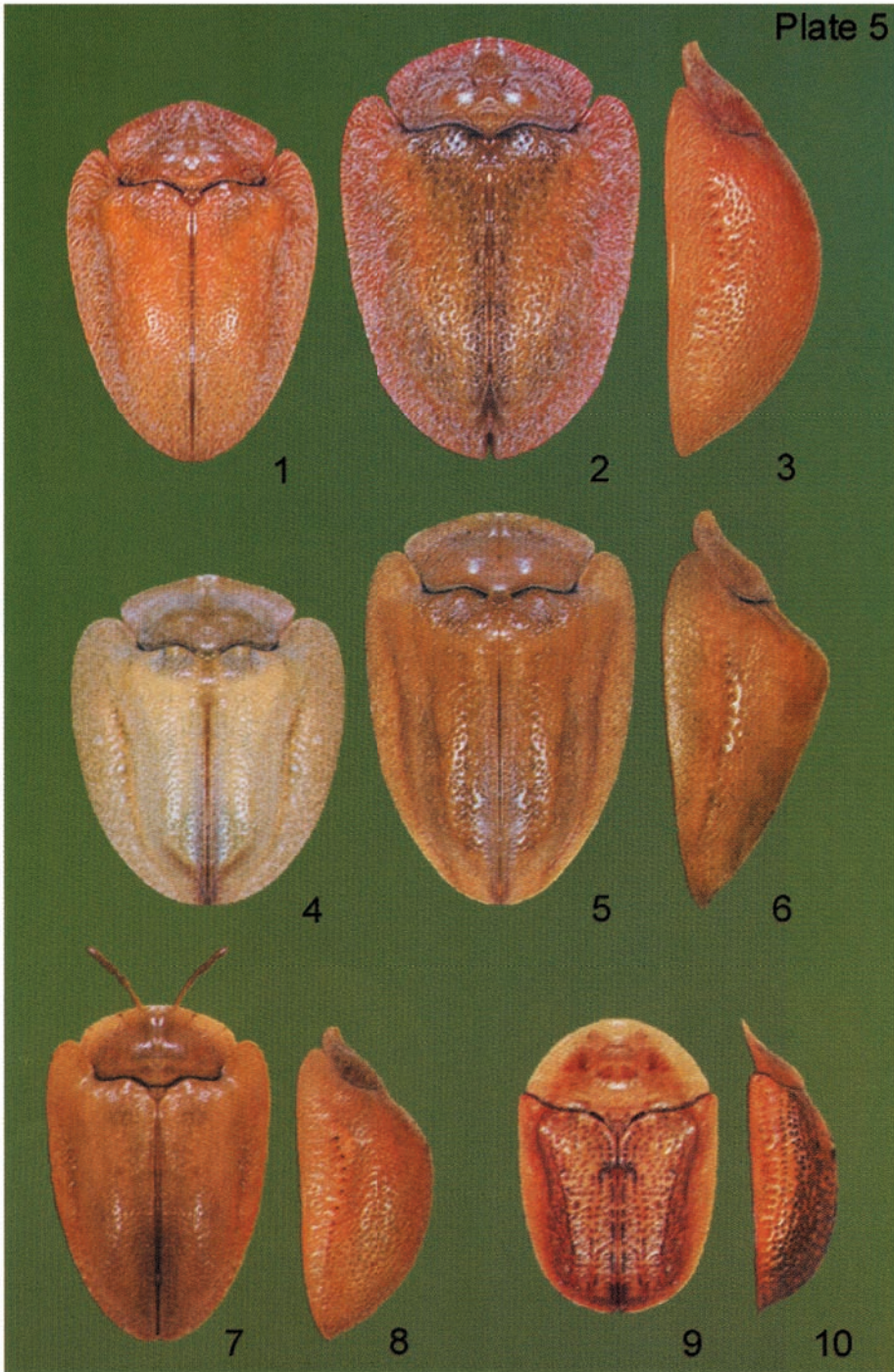


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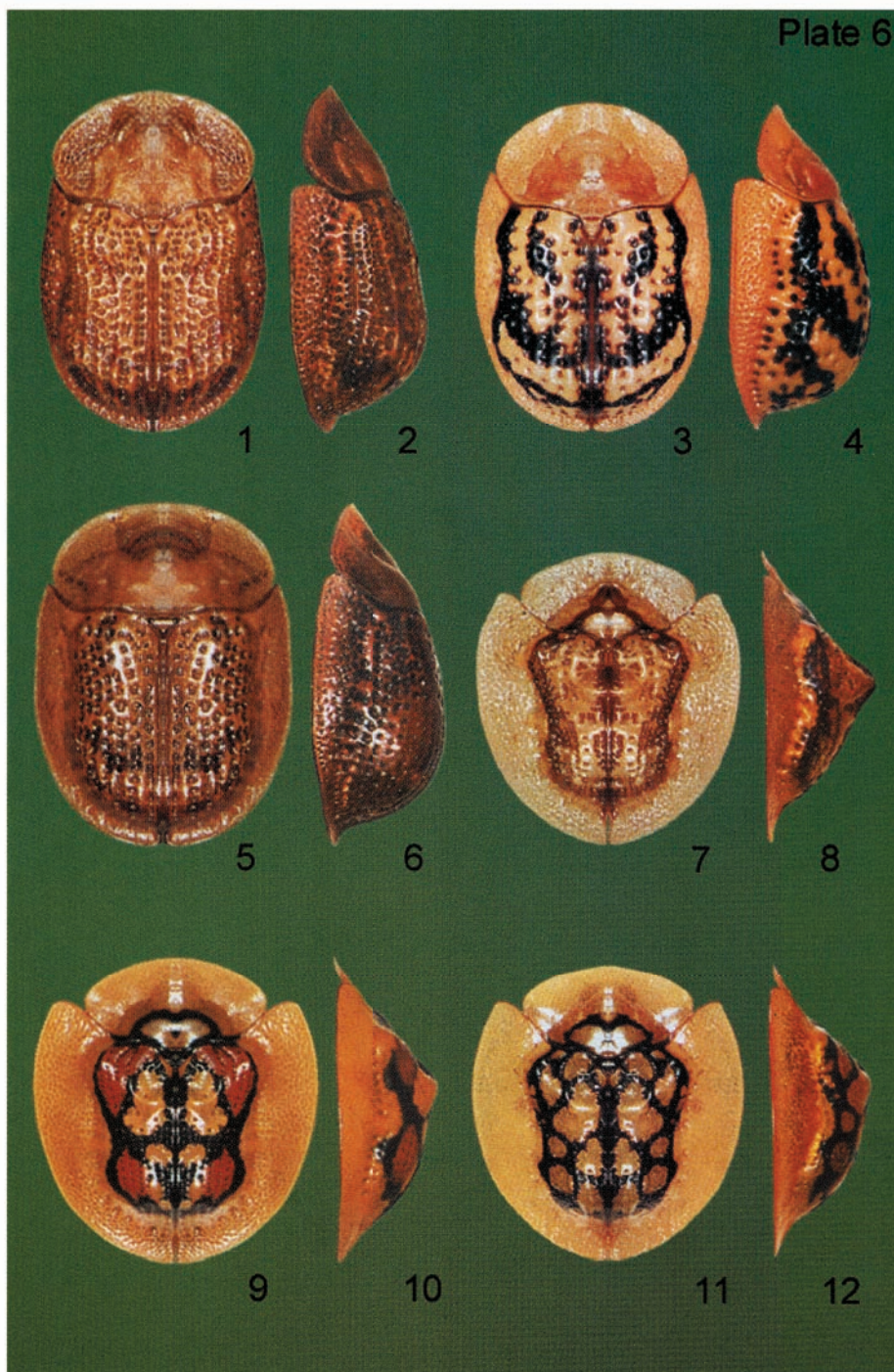


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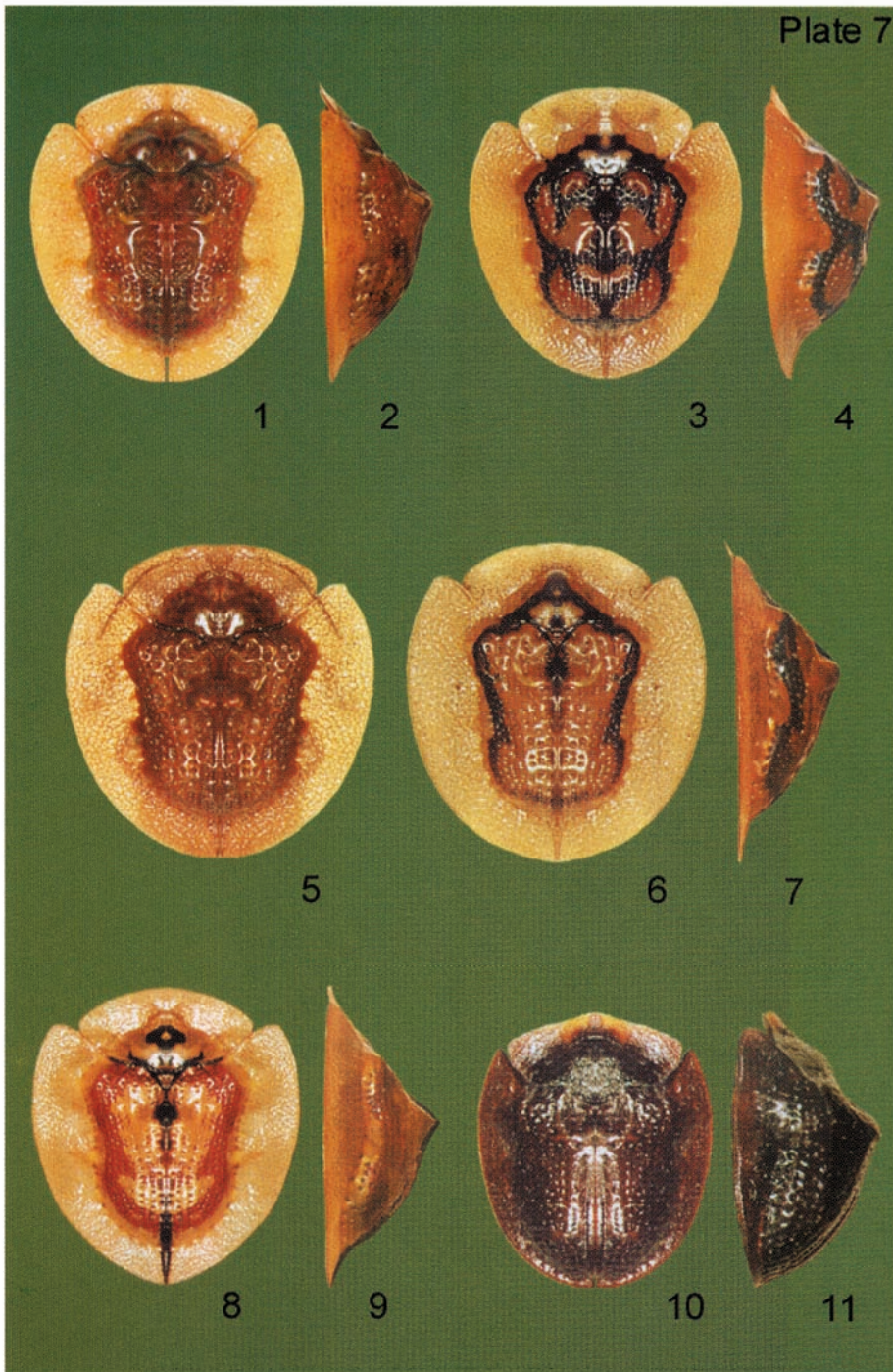


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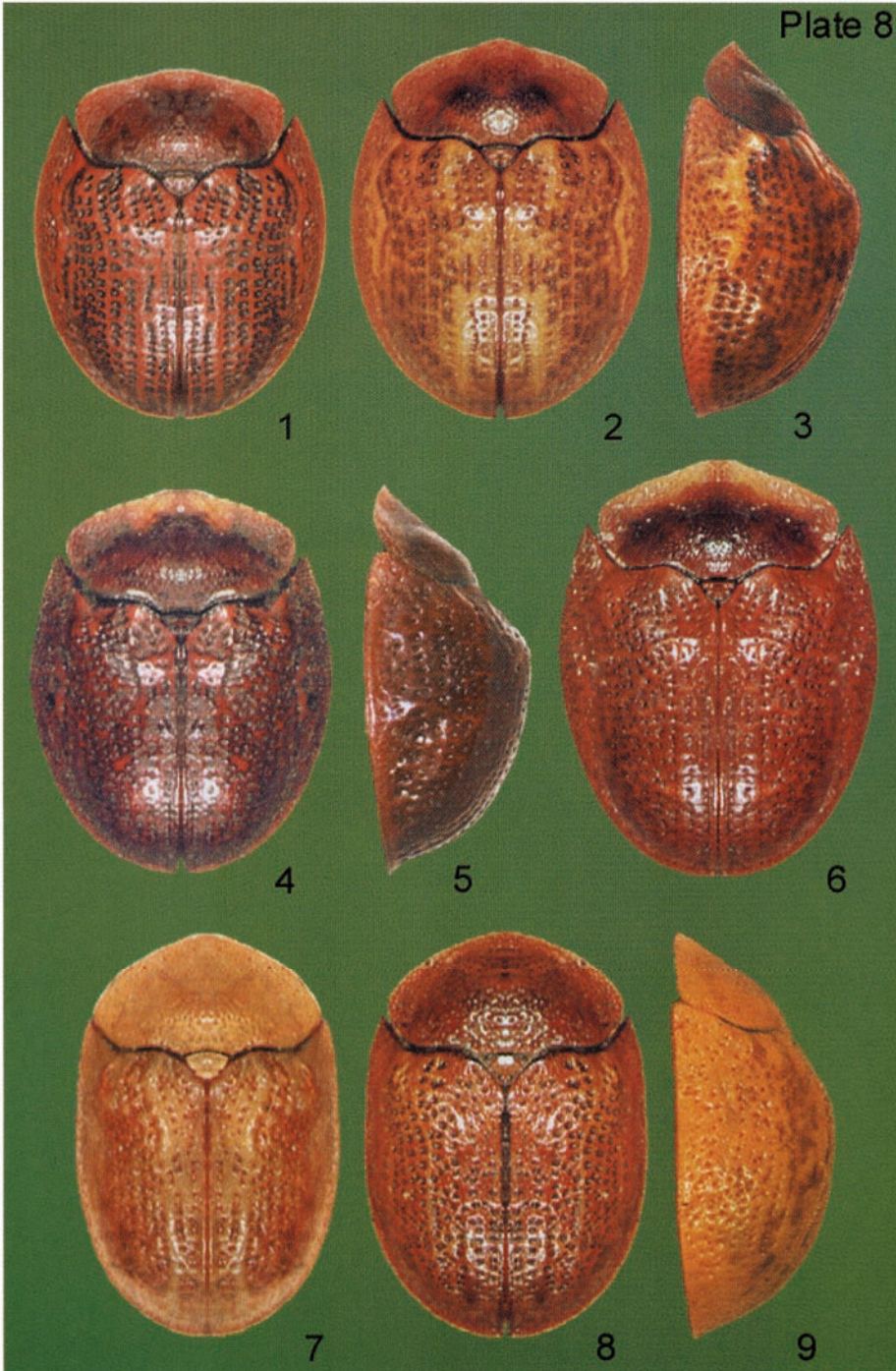


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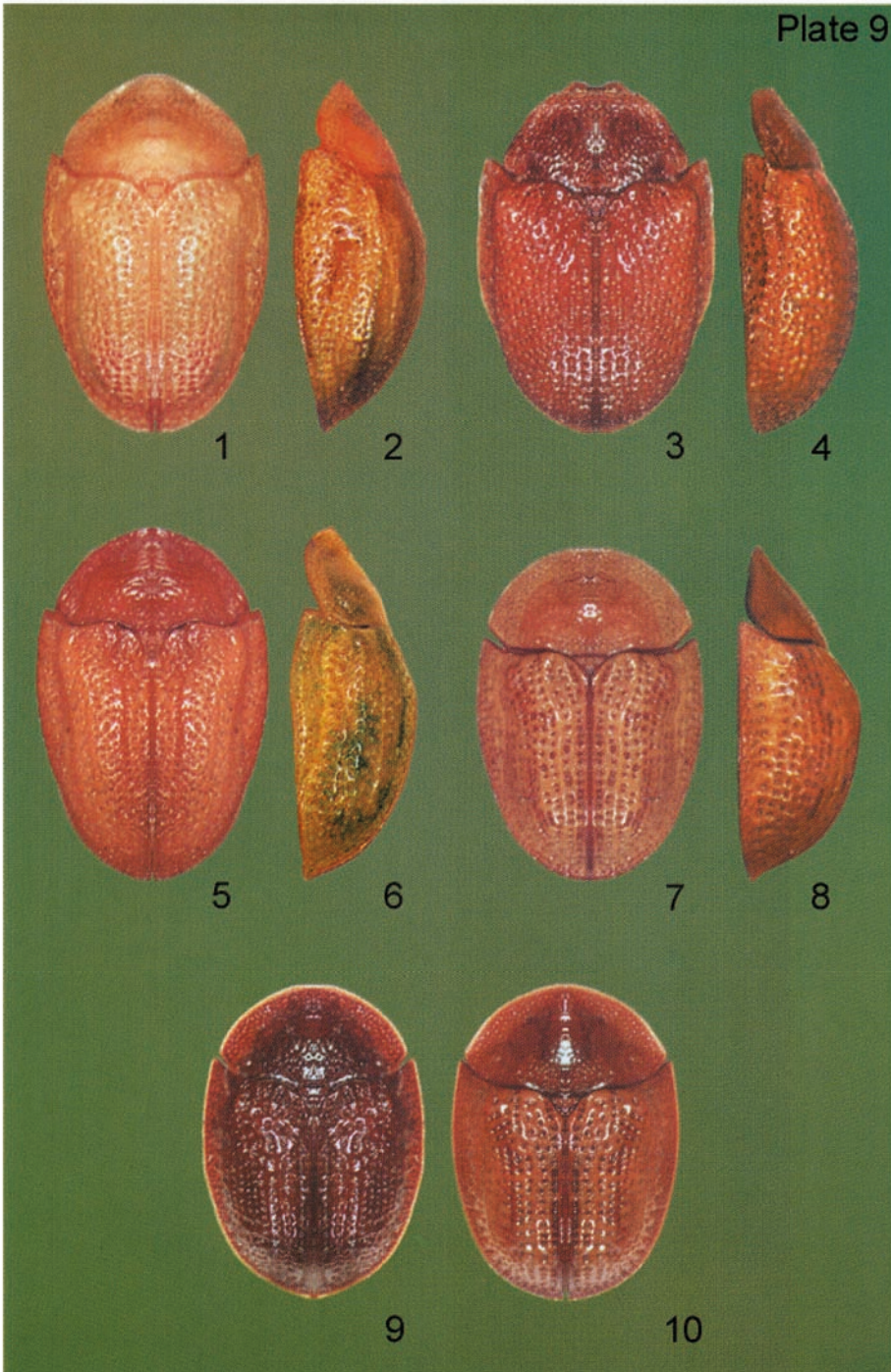


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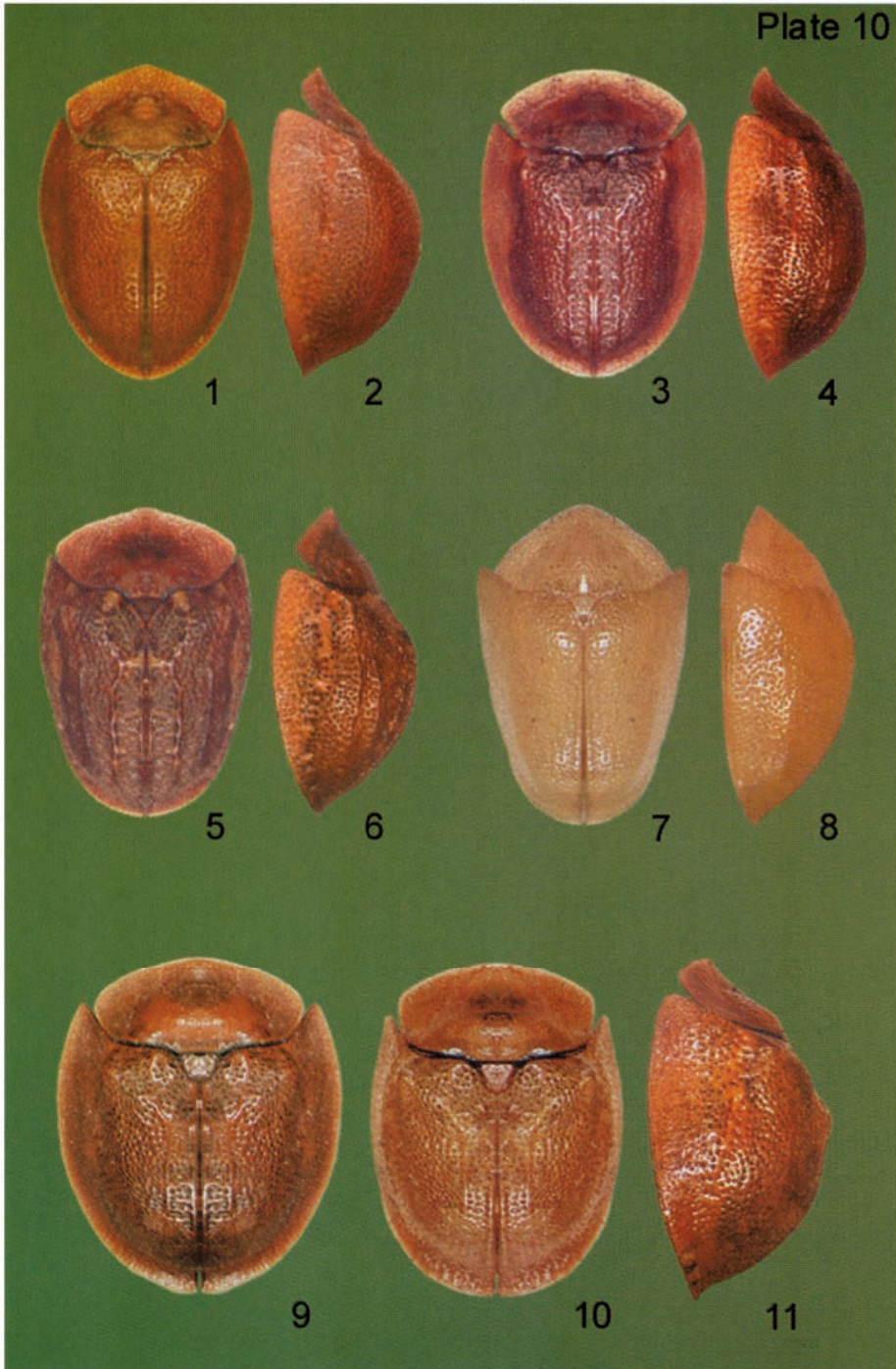


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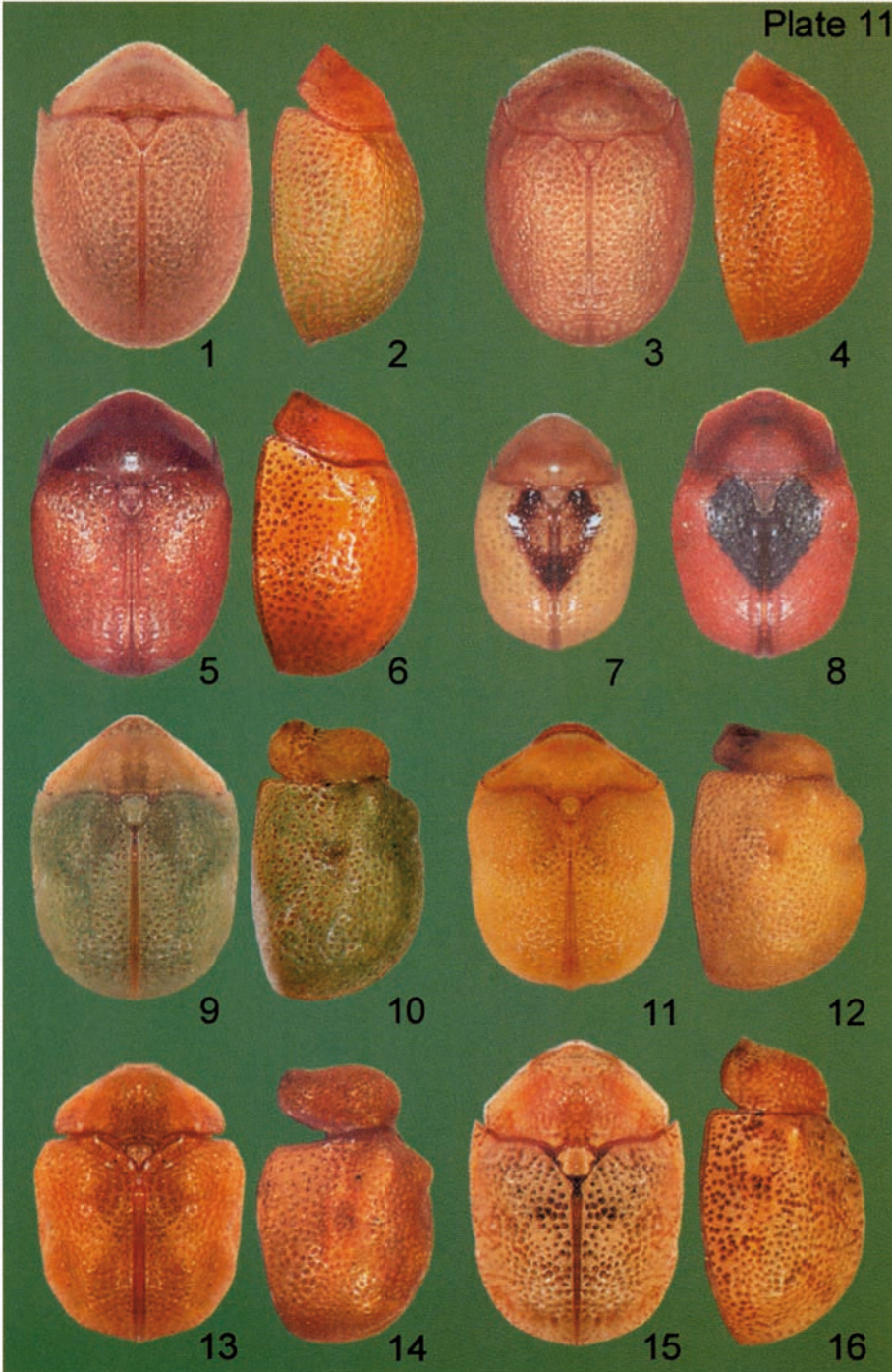


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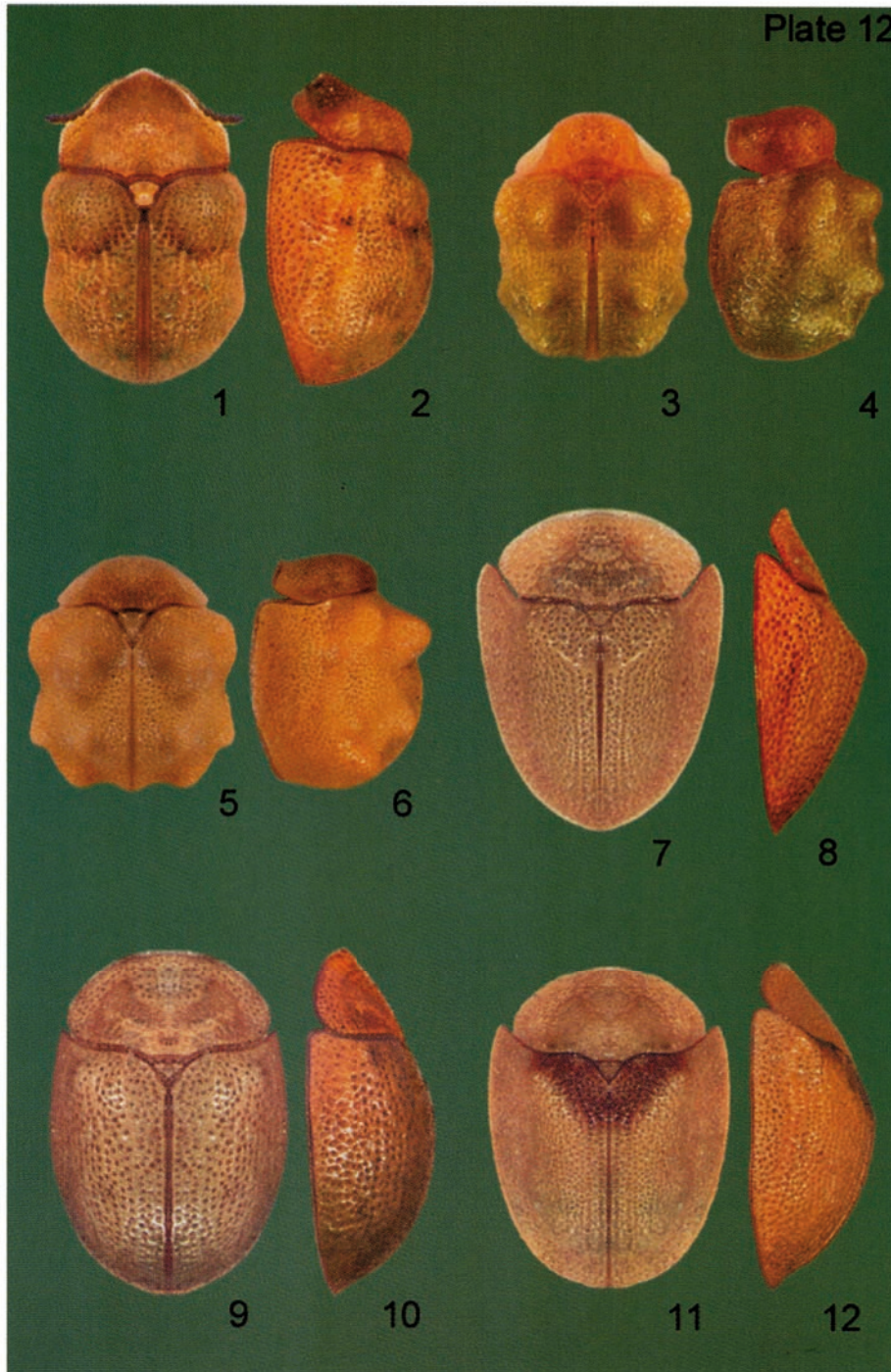


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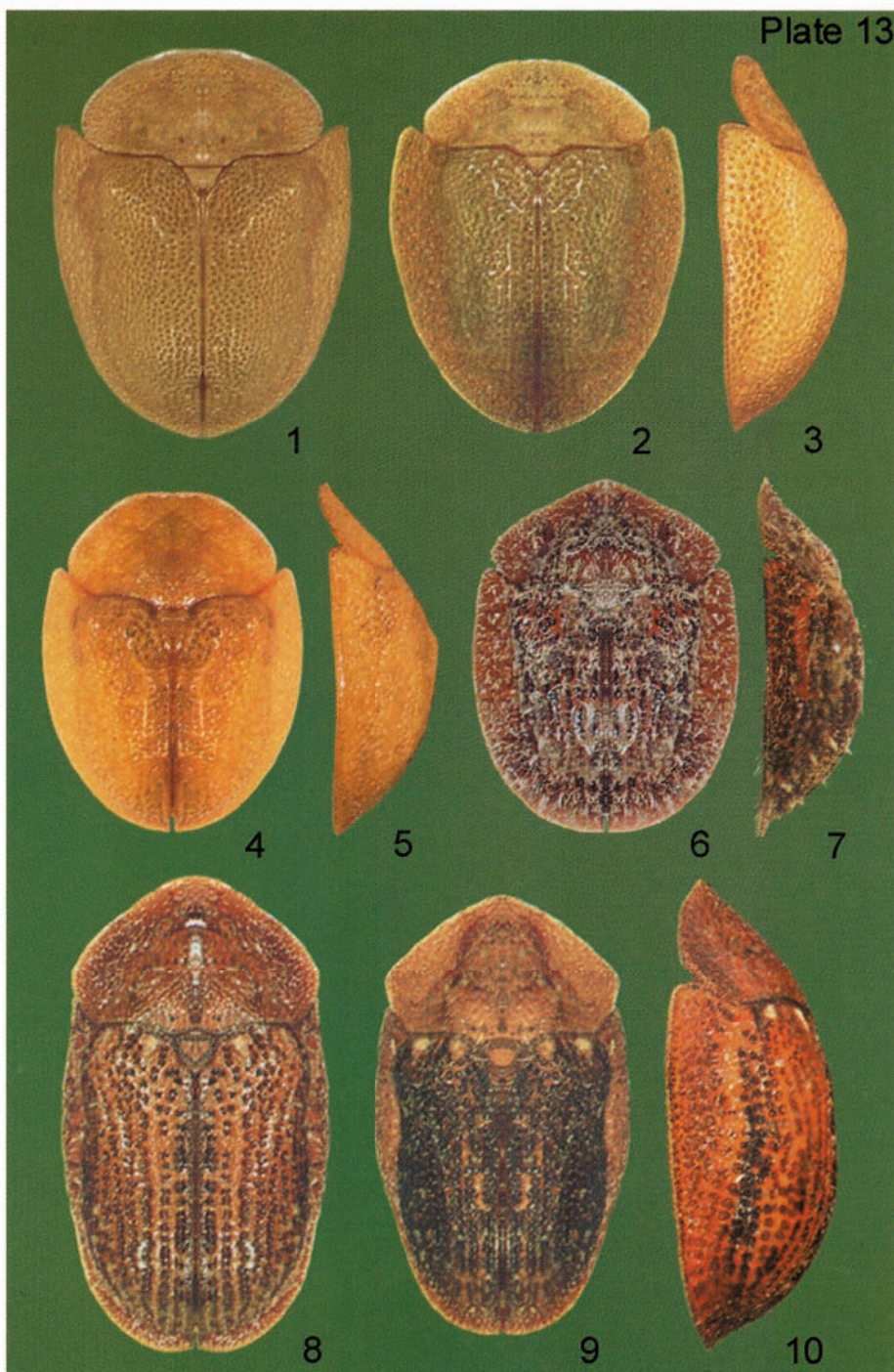


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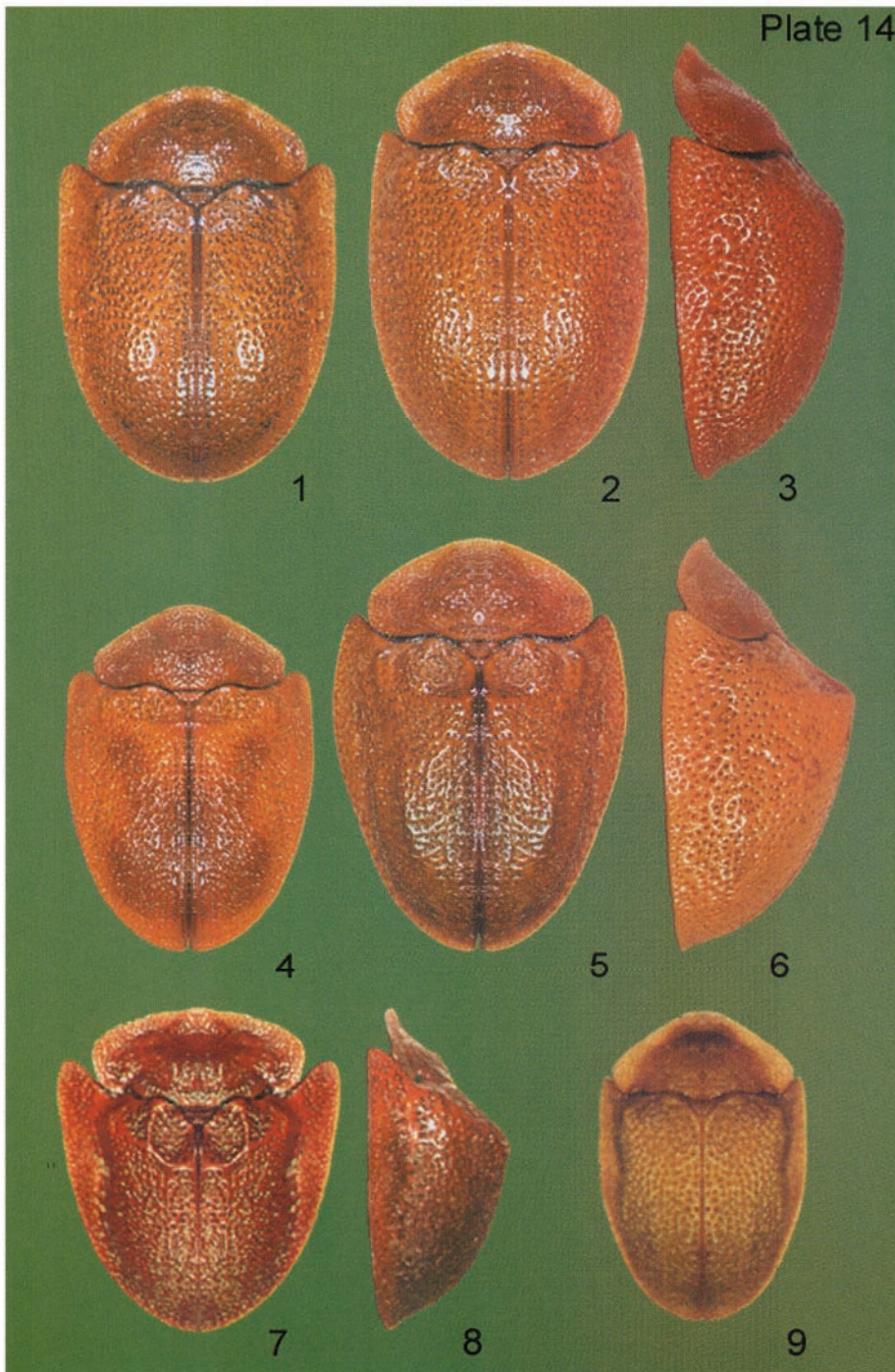


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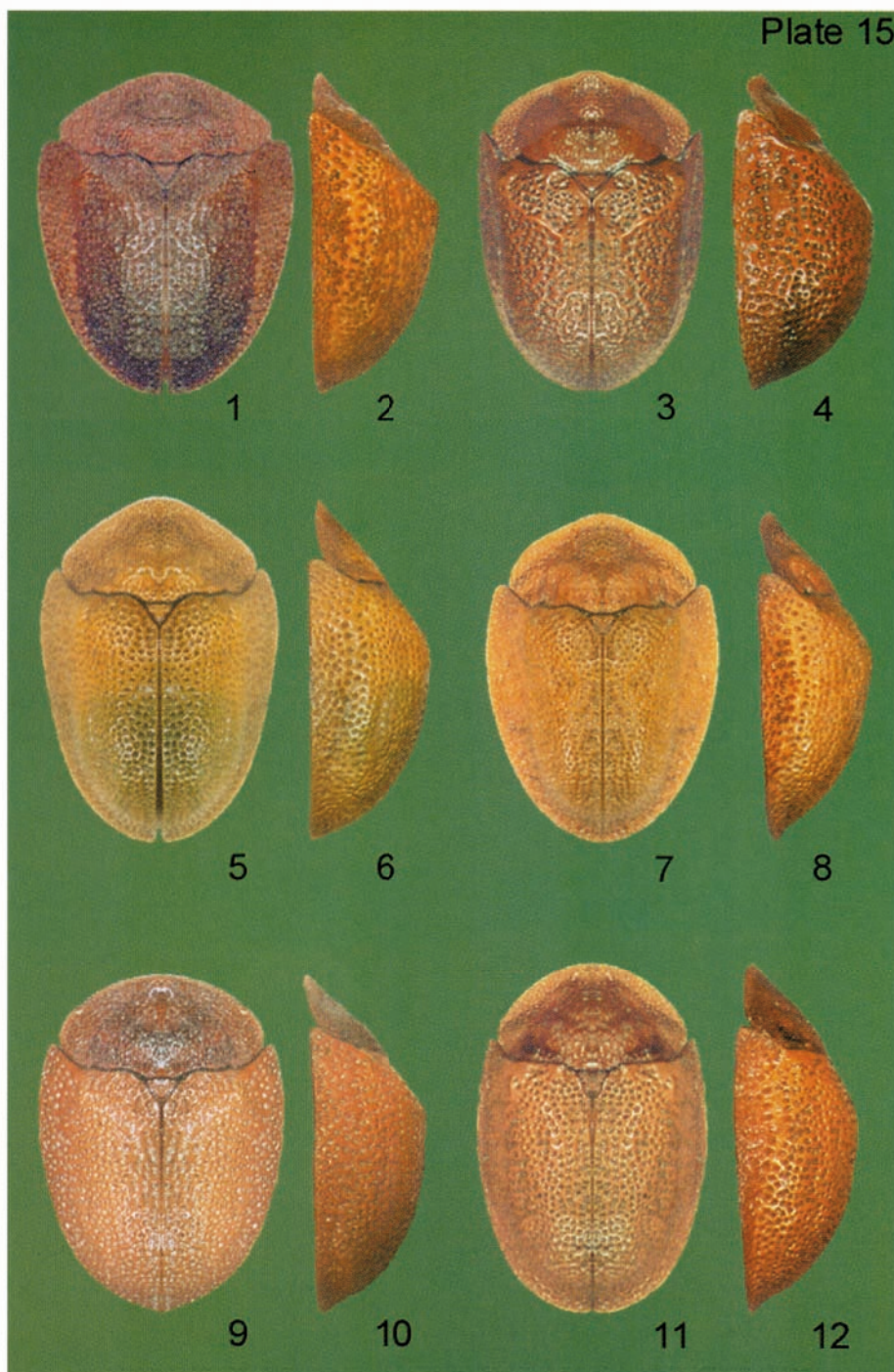


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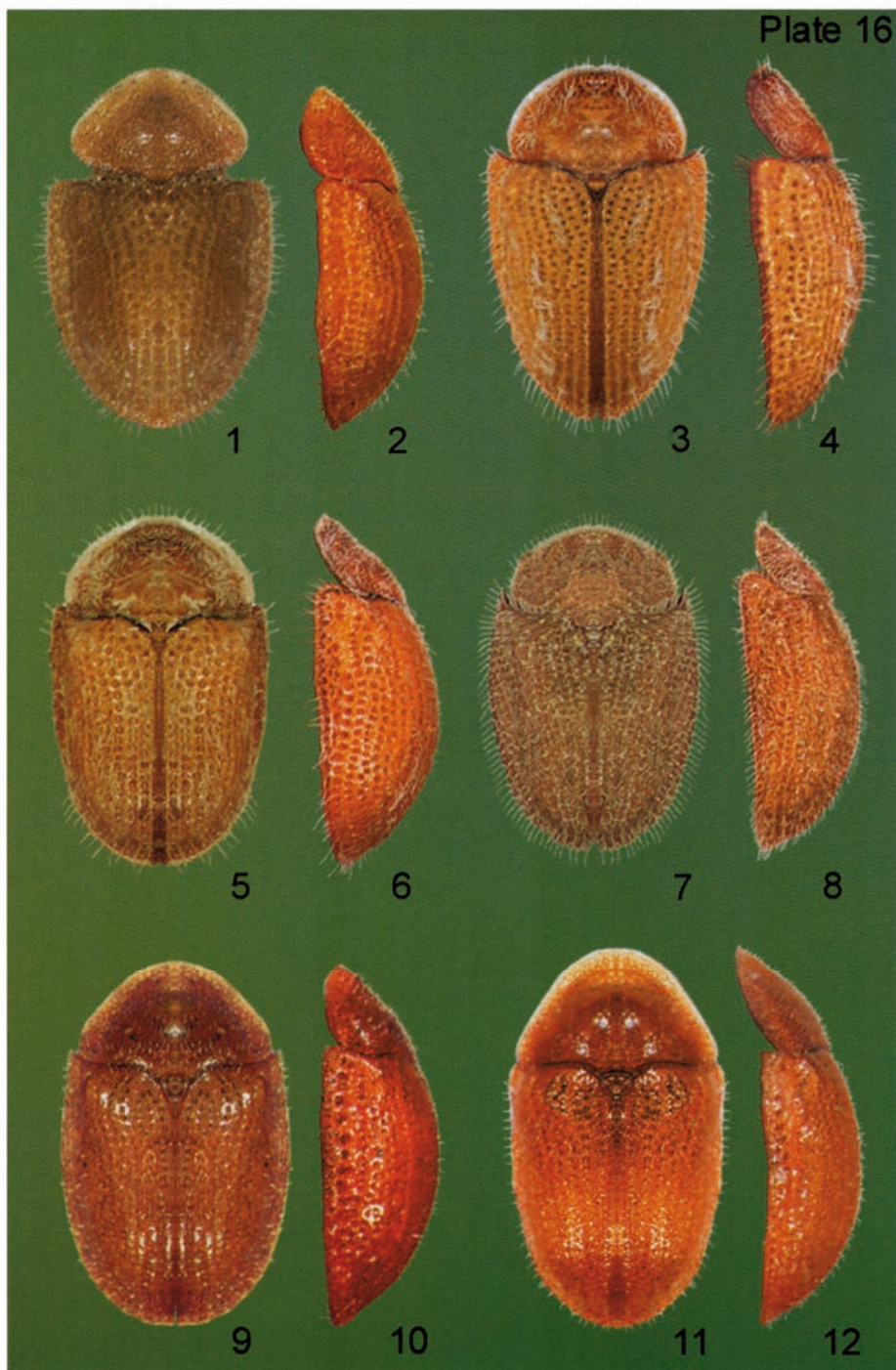


Plate 16: 1-2. *Trichaspis hincksi*; 3-4. *Trichaspis brevicornis*; 5-6. *Trichaspis louwi*; 7-8. *Trichaspis pilosula*; 9-10. *Trichaspis erinacea*; 11-12. *Trichaspis minutissima*

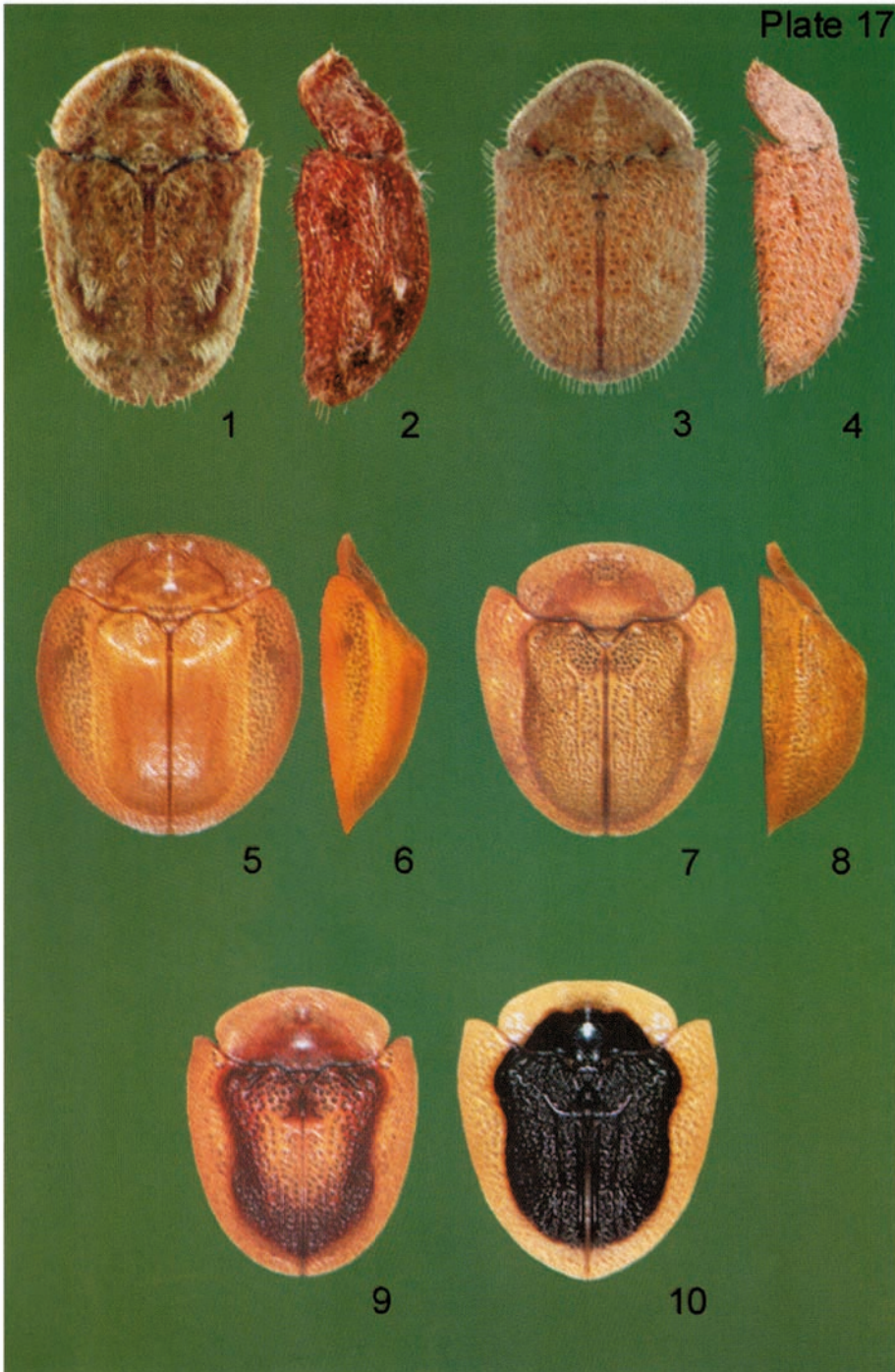


Plate 17: 1-2. *Trichaspis pilosa*; 3-4. *Trichaspis tomentosa*; 5-6. *Tegocassis corpulenta*; 7-10. *Trigonocassis conducta*