

A monograph of the Afrotropical *Cassidinae* (*Coleoptera: Chrysomelidae*)

Part. I. Introduction, morphology, key to the genera, and reviews of the tribes
Epistictinini, *Basiprionotini* and *Aspidimorphini* (except the genus *Aspidimorpha*)

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ABSTRACT. Afrotropical species of the tribes *Epistictinini*, *Basiprionotini*, and *Aspidimorphini* (except the genus *Aspidimorpha*) are reviewed, keyed, and figured. A new genus *Seminabathea* is proposed for *Nabathea pygmaea* Spaeth (Arabian Pen.). *Conchyloctenia aspidiformis* (South Africa), *Lacoptera caduca* (Republic of Congo), and *Lacoptera nunbergi* (Cameroon, Equatorial Guinea, Gabon, and Zaire), new to the science, are described. The following new synonyms are proposed: *Conchyloctenia bonnyana* (GORHAM, 1892) - (= *Aspidomorpha tieffenbachi* KARSCH, 1882; = *Conchyloctenia bonnyana* ssp. *simulans* SPAETH, 1924); *Conchyloctenia praecox* (BOHEMAN, 1854) - (= *Aspidomorpha picta* WEISE, 1898); *Conchyloctenia punctata* (FABRICIUS, 1787) - (= *Cassida parummaculata* BOHEMAN, 1854); *Conchyloctenia signatipennis* (BOHEMAN, 1854) - (= *Conchyloctenia signatipennis* var. *maculipunctata* SPAETH, 1902, = *Cassida spilota* BOHEMAN, 1854, = *Cassida lyncea* BOHEMAN, 1854, = *Cassida nigrosellata* BOHEMAN, 1862; *Lacoptera rugosicollis* (SPAETH, 1902) - (= *Lacoptera contigua* SPAETH, 1919, = *Lacoptera warchalowskii* BOROWIEC, 1985); *Lacoptera cancellata* BOHEMAN, 1855 - (= *Orphonoda marginata* WEISE, 1899); *Lacoptera abyssinica* (BOHEMAN, 1856) - (= *Lacoptera minima* SPAETH, 1932, = *Lacoptera aethiopica* SPAETH, 1938,); *Lacoptera corrugata* (SAHLBERG, 1823) - (= *Lacoptera morosa* WEISE, 1899, = *Lacoptera modesta* SPAETH, 1902); *Lacoptera deremensis* WEISE, 1899 - (= *Lacoptera laeta* WEISE, 1899); *Lacoptera montivaga* SPAETH, 1909 - (= *Lacoptera gyldenstolpei* SPAETH, 1925); *Lacoptera ruginosa* BOHEMAN, 1855 - (= *Lacoptera famula* SPAETH, 1924). General morphology and key to the all Afrotropical genera are also given.

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I. INTRODUCTION

The tortoise-beetles (*Cassidinae*) constitute a moderately large subfamily of the large family *Chrysomelidae*. In the last world catalogue (SPAETH, 1914) 2349 species were recorded, but c. 700 were described within the last eighty years. They are almost world-wide distributed, though they have developed a much greater variety of types in the tropics, particularly tropical South America. They are fewer in temperate regions, especially in North America and Australia; in temperate Europe and Asia not more than 100 species occur.

The Afrotropical Region, including Madagascar, with about 600 described species is, besides Neotropics, among the richest regions. It has never been studied systematically, most descriptions were published in a world monograph by BOHEMAN (1854-1862), and in numerous papers by WEISE (1895-1910) and SPAETH (1898-1943). No Afrotropical genus has been revised recently, most genera have never been keyed, and most species have never been figured. F. SPAETH published several papers on Afrotropical species, but only a few include keys or detailed redescrptions, except quite good descriptions of new species. Fortunately, SPAETH examined many types of previously described species and established synonymy of difficult groups, such as *Aspidomorpha* s. l. and *Cassida* s. l. On the other hand, SPAETH did not study rich materials from all geographical regions of Africa, and described many geographic forms and colour aberrations as distinct species.

In this monograph traditional SPAETH's system of tribes has been adopted. The system is artificial (BOROWIEC, in prep.), and especially the tribe *Notosacanthini* belongs probably to an evolutionary lineage different from that of other Afrotropical cassids. Because this problem needs further studies, I accepted the last system proposed by Spaeth in his posthumous work edited by HINCKS (1952). My monograph will contain 6 volumes:

Volume I - introduction, general morphology, key to the genera, and revision of the tribes *Basiprionotini*, *Epistictinini* and *Aspidimorphini*, except the genus *Aspidimorpha*;

Volume II - revision of the large genus *Aspidimorpha* of the tribe *Aspidimorphini*;

- Volume III - revision of the tribe *Cassidini*, except the genus *Cassida*;
- Volume IV - revision of the large genus *Cassida* of the tribe *Cassidini*;
- Volume V - revision of the tribe *Notosacanthini*;
- Volume VI - zoogeography, catalogue, and supplement to volumes I-V.

Preparing each volume will take 2-3 years. This work is not a complete revision, since I have not examined types of all species, but I have studied the most important collections, especially BOHEMAN's, SPAETH's and WEISE's. These collections contain types of c. 80% Afrotropical nominal species. I have also had the possibility to study SPAETH's unpublished manuscript of the world monograph of *Cassidinae* preserved at the Manchester Museum, with many synonymical notices.

II. MATERIAL AND METHODS

Several dozen thousand of specimens were studied including long series of the species collected during recent scientific expeditions. The material enables studying geographic variability of many species and a detailed zoogeographical analysis.

The specimens generally have not been dissected, because in the subfamily *Cassidinae* genitalia of both sexes are very uniform in their structure and do not offer diagnostic characters, not only at the species, but also at the generic level. The species within the genera have been arranged alphabetically, because phylogenetic relationships are very difficult to ascertain. Bionomics of most species is completely unknown. Some unpublished information on host plants and feeding patterns of South African species was provided by Mr. Hugh HERON. All colour characteristics pertain to dried specimens - the colour usually differs from that of live individuals. In many species, especially of the tribes *Aspidimorphini* and *Cassidini*, in live specimens the cuticle is metallic iridescent, but the colour is lost with death.

I have examined specimens from the following collections (in brackets names of curators):

- BG - coll. B. GRUEV, Plovdiv, Bulgaria;
- BM - Bloemfontain Museum, Bloemfontain, South Africa (S. LOUW);
- BMNH - British Museum Natural History, London, England (S. SHUTE);
- CAS - California Academy of Sciences, San Francisco, USA (D. KAVANAUGH);
- CMN - Canadian Museum of Nature, Ottawa, Canada (R.S. ANDERSON);
- CMNH - Carnegie Museum of Natural History, Pittsburgh, USA (R.L. DAVIDSON);
- CNCI - Canadian National Collection of Insects, Ottawa, Canada (L. LE SAGE);
- CTM - Cape Town Museum, Cape Town, South Africa (V. WHITEHEAD);
- DEI - Deutsche Entomologisches Institut, Eberswalde, Germany (L. DIECKMANN);
- DZPAS - Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Cracow, Poland (J. PAWLOWSKI);
- ER - coll. E. RILEY, Texas, USA;
- FMNH - Field Museum of Natural History, Chicago, USA (E.H. SMITH);
- HH - coll. H. HERON, Queensburgh, South Africa;
- HK - coll. H. KIPPENBERG, Herzogenaurach, Germany;

HNHM - Hungarian Natural History Museum, Budapest, Hungary (Z. KASZAB and O. MERKL);

IFAN - Institut Fondamental d'Afrique Noire, Dakar, Senegal (R. ROY);

IRSN - Institut Royal des Sciences Naturelles, Bruxelles, Belgium (L. BAERT and M. CLUDTS);

ITZ - Instituut voor Taxonomische Zoölogie, Amsterdam, The Netherlands (B. BRUGGE);

IZPAS - Museum and Zoological Institute, Polish Academy of Sciences, Warsaw, Poland (S. A. ŚLIPŃSKI);

JM - coll. J. MAUSER, Freiburg, Germany;

JW - coll. J. WOJTUSIAK, Cracov, Poland;

LB - coll. Lech BOROWIEC, Wrocław, Poland;

LU - Zoological Museum, Lund University, Lund, Sweden (R. DANIELSSON);

MCZC - Museum of Comparative Zoology, Cambridge, USA (A. NEWTON);

MD - coll. M. DÖBERL, Seeweg, Germany;

MHNG - Musée d'Histoire Naturelle, Genève, Switzerland (I. LÖBL);

MM - Manchester Museum, Manchester, England (C. JOHNSON);

MNHN - Muséum National d'Histoire Naturelle, Paris, France (N. BERTI);

MRAC - Musée Royal d'Afrique Centrale, Tervuren, Belgium (J. DECELLE);

MSU - Montana State University, Bozeman, USA (M. IVIE);

MZSNG - Museo Zoologico di Storia Naturale, Genova, Italy (R. POGGI);

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);

NMB - Naturhistorisches Museum, Basel, Switzerland (M. BRANCUCCI);

NMM - National Museum and Monuments, Bulawayo, Zimbabwe (L. HANCOCK);

NMP - Narodni Muzeum, Prague, Czech (J. BILÝ);

NMW - Naturhistorisches Museum, Wien, Austria (H. SCHÖNMANN);

NNML - Nationaal Natuurhistorisch Museum Leiden, the Netherlands (J. KRIKKEN);

NRS - Naturhistoriska Riksmuseet, Stockholm, Sweden (P. LINDSKOG);

OSU - Ohio State University, Columbus, USA (Ch. TRIPLEHORN);

PH - coll. P. HOŠEK, Praha, Czech;

PMNH - Peabody Museum of Natural History, New Haven, USA;

RR - coll. R. REGALIN, Milano, Italy;

SD - coll. S. DOGUET, Noisy le Grand, France;

SEMC - Snow Entomological Museum, Lawrence, USA (R. BROOKS);

SMF - Senckenberg Museum, Frankfurt-am-Main, Germany (R. ZUR STRASSEN);

SMNS - Staatliches Museum für Tierkunde, Stuttgart, Germany (W. SCHWALLER);

SZ - coll. S. ZOIA, Milano, Italy;

TM - Transvaal Museum, Pretoria, South Africa (S. ENDRÖDY-YOUNGA);

UA - coll. U. ARNOLD, Berlin, Germany;

USNM - United States National Museum, Washington, USA (R. WHITE);

WM - Windhoek Museum, State Museum of Namibia, Windhoek, Namibia (E. MARAIS);

WS - coll. W. STEINHAUSEN, München, Germany;

ZMC - Zoologisk Museum, Copenhagen, Danmark (O. MARTIN);

ZMHU - Zoologisches Museum, Humboldt Universität, Berlin, Germany (F. HIEKE);

ZMUH - Zoological Musum, University of Helsinki, Helsinki, Finland (H. SILFVERBERG);

ZSM - Zoologische Staatssammlung, München, Germany (G. SCHERER).

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III. MORPHOLOGY OF THE *CASSIDINAE*

The *Cassidinae*, popularly called "tortoise beetles", differ from other *Chrysomelidae* in their general structure, and only species of the primitive tribes *Epistictinini* and *Basiprionotini* resemble other chrysomelids at first glance.

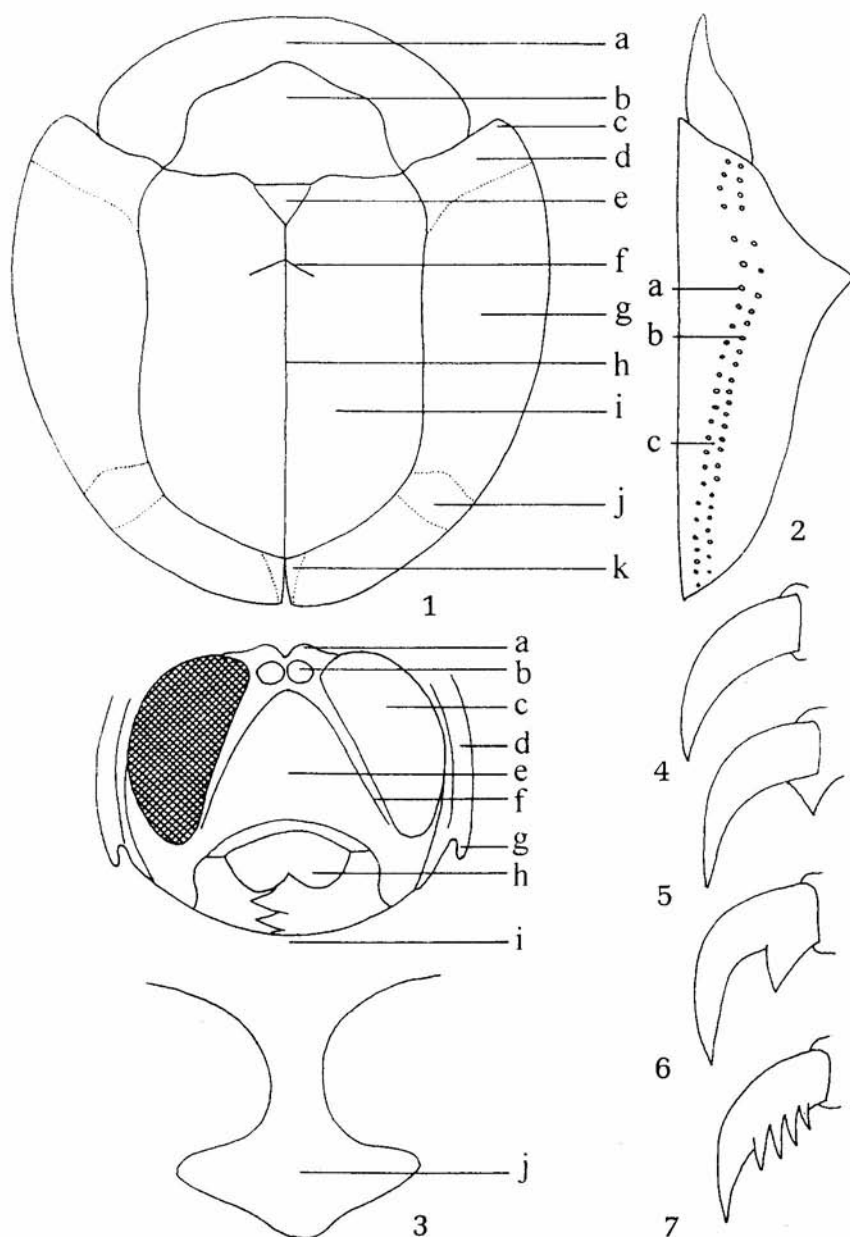
Body usually broad, circular (fig. 1), or broadly oval (figs. 44, 49), only in primitive tribes elongate (figs. 8, 19, 25, 31), in profile varies from depressed (fig. 15), to strongly convex (figs. 260, 261), or gibbous (figs. 248, 274), often with large tubercle in postscutellar area (figs. 2, 212, 217), occasionally with tubercles in posterior half of elytral disc (figs. 199, 206).

Pronotum in most species semicircular or elliptical, sides vary from angulate to broadly rounded, posterior corners subacute to obtuse, in species with sides of pronotum rounded broadly posterior corners often obsolete. Maximum width at the base of pronotum, or in its middle, rarely in front of the middle. Anterior margin of pronotum usually broadly rounded and head not visible from above, only in primitive tribes *Epistictinini* and *Basiprionotini*, and in the tribe *Notosacanthini* anterior margin shallowly to deeply emarginate and head visible from above (fig. 8). Disc of pronotum varies from slightly to strongly convex, its surface varies from smooth, glabrous, to strongly punctate, or else wrinkled, rugose, or longitudinally striate, sometimes base of disc with tubercles. Explanate margin of pronotum indistinctly to distinctly bordered from disc, varies from strongly declivous to horizontal, in many species forms a shallow gutter, its surface varies from smooth, glabrous, to strongly punctate or rugose, only in the tribe *Notosacanthini* with large pores. In species with transparent explanate margin honeycomb structure always present.

Scutellum triangular, in Afrotropical species always visible, usually without specific characters.

Base of elytra as broad as to much wider than pronotum, anterior margin straight to bisinuate, often serrate, humeral angles vary from acute to broadly rounded. Disc varies from depressed to strongly convex, or gibbous, or with postscutellar conical tubercle. Punctuation of disc irregular to completely regular, fine to strong, intervals flat, or some intervals convex, forming longitudinal elevations or costae. In the tribe *Notosacanthini* elytral disc with special relief of various longitudinal and transverse costae, and often with numerous tubercles, in other tribes only a few species have tubercles and distinct costae (except postscutellar tubercle, and elevated intervals 3 and 5). In many *Aspidimorphini* whole disc with large reticulation of folds and wrinkles, appears rugose, elytral punctuation often vanishes within elytral sculpture. Explanate margin usually bordered from disc by a strong marginal interval, but in many species marginal interval blurred within punctuation of disc and explanate margin. In posthumeral part of disc often shallow to deep cavity, in the middle of marginal interval usually transverse fold, often other parts of marginal interval with large folds. Explanate margin of elytra varies from strongly declivous to horizontal, from narrow, not wider than 1/6 length of each disc of elytron, to very broad, as wide as each elytron. Its surface varies from smooth, glabrous, to punctate or strongly rugose, in the tribe *Notosacanthini* surface of explanate margin with large pores. Honeycomb structure occurs in species with transparent margin. Lateral margination of elytra usually simple, occasionally double. Apex of elytral epipleura bare to densely pubescent.

Head usually hidden by pronotum, deep-seated in head cavity, only in primitive tribes not hidden, in the tribe *Notosacanthini* frons forms a frontal plate. Clypeus in the tribes *Epistictinini* and *Basiprionotini* subhorizontal, in other tribes completely horizontal, forming a large plate (fig. 3), only in the primitive tribes and some genera of the tribe *Cassidini* very short (fig. 11). Clypeal lines or grooves more or less developed, converging in arch or strong angle (fig. 3). Surface of clypeus varies from depressed, often with shallow to deep impressions, to strongly elevated, smooth to punctate. Labrum usually transverse, with anterior margin more or less emarginate (fig. 3), but sometimes without margination (figs. 407, 413). Mouth parts often partly hidden by prosternal collar, in some species completely hidden by the collar (figs. 40, 46, 52), mandibles and palpi without specific characters. Eyes large, gena usually very short or obsolete, only in a few species gena longer than 1/4 eye length. Antennal insertions in contact, or only narrowly separated (fig. 3). Antennae 11-segmented (only in a few species of *Notosacantha* antennae 10-segmented), varying from short, not extending to mesothorax, to very long, extending to the end of elytra, filiform, slim, only in the tribe *Notosacanthini* subclavate, and in the tribes *Epistictinini* and *Basiprionotini* stout. Basal three to six antennal segments sparsely pubescent and glabrous, distal 4-11 segments densely pubescent, dull. The length ratio of antennal segments 2 and 3 is an important character at specific and generic level. In many species antennae are sexually dimorphic, in males last segments are longer than in



1-7. General morphology of the *Cassidinae*. 1 - Body in dorsal view: a - explanate margin of pronotum, b - pronotal disc, c - humeral angle, d - humeral spot, e - scutellum, f - postscutellar tubercle, g - explanate margin of elytra, h - suture, i - elytral disc, j - posterolateral spot, k - sutural spot. 2 - Body in lateral view: a - marginal row, b - submarginal row, c - marginal interval. 3 - Head and prosternum: a - frontal tubercle, b - antennal insertion, c - eye, d - antennal groove, e - clypeus, f - clypeal groove, g - lateral incision of prosternal collar, h - labrum, i - prosternal collar, j - prosternal process. 4-7 - Claws: 4 - simple, 5 - apparently appendiculate, 6 - appendiculate (with basal tooth), 7 - pectinate

females, or basal segments are more globular. In species of the tribe *Epistictini* and *Basiprionotini* apical segments are elongatedly punctate to longitudinally striate, in the tribes *Aspidimorphini* and *Cassidini* distal segments on ventral side with sensory pore. In many species on sides of head there is an antennal groove to accommodate basal part of antennae (fig. 3), only in the genus *Oocassida* the groove is prolonged to the ventral part of pronotum and accommodates whole antenna. External part of antennal groove often bordered by a sharp carina.

Prosternum with or without collar, in the tribe *Basiprionotini* the collar is very long and covers mouth parts of head (figs. 40, 46, 52), in some genera of the tribe *Aspidimorphini* sides of collar often form an angle (figs. 213, 218). In many genera of the tribe *Cassidini* sides of collar with lateral incision (fig. 3), the character being usually correlated with the presence of antennal groove. In some genera (*Ischiocassis*, *Oocassida*) the upper margin of incision forms a plate. Prosternal process varies from very narrow to very broad, more or less expanded apically (fig. 3), often canaliculate longitudinally, or apex punctate or rugose. Meso- and metathorax without specific characters, metathoracic plate sometimes strongly gibbous. In the tribe *Notosacanthini* metasternal episternum fused with metasternal epimeron. Abdomen with five visible sternites, the first two fused.

Legs usually slim, not modified, only tarsi with specific characters. Tarsi 4-segmented. The last segment of tarsi usually as long as the third or slightly longer, sometimes distinctly shorter than the third segment, occasionally distinctly longer. Claws simple (fig. 4), or apparently appendiculate (simple but appearing appendiculate due to distally projecting flanks of the claw segment, fig. 5), or with distinct basal tooth (fig. 6), or pectinate on inner (fig. 7), or both inner and outer side of claw, in many species of the tribe *Cassidini* claws micropectinate.

Male genitalia simple, in form of tube, very uniform in shape, do not offer any useful taxonomic characters on both specific and generic level. Genital sclerites and spermatheca of female also very uniform, in many genera without specific characters.

Bionomics is known for only few Afrotropical species, and only for several host plants are known.

IV. KEY TO THE GENERA

1. Head invisible from above 6.
- Head visible from above 2.
2. Antennae subclavate, without longitudinal striation, Elytra partly irregularly punctate, usually with longitudinal and transverse costae, often with tubercles:

Length: 2.5-8.0 mm. Body varying from elongate, parallelsided, to almost circular. Elytral base usually slightly wider than pronotum. Lateral margin of pronotum and elytra often serrate or spinulose. Anterior margin of pronotum deeply emarginate. Frons often with elongate plate. Elytra usually with elevated ridges, and tubercles, the latter often form sharp spines. Punctuation of elytra large and deep, regular or not. Explanate margin of pronotum and elytra with large pores. Anterior corners of pronotum with

sensory pore and seta (in dried specimens sensory setae usually broken). Tarsi broad, the last segment distinctly shorter than the hind. Claws simple. Whole tropical Africa and Madagascar.

..... *Notosacantha* CHEVROLAT, 1837

- Antennae stout, not clavate, with longitudinal striation. Elytra regularly or irregularly punctate, sometimes elytral intervals elevated, form regular longitudinal costae, but always without tubercles or transverse costae 3.
- 3. Mouthparts partly free, apical antennal segment cylindrical, with approximately circular cross-section 4.
- Mouthparts hidden by anterior margin of prosternum, apical antennal segments flattened, with elliptical cross-section 5.
- 4. Body pubescent. Punctuation of elytra irregular, without longitudinal elevations. Africa except Madagascar:

Length: 8-10 mm. Body elongate, elytral base slightly wider than pronotum. Pronotum trapezoidal with slightly rounded sides and broadly but shallowly emarginate anterior margin. Disc and explanate margin of pronotum distinctly punctate and sparsely pubescent. Elytra strongly, irregularly punctate and sparsely pubescent, without marginal row between disc and explanate margin. Clypeus very short, not longer than the first antennal segment. The last tarsal segment distinctly longer than the third. Claws simple. Only one species known from Zambesi Region of southern Africa, southern Zaire, Tanzania, and Ivory Coast.

..... *Metriopecta* FAIRMAIRE, 1882

- Body not pubescent. Punctuation of elytra completely regular, or disc with longitudinal elevations and irregular punctuation between elevations. Madagascar only:

Length: 6-11 mm. Body elongate, parallel-sided to slightly rounded on sides, base of elytra not wider than pronotum. Pronotum trapezoidal, with slightly emarginate anterior margin, disc not bordered from explanate margin, impunctate or strongly punctate. Elytra with regular rows of punctures, or irregularly punctate but with glabrous, longitudinal elevations. Explanate margin very narrow but bordered from disc by distinct marginal row. Clypeus very short, with anterior margin not carinate. In male the first antennal segment usually more globular than in female. The last segment of tarsi distinctly longer than the third. Claws simple. Five species in Madagascar.

..... *Androya* SPAETH, 1911

- 5. Elytra partly regularly punctate. Pronotal disc with several impressions, anterior corners more or less angulate. Africa except Madagascar:

Length: 8-11 mm. Body elongate, slightly widened posterad. Base of elytra not wider than pronotum. Pronotum trapezoidal, with anterior margin shallowly emarginate. Disc not bordered from explanate margin, smooth. Punctuation of elytra in anterior half more or less regular, especially along suture, in posterior half and on sides punctuation irregular. Intervals 2 and 4 slightly elevated and wider than intervals 1 and 3. Explanate margin very narrow, but bordered from disc by marginal row. Clypeus triangular, slightly longer than the first antennal segment, with slightly elevated anterior margin. The last tarsal segment distinctly longer than the third. Claws simple. Only one species in Zambesi Region of southern Africa.

..... *Pseudandroya* SPAETH, 1952

- Elytra irregularly punctate. Pronotal disc without impressions, anterior corners broadly rounded. Madagascar only:

Length: 7-8 mm. Body stout, oval, base of elytra not wider than pronotum. Pronotum trapezoidal, with slightly rounded and distinctly marginate lateral margins. Anterior margin shallowly emarginate. Disc not bordered from explanate margin, punctate or impunctate. Explanate margin of elytra narrow, punctate, not bordered from disc by marginal row. Clypeus very short, about twice shorter than the first antennal segment, with slightly carinate anterior margin. The first antennal segment in male strongly enlarged. The last tarsal segment distinctly longer than the third. Claws simple. Two species in Madagascar.

..... *Cassidopsis* FAIRMAIRE, 1899

6. Anterior margin of pronotum with triangular incision. Explanate margin of pronotum and elytra with large pores. Antennae subclavate with distinct club:

Length: 2.5-3.0 mm. Body stout, almost parallelsided, elytral base not wider than pronotum. Sides of pronotum distinctly angulate. Disc distinctly bordered from explanate margin. Elytral disc with extremely large punctures arranged in more or less regular rows, intervals many times narrower than punctures. Elytral slope with transverse costae. Explanate margin narrow, distinctly bordered from disc, with three rows of large pores. Clypeus narrow, triangular, strongly impressed, bordered laterally by deep grooves. Frons without frontal plate. The last tarsal segment distinctly shorter than the third. Claws simple. Two species in South Africa.

..... *Herminella* SPAETH, 1913

- . Anterior margin of pronotum without incision. Explanate margin of pronotum and elytra impunctate or punctate but without large pores. Antennae filiform or with distal segment slightly, gradually enlarged but without club 7.

7. Inner margin of claws pectinate 8.

- . Inner margin of claws simple or with basal tooth 12.

8. Antennae with only four basal, glabrous segments:

Length c. 5 mm. Body subtriangular, elytral base distinctly wider than pronotum. Pronotum with broadly rounded sides, disc distinctly bordered from explanate margin with longitudinal striation. Elytra with H-shaped postscutellar elevation and more or less regular rows of large punctures; intervals distinctly narrower than rows, partly with transverse wrinkles. Explanate margin distinctly bordered from disc by marginal row, strongly punctate, with honeycomb structure. Clypeus flat, punctate, with distinct lateral grooves. Prosternum with short collar. Claws with short pecten on inner margin and extremely short pecten on external margin. One species in Madagascar.

..... *Mahatsinia* SPAETH, 1919

- . Antennae with six basal, glabrous segments 9.

9. Elytral disc with large tubercles in posterior half:

Length: 7-9 mm. Body elongate, elytra somewhat wider than pronotum. Pronotum transverse, with broadly rounded sides, explanate margin gutter-like. Disc strongly convex, impunctate, glabrous or dull. Elytral disc with large tubercles in anterior half and behind the middle, and several small tubercles and folds on whole surface. Punctuation regular but rows broken by tubercles. Explanate margin gutter-like, ornamented by transverse folds, lateral margin usually shallowly crenulate. Clypeus slightly convex, with margins not carinate. Antennae moderately long, the third segment more than twice longer than the second. Venter of pronotum without antennal groove but head cavity bordered laterally by sharp carina. Claws with pecten only on inner margin. Two species in Africa south of Equator.

..... *Hybosinota* SPAETH, 1909

- . Elytral disc without tubercles in posterior half, sometimes with large folds 10.

10. Prosternal collar large, often with angulate anterior corners, prosternal process usually with longitudinal channel. Elytral sculpture strong, with large punctures, wrinkles or costae, surface often appears rugose. Claws with pecten only on internal margin:

Length: 6-12 mm. A heterogeneous genus with several subgenera. Body varying from elongate, parallelsided to stout, subtriangular; elytra more or less wider than pronotum. Pronotal sides rounded to subangulate, explanate margin moderately declivous to horizontal or gutter-like. Disc often ornamented by irregular wrinkles or regular striation, sometimes punctate, occasionally smooth. Elytral disc regularly convex, or gibbous, or with conical postscutellar tubercle, ornamented by more or less regular rows of large punctures and longitudinal elevations or/and irregular wrinkles or costae. Explanate margin moderately declivous to gutter-like, sometimes marginate laterally, coarsely punctate, with irregular wrinkles. Clypeus always elevated, sometimes with carinate margins. Antennal segment 3 usually more than 1.5 times longer than segment 2. Numerous (36) species in whole Afrotropical Region, including Madagascar.

- *Laccoptera* BOHEMAN, 1855
 -. Prosternal collar usually short, reduced, prosternal process usually flat or with shallow depression. Elytral sculpture faint, elytral disc smooth, only occasionally rugose. Claws usually with distinct pecten on both internal and external margins, but sometimes external pecten obsolete 11.

11. Clypeus distinctly elevated anterad of antennal insertions. External side of tibiae usually canaliculate on whole length. Body parallelsided to oval, depressed or regularly convex but never with conical postscutellar tubercles. Claws with pecten on both margins:

Length: 8-12 mm. Elytral base not or only slightly wider than pronotum. Pronotum semicircular with angulate posterior corners, explanate margin horizontal to gutter-like. Disc convex, punctate or smooth, without wrinkles or striation. Elytra depressed to regularly convex, punctation regular or completely irregular, sometimes very fine. Explanate margin narrow, moderately declivous to horizontal or gutter-like, distinctly bordered from disc only in species with regular elytral punctation. The genus is close to *Aspidimorpha*, and only elevated clypeus distinguishes it from all species of the latter. Other characters mentioned above may occur in many *Aspidimorpha* but never all together. Fourteen species in Africa except Madagascar.

- *Conchyloctenia* SPAETH, 1902
 -. Clypeus not or only slightly elevated anterad to antennal insertions. External side of tibiae usually canaliculate only in basal and distal parts. Body parallelsided to circular, often with conical postscutellar tubercle. Claws with pecten on both margins or external pecten obsolete:

Length: 5-17 mm. Extremely heterogeneous genus with several subgenera. Body varying from elongate to circular, elytral base not to distinctly wider than pronotum. Pronotum varying from semicircular with angulate posterior corners, to elliptical with broadly rounded sides. Disc convex, usually impunctate and glabrous, without ornamentation. Explanate margin moderately declivous, or horizontal, or gutter-like. Elytral disc depressed, or regularly convex, or gibbous, or with conical postscutellar tubercle. Punctuation of disc usually arranged in rows, but sometimes irregular, in most species fine, especially in posterior half of disc, sometimes strong, rugose. Explanate margin moderately declivous, or horizontal, or gutter-like, usually smooth, glabrous, with honeycomb structure, sometimes punctate or/and dull. Antennae slim, long, the third

segment usually more than twice longer than the second. About 100 species in whole Afrotropical Region including Madagascar. Many species are extremely variable in colour and structure, and the genus is one of the most difficult in taxonomical practice.

- *Aspidimorpha* HOPE, 1840
12. Antennae very long, filiform, in both sexes extending to metacoxae; only three basal segments glabrous, remainder dull and densely pubescent. Elytra always with conical postscutellar tubercle. Claws simple. Madagascar only:

Length: 7-11 mm. Body subtriangular to circular, elytral base distinctly wider than pronotum. Pronotum with broadly rounded sides, its maximum width slightly anted to the middle. Disc convex, smooth, glabrous, explanate margin very broad, smooth or slightly granulate but glabrous, with honeycomb structure. Elytral disc strongly convex, with large postscutellar tubercle. Punctuation of disc large, more or less regular, rows often broken by elytral relief. Explanate margin very broad, moderately declivous, distinctly bordered from disc by marginal row; surface smooth, or shallowly punctate, or slightly granulate, with honeycomb structure. Clypeus narrow, flat, with shallow lateral grooves. Prosternal process very broad, only slightly expanded apically. Tarsi broad, the last segment slightly longer than the third, but not reaching behind setae of sole. Four species only in Madagascar.

- *Hovacassis* SPAETH, 1952
- Antennae short to moderately long, never extending to metacoxae, with more than three basal glabrous segments. Elytra without or with postscutellar tubercle. Claws simple, apparently appendiculate, or appendiculate. Africa and Madagascar
- 13.
13. Prosternal collar with lateral incision 14.
- Prosternal collar without lateral incision 24.
14. Venter of pronotum with deep and long antennal groove extending from each side of head to explanate lateral part. The channel can accomodate whole antenna:

Length: 7-8 mm. Body oval, elytral base not wider than pronotum. Pronotum with angulate sides and maximum width distinctly behind the middle. Disc moderately convex, punctate but glabrous, explanate margin indistinctly bordered from disc, strongly declivous, punctate, without honeycomb structure. Elytral disc regularly convex, with large, regular punctuation. Intervals narrower than rows. Explanate margin narrow, strongly declivous, distinctly bordered from disc by marginal row, punctate, without honeycomb structure. Clypeus broad, punctate but glabrous, with distinct lateral grooves. Antennae short, the third segment about 1.5 times longer than the second. Prosternal collar short, lateral incision produced into short plate. Antennal channel sharply carinate and produced into distinct plate opposite to plate of prosternal incision but not connected with prosternal collar. Tarsi slender, the last segment not longer than the third. Claws with basal tooth. Three species in subsaharian region and East Africa.

- *Oocassida* WEISE, 1897
- Venter of pronotum without deep channel but often with short antennal groove on each side of head, the groove usually bordered externally by sharp carina 15.
15. Base of pronotum in front of humerus with deep incision, the incision in some species obsolete but then elytra without marginal row of punctures. Madagascar only:

Length: 5.5-8.5 mm. Body oval to subtriangular, base of elytra slightly wider than pronotum. Pronotum oval with sides rounded to subangulate, with maximum width in the middle, or slightly in front of

the middle. Disc moderately convex, indistinctly bordered from explanate margin, strongly punctured. Explanate margin strongly declivous, punctate, without honeycomb structure. Elytral disc convex to angulate in profile, strongly, densely, irregularly punctate; marginal row, if present, distinct only in anterior third of elytra. Humeral part of explanate margin often strongly protruding anterad. Clypeus broad, with shallow lateral grooves. Prosternal collar distinct, usually with lateral incision, but in small species the incision is obsolete. Antennal groove distinct, bordered externally by sharp or obtuse carina. Prosternal process moderately expanded apically, with longitudinal channel. Tarsi slender, the last segment slightly longer than the third. Claws simple. Five species described only from Madagascar.

- *Sphenocassis* SPAETH, 1911
 -. Base of pronotum in front of humerus without incision 16.
 16. Body strongly convex, sphaerical or cylindrical, explanate margin steeply declivous 17.
 -. Body moderately convex, or angulate in profile, explanate margin moderately declivous 19.
 17. Elytra and pronotum distinctly pubescent or with erect setae. Body cylindrical:

Length: 4.5-5.2 mm. Body elongate, parallelsided, to broadly oval, moderately to strongly convex. Base of elytra usually not wider than pronotum. Pronotum with subangulate to angulate sides. Disc indistinctly bordered from explanate margin, punctate. Explanate margin broad, punctate, without honeycomb structure. Elytral disc regularly convex, punctation coarse, more or less regular, sometimes disturbed by elytral impressions. Explanate margin in anterior half moderately broad, in posterior half very narrow, distinctly bordered from disc by marginal row, punctate. Clypeus broad, punctate, with deep lateral grooves. Venter of pronotum with antennal groove on each side of head, bordered externally by obtuse carina. Antennae short, the third segment longer than the second. The last tarsal segment shorter than the third. Two species in Africa south of Sahara except Madagascar.

- *Smeringaspis* SPAETH, 1924
 -. Elytra and pronotum not pubescent. Body hemispherical or oval 18.
 18. Claws with basal tooth:

Length: 4.8-6.2 mm. Body stout, extremely convex, explanate margin of elytra almost perpendicular. Base of elytra slightly wider than pronotum. Pronotum trapezoidal, with maximum width distinctly anterad to the middle. Disc moderately convex, indistinctly bordered from explanate margin, punctate. Explanate margin broad, punctate. Disc of elytra with small postscutellar elevation, irregularly punctate. Explanate margin broad, punctate, bordered from disc only in anterior half by irregular row of large punctures. Clypeus broad, without lateral grooves. The third antennal segment about twice shorter than the second. The last tarsal segment about twice shorter than the third. One species in northern part of East Africa.

- *Chelysida* FAIRMAIRE, 1882
 -. Claws simple:

Length: 4.5-8.0 mm. Body stout, strongly convex, oval, hemispherical, sometimes distinctly angulate in profile, explanate margin of elytra almost perpendicular. Base of elytra slightly wider than pronotum. Pronotum trapezoidal with maximum width in front of the middle. Disc indistinctly bordered from explanate margin, punctate. Explanate margin broad, punctate. Disc of elytra more or less regularly, strongly punctate. Explanate margin broad, punctate, distinctly bordered from disc by marginal row. Clypeus broad with shallow lateral grooves. Antennae short, the third segment shorter, as long as, or longer than the second. In some species lateral incision of prosternum with dorsal plate, and venter of pronotum with sharply bordered

plate opposite to the plate of prosternum. The last tarsal segment slightly shorter than the third. Four species in Africa south of Zaire.

- *Ischiocassis* SPAETH, 1917
 19. Elytra and pronotum pubescent and with erect setae (*Smeringaspis* sgen. *Luimbelia* SPAETH, 1952, see th. 17).

- Elytra and pronotum not pubescent, sometimes with extremely short erect setae
 20.

20. Claws simple. Body regularly convex 21.

- Claws with more or less developed basal tooth, if toothless then body distinctly angulate in profile or cylindrical 22.

21. Labrum with small tubercle in the middle. Pronotum broadly rounded on sides:

Length c. 5 mm. Body oval, distinctly converging posterad, regularly convex. Base of elytra distinctly wider than pronotum. Pronotum with disc moderately convex, distinctly bordered from explanate margin, sparsely punctate. Explanate margin narrow, rugose punctate. Disc of elytron with two longitudinal elevations, irregularly punctate, but punctures on sides of disc sometimes arranged in more or less regular rows. Explanate margin narrow, strongly declivous but not perpendicular, punctate, bordered from disc by irregular marginal row. Clypeus broad, punctate, without lateral grooves. Antennal segment 3 approximately as long as the second. Lateral incision of prosternum with small dorsal plate. Venter of pronotum with short antennal grooves bordered externally by obtuse carina. The last segment of tarsi longer than the third. One species in Arabian Pen. (gender: feminine; type species: *Nabathea pygmaea* SPAETH).

..... *Seminabathea* n. gen.
 - Labrum without tubercle. Pronotum with strongly angulate sides:

Length c. 6 mm. Body elongate, almost parallelsided. Base of elytra slightly wider than pronotum. Pronotum semicircular with maximum width at base. Disc indistinctly bordered from explanate margin, punctate. Explanate margin narrow, punctate. Disc of elytra moderately, regularly convex, irregularly punctate, with shallow postscutellar depressions and two longitudinal, obtuse costae. Explanate margin narrow, punctate, distinctly bordered from disc by marginal row. Clypeus flat, faintly punctate, without lateral grooves. Antennal segment 3 slightly longer than the second. Venter of pronotum with short antennal groove bordered externally by obtuse carina. The last segment of tarsi slightly shorter than the third. One species in East Africa.

- *Erbolaspis* SPAETH, 1924
 22. Pronotum semicircular, with maximum width at base and sides strongly angulate:

Length: 3.5-8.0 mm. Body subtriangular, more or less angulate in profile. Elytral base not or slightly wider than pronotum. Pronotum with disc indistinctly bordered from explanate margin, punctate. Explanate margin moderately broad, punctate. Disc of elytra irregularly punctate, usually with more or less developed primary costa, and usually with conical postscutellar tubercle, sometimes with transverse wrinkles, appears rugose. Explanate margin narrow, punctate, distinctly bordered from disc by marginal row. Clypeus broad, impunctate or faintly punctate, with faint lateral grooves converging in circle. The third antennal segment usually longer than the second, segments 8-10 not longer than wide. Venter of pronotum with short antennal groove bordered externally by sharp or obtuse carina. The last segment of tarsi not longer than the third. Claws simple or with small basal tooth. Several species in Africa except Madagascar.

..... *Acrocassis* SPAETH, 1924

- Pronotum elliptical, with maximum width in the middle and sides broadly rounded 23.
- 23. Smaller, below 6 mm. Legs usually mostly yellow. Elytra uniformly yellow to green, sometimes with red triangular spot at base:

Length: 4-6 mm. Body subtriangular or oval, regularly convex to slightly angulate in profile. Base of elytra more or less wider than pronotum. Pronotal disc indistinctly bordered from explanate margin, punctate and microreticulate, dull. Explanate margin narrow, punctate. Elytral disc densely, irregularly punctured, usually with indistinct longitudinal primary costa. Explanate margin strongly narrowed posterad, bordered from disc only in anterior half, punctate. Clypeus broad, with faint lateral grooves. Antennal segment 3 about twice shorter than 2, segments 8-10 wider than long. Venter of pronotum with short antennal groove, bordered externally by sharp or obtuse carina. The last segment of tarsi not longer than the third. Claws usually with basal tooth, occasionally simple. Four species in Africa south of Sahara except Madagascar.

..... *Rhytidocassis* SPAETH, 1941

- Larger, length above 6 mm. Legs usually mostly black. Elytra occasionally uniformly yellow, usually with red, brown or black pattern:

Body subtriangular, angulate in profile. Base of elytra distinctly wider than pronotum. Pronotum with disc distinctly bordered from explanate margin, punctate. Explanate margin broad, punctate. Disc of elytra with distinct postscutellar depressions, strongly, irregularly punctate. Explanate margin broad, punctate, distinctly bordered from disc by marginal row. Clypeus broad, faintly punctate, with faint lateral grooves converging in circle. Antennal segment 3 shorter than 2, segments 8-10 longer than wide. Venter of pronotum with short antennal groove bordered externally by sharp to obtuse carina. The last segment of tarsi not longer than the third. Claws simple. One, extremely variable species, in the woodland region of West and Central Africa.

..... *Trigonocassis* HINCKS, 1950

- 24. The last segment of tarsi about twice longer than the third:

Length: 3.2-3.5 mm. Body oval, slightly converging posterad. Base of elytra distinctly wider than pronotum. Pronotum subpentagonal, with broadly rounded sides, disc regularly convex, strongly punctate, indistinctly bordered from explanate margin. Explanate margin of pronotum narrow, rugose punctate, elytral disc regularly convex, strongly, irregularly punctate, but punctures along suture sometimes arranged in partly regular rows. Surface of disc with extremely short, erect setae. Explanate margin of elytra distinctly bordered from disc by marginal row, narrow, especially in posterior third, punctate. Clypeus broad, punctate, without lateral grooves. Antennae short, the third segment shorter than the second. Prosternal collar with shallow pit on each side but without distinct lateral incision. Venter of pronotum without antennal groove. One species in the Arabian Peninsula.

..... *Nabathea* SPAETH, 1911

- The last segment of tarsi not or only slightly longer than the third 25.
- 25. Tarsal claws with basal tooth 26.
- Tarsal claws simple 29.
- 26. Venter of pronotum with deep groove on each side of head, usually bordered externally by sharp carina 27.
- Venter of pronotum without antennal groove 28.
- 27. Prosternal alae with large pits on sides. Pronotum and elytra strongly, irregularly punctate, with no marginal row between disc and explanate margin:

Length: 9-12 mm. Body elongate-oval to subtriangular, regularly convex to strongly angulate in profile. Base of elytra slightly wider than pronotum. Pronotum with broadly rounded sides, disc indistinctly bordered from explanate margin. Elytral disc usually with shallow postscutellar depressions and sometimes with conical postscutellar tubercle. Explanate margin steeply declivous, almost perpendicular. Clypeus broad, strongly punctate, with moderately deep lateral grooves. Labrum with two small spines on sides of medial emargination. The third antennal segment distinctly longer than the second. Prosternal process deeply channeled longitudinally. The last tarsal segment not or slightly longer than the third. Four species in the Zambesi region of southern Africa.

..... *Psalidoma* SPAETH, 1899

- . Prosternal alae without large pits on sides. Pronotum usually impunctate, elytra more or less regularly punctate with distinct marginal row:

Length: 4.5-8.0 mm. Body oval to circular, usually regularly convex or slightly gibbous. Base of elytra more or less wider than pronotum. Pronotum with broadly rounded sides, disc convex, distinctly bordered from explanate margin, usually smooth, glabrous. Explanate margin broad, impunctate, transparent, with honeycomb structure. Elytral puncturation usually fine, arranged in more or less regular rows, intervals smooth, glabrous. Explanate margin moderately declivous, smooth or faintly punctate, transparent, with honeycomb structure. Clypeus flat to convex, without or with lateral grooves. The third antennal segment distinctly longer than the second. Antennal groove deep, long, bordered externally by sharp carina. The last segment of tarsi not longer than the third. About 35 species in whole Afrotropical Region including Madagascar.

..... *Chiridopsis* SPAETH, 1924

- 28. Elytra pubescent or/and with erect setae. Explanate margin of elytra always narrower than the last two intervals together:

Length: 3.0-3.7 mm. Body oval, regularly convex, elytral base slightly wider than pronotum. Pronotum with broadly rounded sides. Disc indistinctly bordered from explanate margin, punctate. Explanate margin narrow, partly transparent, usually rugose punctate. Puncturation of elytral disc regular, strong, intervals usually narrower than rows, sometimes hardly visible. Explanate margin strongly declivous, extremely narrow, punctate. Antennae short, third segment shorter than the second. Prosternal collar large. Venter of pronotum usually shallowly impressed along each side of head but without antennal grooves. The last segment of tarsi approximately as long as the third. Claws with extremely large basal tooth. Six species in East and South Africa.

..... *Trichaspis* SPAETH, 1911

- . Elytra bare, if pubescent then explanate margin of elytra distinctly wider than the last two intervals together:

Length: 3.3-10 mm. An extremely heterogeneous genus. Body varying from parallelsided to circular, depressed, or regularly convex, or gibbous, or with conical postscutellar tubercle. Base of elytra not to distinctly wider than pronotum. Pronotal sides broadly rounded to angulate, disc more or less bordered from explanate margin, often smooth and glabrous, sometimes punctate to rugose, or with regular striation. Explanate margin usually broad, transparent, smooth, with honeycomb structure, sometimes punctate to rugose. Puncturation of elytral disc varying from regular to completely irregular, disc often ornamented by relief, tubercles or wrinkles. Explanate margin moderately declivous to horizontal, sometimes strongly declivous, usually smooth and transparent, sometimes punctate to rugose, with honeycomb structure. Clypeus broad to very narrow, with or without lateral grooves, smooth and glabrous to punctate and dull.

Antennae short to long, the third segment usually longer than the second. The last segment of tarsi not longer than the third. Claws simple or appendiculate, or simple but appearing appendiculate due to distally projecting flanks of claw segment. Numerous species in whole Afrotropical Region including Madagascar.

..... *Cassida* LINNAEUS, 1758

29. Body pubescent. Large species with trapezoidal pronotum. Clypeus very short, not longer than the first antennal segment:

Length: 9-13 mm. Body subtriangular, regularly convex to strongly angulate in profile. Base of elytra distinctly wider than pronotum, humeral angles strongly protruding anterad, reaching to half length of pronotum. Pronotum trapezoidal with maximum width anterad to the middle, disc indistinctly bordered from explanate margin, punctate. Elytral disc irregularly punctate, puncturation along middle of each elytron often denser than in sutural and marginal parts, sometimes rugose. Explanate margin strongly declivous, punctate, distinctly bordered from disc by marginal row. Clypeus elevated before antennal insertions. Antennae short, the third segment slightly longer than the second. Venter of pronotum without antennal groove. The last segment of tarsi about as long as the third. Five species in South Africa.

..... *Basipta* CHEVROLAT, 1842

- Body not pubescent, sometimes with erect setae or scarce hair, if pubescent then length below 5 mm. Clypeus usually longer than the first antennal segment 30.
- 30. Venter of pronotum with deep antennal grooves 31.
- Venter of pronotum without antennal grooves 32.
- 31. Base of pronotum deeply incised at humerus, if incision indistinct then whole surface of elytra irregularly punctate.

..... *Sphenocassis* (part)

- Base of pronotum in front of humerus without incision. Puncturation of elytral disc partly regular:

Length: 4.5-6.5 mm. Body oval, regularly convex, almost cylindrical. Base of elytra slightly wider than pronotum. Pronotum with broadly rounded sides and maximum width in front of the middle. Disc distinctly bordered from explanate margin, smooth to punctate. Elytral disc strongly punctate, punctures usually arranged in regular rows, but sometimes disturbed by transverse wrinkles or simple additional punctures. Intervals usually narrower than rows. Explanate margin steeply declivous, almost perpendicular, shallowly to strongly punctate, distinctly bordered from disc by marginal row. Clypeus broad, with deep lateral grooves, microreticulate and more or less punctate, dull. Border between prosternal alae and venter of pronotum strongly elevated. The third antennal segment distinctly longer than the second. Three species in Africa south of Equator.

..... *Fornicocassis* SPAETH, 1917

- 32. Explanate margin of elytra steeply declivous, almost perpendicular 33.
- Explanate margin of elytra moderately declivous to horizontal 35.
- 33. Elytral puncturation partly regular, explanate margin narrow, not wider than the last three elytral intervals together:

Length: 3.0-3.6 mm. Body oval, slightly narrowed posterad, regularly convex. Base of elytra wider than pronotum. Pronotum with broadly rounded sides and maximum width somewhat anterad to the middle. Disc indistinctly bordered from explanate margin, microreticulate but impunctate. Puncturation of elytral disc in sutural and marginal parts more or less regular, in the middle of each elytron irregular, strong, intervals narrower than rows. The sixth interval in posterior half slightly elevated, widened and glabrous. Explanate

margin punctate, distinctly bordered from disc by marginal row. Clypeus narrow, strongly punctate, with faint lateral grooves. The third antennal segment shorter than the second. The last segment of tarsi approximately as long as the third. One species in South Africa.

- *Limnocassis* SPAETH, 1952
 -. Elytral puncturation irregular 34.

34. Small, length below 4 mm, clypeus without or with faint lateral grooves:

Length: 3-4 mm. Body cylindrical to narrowed posterad, regularly convex or with large tubercles. Base of elytra slightly wider than pronotum. Pronotum with subangulate sides and maximum width distinctly in front of the middle. Disc usually indistinctly bordered from explanate margin, shallowly to strongly punctate. Explanate margin strongly declivous, punctate. Elytra without marginal row or row hardly marked in anterior third of disc. Clypeus broad to moderately narrow, lateral grooves, when present, converging in circle. Antennae short, the third segment not longer than the second. Prosternal process in the middle extremely narrow. The last segment of tarsi distinctly shorter to slightly longer than the third. Associated with halophytes. One species in East Africa south to N Tanzania, and four species in South Africa.

- *Oxylepus* DESBROCHERS, 1884
 -. Longer than 4.5 mm, clypeus with deep lateral grooves:

Length: 5-7 mm. Body oval, regularly convex. Base of elytra slightly wider than pronotum. Pronotum with angulate sides and maximum width in or slightly in front of the middle. Disc indistinctly bordered from explanate margin, its surface slightly rough, shallowly punctate or with small granulation or wrinkles. Explanate margin broad, rough. Elytral disc with distinct postscutellar impressions, sometimes with two or three longitudinal costae. Explanate margin broad, distinctly bordered from disc by marginal row, punctate, rough. Clypeus broad, lateral grooves converging in triangle. The third antennal segment distinctly longer than the second. The last segment of tarsi about as long as the third. Three species in South Africa.

- *Orobiocassis* SPAETH, 1934
 35. Clypeus distinctly elevated in front of antennal insertions. In most species elytra with black pattern on yellow or brown background 36.
 -. Clypeus flat or only slightly elevated. Elytra often uniformly yellow 37.

36. Pronotal base bisinuate, maximum width of pronotum at base, sides angulate:

Length: 5-7 mm. Body regularly oval, slightly depressed. Base of elytra slightly wider than pronotum. Pronotum semicircular, disc distinctly bordered from explanate margin, smooth, glabrous. Elytral disc regularly punctate, intervals distinctly wider than rows. Explanate margin broad, smooth, distinctly bordered from disc by marginal row. Clypeus short, triangular, between clypeus and antennal insertions deep sulcus. Prosternal collar long, subangulate on sides. Head cavity on each side with sharp carina. The third antennal segment distinctly longer than the second. The last segment of tarsi approximately as long as the third. One species in Madagascar.

- *Andevocassis* SPAETH, 1924
 -. Pronotal base not bisinuate, sides rounded to subangulate, with maximum width in or in front of the middle:

Length: 5-11 mm. Body broadly oval, depressed to regularly convex. Base of elytra more or less wider than pronotum. Pronotal disc distinctly bordered from explanate margin, smooth or punctate. Explanate margin broad, moderately declivous to horizontal, smooth. Puncturation of elytral disc regular, but rows sometimes broken by elytral relief. Intervals distinctly wider than rows, smooth or punctate. Explanate margin broad, moderately declivous to gutter like, smooth or with transverse wrinkles. The third antennal

segment distinctly larger than the second. Prosternal collar with subangulate sides. Head cavity on each side with sharp carina. The last segment of tarsi about as long as the third. About 30 species in whole Africa except Madagascar.

- *Aethiopocassis* SPAETH, 1924
 37. Pronotal base bisinuate, with sides angulate to acute, strongly protruding posterad.
 *Cassida* (part)
 - Pronotal base not bisinuate, sides never protruding posterad 38.
 38. Prosternal collar long, connected with head cavity collar. Elytra uniformly green or yellow, irregularly punctate, marginal row distinct only in anterior third of each elytron:

Length: 8-12. Body almost circular, subangulate in profile. Base of elytra not or only slightly wider than pronotum. Pronotum broad, with maximum width slightly in front of base, sides rounded. Disc unbordered from explanate margin, microreticulate, indistinctly punctate. Explanate margin on each side with shallow striation. Elytral punctation fine, dense. Explanate margin very broad, punctured like the disc or slightly coarser. Clypeus flat, without lateral grooves. Eyes small, gena almost as long as half eye width. The third antennal segment distinctly longer than the second. The last segment of tarsi slightly longer than the third. One species in forests of Central and East Africa and in Madagascar.

- *Tegocassis* SPAETH, 1924
 - Prosternum with short collar, head cavity usually without distinct collar. Elytra often with dark pattern, often regularly punctate, marginal rows usually distinct on whole length of elytron:
 *Cassida* (part, only simple-clawed species)

V. REVIEW OF SPECIES

Tribe *Epistictinini* SPAETH, 1952

Epistictitae SPAETH in HINCKS, 1952: 331.

Epistictinini: SPAETH in HINCKS, 1952: 331; SEENO and WILCOX, 1982: 171.

Genus: *Androya* SPAETH, 1911

Androya SPAETH, 1911: 239 (type species: *Metriopecta rubrocostata* FAIRMAIRE, 1898, designated by HINCKS, 1952); HINCKS, 1952: 331; SEENO and WILCOX, 1982: 171.

Primitive cassids of hispid appearance. Elongate oval to elongate. Explanate margin of pronotum and elytra extremely narrow. Head visible from above. Pronotum trapezoidal with shallowly emarginate anterior margin. Elytra depressed to regularly convex, regularly or irregularly punctate, sometimes with longitudinal costae. Prosternal collar large but mouth parts mostly free. The distance between antennal insertions as wide as or slightly wider than the first antennal segment. Antennae stout, apical segments dull and longitudinally punctate to striate. Claws simple.

Distribution: only Madagascar.

KEY TO THE SPECIES

1. Elytral puncturation mostly regular (figs. 9, 14) 2.
- Elytral puncturation mostly irregular (figs. 8, 20, 25) 3.
2. Elytra without costae (fig. 14), intervals 3 and 5 only slightly wider than the neighbouring ones. Body broad, oval, sides of elytra regularly rounded. Pronotum black, elytra brown:
..... *A. obscuricollis*
- Elytral intervals 3 and 5 c. twice wider than the neighbouring ones, convex, form longitudinal costae (fig. 9). Body narrow, almost parallelsided. Pronotum and elytra yellow to brown:
..... *A. longula*
3. Surface of pronotum impunctate (figs. 8, 25). Elytra without distinct longitudinal costae, intervals 3 and 5 only slightly convex. Body uniformly yellow to black
..... 4.
- Surface of pronotum strongly punctured (fig. 20). Elytra with distinct longitudinal costae, intervals 3, 5, 7, and 9 strongly convex. Elytra metallic blue with reddish-brown costae:
..... *A. rubrocostata*
4. Pronotum with median, longitudinal impression. Puncturation of elytra finer, intervals 3 and 5 wider:
..... *A. impressicollis*
- Pronotum without median, longitudinal impression. Puncturation of elytra coarser, intervals 3 and 5 narrower:
..... *A. tenuicostata*

Androya impressicollis (FAIRMAIRE, 1901)

(fig. 8)

Metriopecta impressicollis FAIRMAIRE, 1901: 246 (holotype in MHNP).*Androya impressicollis*: SPAETH, 1911: 240, 1914: 20.

DESCRIPTION

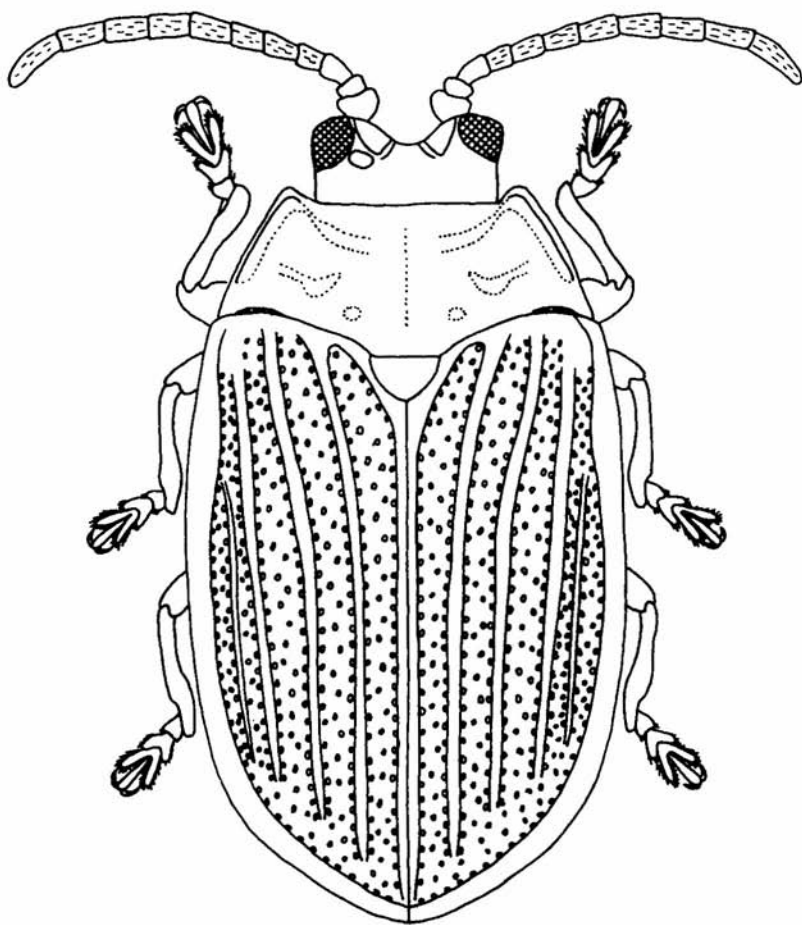
Length: 7.9 mm, width: 3.9 mm, pronotum length: 1.3 mm, pronotum width: 3.3 mm. Body elongate oval (fig. 8).

Uniformly yellow, only the last antennal segment infusate, and basal pronotal and elytral serrulation black.

Pronotum trapezoidal, anterior margin shallowly emarginate. Sides straight, basal margin except praescutellar lobe almost straight, strongly serrulate. Anterior corners obtuse. Disc with longitudinal medial impression, on each side with oblique furrow connected with lateral impression and irregular impression slightly behind the middle, and with two pits close to basal margin. Explanate margin very narrow, deeply

impressed, forms a narrow gutter. Marginal fold of each side of pronotum broad, especially in anterior third.

Scutellum subpentagonal. Base of elytra as wide as base of pronotum. Maximum width of elytra slightly behind the middle. Basal margin strongly serrulate. Disc depressed, puncturation between intervals irregular, but each interval margined by regular row of large punctures. Space between punctures distinctly smaller than puncture diameter. Intervals 1, 3, 5, 7, 9 unpunctured and slightly elevated but do not form distinct costae. Marginal row distinct. Explanate margin very narrow, forms a gutter, unpunctured, glabrous, side double margined. Surface of elytra between punctures glabrous.



8. *Androya impressicollis*, dorsal view

Head large. Clypeus extremely short, sharply margined, antennal insertions almost touching anterior margin of clypeus. Labrum very narrow, transverse. Antennae stout, in male the first antennal segment distinctly larger than in female. Length ratio of antennal segments: 100:52:72:76:80:80:84:88:88:88:140. Segment 3 distinctly wider than 2.

Prosternall collar large, without transverse sulci. Prosternal process strongly expanded apically, in the middle with distinct impression.

Legs stout, unmodified, tarsi broad, the last segment slightly longer than the third but not extending behind marginal setae. Claws simple, without micropecten.

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar.

REMARKS

It is known from a single, not fully sclerotized and partly damaged specimen. It is very similar to *A. tenuescostata*. Both species are uniformly yellow or brown, with no metallic tint, uneven intervals do not form distinct costae, puncturation of even intervals mostly irregular. *A. impressicollis* differs in pronotal disc with median, longitudinal impression (regularly convex in *A. tenuescostata*), pronotal puncturation smaller, and uneven intervals slightly broader. Lateral margin of pronotum in anterior third is in *A. impressicollis* distinctly wider than in posterior half, while in *A. tenuescostata* this margin is in anterior third as wide as in posterior half.

MATERIAL EXAMINED

MADAGASCAR: Hukuru Perru, 1 (holotype, MHNP).

Androya longula (FAIRMAIRE, 1901)

(figs. 9-13, 43)

Metriopecta longula FAIRMAIRE, 1901: 84 (syntypes in MM).

Androya longula: SPAETH, 1911: 240; 1914: 20.

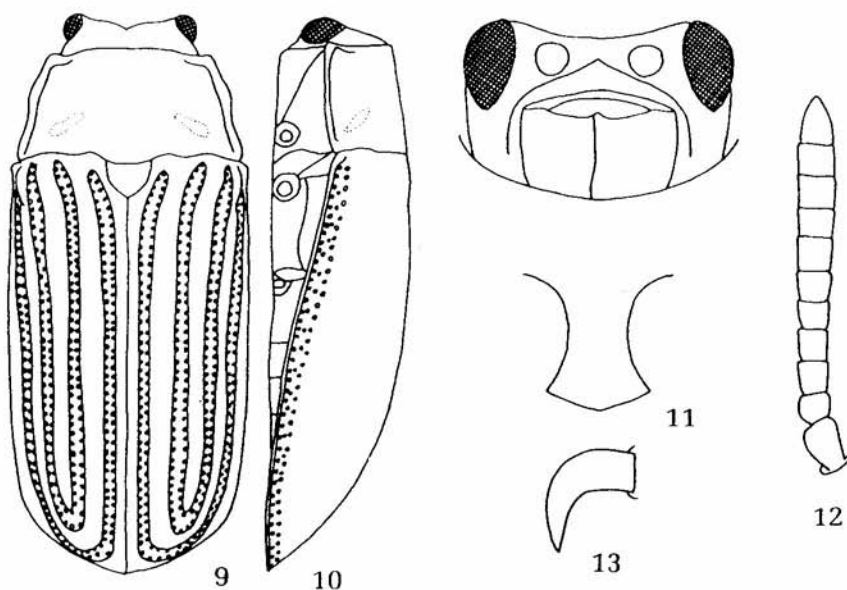
DESCRIPTION

Length: 7.0-8.1 mm, width: 3.3-3.8 mm, pronotum length: 1.7-1.9 mm, pronotum width: 3.0-3.4 mm. Body elongate, parallelsided (fig. 9).

Head, pronotum and elytra uniformly yellow to brown, elytral punctures usually with darker centre. Ventrites dark brown, margins of thoracic plates often darker, blackish. Antennae black except two basal segments, which are dark brown on upperside, pale brown to brown on underside.

Pronotum trapezial, anterior margin shallowly emarginate, anterior corners rounded. Sides in front of the middle slightly concave. Basal margin slightly bisinuate. Disc regularly convex, without median impression or carina, with deep oblique impression on sides near to base, in the middle with two small pits. Surface of disc impunctate, glabrous. Explanate margin very narrow, forms a deep gutter.

Scutellum subpentagonal. Base of elytra as wide as base of pronotum. Elytral disc regularly convex (fig. 10). Uneven intervals convex, form longitudinal costae, even intervals flat, each with two regular rows of punctures, only the last interval between two regular rows with additional irregular punctures. Marginal row distinct. Surface of disc smooth, glabrous. Explanate margin very narrow, forms a shallow gutter. Lateral margin double margined.



9-13. *Androya longula*. 9 - body in dorsal view, 10 - body in lateral view, 11 - head nad prosternum, 12 - antenna, 13 - tarsal claw

Head large, clypeus very short, as long as the second antennal segment (fig. 11). Antennae short, length ratio of antennal segments: 100:50:86:81:77:77:81:81:81:131. Segment 2 very short, segment 3 about twice longer than 2 (fig. 12).

Prosternal collar large, with sides distinctly anngulate, without transverse sulci. Prosternal process moderately expanded apically (fig. 11), with shallow impression.

Legs stout, unmodified. Tarsi moderately broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws simple (fig. 13).

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar (fig. 43).

REMARKS

It is a unique species. It is the only species with elytra longitudinally costate and regularly punctate. Only *A. rubrocostata* has regular longitudinal costae but differs in pronotal disc strongly punctate (impunctate in *A. longula*) and elytra with metallic tint (yellow to brown in *A. longula*). *A. obscuricollis* has also regular rows of punctures but differs in broad body (elongate in *A. longula*) and elytra without costae (costate in *A. longula*).

MATERIAL EXAMINED

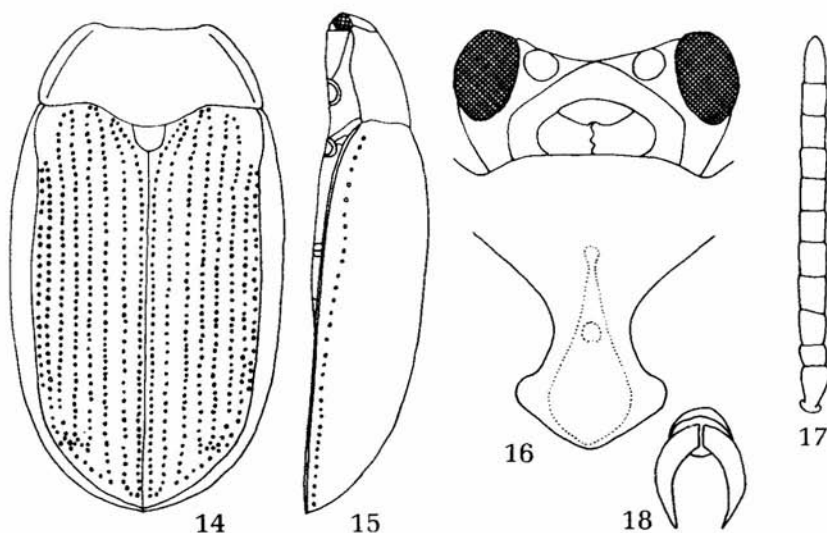
MADAGASCAR: Plateau de l'Androy, Reg. d'Ambovombe, 7 (syntypes, MM).

***Androya obscuricollis* (FAIRMAIRE, 1903)**

(figs. 14-18, 43)

Metropepla obscuricollis FAIRMAIRE, 1903: 10 (syntypes in MM); XAMBEU, 1905: 151.

Androya obscuricollis SPAETH, 1911: 241 (syntypes in MM); 1914: 20 (as syn. and hom.).



14-18. *Androya obscuricollis*: 14 - body in dorsal view, 15 - body in lateral view, 16 - head and prothorax, 17 - antenna, 18 - tarsal claw

DESCRIPTION

Length: 9.2-10.5 mm, width: 5.4-6.0 mm, pronotum length: 2.2-2.6 mm, pronotum width: 4.5-4.9 mm. Body oval (fig. 14).

Head, pronotum, scutellum, thorax, legs, and antennae black. Elytra brown, abdomen brown, basal sternites more or less infusate.

Pronotum trapezoidal, anterior margin shallowly emarginate. Sides straight, anterior corners broadly rounded. Basal margin except praescutellar lobe almost straight, serrulate. Disc regularly convex, with no distinct impressions, median pits small, shallow, in some specimens hardly marked. Surface of disc smooth, glabrous. Explanate margin very narrow, in posterior half slightly broader than in anterior, gutter-like.

Scutellum almost semicircular. Elytral base as wide as pronotal base. Disc depressed (fig. 15), with 9 regular rows of punctures, only the last interval irregularly punctate. Punctures small, distance between punctures c. half puncture diameter. All intervals flat or only slightly convex, uneven intervals only slightly wider than even ones. Surface of intervals smooth, glabrous. Marginal row distinct. Explanate margin forms a gutter, narrow, about as wide as the last interval. Lateral margin double margined.

Head large. Clypeus very short, as long as length of the second antennal segment (fig. 16). Labrum very narrow, transverse. Antennae short, but longer than in other species of the genus. Length ratio of antennal segments: 100:51:96:110:96:100:103:89:89:100:134. Segment 2 very short, c. twice shorter than 3 (fig. 17).

Prosternal collar large, without transverse sulci, prosternal process strongly expanded apically, in the middle with deep pit, and often with longitudinal shallow impression (fig. 16).

Legs stout, unmodified. Tarsi broad, the last segment distinctly longer than the third, extending behind marginal setae. Claws simple (fig. 18).

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar (fig. 43).

REMARKS

It is the largest species in the genus. It differs distinctly in regularly punctate elytra without longitudinal costae. It is the only species with black pronotum. At first glance it resembles *Pseudandroya livigstonei* from Africa, but *A. obscuricollis* distinctly differs in free mouth parts, and pronotal base not bisinuate.

MATERIAL EXAMINED

MADAGASCAR: Diego Suarez, 8 (syntypes of *A. obscuricollis* FAIRM. and *A. obscuricollis* SP., MM).

***Androya rubrocostata* (FAIRMAIRE, 1898)**

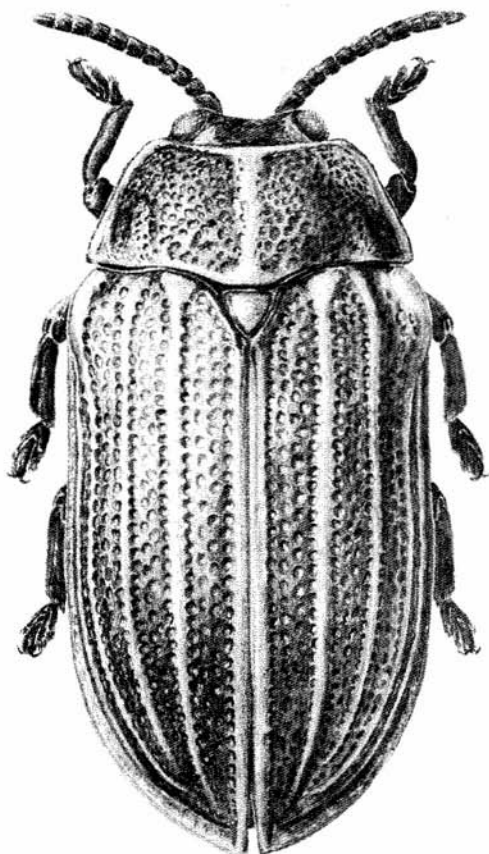
(figs. 19-24, 43)

Metriopecta rubrocostata FAIRMAIRE, 1898: 258 (syntypes in MM); HINCKS, 1952: 331.*Androya rubrocostata*: SPAETH, 1911: 240; 1914: 20

DESCRIPTION

Length: 7.0-9.2 mm, width: 3.9-4.8 mm, pronotum length: 2.0-2.4 mm, pronotum width: 3.5-4.0 mm. Body elongate-oval (fig. 19).

Head, pronotum except margins and median longitudinal elevation, elytra except margins and elevated intervals metallic blue. In immature, not fully sclerotized specimens metallic tint absent or indistinct. Pronotal and elytral margins, median

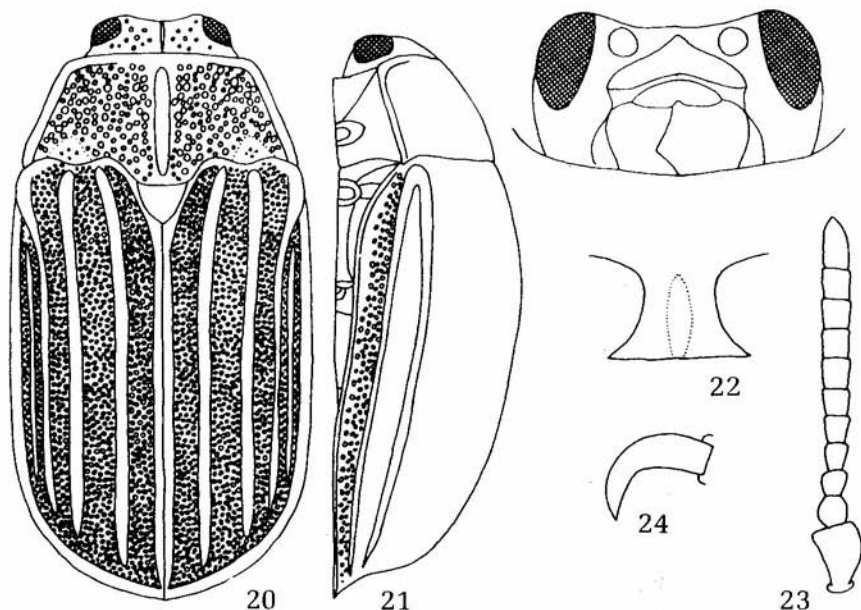
19. *Androya rubrocostata*, dorsal view

longitudinal elevation of pronotal disc, scutellum and elytral costae reddish-brown to purple-red. Ventrites in fully sclerotized specimens dark brown to black, in immature specimens yellowish-brown. Antennae black, except brown ventral side of the first segment.

Pronotum trapezial, anterior margin shallowly emarginate, anterior corners rounded. Sides straight, basal margin except praescutellar lobe slightly bisinuate. Disc regularly convex, with narrow, median, longitudinal elevation. Surface of disc strongly, coarsely punctured (fig. 20). Punctures almost touching each other and surface appears rugose. Surface of longitudinal elevation smooth, glabrous. Explanate margin extremely narrow, forms a gutter.

Scutellum subpentagonal. Base of elytra as wide as base of pronotum. Disc regularly convex (fig. 21). Uneven intervals form narrow longitudinal costae. Surface between costae strongly, densely, irregularly punctured. Space between punctures distinctly narrower than puncture diameter. Surface of elevated intervals smooth, glabrous. Marginal row distinct. Explanate margin subhorizontal, very narrow, forms a gutter. Lateral margin double margined.

Head large (fig. 22). Clypeus very short, as long as the second antennal segment. Labrum very narrow, transverse. Antennae stout, length ratio of antennal segments: 100:45:48:42:45:45:63:54:66:66:112. First segment in male is distinctly larger than in female with external corner angulate. The third segment only slightly longer than the second (fig. 23).



20-24. *Androya rubrocostata*: 20 - body in dorsal view, 21 - body in lateral view, 22 - head and prothorax, 23 - antenna, 24 - tarsal claw

Prosternal collar large, without transverse sulci, prosternal process strongly expanded apically, in the middle with large impression (fig. 22).

Legs stout, unmodified. Tarsi broad, the last segment longer than the third but not extending behind marginal setae. Claws simple (fig. 24).

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar (fig. 43).

REMARKS

It is a unique species. It is the only species of the genus with pronotum and elytra with metallic tint and pronotal disc punctured.

MATERIAL EXAMINED

MADAGASCAR: forêt de Fito, 1 (MRAC); Madagascar, 1 (syntype, MM); Plateau de l'Androy, Reg. d'Ambovombe, 7 (syntypes, MM).

Androya tenuecostata (FAIRMAIRE, 1899)

(figs. 25-29)

Metriopecta tenuecostata FAIRMAIRE, 1899: 556 (syntypes in MM).

Androya tenuecostata: SPAETH, 1911: 240; 1914: 20.

DESCRIPTION

Length: 6.2-7.3 mm, width: 3.6-4.0 mm, pronotum length: 1.4-1.6 mm, pronotum width: 2.9-3.2 mm. Body elongate oval (fig. 25).

Uniformly yellow to brown, only antennal segments 5-11 and basal elytral and pronotal serrulation black.

Pronotum trapezoidal, anterior margin shallowly emarginate, head visible from above. Sides straight, anterior corners obtuse. Basal margin except praescutellar lobe almost straight, strongly serrulate. Disc regularly convex, without median longitudinal impression, but with deep transverse subbasal and subapical impressions. Each side of subbasal impression with small pit. Side of disc with indistinct oblique impression. Surface of disc smooth, glabrous. Explanate margin extremely narrow, forms a gutter. Lateral margin of the gutter very narrow, in anterior half as wide as in posterior.

Scutellum subpentagonal. Base of elytra as wide as base of pronotum, anterior margin strongly serrulate. Disc depressed (fig. 26), between uneven intervals irregularly punctured but each uneven interval margined by regular row of punctures. Punctures large and dense, space between punctures smaller than puncture diameter,

in marginal interval punctures almost touching each other and surface appears slightly rugose. Uneven intervals unpunctured and slightly elevated, as wide as or slightly wider than puncture diameter. Surface between punctures and elevated intervals smooth, glabrous. Marginal row distinct. Explanate margin subhorizontal, very narrow, about twice wider than punctures in marginal row, surface smooth and glabrous. Lateral margin double margined.

Head large. Clypeus extremely short, hardly marked, antennal insertions almost touching anterior margin of clypeus (fig. 27). Labrum very narrow, transverse. Antennae stout, in male the first antennal segment distinctly larger than in female. Length ratio of antennal segment: 100:52:72:76:80:80:84:88:88:88:140. Segment 3 distinctly longer than 2 (fig. 28).

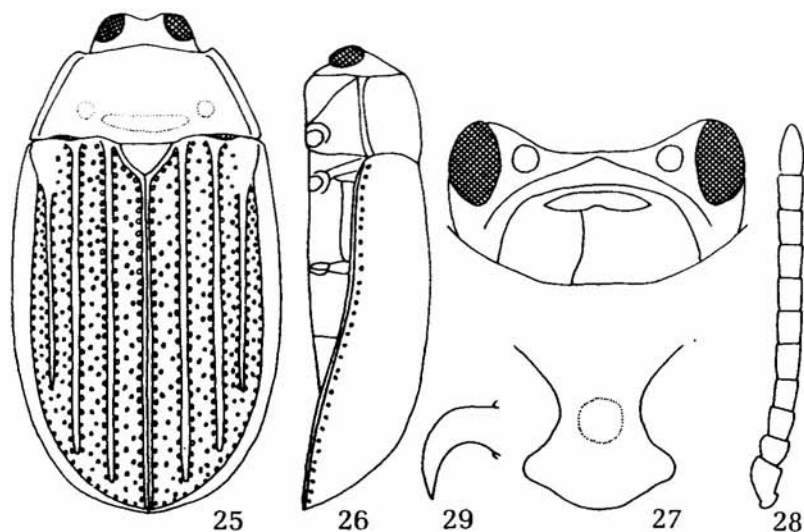
Prosternall collar large, without transverse sulci. Prosternal process strongly expanded apically, in the middle with distinct impression (fig. 27).

Legs stout, unmodified, tarsi broad, the last segment slightly longer than the third but not extending behind marginal setae. Claws simple, without micropecten (fig. 29).

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar.



25-29. *Androya tenuecostata*: 25 - body in dorsal view, 26 - body in lateral view, 27 - head and prosternum, 28 - antenna, 29 - tarsal claw

REMARKS

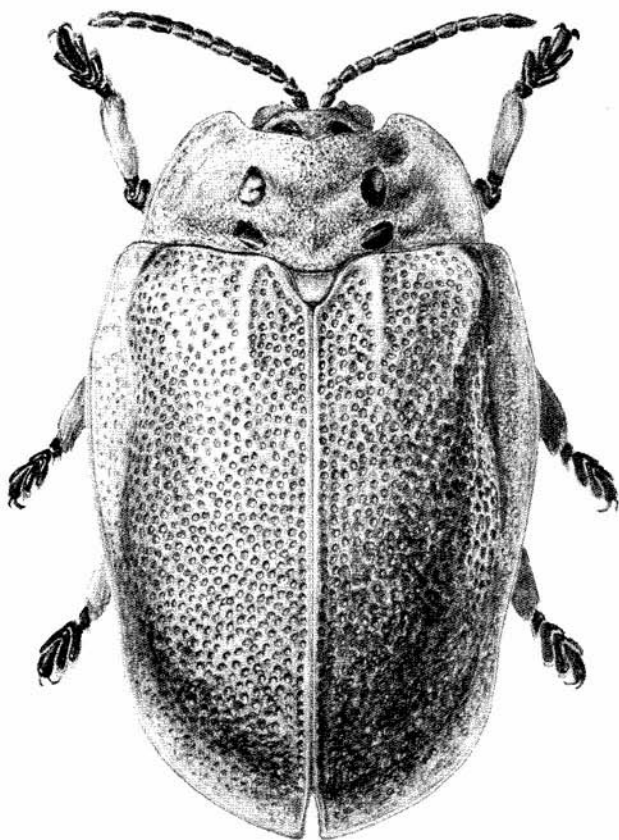
See remarks under *Androya impressicollis*.

MATERIAL EXAMINED

MADAGASCAR: Suberbieville, 5, H. PERRIER (syntypes, 4 MM, 1 LB).

Genus: *Metriopepla* FAIRMAIRE, 1882

Metriopepla FAIRMAIRE, 1882: 57 (type species: *Epistictia inornata* WATERHOUSE, 1877 (= *Metriopepla lividula* FAIRMAIRE, 1882), by monotypy); SPAETH, 1911: 241; HINCKS, 1952: 331; SEENO and WILCOX, 1982: 171.



30. *Metriopepla inornata*, dorsal view

Primitive cassids of hispoid appearance. Elongate oval. Head visible from above. Pronotum semicircular with deeply emarginate anterior margin, explanate margin indistinctly bordered from disc. Pronotal base straight. Pronotal and elytral disc strongly, irregularly punctate, no marginal row. Mouth parts free. Clypeus short and broad. Antennae stout, the limits between basal and distal segments indistinct. Distal segments dull, elongate punctate to striate.

Distribution: Ivory Coast, East and eastern part of Central Africa.

***Metriopecta inornata* (WATERHOUSE, 1877)**

(figs. 30-36)

Epistictia inornata WATERHOUSE, 1877: 229 (type in ?).

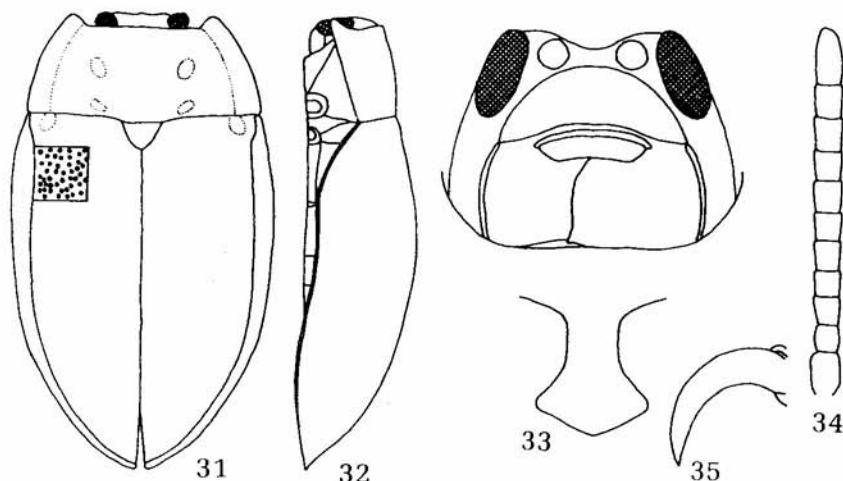
Metriopecta inornata: WEISE, 1905: 334; SPAETH, 1909: 267; 1911: 241; 1914: 19.

Metriopecta lividula FAIRMAIRE, 1882: 57 (type in MHNP); WEISE, 1905: 334 (as syn. of *inornata*); SPAETH, 1911: 240; 1914: 20.

Epistictia quadripunctata LINELL, 1895: 696 (type in USNM); SPAETH, 1909: 267 (as syn. of *inornata*); 1914: 20.

DESCRIPTION

Length: 8.0-9.9 mm, width: 4.7-5.9 mm, pronotum length: 1.8-2.0 mm, pronotum width: .4.0-4.6 mm. Body elongate-oval (fig. 30).

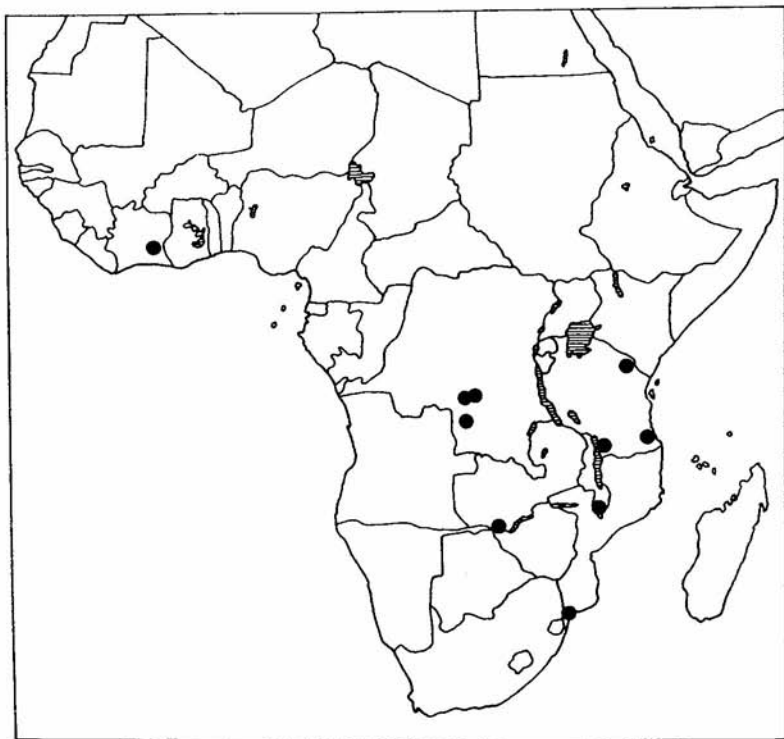


31-35. *Metriopecta inornata*: 31 - body in dorsal view, 32 - body in lateral view, 33 - head and pronotum, 34 - antenna, 35 - tarsal claw

Head yellow with two black spots on vertex. Pronotum yellow with two black spots in the middle and two black spots at base behind central spots. Elytra yellow, humerus with elongate brown to black spot, sometimes the spot obsolete. Each elytral puncture with dark centre. Ventrites mostly yellow, posterior part of metathorax often infuscate to black, often central part of sternites infuscate. Legs yellow, coxa, trochanter, knee and tarsi brown to black. Antennae and labrum black.

Pronotum semicircular, anterior margin broadly emarginate, sides regularly rounded, anterior corners obtuse. Disc regularly convex, between black spots with transverse impressions, surface except spots strongly densely punctate. Each puncture with white, short, adherent hair. Distance between punctures distinctly smaller than puncture diameter, on sides puncturation appears slightly rugose. Black spots slightly convex and extremely finely punctate. Explanate margin indistinctly bordered from disc, subhorizontal, surface strongly and densely punctate, punctures similar to those of side of disc. Sides narrowly emarginate.

Scutellum almost semicircular. Base of elytra slightly wider than base of pronotum. Disc regularly convex (fig. 32), strongly, densely, irregularly punctate



36. Distribution of *Metrioepepla inornata*

(fig. 31) and shortly, adherent pubescent. Distance between punctures varying from smaller to slightly larger than puncture diameter, surface appears slightly irregular. The third interval reduced to basal elevation, sometimes prolonged to 1/6 of disc, forms irregular elevation. No marginal row. Explanate margin moderately declivous, narrow, c. 1/4 elytron width. Surface strongly punctate, similar to sides of disc, only the very margin scarcely punctate. Lateral margination simple.

Head large. Eyes small, gena distinct. Anterior margin of clypeus semicircular (fig. 33), mouth parts completely free including the last segment of palpi. Distance between basal segments of antennae about as wide as the basal segment, but antennal insertions have a common cavity. Antennae short, stout, all segments microreticulate and dull, four basal segments only slightly less punctate than distal segments, seven distal segments elongatedly punctate and striate. Length ratio of antennal segments: 100:68:76:76:80:80:84:84:84:160. Segment 3 only slightly longer than 2 (fig. 34).

Prosternal collar moderately long, without transverse sulci, sides not angulate. Prosternal process moderately convex, not or only shallowly impressed (fig. 33). Mesosternum as wide as mid coxa. Metasternum regularly convex.

Legs moderately stout, tarsi moderately broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws simple (fig. 35).

Host plant and bionomics unknown.

DISTRIBUTION

Ivory Coast, SE Zaire, Tanzania, Malawi, Zambia and Mozambique (fig. 36). Recorded also from Ethiopia.

REMARKS

It is a unique genus and species with no close relatives in any zoogeographical region.

MATERIAL EXAMINED

IVORY COAST: Abengourou, 1 (MRAC).

MALAWI: Mlanje, 21 XII 1913, 1, S. A. NEAVE (BMNH).

MOZAMBIQUE: Delagoa, 3, JUNOD (1 MHNG, 2 LB).

TANZANIA: Lindi, I 1905, 1 (ZSM); Songea, Lituhi, 500 m, 5 IX 1952, 1, LINDEMANN and PAVLITZKI (ZSM).

ZAIRE: Kapanga, I 1933, 1, IX 1933, 1, X 1933, 2, G.F. OVERLAET (MRAC, 1 LB); Kasai, Gandajika, IV 1959, 1, J. DUBOIS (MRAC); Sankuru, M'Pemba Zeo, Gandajika, 5 X 1958, 1, P. MARÉCHAL (MRAC).

ZAMBIA: N. Prov., surr. Kasyasya, 80 km E Isoka, 750 m, IX 1982-III 1983, 1, L. WILLEMSE (NNML).

Tribe *Basiprionotini* CHAPUIS, 1875

Priopterites CHAPUIS, 1875: 367.

Priopteritae SPAETH, 1914: 129.

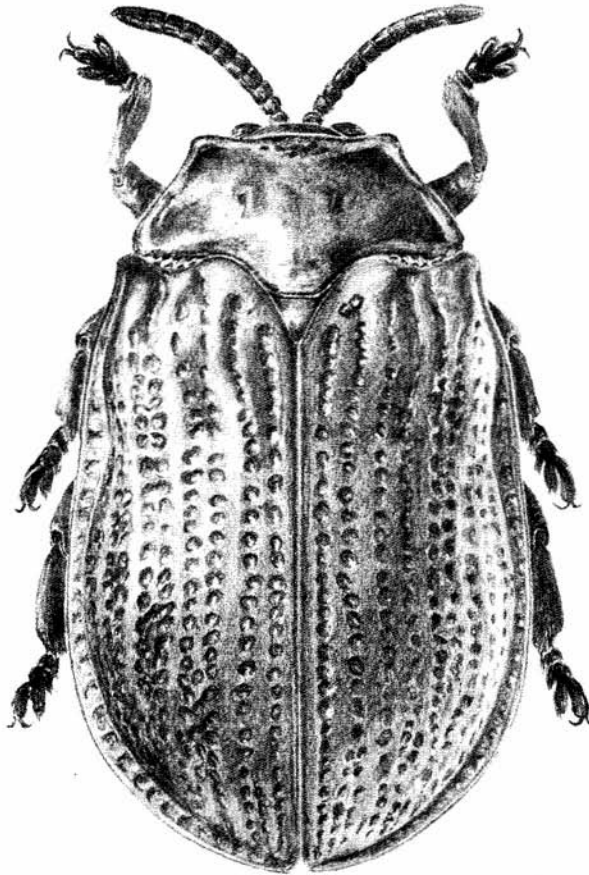
Basiprionotini GRESSITT, 1952: 444; SPAETH in HINCKS, 1952: 331; SEENO and WILCOX, 1982: 171.

Genus: *Pseudandroya* SPAETH, 1952

Pseudandroya SPAETH in HINCKS, 1952: 343 (type species: *Calopepla livingstonei* BALY, 1864, by monotypy);

SEENO and WILCOX, 1982: 172.

Primitive cassids of hispoid appearance. Body elongate, explanate margins of elytra and pronotum extremely narrow. Head visible from above. Pronotum trapezial



37. *Pseudandroya livingstonei*, dorsal view

with anterior margin shallowly emarginate. Antennal insertions touching each other. Antennae stout, distal segments longitudinally striate. Mouth parts hidden by large prosternal collar. Elytral puncturation partly regular. Claws simple.

Distribution: Tanzania and Zambesi region. Only one species.

***Pseudandroya livingstonei* (BALY, 1864)**

(figs. 37-43)

Calopepla livingstonei BALY, 1864: 239 (type in BMNH).

Metriopecta livingstonei: FAIRMAIRE, 1882: 57; SPAETH, 1911: 240.

Androya livingstonei: SPAETH, 1914: 20.

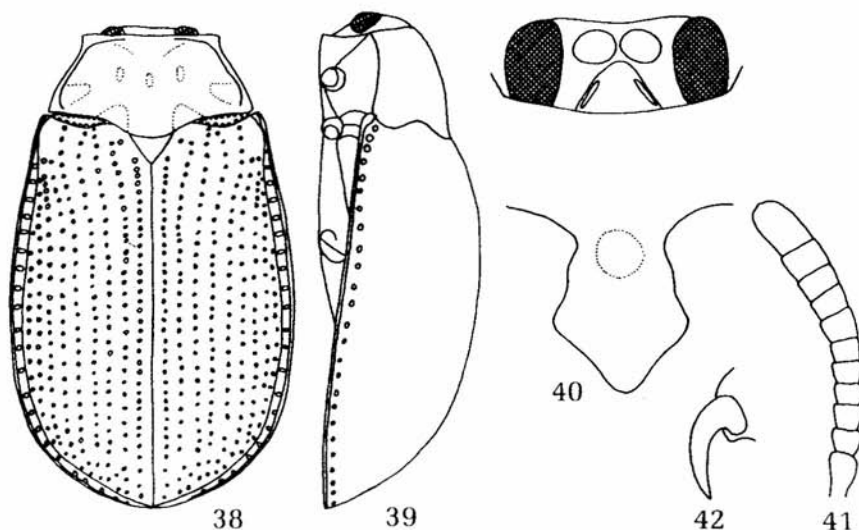
Pseudandroya livingstonei: SPAETH in HINCKS, 1952: 343.

DESCRIPTION

Length: 9.0-10.1 mm (pronotum+elytra), width: 5.6-6.2 mm, pronotum length: 2.3-2.7 mm, pronotum width: 4.0-4.5 mm. Body elongate (fig. 37).

Pronotum brown, with dark brown to black irregular spots. Elytra uniformly brown. Serrate margin of pronotal and elytral base black. Ventrites brown with darker margins. Legs brown, apices of femora dark brown to black. Antennae black, except brown first segment.

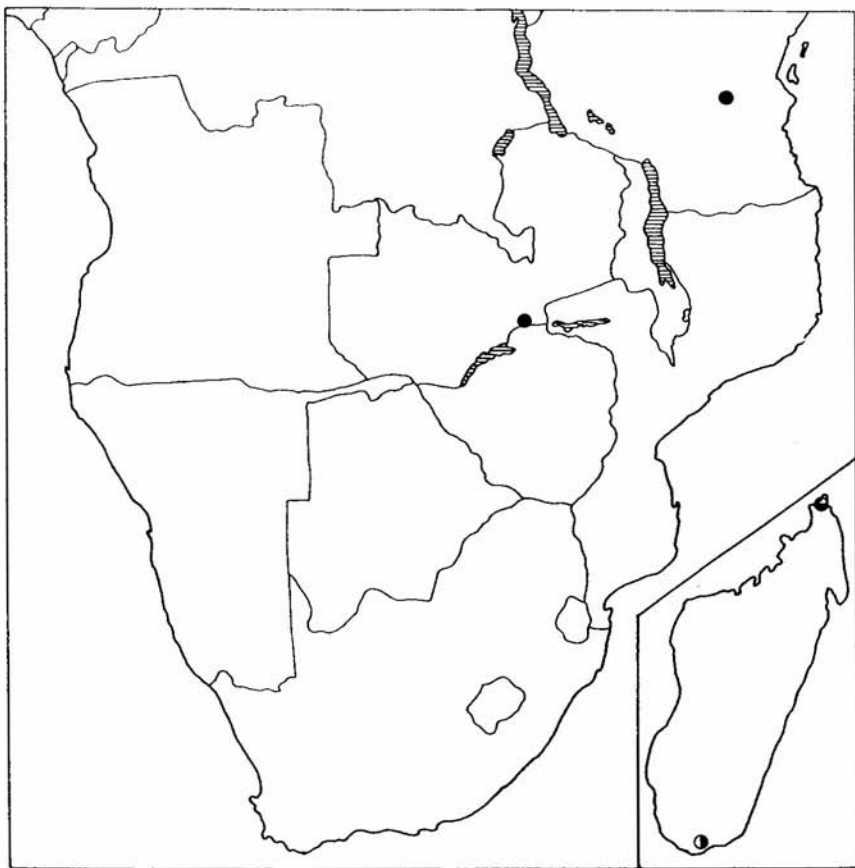
Head visible from above. Pronotum trapezoidal, anterior margin shallowly emarginate, sides straight, base deeply bisinuate with large praescutellar lobe, basal margin except praescutellar lobe strongly serrate. Anterior corners rounded, or



38-42. *Pseudandroya livingstonei*: 38 - body in dorsal view, 39 - body in lateral view, 40 - head and prosternum, 41 - antenna, 42 - tarsal claw

angulate if margin emarginate behind the corner. Surface of disc with deep sulcus along each side, explanate margin very narrow, forms a narrow fold along the sides. Central part of disc regularly convex with two small pits in the middle, large impression on each side of disc, and shallow impression of each side of praescutellar lobe. Surface of disc impunctate, smooth, glabrous.

Scutellum subtriangular to oval, its surface smooth, glabrous. Base of elytra as wide as base of pronotum, anterior margin deeply bisinuate and strongly serrate. Elytral disc regularly but moderately convex (fig. 39). Punctuation of disc arranged in more or less regular rows (fig. 38), but intervals 6-8 often with additional punctures of the same size as punctures in row, and punctuation appears irregular to rugose. Punctures in rows large, touching each other, rows 1 and 2, 3 and 4 closed anterad. Intervals flat or slightly convex, in sutural half of elytra as wide as or slightly wider than punctures in rows, only intervals 3 and 5 distinctly wider than punctures, about twice wider than intervals 2 and 4. In some specimens interval 5 more convex than



43. Distribution of *Pseudandroya livingstonei* (black circle), *Androya longula* (white and black circle, *A. obscuricollis* and *A. rubrocostata* (white above black circle)

the neighbouring intervals, forms an obtuse costa. In marginal half of elytra intervals narrower than punctures in rows, interval 7 and 9 slightly wider than intervals 6, 8, and 10. Surface of intervals smooth and glabrous. Marginal row distinct. Explanate margin extremely narrow, slightly narrower than punctures in marginal row, subhorizontal. Elytral margin double marginate.

Head large, mouth parts hidden by prosternal collar (fig. 40), clypeus elevated, forms a regular triangle. Surface of clypeus slightly impressed, with indistinct small punctures and wrinkles. Antennae stout and short, 6 basal segments glabrous, scarcely punctate, 5 distal segments dull, densely punctate, punctures elongate, and surface appears longitudinally striate. Antennal segments distinctly depressed dorsally and ventrally. Length ratio of antennal segments: 100:68:76:76:64:76:80:68:72:80:148. The third segment only slightly longer than the second (fig. 41).

Prosternal collar large, without transverse sulci, sides rounded, no antennal grooves. Prosternal process regularly expanded apically with more or less developed median impression (fig. 40). Mesosternum as wide as width of mid coxa with truncate apex. Metasternum regularly convex. Mesoepimeron bordered from mesoepisternum by deep sulcus. The first two abdominal segments fused but with distinct suture, especially on sides of abdomen.

Legs stout, unmodified. Tarsi broad, the last segment slightly longer than the third but not extending behind marginal setae. Claws simple, without micropecten (fig. 42).

Bionomics and host plant unknown.

DISTRIBUTION

Tanzania and Zambesi region (fig. 43). It is known from only a few specimens.

REMARKS

It is a unique genus and species with no close relatives in any zoogeographical region. At first glance it resembles Madagascar genus *Androya*, especially *A. obscuricollis*, but the genus *Androya* distinctly differs in partly free mouth parts, not completely hidden by prosternal collar, and pronotal base not distinctly bisinuate.

MATERIAL EXAMINED

TANZANIA: Mrogoro, 1916, 1, STAUD. (MM).

VARIA: Zambesi, Caia, 3 IX 1911, 1, H. SWALE (MM).

Genus: *Cassidopsis* FAIRMAIRE, 1899

Cassidopsis FAIRMAIRE, 1899: 557 (type species: *Cassidopsis basipennis* FAIRMAIRE, 1899, by monotypy);
HINCKS, 1952: 331; SEENO and WILCOX, 1982: 172.

Primitive cassids of hispoid appearance. Body stout, broadly rounded on sides. Head visible from above. Pronotum transverse with deeply emarginate anterior margin, and strongly bisinuate basal margin. Antennal insertions touching each other. Antennae stout, apical segments elongatedly punctate to striate. Elytra irregularly punctate. Mouth parts completely hidden by prosternal collar. Claws simple.

Distribution: only Madagascar.

KEY TO THE SPECIES

1. Pronotum uniformly brown. Elytron deep yellow with two pale yellow convex spots: *C. basipennis*
 -. Pronotum bicoloured, yellow and black, often with blue metallic tint. Elytron black, often with blue metallic tint, and with 6 yellow spots: *C. perrieri*

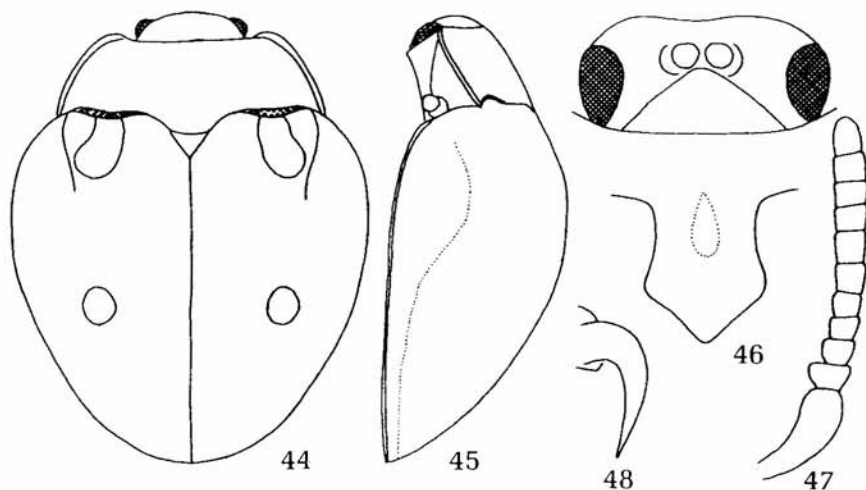
Cassidopsis basipennis FAIRMAIRE, 1899

(figs. 44-48)

Cassidopsis basipennis FAIRMAIRE, 1899: 557 (syntypes in MHNP, MM); SPAETH, 1914: 20.

DESCRIPTION

Length: 6.9-7.7 mm, width: 5.8-6.3 mm, pronotum length: 2.2-2.4 mm, pronotum width: 4.5-4.8 mm. Body stout (fig. 44).



44-48. *Cassidopsis basipennis*: 44 - body in dorsal view, 45 - body in lateral view, 46 - head and prosternum, 47 - antenna, 48 - tarsal claw

Head, pronotum and scutellum brown, elytra deep yellow, each elytron with two pale yellow, convex spots - one large in the middle of basal margin, and one small slightly behind the middle of elytron. Ventrites yellow-brown to brown. Legs yellow-brown to brown, tarsi obscure to black. Antennae black, except yellow-brown basal segment.

Pronotum broad, about twice wider than long, anterior margin deeply emarginate, basal margin serrulate and strongly bisinuate, basal corners strongly angulate. Pronotal sides in posterior half almost straight, in anterior half broadly rounded, so that its anterior corners are hardly marked. Disc regularly convex, in the middle with short, narrow median furrow, without impressions. Surface microreticulate and finely, scarcely and shallowly punctate. Distance between punctures distinctly wider than puncture diameter. Explanate margin extremely narrow, broadly marginate.

Scutellum subtriangular. Base of elytra not wider than base of pronotum, sides broadly rounded, elytra in the middle distinctly wider than pronotum. Disc regularly convex (fig. 45), irregularly punctate. Punctures moderately large, scarce, distance between punctures as wide as puncture diameter or distinctly wider. Pale yellow, convex basal spot impunctate or only with a few punctures, spot behind the middle impunctate. No marginal row. Explanate margin about as wide as 1/3-1/2 elytron width, strongly, densely punctate. Punctures about twice larger than those on elytral disc, distance between punctures distinctly narrower than puncture diameter, in some specimens punctation appears partly rugose.

Head large. Clypeus short, triangular (fig. 46), its surface smooth, glabrous. Antennae stout, sexually dimorphic. In male first segment large, with external margin sharply carinate, in female basal segment unmodified. Five basal segments scarcely punctate and glabrous, six distal segments dull and elongatedly punctate to longitudinally striate. Length ratio of antennal segments (male): 100:25:18:20:20:22:28:23:25:25:48. Segment 3 shorter than 2 (fig. 47).

Prosternal collar large, not angulate on sides, without transverse striation or sulci. Prosternal process strongly expanded apically, with shallow impression (fig. 46).

Legs stout, unmodified. Tarsi broad, the last segment distinctly wider than the third, but not extending behind marginal setae. Claws simple (fig. 48).

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

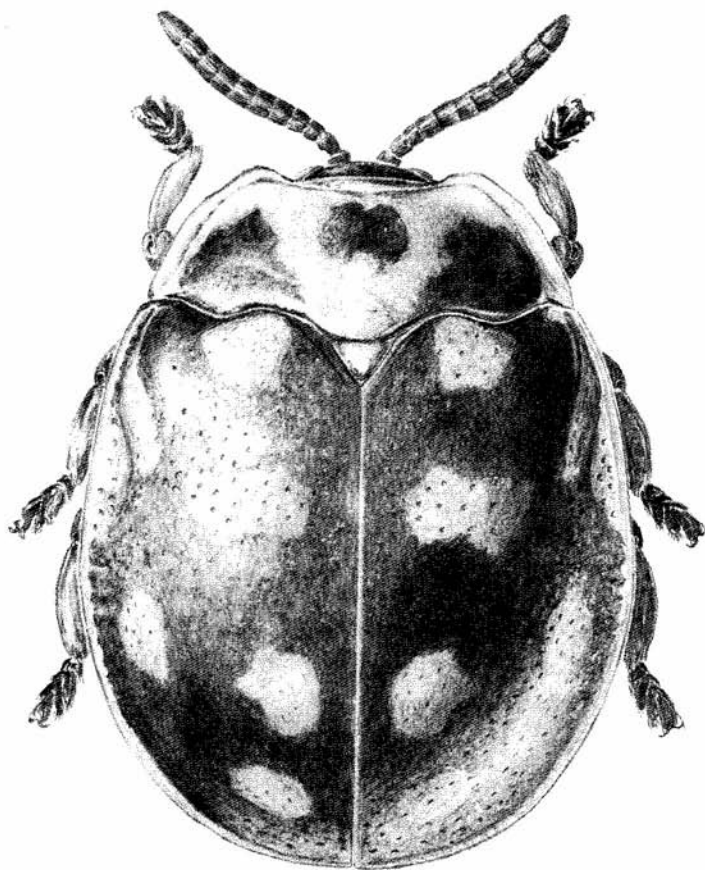
A unique species, distinctly differs from *C. perrieri* in colour pattern (see key).

MATERIAL EXAMINED

MADAGASCAR: Suberbieville, 4 (syntypes, MM); Suberbieville, 1, H. PERRIER (syntype, MM).

Cassidopsis perrieri FAIRMAIRE, 1900
(figs. 49-54)

Cassidopsis Perrieri FAIRMAIRE 1900: 89 (syntypes in MHNP, MM); SPAETH, 1914: 20.



49. *Cassidopsis perrieri*, dorsal view

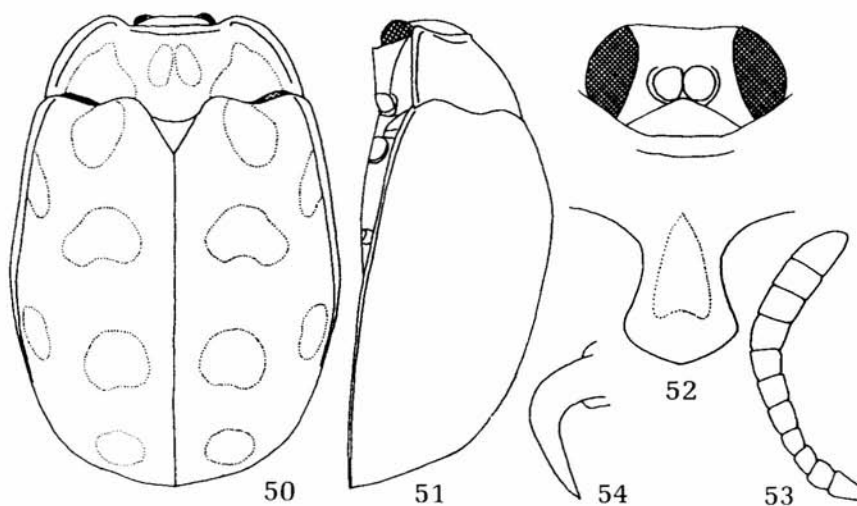
DESCRIPTION

Length: 7.1-7.7 mm, width: 5.5-5.7 mm, pronotum length: 2.0-2.1 mm, pronotum width: 4.2-4.7 mm. Body stout, but slimmer than in *C. basipennis* (fig. 49).

Head yellow with black vertex. Pronotum yellow with black pattern: two large triangular spots at base of each side of disc, and irregular spot in the middle of disc, sometimes divided into two smaller spots. Black pattern often with indistinct metallic blue tint. Scutellum yellow. Elytra mostly black, sometimes with indistinct blue metallic tint, except yellow explanate margin and six spots of each elytron: one large, circular in the middle of base, one elongate at humerus, one slightly transverse in front of the middle close to suture, two small, round in posterior half of disc close to suture, and one round in posterior half of disc close to lateral margin. Ventrites yellow, legs yellow, knee and tarsi infusate. Antennae black, except 1-4 basal segments yellowish to brown.

Pronotum broad, more than twice wider than long. Sides rounded, or in posterior half almost straight, base bisinuate and serrulate. Anterior corners broadly rounded. Disc regularly convex, with no median furrow, without impressions. Surface finely, indistinctly punctate, distance between punctures many times wider than puncture diameter. Surface between punctures glabrous. Explanate margin very narrow, broadly marginate.

Scutellum triangular. Base of elytra not wider than base of pronotum, sides moderately rounded, in the middle elytra distinctly wider than pronotum. Disc regularly convex (fig. 51), scarcely, moderately irregularly punctate, distance between punctures distinctly wider than puncture diameter. Yellow spots not elevated and



50-54. *Cassidopsis perrieri*: 50 - body in dorsal view, 51 - body in lateral view, 52 - head and prosternum, 53 - antenna, 54 - tarsal claw

punctured similarly to black pattern. No marginal row. Explanate margin narrow, not wider than 1/8 elytron width, with several punctures (fig. 50).

Head large, clypeus short, triangular (fig. 52), its surface smooth and glabrous. Antennae short and stout, probably similarly dimorphic to antennae of *C. basipennis*, but only females were available. Length ratio of antennal segments (female): 100:52:48:52:52:60:68:64:72:68:120. Segment 3 shorter than 2 (fig. 53).

Prosternal collar large, sides not angulate. Prosternal process moderately expanded apically, without or with indistinct impression.

Legs stout. Tarsi broad, the last segment distinctly longer than the third, but not extending behind marginal setae. Claws simple (fig. 54).

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

A unique species, distinctly differs from *C. basipennis* in pronotal and elytral pattern.

MATERIAL EXAMINED

MADAGASCAR: Suberbiville, 4 (syntypes, MM).

Tribe *Aspidimorphini* CHAPUIS, 1875

Aspidimorphites CHAPUIS, 1875: 406.

Aspidomorphitae: SPAETH, 1914: 129.

Aspidomorphini: SPAETH in HINCKS, 1952: 336; GRESSITT, 1952: 460; SEENO and WILCOX, 1982: 175; BOROWIEC, 1992: 123.

Genus: *Conchyloctenia* SPAETH, 1902

Aspidomorpha sgen. *Conchyloctenia* SPAETH, 1902a: 449 (type species: *Cassida hybrida* BOHEMAN, 1854, designated by MAULIK, 1919); 1914: 79 (as gen.); 1924: 296 (key); HINCKS, 1952: 337 (as subgen.); SEENO and WILCOX, 1982: 175.

Moderately large to large cassids. Body varying from elongate oval, parallelsided to stout, subcircular. Punctuation of elytra varying from regular to completely irregular. Clypeus elevated, especially behind antennal insertions. Antennae with 6 basal glabrous segments, and 5 distal, dull segments. External margin of tibiae canaliculate on whole length. Claws pectinate on both sides.

Distribution: Africa except Madagascar, one species in India.

KEY TO THE SPECIES

1. Punctuation of elytra completely or partly regular (figs. 70, 76, 82, 105, 111, 177) 2.
- Punctuation of elytra completely irregular (figs. 55, 87, 93, 99, 116) 10.
2. Punctuation of elytra strong, mostly regular, punctures arranged in deep rows, intervals more or less convex 3.
- Punctuation of elytra small, partly irregular, punctures not arranged in deep rows, intervals flat 8.
3. Pronotum with black or red spots (figs. 82, 182-187) 4.
- Pronotum immaculate 5.
4. Pronotum with two spots (fig. 82), elytra with irregular reddish spots, never with black: *bipuncticollis*
- Pronotum with three spots, elytra usually with black spots on disc and explanate margin, only in the palest form black pattern reduced to the small spot on humerus (figs. 182-187): *tigrina*
5. Punctuation of elytra extremely strong and dense, punctures almost touching each other. Body uniformly yellow 6.
- Punctuation of elytra moderately large, distance between punctures usually larger than puncture diameter. Body often with reddish to brown spots, or humerus with small black spot 7.
6. Smaller, length below 8.5 mm. Posterior half of marginal interval without or with only few irregular punctures (fig. 112). Ventrites mostly black: *illota*
- Larger, length above 9.0 mm. Posterior half of marginal interval irregularly punctate (fig. 77). Ventrites mostly yellow: *aspidiformis*
7. Humerus with black spot, elytral disc always without reddish brown spots. Extremely rare form with reduced pronotal black spots: *tigrina* (part)
- Humerus without black spot, elytral disc often with reddish brown spots (figs. 189, 190): *hybrida*
8. Pronotum with two black spots: *aruwimiensis*
- Pronotum without black spots 9.
9. Larger and stouter. Pronotum usually with 7 or 9 separate spots. Explanate margin of elytra without spots, or with humeral spot, or with humeral and posterolateral spot (figs. 145-147): *multimaculata*
- Smaller and slimmer. Pronotum usually with coalescent spots forming an M-shaped

pattern. Explanate margin of elytra, except humeral and posterolateral spot, usually with two spots in the middle, occasionally without spots or mostly black (figs. 139-144):

- *praecox*
10. Body elongate oval (figs. 55, 150, 165) 11.
 -. Body short oval to subcircular (figs. 87, 93, 99, 116) 13.
11. Elytral margin distinctly marginate, explanate margin forms a shallow gutter
 12.
 -. Elytral margin not marginate, explanate margin declivous:
 *signatipennis*
12. Slimmer species, especially explanate margin of elytra narrower with very narrow lateral margination (fig. 55). Elytral pattern usually reduced to several spots at base and along suture, external half of disc usually immaculate, explanate margin never maculate (figs. 63-68). West Africa, subsaharian region to Ethiopia, and northern part of Central Africa:
 *adspersa*
- . Stouter, explanate margin broader, with lateral margination broader (fig. 150). Elytral disc usually maculate on whole surface, explanate margin often maculate or partly black (figs. 155-163). Central, East and South Africa:
 *punctata*
13. Body strongly convex (figs. 88, 94, 100, 117), explanate margin of elytra strongly declivous, also in posterior part. Pronotum usually immaculate, elytra reddish brown to brown, only in not fully sclerotized specimens yellow, sometimes with black or brown pattern 14.
 -. Body moderately convex (fig. 71), explanate margin moderately declivous, in posterior half subhorizontal. Pronotum with two black spots, elytra pale yellow, always immaculate:
 *aruwimiensis*
14. Elytra with black or brown pattern (figs. 121-126) 15.
 -. Elytra without pattern. occasionally whole disc except suture black (figs. 60-62)
 16.
15. Punctuation of elytra fine and scarce (fig. 116), dark spots not denser punctured than pale pattern. Elytral pattern usually black and more regular (figs. 121-123). Forest lowland regions of Central Africa:
 *mouffleti*
- . Punctuation of elytra stronger (fig. 93), especially dark spots usually stronger and denser punctured than pale pattern. Elytral pattern usually brown and less regular (fig. 124-126). Mountain regions of Central Africa, Ethiopia and Sudan:
 *fibrata*
16. Pronotum with two black spots or immaculate (figs. 60-62). Elytral punctuation fine but distinct, distance between punctures about twice to thrice larger than puncture diameter (fig. 87):
 *bonnyana*

- Pronotum always immaculate. Elytral puncturation extremely fine, hardly visible, distance between punctures many times larger than puncture diameter (fig. 99):
..... *hepatica*

***Conchyloctenia adspersa* (FABRICIUS, 1801)**

(figs. 55-69)

Cassida adspersa FABRICIUS, 1801: 400 (type in ZMC); ZIMSEN, 1964: 91.

Conchyloctenia adspersa: SPAETH, 1902a: 450; 1914: 79; 1924: 300; BOROWIEC, 1986: 802.

Cassida adspersa BOHEMAN, 1854: 351 (type in NRS).

Conchyloctenia nigrosparsa: SPAETH, 1902a: 450.

Conchyloctenia adspersa ab. *nigrosparsa*: SPAETH, 1914: 79; 1924: 300.

Cassida nilotica BOHEMAN, 1854: 352 (syntype in NRS and MNHN); BOROWIEC, 1986: 802 (as syn. of *adspersa*).

Conchyloctenia nilotica: SPAETH, 1902a: 450; 1914: 80; 1924: 300.

Conchyloctenia notaticollis SPAETH, 1902a: 452 (syntype in MM); 1914: 80 (as syn. of *nilotica*).

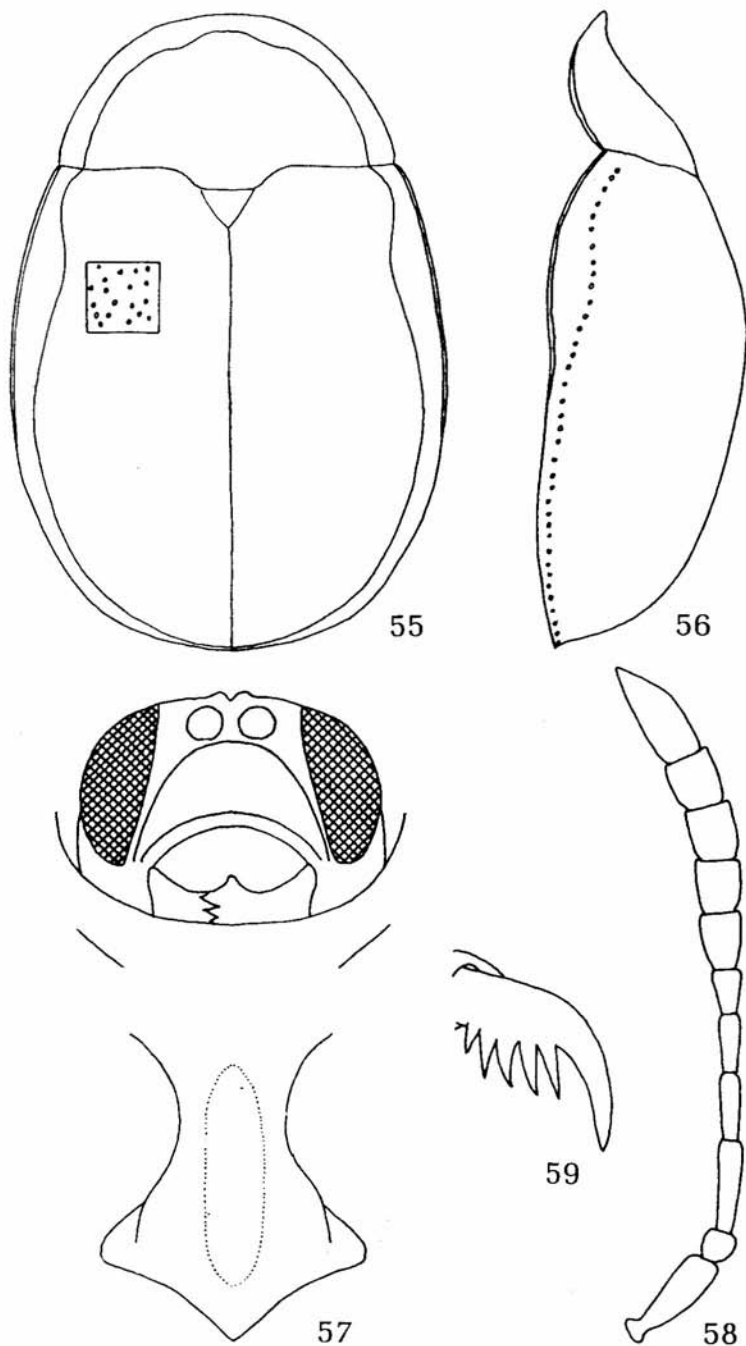
DESCRIPTION

Length: 8.8-11.6 mm, width: 5.9-6.7 mm, pronotum length: 2.6-3.3 mm, pronotum width: 4.5-5.7 mm. Body elongate-oval (fig. 55), males slightly stouter than females.

Pronotum pale yellow to deep yellow, immaculate, or with rhomboidal brown to black spot, or with large transverse brown to black spot (= *nilotica*), sometimes with small additional spots at base of disc. Elytra pale yellow, usually slightly paler than pronotum, disc with black spots. In the palest form dark pattern is reduced to spot on humerus, spot in the middle of basal margin and spot behind scutellum not extending to suture. In the darkest form whole disc with many black spots (= *nigrosparsa*). Between these forms all intermediates occur. Explanate margin always immaculate (figs. 63-68). Ventrites and legs usually black, only lateral margins of sternites, and apical margin of the last sternite, yellowish to brown; occasionally abdomen mostly or completely yellowish to brown. Antennae black, basal five segments partly yellowish to brown.

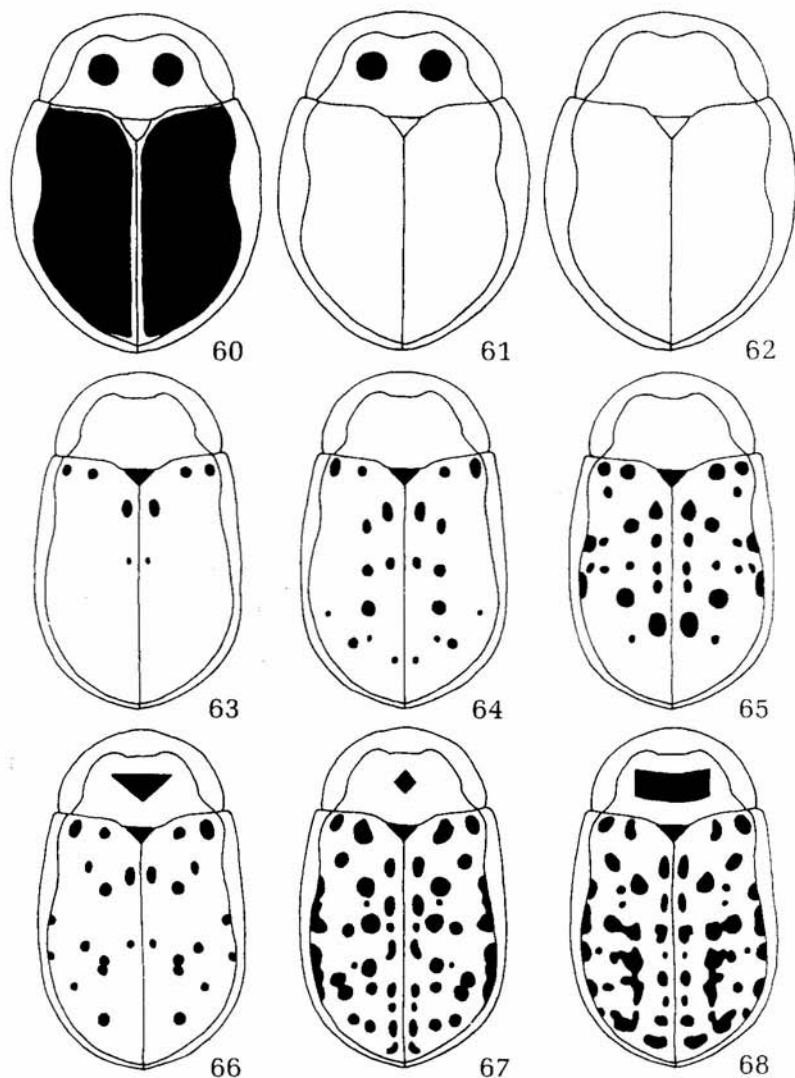
Pronotum semicircular, width/length ratio 1.70-1.84. Posterior corners form a right angle. Disc regularly convex, its sculpture variable, in specimens without spots surface smooth to microreticulate, impunctate or with scarce faint pricks; in specimens with dark spot black area usually more or less distinctly punctate. Explanate margin distinctly bordered from disc, subhorizontal, in some specimens forms a shallow gutter, especially on sides, with honeycomb structure, surface microreticulate, glabrous.

Scutellum triangular. Base of elytra only slightly wider than base of pronotum. Basal margin of elytra straight, serrulate. Disc moderately, regularly convex (fig. 56). Puncturation of disc irregular, fine, scarce, distance between punctures as wide as to three times larger than puncture diameter, in populations from southern parts of the



55-58. *Conchyloctenia adspersa*: 55 - body in dorsal view, 56 - body in lateral view, 57 - head and prosternum, 58 - antenna, 59 - tarsal claw

distribution range puncturation usually slightly coarser and denser than in populations from its northern part. Dark spots punctured as coarsely and densely as pale area. Surface between punctures smooth and glabrous. Marginal row indistinct, its punctures vanish between puncturation of disc and explanate margin. Explanate margin narrow, as wide as $1/6-1/7$ width of each elytron, moderately declivous, sides finely but distinctly marginate. Surface of explanate margin glabrous, scarcely, irregularly punctured, punctures slightly larger than on disc.



60-68. Variation of dorsal maculation: 60-62 - *Conchyloctenia bonnyana*, 63-68 - *C. adspersa*

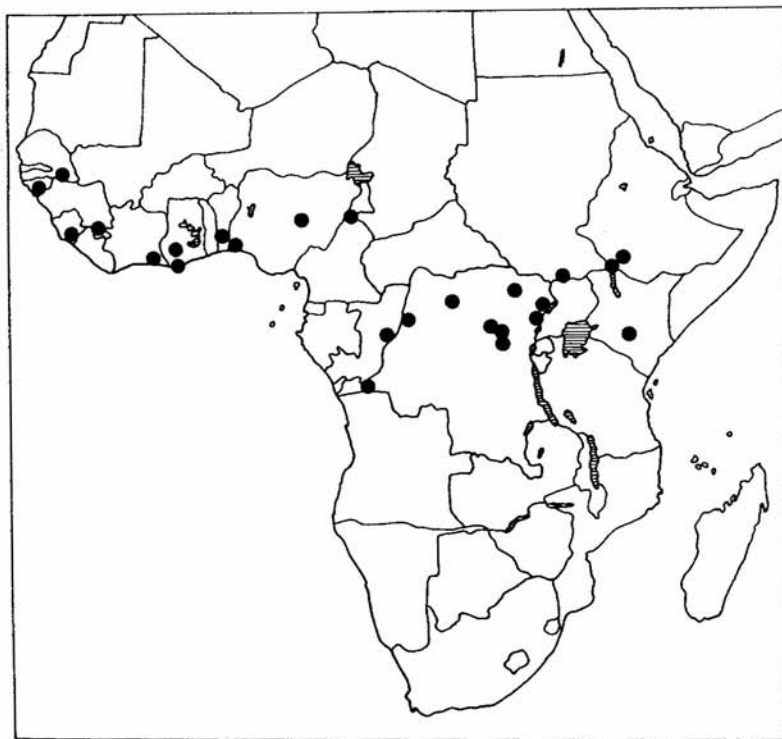
Clypeus transverse, strongly elevated, its surface microreticulate and distinctly punctate. Labrum emarginate to 1/4 length (fig. 57). Antennae moderately long, extending to the end of mesosternum. Length ratio of antennal segments: 100:50:146:76:90:66:66:60:56:56:120. Segment three about thrice longer than 2 (fig. 58).

Prosternal collar moderately large, with transverse sulci. Prosternal process moderately expanded apically, with deep longitudinal channel (fig. 57). Legs slim, tarsi moderately broad, the last segment distinctly longer than the third, but not extending behind marginal setae. Inner margin of claws with larger pecten, teeth of equal length, extending to half length of claw (fig. 59); outer margin with four teeth, about twice shorter than teeth of inner margin.

Bionomics and host plant unknown.

DISTRIBUTION

West Africa, northern part of Central Africa, Ethiopia (fig. 69).



69. Distribution of *Conchyloctenia adspersa*

REMARKS

It belongs to the group of species with irregular elytral puncturation and elongate-oval body. This group comprises also *C. signatipennis* and *C. punctata*. *C. signatipennis* distinctly differs in lateral margin of elytra without margination; this species is usually darker coloured, reddish-brown, with many black spots, sometimes whole disc is black. Explanate margin in *C. signatipennis* more declivous than in *C. adspersa*, also in posterior half of elytra. *C. punctata* is extremely similar to *C. adspersa* and some specimens are difficult to identify without comparison with the series of properly identified specimens. *C. punctata* is usually larger, darker coloured, reddish-brown, with many black spots, sometimes whole disc is black, explanate margin of elytra often with black spots. Explanate margin of elytra, especially lateral margination, in *C. punctata* slightly broader than in *C. adspersa*, so explanate margin forms a narrow gutter. Both species are partly separated geographically, *C. adspersa* is more western and northern species, while *C. punctata* is especially common in South and southern part of Central Africa, only in northern part of Central Africa both species are sympatric.

MATERIAL EXAMINED

BENIN: Dahomey, 1, POUILLON (MRAC).

CAMEROON: Garua, 19-24 VIII 1909, 1, RIGGENBACH (ZMHU)

ETHIOPIA: Gemu-Gofa Prov., Arba-Minch, 1250 m, 29-30 V 1974, 1, G. DE ROUGEMONT (LB).

GHANA: Ashanti Reg., Kwadaso, 3 VIII 1965, 2, S. ENDRÖDY-YOUNGA (HNHM); Takoradi, IV-XI 1967, 1, BESNARD (MRAC).

GUINEA: Guinée, 1, coll. CLAVAREAU (MRAC); Guinea, 1 (holotype, ZMC), 1 (FMNH).

GUINEA BISSAU: Bafata, VII 1953, 1, BENASSI (PMNH).

IVORY COAST: Assinie, 1886, 2, Ch. ALLUAUD (NMP); Dimbroko, 1 (NMP).

KENYA: Kikuyu, 1, F. THOMAS (ZMHU).

NIGERIA: Jos, 1968, 1 (MRAC); Lagos, 2, W. A. ZAMBORN (BMNH).

REPUBLIC OF CONGO: Mossaka, V 1980, 2, XI 1980, 3, ab. *nilotica*, ONORE (2 OSU, 2 PMNH, 1 LB).

SENEGAL: Senegal, 1 (NMP).

SIERRA LEONE: Kenema, 1975, 12, M., VERHAEGHE (5 MRAC, 4 IRSN, 3 LB).

ZAIRE: Albert Nat. Park, Ishangho (meandres Semliki), 10 XII 1935, 1, H. DAMAS (MRAC); Albert Nat. Park, Lac N'Goma, 1460 m, 19 VI 1935, 2, H. DAMAS (MRAC); Boma, 1891, 1, M. TSCHOFFEN, 1 (syntype of *C. notaticollis*, IRSN); Bopoto, 1, ab. *nilotica* (Harvard); Bosako, V 1948, 2, ab. *nilotica*, G. BENOIT (LB); Bumba, 1939, 1, ab. *nilotica*, R. P. LOOTENS (MRAC), 1 (MM); Coquilhatville, 1959, 1, ab. *nilotica*, P. HULSTAERT (MRAC); Jassaka, 6 II 1990, 1, J. DUVIVIER (syntype of *Conchyloctenia notaticollis*, MM); Kasenyi, VII 1934, 1, ab. *nilotica*, J. V. LEROY

(MRAC), XII 1938, 1, ab. *nilotica*, P. LEFÈVRE (MRAC); Kassongo, à Stanleyfalls, 1 (syntype of *C. notaticollis*, IRSN); Kisantu, 2, P. GOOSSENS (MRAC); Ponthierville, 29 VIII 1929, A. COLLART, 9, ab. *nilotica* (6 IRSN, 3 LB); Stanleyville, 18 II 1928, 1, A. COLLART (IRSN); H'Uele, Paulis, X 1947, 1, ab. *nilotica*, G. BENOIT (LB); Yangambi (Stan.), XII 1958, 1, ab. *nilotica*, P. DESSART (MRAC).

***Conchyloctenia aruwimiensis* (GORHAM, 1892)**

(figs. 70-75)

Aspidomorpha aruwimiensis GORHAM in GORHAM and GAHAN, 1892: 4 (type in BMNH); SPAETH, 1902a: 449; 1914: 73.

Aspidomorpha nigricornis WEISE, 1896: 18 (type in ZMHU); KOLBE, 1898: 344; WEISE, 1902: 404 (as syn.); SPAETH, 1902a: 449 (as syn.).

DESCRIPTION

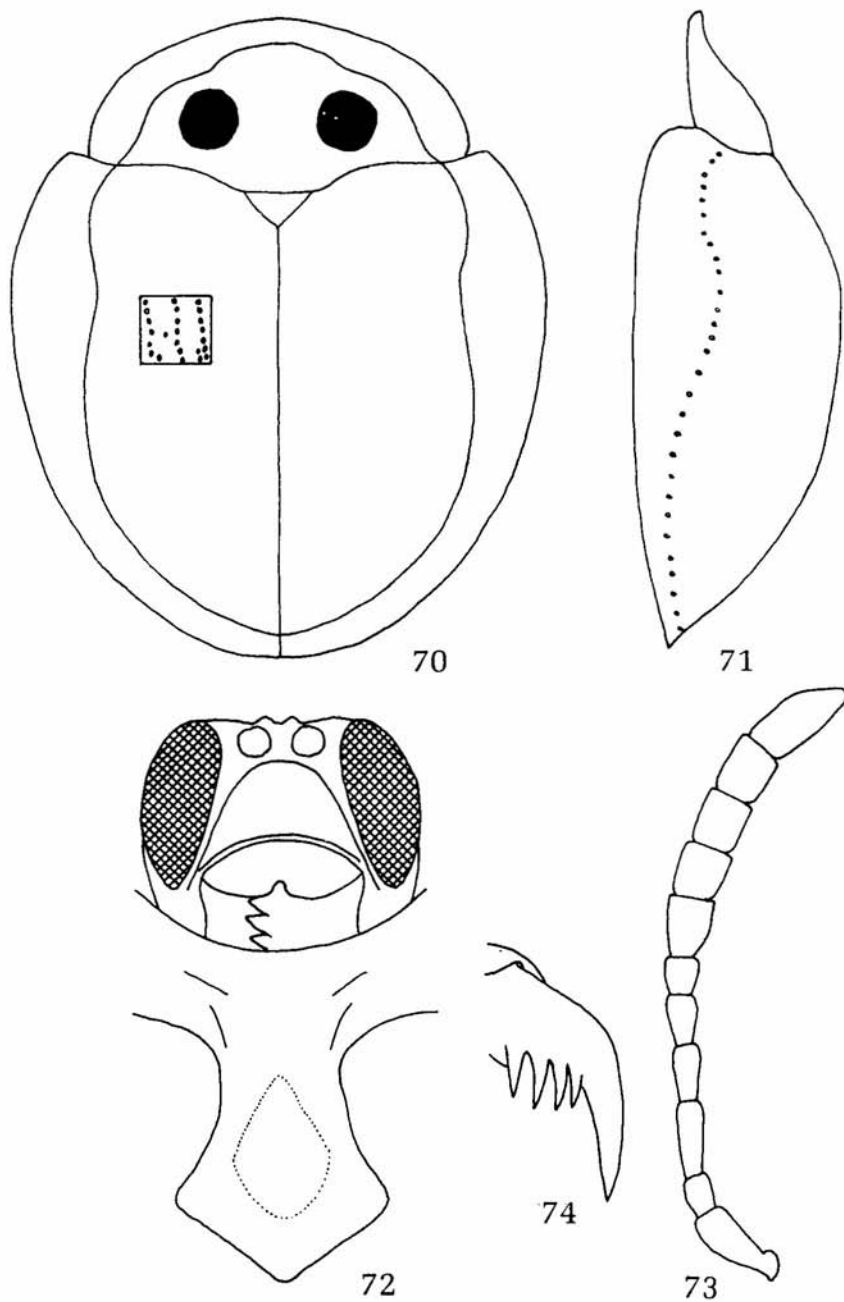
Length: 9.2-11.7 mm, width: 7.5-9.1 mm, pronotum length: 2.8-3.1 mm, pronotum width: 5.3-6.3 mm. Body short-oval (fig. 70), males smaller and stouter than females.

Pronotum pale yellow with two large, round, black spots (fig. 70). Scutellum black with yellowish central spot. Elytra uniformly pale yellow. Ventrites black, except yellowish extreme posterior margin of abdominal sternites, and often small yellowish spot on each side of the last sternite. Antennae usually wholly black, sometimes two basal segments brownish.

Pronotum very broad, width/length ratio 1.9-2.1, elliptical. Posterior corners rounded. Disc moderately convex, its surface microreticulate but glabrous, mostly impunctate, only black spots with several small punctures, and sometimes several punctures occur between black spot and at base of pronotum. Explanate margin distinctly bordered from disc, subhorizontal, microreticulate, glabrous, with honeycomb structure.

Scutellum triangular. Base of elytra distinctly wider than base of pronotum, anterior margin slightly bisinuate, crenulate. Disc moderately convex (fig. 71), scarcely, irregularly punctate, but sometimes punctures tend to form irregular rows, especially in sutural part of elytra (fig. 70). Each elytron with three narrow, longitudinal, impunctate elevations (homologue to 3, 5, and 7th elytral intervals). Surface microreticulate, slightly less glabrous than surface of pronotum. Marginal row distinct. Explanate margin broad, about as wide as 1/3 elytron width, moderately declivous, in apical part subhorizontal, with honeycomb structure. Surface impunctate but slightly uneven, glabrous.

Clypeus broad (fig. 72), distinctly elevated, its surface microreticulate, dull to glabrous, sides with several small punctures. Labrum emarginate to 1/4 length. Antennae moderately long, extending to anterior margin of metasternum. Length ratio of antennal segments: 100:50:100:63:63:46:66:60:63:63:133. Segment 3 about twice longer than 2 (fig. 73).



70-74. *Conchyloctenia aruwimiensis*: 70 - body in dorsal view, 71 - body in lateral view, 72 - head and prosternum, 73 - antenna, 74 - tarsal claw

Prosternal collar moderately long, with transverse sulci. Prosternal process broad, strongly expanded apically, with large shallow impression, but not longitudinally canaliculate (fig. 72). Legs slim, tarsi moderately broad, the last segment distinctly longer than the third, extending to the end of marginal setae. Inner margin of claws with large pecten of teeth, equal in length (fig. 74), extending to half length of claw. Outer margin with four teeth about as long as $2/3$ length of inner pecten.

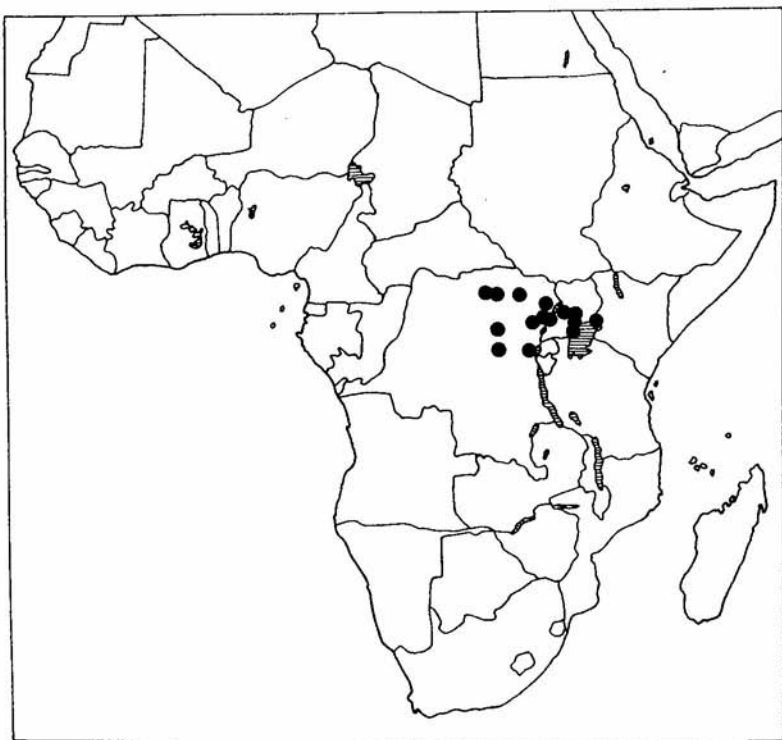
Bionomics and host plant unknown.

DISTRIBUTION

W Kenya, Uganda, NE Zaire (fig. 75).

REMARKS

It is unique a species. It differs from all short-oval species in pale yellow colour, explanate margin of elytra in apical part subhorizontal, and elytra with three longitudinal elevations. In other stout species elytral puncturation has no tendency to



75. Distribution of *Conchyloctenia aruwimiensis*

form irregular rows. Only some forms of *C. bonnyana* have pronotum with two large black spots, but they differ distinctly in larger body, brownish colouration, and distinctly smaller elytral puncturation. *C. aruwimiensis* at first glance resembles some members of the genus *Aspidimorpha*, but no species of *Aspidimorpha* has elevated clypeus.

MATERIAL EXAMINED

KENYA: Mulunge, 5 (FMNH).

UGANDA: Kafu Riv., Ungoro, 3400 ft., 23-28 XII 1911, 1, S. A. NEAVE (BMNH); Kampala, 1 (BMNH); Kivuvu, 19 VIII 1913, 1, C. C. GOWDEY (BMNH); Mabira, 3 (IRSN); Mabiri Forest, 17 XII 1920, 1, R. DUMMER (IRSN); between Mitiana and Entebbe, 3800 ft., 9-11 I 1912, 2, S. A. NEAVE (1 BMNH, 1 LB); near Mpumu, 4000 ft., 14-15 VII 1911, 1, S. A. NEAVE (BMNH); Sesse Is., 5 (4 FMNH, 1 LB); Tinja, 17 V 1952, 1 (NMM); between Seziwa R. and Kampala, 3500-3750 ft., 27-31 VIII 1911, 1, S. A. NEAVE (BMNH).

ZAIRE: Albert Nat. Park, Forêt Semliki, 900-1200 m, X-XI 1937, 2, HACKARS (MRAC); Albert Nat. Park, Mont Hoyo, grotte Saga-Saga, 1160 m, 11-14 VII 1955, 1, P. VANSCHUYTBOECK (MRAC); Albert Nat. Park, Plaine Semliki, 1000-1100 m, IV-X 1937, 2, HACKARS (MRAC); Albert Nat. Park, Reg. Oycha, 1100 m, IV-V 1950, 1, J. DE WILDE (MRAC); Albert Nat. Park, W. Ruwenzori, 1200-1500 m, III 1937, 3, HACKARS (2 MRAC, 1 LB); Albert Nat. Park, Ruwenzori, Mutawanga, 1000-1300 m, XI 1936-II 1937, 2, II-III 1937, 14, IV-X 1937, 1, HACKARS (11 MRAC, 6 LB); Ituri Forest, Beni, VIII 1946, 1 (BMNH); Kivu, Terr. Kalehe, Kashwe, 15 km of Irangi, XII 1962, 1, R. KISS (MRAC); Kivu, Lukando, Bunyakiri, 1959-60, 1, J. HECQ (MRAC); Kussongo, Stanleyfalls, 1, ROM (IRSN), 5, MALFEYT (IRSN); Orientale Prov., Bas-Uele Distr., Bahuma, 3 VII 1958, 7 (5 FMNH, 2 LB); Orientale Prov., Bas-Uele Distr., Beo, 20 IV 1958, 3 (FMNH); Orientale Prov., Bas-Uele Distr., Bongide, 20 VIII 1957, 1 (FMNH); Orientale Prov., Haut-Uele Distr., Bunie, 29 X 1956, 3 (2 FMNH, 1 LB).

VARIA: Mulunge, Dummer, 29 X 1922, 3, C. LE DOUX (ZMHU).

Conchyloctenia aspidiformis n. sp.

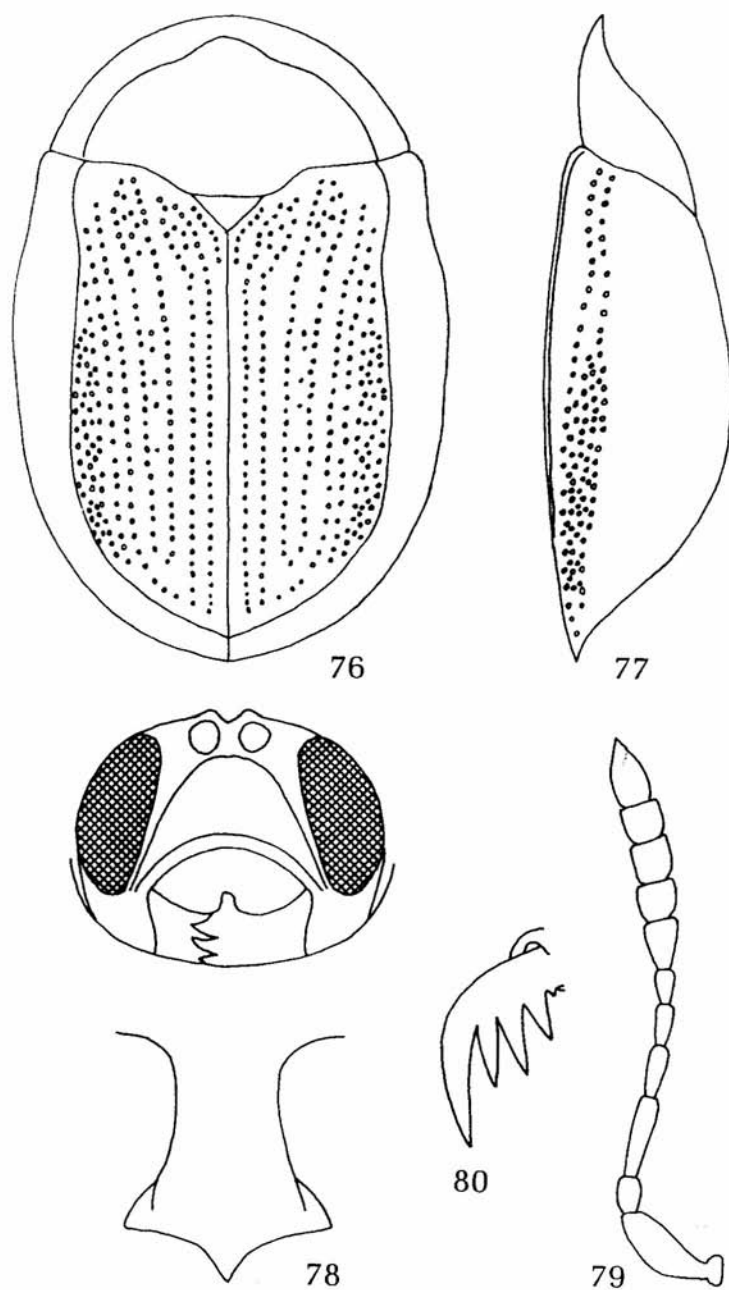
(figs. 76-81)

ETYMOLOGY

This species at first glance resembles some members of the genus *Aspidimorpha*.

DESCRIPTION

Length: 9.3 mm, width: 5.4 mm, pronotum length: 3.1 mm, pronotum width: 5.0 mm. Body elongate-oval (fig. 76).

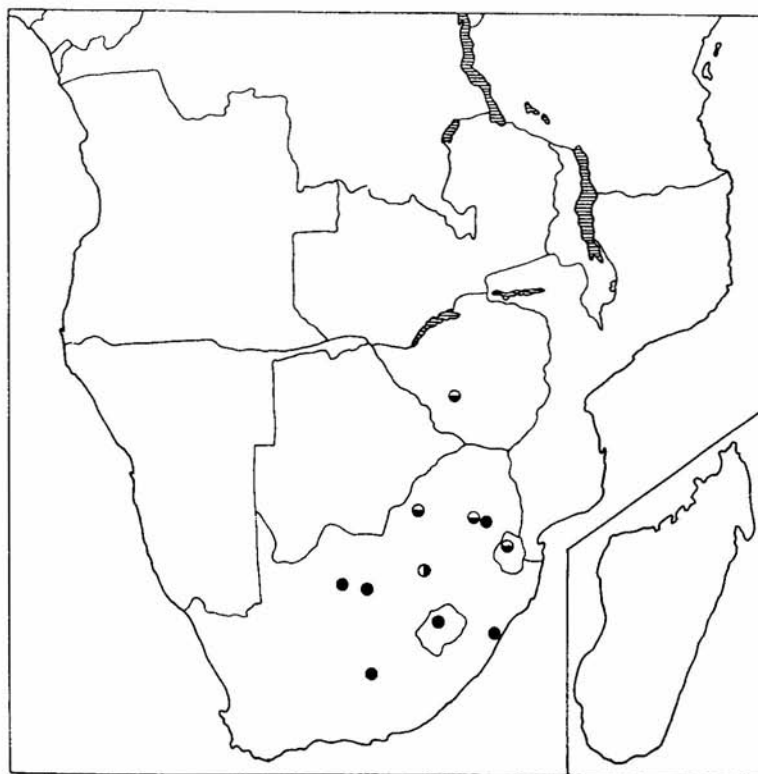


76-80. *Conchyloctenia aspidiformis*: 76 - body in dorsal view, 77 - body in lateral view, 78 - head and prosternum, 79 - antenna, 80 - tarsal claw

Pronotum and elytra uniformly yellow. Head yellow, basal corners of clypeus infusate. Ventrites yellow except infusate sutural part of metasternum. Legs and antennae yellow.

Pronotum semicircular, about 1.6 times wider than long, posterior corners obtuse. Disc regularly convex, its surface distinctly microreticulate, and scarcely, finely punctate. Distance between punctures 2-4 times wider than puncture diameter. Explanate margin moderately broad, with honeycomb structure, horizontal, forms a shallow gutter.

Scutellum triangular. Base of elytra only slightly wider than base of pronotum, anterior margin slightly bisinuate, crenulate. Disc moderately, regularly convex (fig. 77). Punctuation of elytra mostly regular, arranged in deep rows, only posterior half of the last two intervals completely irregularly punctate. Basal part of intervals 2-4, and distal part of interval 4 with a few additional punctures. Punctures in rows large, dense, partly touching each other, or distance between them not wider than puncture diameter. Punctures in distal part of the last two intervals slightly smaller than punctures in rows, but extremely dense, almost touching each other, surface of



81. Distribution of *Conchyloctenia illota* (black circles), *C. aspidiformis* (black and white circle), and *C. bipuncticollis* (white above black circles)

intervals appears rugose. Intervals in sutural half of disc about twice to thrice wider than rows, in lateral half as wide as rows, slightly convex, their surface smooth, glabrous. Marginal row distinct. Explanate margin narrow, about as wide as 1/5 width of each elytron, with honeycomb structure, subhorizontal, forms a shallow gutter. Lateral margination narrow but distinct.

Clypeus moderately broad (fig. 78), less elevated than in other species, in the middle with shallow impression, anterior margin rounded. Surface of clypeus microreticulate, on sides glabrous, within impression slightly dull with a few small punctures. Labrum emarginate to 1/3 length. Antennae short, extending to apex of prosternal process. Length ratio of antennal segments: 100:36:86:50:50:33:53:43:43:40:90. Segment 3 about 2.4 times longer than 2 (fig. 79).

Prosternal collar moderately long, with transverse sulci, prosternal process moderately broad, strongly expanded apically, without impressions (fig. 78). Legs slim, tarsi slim, the last segment distinctly wider than the third but not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, about twice shorter than claw (fig. 80), outer margin with three teeth about thrice shorter than teeth of inner margin.

Host plant and bionomics unknown.

DISTRIBUTION

South Africa (Orange F.S., fig. 81).

REMARKS

It belongs to the group of elongate species with strong elytral puncturation. At first glance it is similar to *C. illota*, especially in pale yellow dorsal side and distinctly elevated intervals. *C. illota* differs distinctly in ventrites mostly black (yellow in *C. aspidiformis*), and the last interval of elytral disc without irregular puncturation. Other species (*C. hybrida*, *C. tigrina* and *C. bipuncticollis*) distinctly differ in dorsal part of body with black, brown, or reddish pattern. *C. aspidiformis* has clypeus less convex than other species of the genus *Conchylectenia* and in this character resembles some members of the genus *Aspidimorpha*, especially *A. n. sp. near astraea*, *A. astraea* and *A. katangana* (pale forms), but no elongate species of the genus *Aspidimorpha* has elytral puncturation as strong as in *C. aspidiformis*; in the genus *Aspidimorpha* clypeus is completely flat, and posterior corners of pronotum more rounded than in *C. aspidiformis*.

MATERIAL EXAMINED

SOUTH AFRICA: holotype, Parys [Orange F.S.], X 1948, 1, C. KOCH (LB).

Conchyloctenia bipuncticollis (BOHEMAN, 1854)

(figs. 81-86)

Cassida bipuncticollis BOHEMAN, 1854: 337 (type in NRS); 1856: 118; 1862: 289.*Conchyloctenia bipuncticollis*: SPAETH, 1902a: 450; 1914: 79; 1924: 299.*Aspidomorpha* (*Conchyloctenia*) *bipuncticollis*: SHAW, 1956a: 263.

DESCRIPTION

Length: 8.2-9.8 mm, width: 5.5-6.2 mm, pronotum length: 2.8-3.0 mm, pronotum width: 4.8-5.3 mm. Body elongate-oval, almost parallelsided (fig. 82).

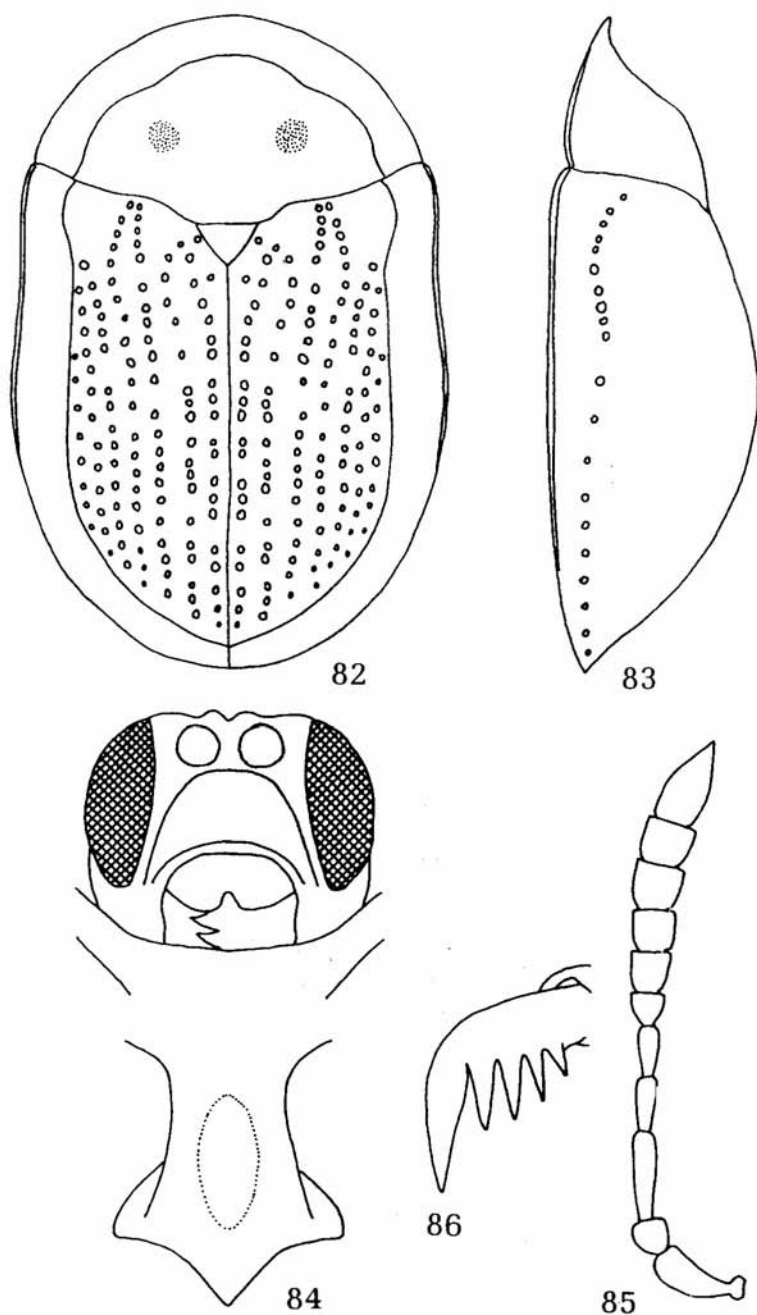
Pronotum deep yellow, disc with two small, round, black or red spots (fig. 82). Elytra yellow, disc with irregular pattern of reddish-brown spots or reticulation, each puncture of disc with dark centre. In pale specimens reddish pattern occupies not more than 40% surface of disc, in dark specimens almost whole disc is reddish except two yellow spots at base of each elytron, yellow marginal interval and few small yellow spots on sides of disc and along suture. Explanate margin yellow or reddish. Head yellow, thorax mostly or completely black, abdominal sternites yellow or with more or less developed brown to black spot in the middle. Legs yellow, basal six antennal segments yellow, distal five black, segment 7 often brownish.

Pronotum semicircular, broad, 1.7-1.8 times wider than long, posterior corners angulate. Disc regularly convex, impunctate, microreticulate but glabrous. Explanate margin with honeycomb structure, broad, horizontal, forms a distinct gutter, its surface impunctate, microreticulate, glabrous.

Scutellum triangular. Base of elytra only slightly wider than base of pronotum, anterior margin slightly bisinuate, crenulate, disc regularly convex (fig. 83). Puncturation of elytra regular, but sometimes rows of punctures on short distance irregular, especially on sides of disc, sometimes intervals with a few additional punctures. Punctures large and deep, distance between punctures variable, in one part of row punctures almost touching each other, in other parts distance as wide as to twice wider than puncture diameter, sometimes punctures grouped in 2 or 3 together. Intervals in sutural half of disc about twice wider than rows, on sides as wide as or slightly narrower than rows, slightly convex, its surface smooth, glabrous. Marginal row of punctures distinct. Explanate margin of elytra subhorizontal, with honeycomb structure, narrow, as wide as 1/4-1/5 width of each elytron, its surface transversely sulcate, appears irregular. Lateral margination narrow but distinct.

Clypeus broad (fig. 84), distinctly elevated, its anterior margin rounded, surface impunctate, microreticulate. Labrum emarginate to 1/3 length. Antennae short, extending to apex of prosternal process. Length ratio of antennal segments: 100:40:110:56:56:33:56:40:50:50:110. Segment 3 about thrice longer than 2 (fig. 85).

Prosternal collar moderately long, with transverse sulci, sides not angulate. Prosternal process broad, strongly expanded apically, in the middle with distinct



82-86. *Conchyloctenia bipuncticollis*: 82 - body in dorsal view, 83 - body in lateral view, 84 - head and prosternum, 85 - antenna, 86 - tarsal claw

impression (fig. 84). Legs slim, tarsi slim, the last segment long, distinctly longer than segment 3, slightly extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, extending to half length of claw (fig. 86), outer margin with 3 teeth, about thrice shorter than teeth of inner margin.

Host plant and bionomics unknown.

DISTRIBUTION

Zimbabwe, Swaziland, South Africa (fig. 81).

REMARKS

It is a distinct species. It differs from all elongate species with strongly punctate elytra in pronotum with two black or red round spots (in *C. illota*, *hybrida* and *aspidiformis* pronotum it is immaculate, in *C. tigrina* it has three spots). The reddish pattern of elytra is unique, only *C. hybrida* has similar irregular pattern but it is rather brownish or yellowish brown.

MATERIAL EXAMINED

SOUTH AFRICA: Lydenburg, 1896, 1, P. A. KRANTZ (TM); W Transvaal, 28 mls NW Britz, 1970, 1, L. SCHULZE (TM).

SWAZILAND: Eranchi, 15-31 XII 1954, 1, A. L. CAPENER (LB).

ZIMBABWE: Bulawayo, 1, L. ARNOLD (LB); Salisbury Distr., 1 (TM).

Conchyloctenia bonnyana (GORHAM, 1892)

(figs. 60-62, 87-92)

Cassida hepatica var.: DOHRN, 1880: 150.

Cassida Bonnyana GORHAM in GORHAM and GAHAN, 1892: 94 (type in BMNH).

Aspidomorpha Bonnyana: SPAETH, 1898a: 277.

Conchyloctenia bonnyana: SPAETH, 1902a: 450; 1914: 79; 1916: 41; 1924: 302; 1929: 160; BOROWIEC, 1985a: 237; 1986: 802.

Aspidomorpha (Conchyloctenia) bonnyana: SPAETH, 1943: 54; SHAW, 1956a: 595; 1961: 22; 1968b: 782.

Aspidomorpha Tieffenbachi KARSCH, 1882: 401 (type in ?), **n. syn.**

Conchyloctenia Tieffenbachi: SPAETH, 1902a: 450; 1914: 80.

Conchyloctenia bonnyana ssp. *Tieffenbachi*: SPAETH, 1924: 303.

Aspidomorpha Bennigseni Weise, 1898: 219 (type in ZMHU); 1899: 262; SPAETH, 1898b: 540 (as syn. of *bonnyana*); 1914: 79.

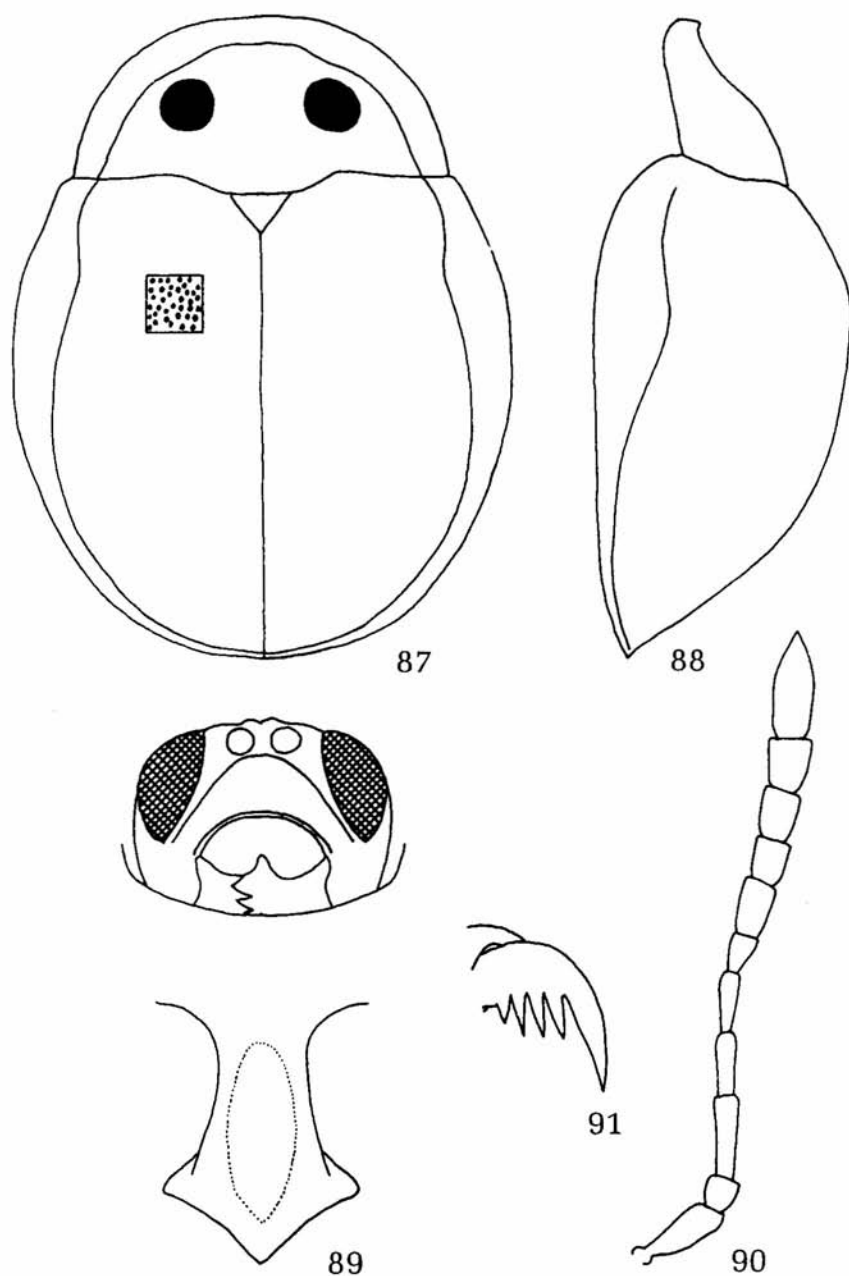
Conchyloctenia bennigseni: SPAETH, 1902a: 450.

Conchyloctenia luteipennis SPAETH, 1902a: 450 (type in IRSN); 1914: 79.

Conchyloctenia Bonnyana ab. *luteipennis*: SPAETH, 1924: 303; 1943: 55 (as syn. of *bonnyana*).

Conchyloctenia Bonnyana ssp. *simulans* SPAETH, 1924: 303 (syntypes in MM), **n. syn.**

Conchyloctenia luteicollis: SPAETH, 1902a: 450 (error typogr. = *luteipennis*).



87-91. *Conchyloctenia bonnyana*: 87 - body in dorsal view, 88 - body in lateral view, 89 - head and prosternum, 90 - antenna, 91 - tarsal claw

DESCRIPTION

Length: 10.8-14.3 mm, width: 7.8-10.0 mm, pronotum length: 3.5-4.3 mm, pronotum width: 5.9-7.7 mm. Body large, stout, broadly rounded on sides (fig. 87), males slightly stouter than females.

Pronotum and elytra yellow (= *luteipennis*) to reddish-brown. In typical specimens pronotal disc with two round, black spots of various size (fig. 61), but often pronotum immaculate (= *simulans*, fig. 62). Elytra usually unicoloured, occasionally whole disc black or with only suture and basal margin reddish-brown (= *tieffenbachi*, fig. 60). Ventrites black, clypeus in pale forms yellow, or with only posterior corners infuscate to black, sides of abdominal sternites often yellowish, in the palest form last two sternites wholly testaceous. Legs black. Basal 4-5 antennal segments yellowish, distal segments black, in forms with maculate pronotum and/or elytra dorsal part of basal antennal segments often infuscate to black.

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, distinctly microreticulate, with scarce fine pricks, each puncture about twice to thrice larger than each cell of microreticulation, surface glabrous. Black spots as densely punctured as light area. Explanate margin distinctly bordered from disc, moderately broad, horizontal or forming a shallow gutter, with honeycomb structure. Surface microreticulate, glabrous, without or with extremely fine pricks.

Scutellum triangular. Base of elytra not or only slightly wider than base of pronotum, anterior margin bisinuate, crenulate. Disc strongly, regularly convex (fig. 88). Punctuation of disc completely irregular, very fine and scarce, distance between punctures about twice larger than puncture diameter. Marginal row indistinct or obsolete, but along border between disc and explanate margin usually an impunctate narrow interval occurs, sometimes external margin of this interval with short rows of larger punctures of marginal row. Surface of disc distinctly microreticulate, in populations from northern part of distribution range glabrous, in populations from its southern part often dull. Explanate margin about as wide as 1/5 width of each elytron, declivous, with no lateral margination. Surface microreticulate glabrous or dull, with very shallow punctuation, especially along marginal interval, punctures as large as on disc.

Clypeus broad, strongly elevated, anterior margin rounded, surface microreticulate with several fine punctures. Labrum emarginate to 1/3 length. Antennae moderately long, extending to 1/4 length of metasternum. Length ratio of antennal segments: 100:37:125:88:72:50:55:55:50:60:100. Segment 3 more than thrice longer than 2 (fig. 90).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, deeply canaliculate longitudinally. Legs slim, tarsi broad, the last segment distinctly longer than the third, extending slightly behind marginal setae. Inner margin of claws with pecten of teeth of equal size, about twice shorter than claw (fig. 91), outer margin with three teeth about thrice shorter than teeth of inner margin.

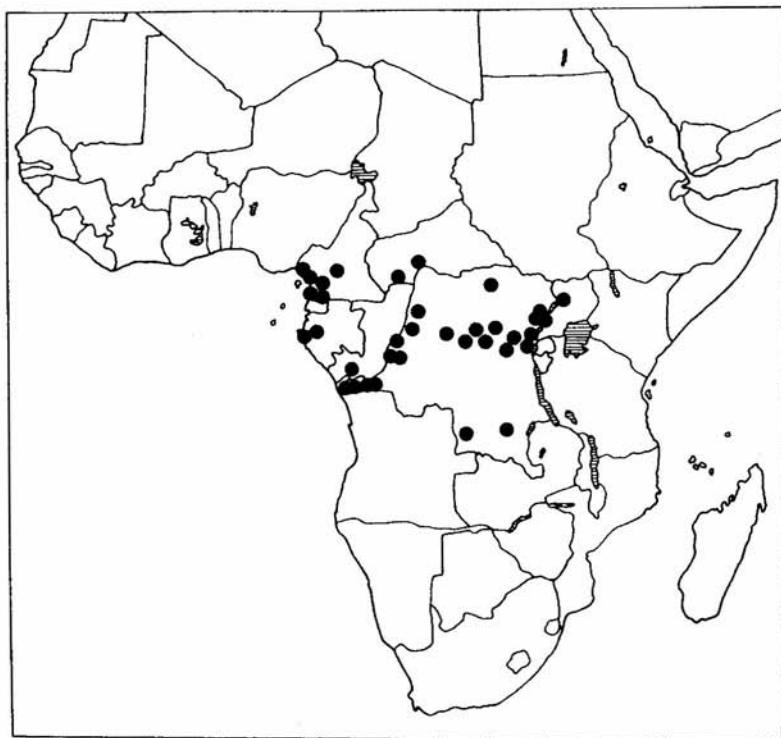
Bionomics and host plant unknown.

DISTRIBUTION

Cameroon, Gabon, Republic of Central Africa, Uganda and Zaire (fig. 92).

REMARKS

The large, strongly convex and stout body, irregular elytral puncturation, and usually immaculate elytra place this species close only to *C. hepatica*. Both species are extremely similar in body shape and background colouration, but *C. hepatica* never forms aberrations with maculate pronotum, or black elytral disc. Immaculate forms of *C. bonnyana* differ from *C. hepatica* only in stronger elytral puncturation; in *C. hepatica* puncturation is almost obsolete, in form of fine pricks, distance between punctures many times wider than puncture diameter, while in *C. bonnyana* puncturation is fine but distinct, and distance between punctures is about twice wider than puncture diameter. Both species are partly separated geographically. *C. hepatica* is west



92. Distribution of *Conchyloctenia bonnyana*

African, *C. bonnyana* occurs in Central Africa, only in Cameroon they are partly sympatric.

MATERIAL EXAMINED

CAMEROON: Barombi, 3, CONRADT (2 IZPAS, 1 LB); Batanga, II 1914, 1, III 1914, 2, IV 1914, 15, F.H. HOPE (CMNH); Bombe, III 1910, 1, E. HINTZ (FMNH); Duala, 18 (NMP), 5, LENCZS (3 MRAC, 2 LB), 1, J. CANTALOUBE (MRAC); Duala, X 1912, 1, ab. *simulans*, ROTHKIRCH (ZMHU); Ebolowa, n. Ambam, 6-9 X 1964, 1, T. V. D. AUDENAERDE (MRAC); Edea, 20 III 1922, 1, 25 III 1922, 1, 25 VI 1922, 1, J.A. REIS (CMNH); Efulen, XI 1921, 3, 3 VI 1922, 1, H.L. WEBER (CMNH); Jaunde Stat., 800 m, 6, ZENKER (4 IRSN, 2 LB); Jaunde, 27 III 1923, 1 (CMNH); Joko, 4 (syntypes of *Conchyloctenia bonnyana* ssp. *simulans*, MM), 1 (FMNH); Kribi, 2 (MRAC), 2, CARRET (MRAC); Lolodorf, III 1914, 1, 27 XI 1914, 2, J.A. REIS (CMNH), X 1925, 1, XII 1926, 1, A.I. GOOD (CMNH); Metet, II 1922, 1, Mrs. LIPPERT (CMNH); Mont Balmayo, 5, BARGA (MRAC), 1, J. CANTALOUBE (MRAC), VI 1969, 1, J. CANTALOUBE (MRAC); Nkolbisson, Dept. Nyong-Sanaga, IX 1963, 2, X 1963, 1, L.G. SEGERS (MRAC); Nkolbison, Yaounde-Bi, 3 I 1963, 2, L. SEGERS (ZSM); Pipinde, 1, ZENKER (ZMHU); Sasse near Buea, Mt Cameroon, II 1951, 2, S. TITA (CAS); Sasse-Sappo, 20-31 I 1952, 1, 1 II 1952, 8 II 1952, 1, S. TITA (CAS, 1 LB); Soppo, II 1913, 1, ab. *simulans*, v. ROTHKIRCH (ZMHU); Victoria, Mabeta, VII 1949, 1, VII-VIII 1949, 1, S. TITA (CAS).

GABON: Bas-Ogooue, Lambaréné, 1 (NMP); Fernan Vaz, IX-X 1902, 1, L. FEA (MZSNG); Kangvé, Ogové R., 12, A.C. GOOD (CMNH); Ogové R., 21, A.C. GOOD (CMNH); Ogowé, 2 (NMP).

REPUBLIC OF CENTRAL AFRICA: Fort Sibut, Oubanghi-Chari, 1968, 2 (MRAC).

UGANDA: Mabira Forest, Chagwe, 3500-3800 ft., 16-25 VII 1911, 2, S. A. NEAVE (BMNH); Mpanga Forest, Toro, 4800 ft., 19-23 XI 1911, 2, S. A. NEAVE (BMNH).

ZAIRE: Albert Nat. Park, riv. Kasalala, 1100 m, 6 XI 1948, 2, J. DE WILDE (MRAC); Albert Nat. Park, R. dr. Loule, 1100 m, 14 V 1949, 1, J. DE WILDE (MRAC); Albert Nat. Park, Mutsora, 1939, 3, HACKARS (MRAC); Albert Nat. Park, riv. dr. Okabalua, 950 m, 18 III 1949, 2, J. DE WILDE (MRAC); Albert Nat. Park, Plaine Semliki, 900-1100 m, 10 X 1937, 11, HACKARS (MRAC); Albert Nat. Park, Rutshuru, 1285 m, 1, ab. *luteipennis*, G. F. DE WITTE (MRAC); Albert Nat. Park, W Ruwenzori, 1200-1500 m, III 1937, 1, HACKARS (MRAC); Albert Nat. Park, Ruwenzori, Mutawanga, 1000-1300 m, II-III 1937, 19, HACKARS (MRAC, LB); Albert Nat. Park, Secteur Nord, riv. Kyniamyga, affl. g. Semliki, 895 m, 9 IV 1958, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Lesse, affl. g. Semliki, 695 m, 9 VII 1957, 1, P. VANSCHUYTBROECK (MRAC); Bas-Congo, Mayidi, 1942, 1, R. P. VAN EYEN (MRAC); Bambesa, X 1933, 1, J. V. LEROY (MRAC), 7 VI 1937, 1, XI 1937, 1, J.M. VRIJDAGH (IRSN); Bas Congo, Mayumbe, IV 1936, 1, F.G. OVERLAET (LB); Biruwe à Matenda, 21 IX 1929, 1, A. COLLART (IRSN); Bokalakala, Bolobo, 1954, 1, C. ELOY (MRAC);

Botuna-Bokungu, 1950, 1, M. BOEL (LB); Boye Plant., Terr. Opala, 1955, 1, P. SAUSSUS (MRAC); Buhunde-Matenda, 22 IX 1929, 1, A. COLLART (IRSN); Buhunde-Okondo, 19 IX 1929, 1, A. COLLART (IRSN); Equateur, Bokuma, XII 1951, 1, VII 1952, 2, II 1952, 1, R.P. LOOTENS (MRAC); Kakolo-Molinda, 4 X 1929, 1, A. COLLART (IRSN); Kangu Mayombe, 1, PEREGI (HNHM); Kivu, Lukando, Bunyakiri, 1959-60, 1, J. HECQ (MRAC); N Lac Kivu, Rwankwi, XII 1951, 1, J.V. LEROY (MRAC); env. Lac Leopold II, 11-24 VI 1925, 3, Pr. LEOPOLD (IRSN); Lac Leopold II, Bokalakala, 1957, 3, N'KELE (MRAC); Libenge, 24 X 1947, 1, 4 XI 1947, 1, R. CREMER and M. NEUMAN (1 IRSN, 1 LB); Libenge-Mawuya, 14 X 1947, 1, R. CREMER and M. NEUMANN (IRSN); Likimi-Kwawa, 4 X 1927, 1, A. COLLART (IRSN); Likimi-Mumbia, 29 X 1927, 1, A. COLLART (IRSN); Lomani-Kaniama, 1932, 1, ab. *luteipennis*, R. MASSART (MRAC); Lubuta-Masua, 1930, 1, A. COLLART (IRSN); Lubutu, 5 IX 1929, 1, 14 X 1929, 1, 15 X 1929, 1, A. COLLART (IRSN); Lukolela, 1938, 1, R. MASSART (IRSN); Lukungu, 1, Ch. HAAS (type of *C. luteipennis*); Lulua, Kapanga, III 1933, 1, F. G. OVERLAET (MRAC); Masisi, Mandimba-Uluku, 14 IX 1929, 2, A. COLLART (IRSN); Mayumbe, VII 1917, 1, R. MAYNÉ (MRAC); Sanga, 26 X 1925, 1, A. COLLART (IRSN); Thysville, 25 VIII 1950, 1, M. LECLERQ (IRSN); Tshela (Mayumbe), XI 1924, 1, ab. *tieffenbachi*, A. COLLART (MRAC); Tshuapa, Bokuma, VI 1952, 1, III 1954, 1, R.P. LOOTENS (MRAC); Tshuapa, Bokungu, 1949, 1, M. DUPOUIS (MRAC); Tshuapa, Etata, V 1970, 1, J. HAUWAERTS (MRAC); Tshuapa, Ikela, 1955, 20, 1956, 6, III-VI 1956, 2, IX 1956, 1, XI 1956, 3, R.P. LOOTENS (MRAC, LB), III-VI 1956, 3, R. DEGUIDE (MRAC); Ubangi, Bulu, 25 II 1935, 1, G. SETTEMBRINO (IRSN); Uluku-Buhunde, 23 X 1929, 1, A. COLLART (IRSN); Yangambi (Stan.), X-XII 1958, 1, J. DUBOIS (MRAC).

VARIA: Old Calabar, 1 (syntype of *Cassida hepatica*, BMNH).

Conchyloctenia fibrata SPAETH, 1912

(figs. 93-98, 124-126)

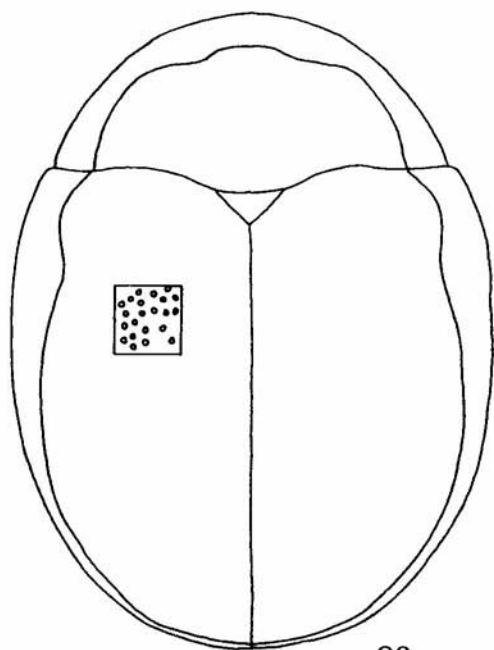
Conchyloctenia fibrata SPAETH, 1912b: 505 (syntypes in MM, DEI); 1924: 304; BOROWIEC, 1986: 802.

Aspidomorpha (Conchyloctenia) fibrata: SPAETH, 1943: 54; SHAW, 1955: 235.

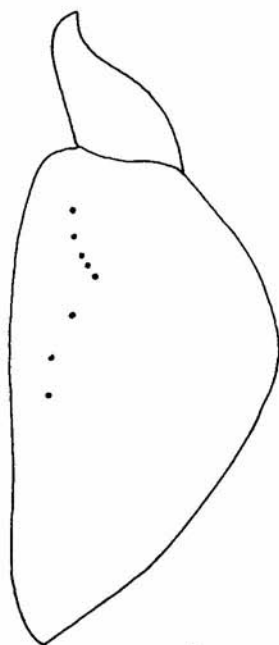
DESCRIPTION

Length: 8.8-12.3 mm, width: 6.5-8.0 mm, pronotum length: 2.9-3.5 mm, pronotum width: 5.1-6.2 mm. Body stout, broadly rounded on sides (fig. 93), males distinctly shorter and stouter than females.

Pronotum yellowish to brown, immaculate, only occasionally whole disc black. Elytra yellowish to pale brown, disc with darker brown, irregular pattern forming reticulation variable in size and shape (figs. 124-126). Pale background colour often forms line along suture and irregular line homologous to third interval. Dark reticulation tends to form three irregular transverse bands. In extremely dark species whole disc black. Explanate margin yellowish to pale brown, occasionally dark



93



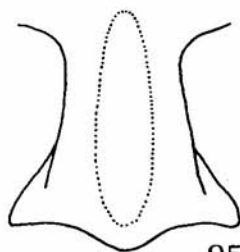
94



95



97



96

93-97. *Conchyloctenia fibrata*: 93 - body in dorsal view, 94 - body in lateral view, 95 - head and prosternum, 96 - antenna, 97 - tarsal claw

brown, immaculate. Ventrites mostly black, clypeus often paler, brown, abdominal sternites sometimes partly brownish. Legs black. Antennal segments 5-7 brownish, remainder black, in dark forms dorsal side of basal segments infuscate.

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, glabrous or slightly dull, with extremely scarce and fine puncturation. Distance between punctures 2-4 times wider than puncture diameter. Explanate margin distinctly bordered from disc, horizontal to forming a shallow gutter, surface microreticulate, glabrous to slightly dull, impunctate or with punctures similar to those on disc.

Scutellum triangular. Base of elytra not wider than base of pronotum, anterior margin almost straight, crenulate. Disc strongly, regularly convex (fig. 94), puncturation completely irregular, small and scarce, on darker spot usually denser than on pale background colour. Distance between punctures on dark spots usually as wide as puncture diameter, on pale spots usually many times wider than punctures, often pale spots impunctate. Marginal row in most specimens indistinct, sometimes distinct in subhumeral area and in posterior half of disc, occasionally distinct on almost whole length except the middle. Explanate margin declivous, with no lateral margination, usually impunctate or with a few punctures in subhumeral area, and sometimes in posterior third close to border between disc and explanate margin. Surface microreticulate, glabrous to slightly dull, honeycomb structure in dried specimens often invisible.

Clypeus broad (fig. 95), distinctly elevated, anterior margin rounded, surface microreticulate, impunctate or with a few small punctures. Antennae moderately long, extending to mesosternum. Length ratio of antennal segments: 100:36:100:70:70:53:60:56:60:60:106. Segment 3 about 2.7 times longer than 2 (fig. 96).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with shallow longitudinal canaliculation. Legs slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claw with pecten of teeth of equal length, about twice shorter than claw (fig. 97), outer margin with three teeth about twice shorter than teeth of inner pecten.

Host plant and bionomics unknown.

DISTRIBUTION

Mountain regions of African rift from S Ethiopia to Ruanda (fig. 98).

REMARKS

It is vicariant species to *C. mouffleti*. Both are extremely similar in size and shape, *C. mouffleti* differs distinctly in smaller and scarcer puncturation of elytra, elytral black pattern, usually more regular with tendency to form more distinct transverse bands. *C. mouffleti* is a lowland species, widespread in woodland region of Central Africa. *C. signatipennis* is also similar to *C. fibrata*, especially in

irregularly punctured elytra and lack of lateral elytral margination; but *C. signatipennis* is more elongate with elytral pattern in form of numerous black spots.

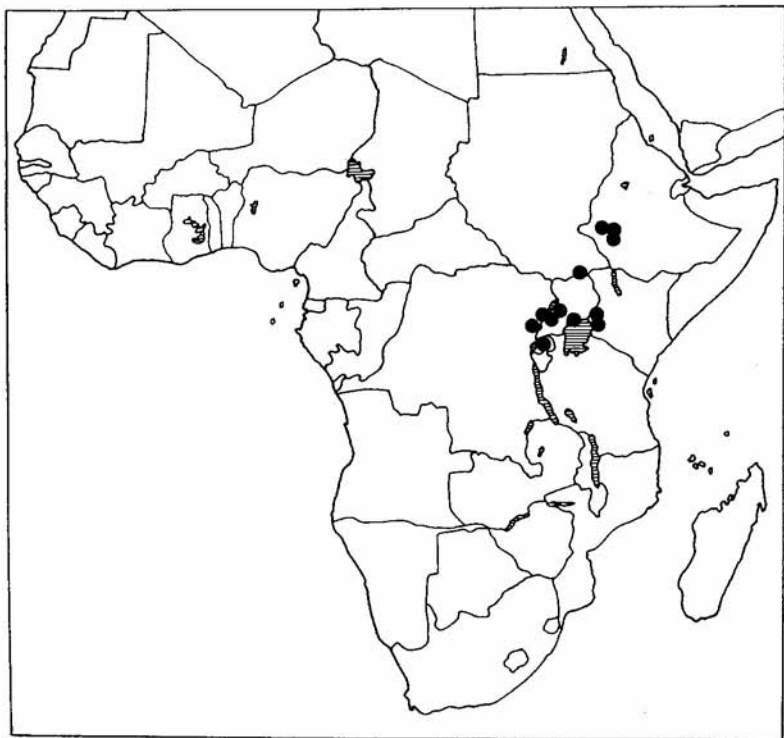
MATERIAL EXAMINED

ETHIOPIA: Ilubabor Prov., 15 km NW Chora, 1600 m, VI 1973, 1, G. DE ROUGEMOUT (MRAC); Kaffa Prov., Gojeb Vall., VIII 1971, 1, G. DE ROUGEMOUT (MRAC), 1/2 km W Bridge, 1450 m, 18 X 1972, 1, R. CLARKE (MRAC); Kaffa Prov., Jimma, VII-VIII 1971, 1, G. DE ROUGEMOUT (MRAC).

KENYA: Ilala, Maramas Distr., 14 mls E Mumias, 18-21 VI 1911, 1, S. A. NEAVE (BMNH); Lusinga Is., E. Vic. Nyanza, 25-26 IV 1911, 1, S. A. NEAVE (BMNH).

RUANDA: Rubengera, Terr. Kibunye, 1900 m, 12 II 1953, 1, P. BASILEWSKY (MRAC).

UGANDA: Brit. Uganda, 2, GRAUER (syntypes, MM); Bwamba Forest, III 1948, 1, J. G. WILLIAMS, 1 (BMNH); Entebbe, 5-9 IV 1914, 2, 20-25 IV 1914, 1, C. C. GOWDEY (BMNH); Kafu Riv., near Hoima-Kampala road, 3500 ft., 29-31 XII 1911, 1, S. A. NEAVE (BMNH); Kibale Forest, 16 XCII 1984, 1, 14 II 1985, 1, 13 IX 1986, 2, M.



98. Distribution of *Conchyloctenia fibrata*

NUMMELIN (ZMUH); Mabira, 1 (NMP); near Mpumu, 4000 ft., 14-15 VI 1911, 1, S. A. NEAVE (BMNH).

ZAIRE: Albert Nat. Park, Kamande (Talia), 912 m, 21 XI 1935, 3, H. DAMAS (MRAC); Albert Nat. Park, Kibga, S. Bishoke, 2400 m, 16-19 II 1935, 1, F. DE WITTE (IRSN); Albert Nat. Park, L. Mugunga (Nzulu), Sake, 1500 m, 3-4 II 1934, 1, G. F. DE WITTE (MRAC); Albert Nat. Park, Mutsora, 77, HACKARS (MRAC, LB); Albert Nat. Park, Secteur Nord, riv. Lume (moyenne), 1420 m, 10 IX 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Mangbwelu, af. Butahu, 950 m, 22 VI 1951, 1, R. CHRISTIAENS (MRAC); Plaine Semliki, 900-1100 m, IV-X 1937, 2, HACKARS (MRAC); Ruwenzori, Mutawanga, 1000-1300 m, II-III 1937, 9, HACKARS (MRAC).

Conchyloctenia hepatica (BOHEMAN, 1854)

(figs. 99-104)

Cassida hepatica BOHEMAN, 1854: 342 (type in NRS); 1856: 120; 1862: 294.

Aspidomorpha hepatica: WAGENER, 1880: 161.

Conchyloctenia hepatica: SPAETH, 1902a: 450; 1903b: 177; 1914: 79; 1924: 302; BOROWIEC, 1985a: 237; 1986: 802.

Aspidomorpha (Conchyloctenia) hepatica: SHAW, 1968a: 370.

DESCRIPTION

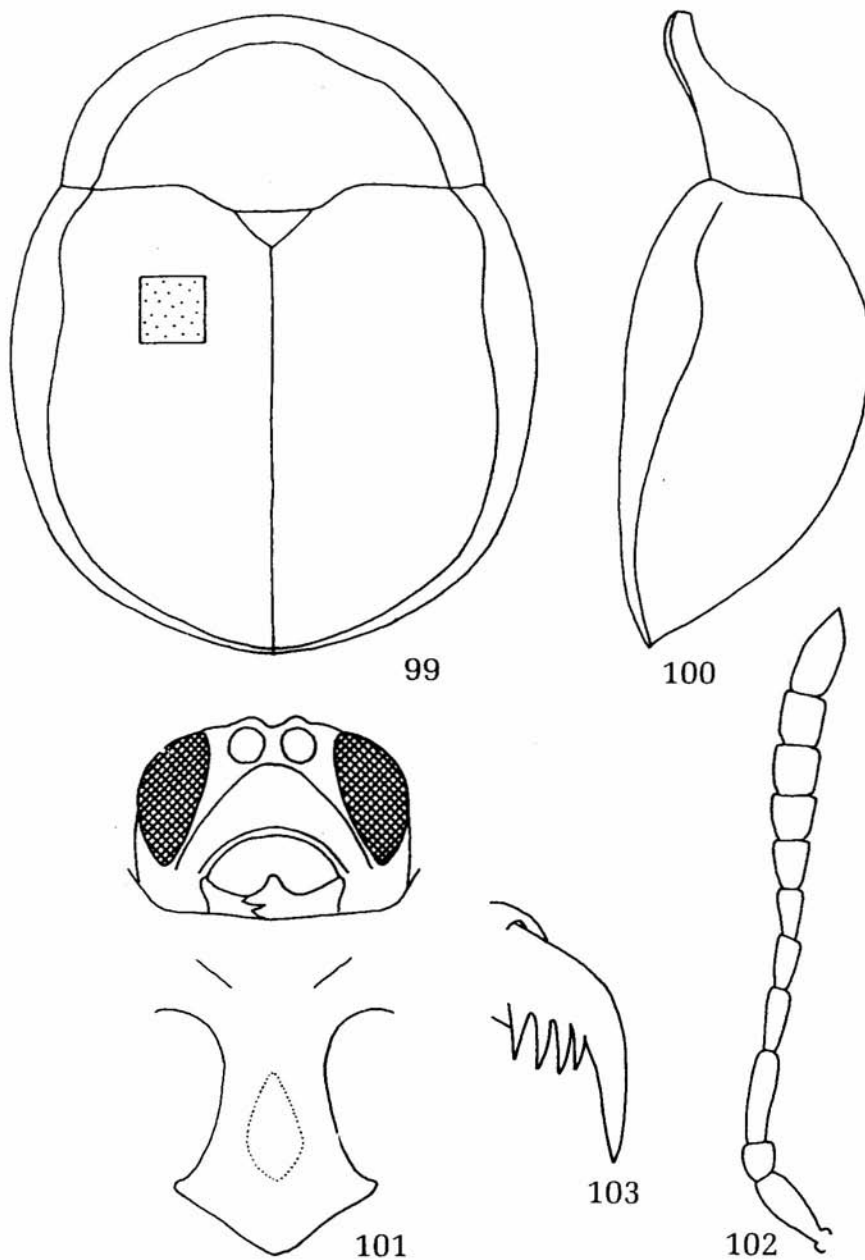
Length: 9.0-13.2 mm, width: 6.9-9.7 mm, pronotum length: 3.2-4.3 mm, pronotum width: 5.6-7.4 mm. Body large, stout (fig. 99), strongly convex, males slightly stouter than females.

Pronotum and elytra uniformly brown to dark brown. Ventrites mostly black, clypeus usually brown, often coxa and trochanteres, and lateral and apical margins of abdominal sternites brownish, occasionally whole abdomen brownish, in the middle more or less infuscate. Basal 3-4 antennal segments brown, often infuscate on dorsal side, distal segments black.

Pronotum semicircular, about 1.7 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, with extremely fine pricks, glabrous. Explanate margin distinctly bordered from disc, horizontal, with honeycomb structure, its surface microreticulate, impunctate, glabrous.

Scutellum triangular. Base of elytra not or only slightly wider than base of pronotum, anterior margin slightly bisinuate, crenulate. Disc of elytra strongly, regularly convex (fig. 100), glabrous, appears impunctate, with extremely fine irregular pricks about as large as 2-3 cells of microreticulation (fig. 99). Distance between pricks many times larger than prick diameter. No marginal row. Explanate margin of elytra about as wide as 1/5 width of each elytron, declivous, with honeycomb structure, its surface microreticulate, impunctate, glabrous.

Clypeus broad (fig. 101), strongly elevated, its anterior margin rounded, surface microreticulate with several small punctures. Antennae moderately long, extending



99-103. *Conchyloctenia hepatica*: 99 - body in dorsal view, 100 - body in lateral view, 101 - head and prosternum, 102 - antenna, 103 - tarsal claw

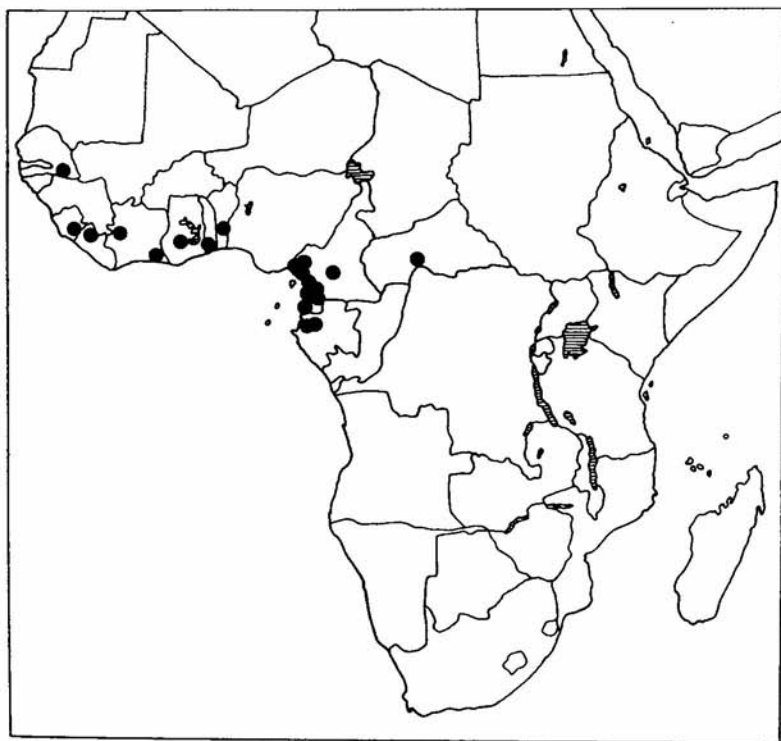
to mesosternum. Length ratio of antennal segments: 100:43:128:80:71:57:63:57:60:63:114. Segment 3 about thrice longer than 2 (fig. 102).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with shallow to deep longitudinal canalicular. Legs slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal size, about twice shorter than claw (fig. 103), outer margin with three teeth about thrice shorter than teeth of inner margin.

Host plant nad bionomics unknown.

DISTRIBUTION

West Africa from Senegal to Republic of Central Africa (fig. 104).



104. Distribution of *Conchyloctenia hepatica*

REMARKS

It is the only species with elytra apparently impunctate. *C. bonnyana* has similar body shape and size, but distinctly differs in pronotum often with black spots. Immaculate forms of *C. bonnyana* are extremely similar to *C. hepatica*, but they have elytral disc finely and distinctly punctate, with distance between punctures about twice to thrice larger than puncture diameter. Both species are sympatric only in Cameroon and Republic of Central Africa.

MATERIAL EXAMINED

BENIN: Dahomey, 1 (IRSN); Mars, 1 (LB).

CAMEROON: Balanga, 2 (NMP); Barombi, 2, CONRADT (1 IZPAS, 1 LB); Batanga, VI 1911, 3, 15 IV 1920, 1, A.I. GOOD (CMNH); Cameroon, 1 (FMNH), 6 (LU); Dschang, 1, LENCSEZ (MRAC); Edea, 20 V 1912, 1, v. ROTHKIRCH (LB), 20 III 1922, 1, 13 IV 1922, 2, 14 IV 1922, 4, 18 IV 1922, 1, 19 IV 1922, 1, 12 V 1922, 1, 24 VIII 1922, 1, J.A. REIS (CMNH); Efulen, 14 IV 1909, 1, III 1910, 1, 19 IV 1910, 1, 7 I 1918, 1, 16 I 1918, 1, 19 I 1918, 1, H.L. WEBER (CMNH), IX 1912, 12, X 1912, 5, XI 1912, 10, 15 III 1919, 1, J. A. REIS (CMNH); Joko, 1 (HNHM); Kribi, XII 1951, 1, DEVYLDER (IFAN); Lolodorf, VIII 1910, 1, II 1914, 1, 26 VIII 1914, 1, III 1925, 1, IX 1926, 1, A.I. GOOD (CMNH), V 1914, 3, 12 V 1914, 1, 19 XII 1914, 1, J.A. REIS (CMNH).

EQUATORIAL GUINEA: Bata, 1, Palau (USNM); Benito, 2 (1 CMNH, 1 NMP); Mongo, 1946-1948, 1, J. PALAU (MRAC).

GABON: Bas-Ogooué, 34 (NMP), 3 (IRSN); Bas-Ogooué, Lambaréné, 17 (NMP); Gabon, 3 (IRSN); Kangvé, Ogové R., 1, A.C. GOOD (CMNH); Ogové R., 1, A.C. GOOD (CMNH).

GHANA: Asente Akem (Ashantis), 1, coll. CLAVAREAU (MRAC).

IVORY COAST: Adiopodoumé, 1 (MRAC); Bingerville, IX 1961, 1, J. DECELLE (MRAC); Man, VIII 1948, 3 (2 MHNG, 1 LB).

LIBERIA: NY Setlmt, III 1985, 1, Mus. Sharp (USNM); 4 mls NW Zorzor, 12 VIII 1966, 1, E. S. ROSS and K. LORENZEN (CAS).

REPUBLIC OF CENTRAL AFRICA: Fort Sibut, Oubanghi-Chari, 1 (MRAC).

SENEGAL: Senegal, 1 (FMNH).

SIERRA LEONE: Kenema, 1975, 5, M. VERHAEGHE (MRAC), III-VI 1975, 4, M. VERHAEGHE (IRSN); Mayamba, 1, coll. LE MOULT (IRSN); Sierra Leone, 1 (ex coll. SELMAN, DZPAS), 4 (IRSN), 1 (FMNH), 2 (NMP), 1 (LU).

TOGO: Misahohe, XI 1894, 1, E. BAUMANN (LB); Missahoué, 650 m, VI 1963, 1, Y. SCHACH (MRAC).

***Conchyloctenia hybrida* (BOHEMAN, 1854)**

(figs. 105-110, 188-190)

Cassida hybrida BOHEMAN, 1854: 338 (syntypes in NRS).*Aspidomorpha hybrida*: CHAPUIS, 1880: 31; KOLBE, 1898: 344; HARRIS, 1937: 488.*Conchyloctenia hybrida*: SPAETH, 1902a: 450; 1909: 276; 1912b: 504; 1914: 79; 1915a: 1; 1916: 41; 1922: 999; 1924: 297, 299; 1929: 161; 1938: 61; JOLIVET, 1957: 51; BOROWIEC, 1985a: 236; 1986: 801.*Aspidomorpha (Conchyloctenia) hybrida*: SPAETH, 1943: 53; SHAW, 1955: 235; 1956b: 263; 1960: 370; 1961: 23; 1972: 68.*Aspidomorpha vicaria* HAROLD, 1879: 216 (type in ?).*Conchyloctenia vicaria*: SPAETH, 1902a: 450; 1909: 277 (as syn. of *hybrida*).*Conchyloctenia hybrida* ssp. *vicaria*: SPAETH, 1914: 79; 1935a: 173.*Aspidomorpha adjuncta* WEISE, 1899: 262 (syntypes in ZMHU); SPAETH, 1909: 276 (as syn. of *hybrida*).*Conchyloctenia adjuncta*: SPAETH, 1902a: 450.

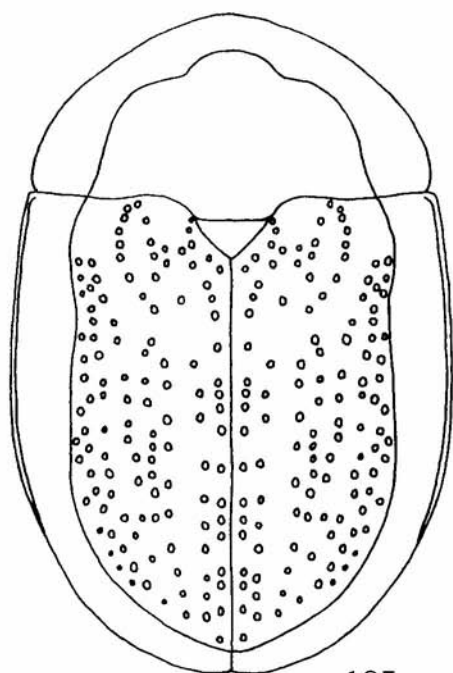
DESCRIPTION

Length: 7.3-10.6 mm, width: 5.2-7.9 mm, pronotum length: 2.7-3.2 mm, pronotum width: 4.6-5.8 mm. Body elongate, almost parallelsided (fig. 105).

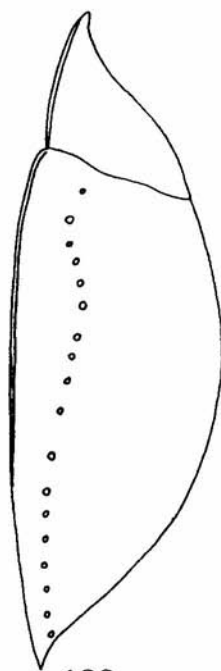
Pronotum yellow to deep yellow, immaculate, or with irregular brownish pattern. Elytra yellow to deep yellow, each puncture with black centre, in pale specimens disc immaculate, in dark specimens with pale brown spots, especially along suture and along sides of disc, sometimes spots along sides of disc connected, forming a longitudinal band (figs. 188-190). Explanate margin of elytra yellow to deep yellow, immaculate, or with indistinct pale brownish spots. Ventrites mostly black, including clypeus; lateral plates of thorax and lateral margins of abdominal sternites, and apex of the last sternite yellow. Legs except black coxa and trochanters yellow. Antennal segments 1-7 yellow, remainder black, apex of segment 7 often infusate.

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, glabrous, with scarce, extremely fine pricks. Each side of disc with a few larger punctures. Explanate margin distinctly bordered from disc, broad, horizontal, with honeycomb structure, not or indistinctly microreticulate, glabrous.

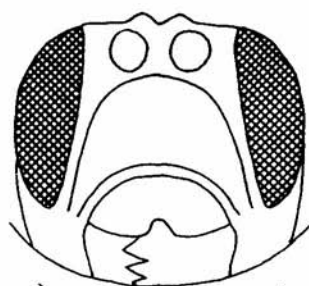
Scutellum triangular. Base of elytra not wider than base of pronotum, anterior margin almost straight, crenulate. Disc moderately convex (fig. 106), puncturation arranged in moderately deep rows, regular but sometimes rows slightly irregular. Punctures in rows large, often grouped 1-3 together, so in one part of rows distance between punctures is 2-4 times larger than puncture diameter, in other parts punctures almost touching each other. Intervals almost flat, in sutural half of disc about twice wider than rows of punctures, on sides of disc as wide as or slightly wider than rows. Interval 3 distinctly wider than neighbouring ones. Surface of intervals smooth or with indistinct microreticulation, glabrous. Marginal row distinct, its punctures slightly larger than those on sides of disc. Explanate margin about as wide as 1/5 width of each



105



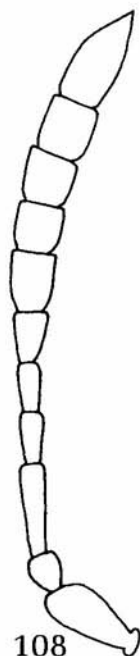
106



107



109



108

105-109. *Conchyloctenia hybrida*: 105 - body in dorsal view, 106 - body in lateral view, 107 - head and prosternum, 108 - antenna, 109 - tarsal claw

elytron, with honeycomb structure, subhorizontal, forming a gutter. Lateral margination narrow but distinct. Surface of explanate margin with indistinct transverse folds, glabrous.

Clypeus moderately broad (fig. 107), strongly elevated, anterior margin rounded. Surface slightly impressed in the middle, with several punctures, glabrous. Labrum emarginate to 1/4-1/3 length. Antennae moderately long, extending to apex of mesosternum. Length ratio of antennal segments: 100:40:96:53:50:40:66:50:50:53:100. Segment 3 about 2.4 times longer than 2 (fig. 108).

Prosternal collar large, with transverse sulci, prosternal process moderately broad, strongly expanded apically, canaliculate longitudinally. Legs slim, tarsi slim, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, about twice shorter than claw (fig. 109), outer margin with three or four teeth about twice shorter than those of inner pecten.

Host plant: *Solanaceae*: *Solanum incanum*, *S. campylacanthum*, *S. mauritianum* - (Shaw, 1956 and label's data), *Solanum* spp. - (H. HERON letter inf., and label's data). Bionomics unknown.

DISTRIBUTION

Wide spread in eastern part of Africa north to Ethiopia, in South Africa and southern part of Central Africa (S Zaire, Republic of Central Africa, fig. 110).

REMARKS

It belongs to the group of elongate species with strongly punctured elytra. This group comprises also *C. tigrina*, *C. illota*, *C. bipuncticollis* and *C. aspidiformis*. *C. illota* and *C. aspidiformis* differ distinctly in uniformly yellow elytra (at least with black punctures in *C. hybrida*); *C. tigrina* and *C. bipuncticollis* differ in pronotum with black spots (at most with irregular pale brown pattern in *C. hybrida*). Form of *C. tigrina* with immaculate pronotum differs distinctly in elytra with black spots (at most with brown spots in *C. hybrida*). In eastern part of Africa *C. hybrida* is among the most common species of the tribe *Aspidimorphini*.

MATERIAL EXAMINED

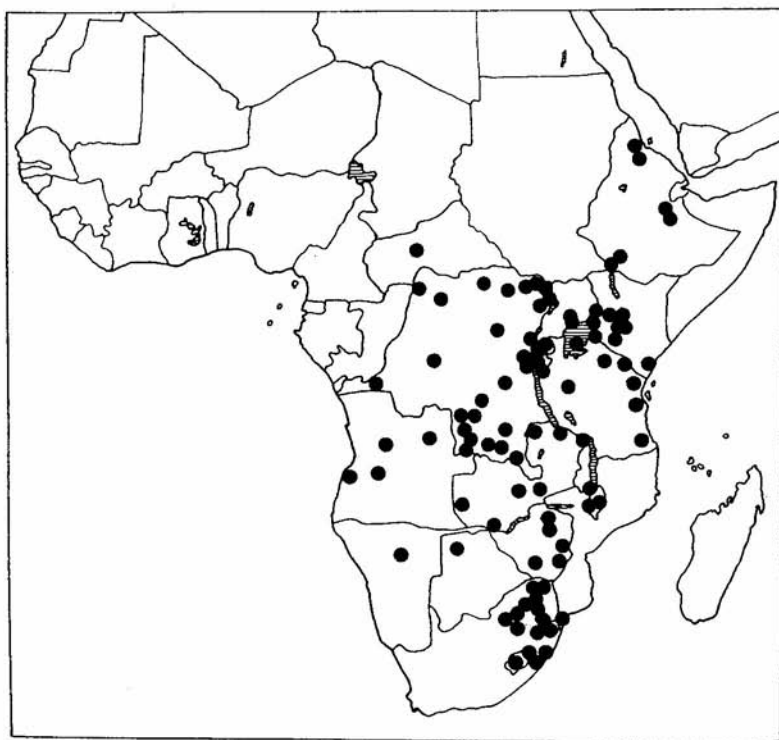
ANGOLA: Benguela Distr., Quito, 5100-6100 ft., 1 III 1931, 14 (CMNH); Bihé Distr., Chitau, 4900 ft., 12 I 1931, 37, 16 I 1931, 58 (CMNH); Lunda distr., 1200 m, 1, P. A. NANNINGS (ITZ); Malange Distr., Gauca, 20 mls E Rio Quanza, 3650 ft., 7 I 1931, 2 (CMNH).

BOTSWANA: Okavango, 4-River Camp, 10 XII 1975, 1 (NMM); Okavango, E Moremi Game Res., 14 XII 1973, 1 (NMM).

BURUNDI: Bururi, 2, R.P. GIRAUDIN (MRAC); Plaine de la Ruzizi, IV 1966, 1, I-III 1968, 2, S. N'DANI (MRAC).

ETHIOPIA: Aouaah, 880 m, VII 1957, 1, F. SCHÄUFFELE (SMNS); Dire Dava, 2 (ex coll. SOLMAN, DZPAS); Eritrea, 2 (HNHM), VII 1908, 1, KRISTENSEN (IZPAS); Eritrea, Adi Ugri, 3 (ITZ); Eritrea, Asmara, VIII, 1, coll. LE MOULT (IRSN); Eritrea, Cheren, 1 (FMNH); Eritrea, Gheleb, IX, 2, coll. LE MOULT (IRSN); Gemu-Gofa Prov., Arba-Minch, 1250 m, 29-30 V 1974, 2, G. DE ROUGEMONT (MRAC); Gemu Gofa, Konso, 1610 m, 29 III 1960, 1, 10 IV 1960, 1, 11 IV 1960, 1, 14 IV 1960, 7, W. RICHTER (SMNS); Harrar, 1 (FMNH), Harrar, 1, KRISTENSEN (IRSN); Harrar, Alemaya, 16 IV 1960, 1, from *Solanum incanum* (USNM); env. Lac Margarita, 1934-35, 5, R. DE MEULENAERE (IRSN); Maraco, 2 (IRSN).

KENYA: Amala Riv., 1 (NMP); Baringo-Samburu, 25 XII 1990, 1, J. MAUSER (JM); Cherangani, 18 V 1949, 2, RAWLINS (NNML); Kisima, 2300 m, 3 VIII 1975, 1, B. PETERSEN (ZMC); Lake Nakuru (west side), 1800-1900 m, 4 VII 1991, 1, S. ZOIA (SZ); Masai Reserve, Narok, 16 II 1914, 1, 26 II 1914, 1, 11 III 1914, 1, A. D. LUCKMAN (BMNH); Mathews Range, Kichich, 17 XI 1978, 6, Mus. Leyden Exp. (NNML); Menengai, 7 V 1949, 1, R.A. MAAS GEESTERANUS (NNMP); Mkunumbi, 24 II 1912,



110. Distribution of *Conchyloctenia hybrida*

1, S. A. NEAVE (BMNH); Mombasa, 1 (NMP); Monianku, Kisii, 10 I 1978, 1, 12 III 1978, 1, 10 IV 1978, 1, J. W. WASKEVICH (PMNH); Mt. Elgon, 5100-5800 ft., 8-13 VI 1911, 3, S. A. NEAVE (BMNH); Nairobi, 5450 ft., 1, A. F. J. GEDYE (USNM), 1 II 1916, 1, 10 VI 1919, 1, A. LOVERIDGE (MCZ); nr Nairobi, Ngong Hills, East Side, 28 X 1978, 1, Mus. Leyden Exp. (NNML); nr. Nairobi, Parklands, 5650 ft., 26 IV 1915, 1, A. LOVERIDGE, (MCZ); Ndeya near Nairobi, 18 VII 1953, 1, B. VERDCOURT (BMNH); Nyangori, Kavirondo, 4800 ft., 18-19 V 1911, 1, S. A. NEAVE (BMNH); Tana Riv., 1 (NMP); Yala River, Kakumega, I-II 1916, 1, H. J. A. TURNER (USNM).

LESOTHO: Leribe, 1913, 3, PHILLIPS (CTM).

MALAWI: Blantyre, 2000 ft., 7-11 IV 1910, 1, S. A. NEAVE (BMNH); Ft. Johnston, I-II 1896, 9, P. RENDALL (MCZC); C Golomoti, 650 m, 22-23 I 1985, 1, BELLAMY and SCHOLTZ (TM); 5 km W Golomoti, 650 m, 22-23 I 1985, 1, C. L. BELLAMY et al. (ER); road Mlanje to Zomba, 2000-3000 ft., 6-7 V 1910, 2, S. A. NEAVE (BMNH); 6 km SE Mwazisi, Rumphu Distr., 2-3 XII 1986, 1, E. HOLM and E. MARAIS (WM); 3 km NNE Namatandala, 2 km SSW Lufipa, Chitipa Distr., 7 XII 1986, 3, E. HOLM and E. MARAIS (WM); SE shore of L. Nyasa, between Ft. Magore and Ft. Johnston, 6-17 III 1910, 1, S. A. NEAVE (BMNH); Zomba, Upp. Shore Riv., 3000 ft., X-XII 1895, 9, P. RENDALL (MCZC).

MOZAMBIQUE: Beira, 1, A. BODONG (IRSN); Marromen, 5, v. ELDIK (NNML); Waterval, Delagoa bay, IX 1897, 1, 10 XI 1910, 1, A. J. JANSE (TM); Zumbo, 1 (IRSN).

NAMIBIA: Waterberg, 1898-99, 6, v. JUTRZENCKA (TM); Waterberg Distr., 1, G. SWIERSTRA (TM), I-II 1905, 5, v. JUTRZENCKA (TM).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 1, LE MOULT (IRSN).

RWANDA: env. Astrida, 1954-55, 6, G. FOUCART (MRAC); Gabiro, 1959, 2, HOSTIE (MRAC); Kibuye, V 1962, 4, G. PIERRARD (MRAC); Rubona, 10 III 1963, 1, 4 IV 1963, 1, 5 IV 1963, 2, 7 IV 1963, 1, 15 IV 1963, 1, G. PIERRARD (MRAC).

SOUTH AFRICA: Barberton, X 1922, 1 (TM), 8 mls NW Barberton, XII 1965, 1, L. SCHULZE (TM); Cape Prov., 22 mls W Cofimvaba, 940 m, 14 IV 1958, 1, E. S. ROSS and R. E. LEECH (CAS); Dalton, 1904, 8, 19 II 1908, 1 (TM); Dave, Ermelo Distr., XI 1962, 1, O. P. PROZESKY (TM); Fount Grove, 1 V 1905, 1, 27 VIII 1905, 1, G. SWIERSTRA (TM); Hluhluwe, 1933, 2, MARTENS (TM); Irene, Distr. Pretoria, 6 VI 1907, 1, C. SWIERSTRA (TM); 5 mls E Jambila, XII 1965, 1, L. SCHULZE (TM); Johannesburg, 29 X 1898, 1, II 1907, 4, II 1932, 2, G. KOBROW (TM); Koedoes Riv., I 1904, 1, BREYER (TM); 9-14 mls E Louis Trichardt, XI 1965, 3, L. SCHULZE (TM); Maritzburg, 2 III 1904, 22, PAULUS (TM); NMuckleneuk, 30 I 1922, 1, R. ROBERTS (1 PH, 3 TM); Natal, 1 (FMNH), 1 (ZMHU), 1 (NMP); Natal, Cathin Park, 1 I 1947, 1 (NMM); Natal, Estcourt, 1, GORHAM (ZMHU), 2, G. A. MARSHALL (BMNH); Natal, Mooi River, 31 XII 1979, 3, larvae feeding *Solanum* sp., R. KLUGE (NIC); Natal, Umvoti, 1, H. FRY (TM); New Hanover, 4 XII 1914, 1, HARDENBERG (TM); Oranje, Bothaville, II 1957, BRAUNS (TM); Oranje, Golden Gate, 14-15 I 1964, 2, A. CAPENER (ZSM); Oranje, Kroonstad, II 1957, 1, BRAUNS (TM); Pienaars, 1898, 2, v. JUTRZENCKA (TM); 6-8 mls N Pietersburg, XI 1965, 2, L. SCHULZE (TM); Pinetown, 9 I 1909, 5, G. F. LEIGH (TM); Plat Riv., 6-18 IV 1905, 1 (TM); Roiplaat, I 1904, 1, BREYER (TM); Transvaal, 2

(NMP); E Transvaal, Barberton, 10 XI 1980, 1, S. ENDRÖDY-YOUNGA (TM); Transvaal, Blonberg, NW of Pietersburg, 31 V 1988, 1, on *Solanum mauritianum*, S. NESER (NCI); Transvaal, Hartbeepoort, 28 km W Pretoria, 27 XI 1984, 1, H. and A. HOWDEN (CMN); Transvaal, Grootpan, Harrismith, 18 XII 1984, 8, A. v. RENSBERG (BM); N Transvaal, Happy Rest Nat. Res., on *Solanaceae*, 1-5 IV 1976, 2, PROZ. and SCHULZE (TM); Transvaal, Johannesburg, 2, J. P. CREGOE (BMNH); Transvaal, Johannesburg, Bedford View, III 1953, 1, A. L. CAPENER (MM); Transvaal, 21-22 km S Leydenburg, 15 XI 1983, 1, W. WITTMER (NMB); Transvaal, Magdalisburg, 2 (MCZC); E Transvaal, Pelindaba, XI 1974, 2, P. E. REAVEL (TM); E Transvaal, Penge, 13-17 XI 1972, 1, A. STRYDOM (TM); N Transvaal, Potgietersrus, 1 II 1975, 1, C. H. DRAPER (TM); Transvaal, 15 mls NE Pretoria, III 1956, 3, G. RUDEBECK (LU); Transvaal, Rhenosterpoort, 23 I 1973, 12, S. ENDRÖDY-YOUNGA (TM); Transvaal, Rietveldam Nat. Res., 15 I 1981, 3, L. VÁRI (TM); W Transvaal, Ventersdorp, XI 1963, 1, L. SCHULZE (TM); N Transvaal, Waterberg, Farm 223, grassnetting, 12 II 1976, 6, A. STRYDOM (TM); Transvaal, Wilge Riv., 5-15 XII 1959, 1, HÉJJA (HNHM); Transvaal, Zoutpansberg, 17-21 XII 1960, 1, LOUIS-TRICHARD (HNHM), 1415 m, Outlook Est, 1 XII 1978, 1, L. TRICHARDT (NMM); Waterkloof, Pretoria Distr., 1, F. NOOMO (TM); Zululand centr., 24-26 X 1938, 4, D. L. UYTENBOOGAART (ITZ); Zululand, Empangeni, II 1975, 4, 30 II 1975, 1, 24 IV 1977, 1, P. E. REAVEL (TM).

SWAZILAND: Karakurisa, II 1958, 1, C. KOCH (TM).

TANZANIA: Dar-es-Salaam, 1 (LU); Kikango nr. Moba, 1500 m, I 1954, 4, H. BOMANS (MRAC); Kigonsera, 1 (FMNH); Kilimandjaro, Kibonoto, 4, SJÖSTEDT (LU); Kilimandjaro, Madschame, 1 (IRSN); Lindi, 1 (NMP); Lulanguru, 17 mls W Tabora, 1148 m, X-XII 1917, 1, G. D. CAPENER (BMNH); Meru, 4 (LU); Meru Nat. Parc, 1500 m, I 1990, 1, WERNER (MD); Mombo, 2, SJÖSTEDT (LU); Mto-ya-Mawe, 10 XI 1896, 1, Dr. ANSORGE (MCZC); Ndanda, 1 (SMF); N'gani Mtoni, 27 III 1916, 3, 20 IV 1916, 2, A. LOVERIDGE (MCZC); Ngorongoro S, III 1936, 3, KOHL-LARSEN (SMF), XII 1961, 3, MOOR (TM); Nymbe-Bulungwa, 1914, 4, HAMMERSTEIN (IZPAS); Tanga, 4 (NMP); Ukerewe, 2, ERTL (MRAC); Usambara, Bumbuli, 1 (NMP); W Usambara, Mombo, 27 VII 1979, 1, M. STOLTZE (ZMC); Usambara, Nguelo, 4 (IRSN).

UGANDA: Entebbe, 1, F. J. JACKSON (BMNH), VIII-X 1912, 3, C. C. GOWDEY (BMNH); Jinja, 1 (NMP); Kampala, 20-39 IX 1915, 1, C. C. GOWDEY (BMNH); Kampala, Mnyenga Hill, 23 I 1973, 2, H. GØNGET (ZMC).

ZAIRE: Albert Nat. Park, SL Eduard, Kamande, 925 m, 4 X 1935, 1, L. LIPPENS (MRAC); Albert Nat. Park, SL Eduard, Rwindi, 1000 m, 25 IV 1936, 1, L. LIPPENS (MRAC); Albert Nat. Park, Mutsora, 1939, 1, HACKARS (MRAC); Albert Nat. Park, Ondo, 1200 m, 20 VII 1935, 1, H. DAMAS (MRAC); Albert Nat. Park, Secteur Nord, Buyansha, sur. riv. dr. Semliki, 900 m, 20 XI 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Plaine Semliki, Ishango, 1900 m, 6-8 X 1948, 1, J. DE WILDE (MRAC); Atso, 72 km from Aru, Aru-Aba road, 1948, 8, L. DEMOLIN (IRSN); Bambesa, 26 VIII 1937, 1, J. M. VRIJDAGH (IRSN); Blukwa, 23 III 1929, 2, A. COLLART (IRSN); Bumbuli, 14 IV 1915, 2, R. MAYNÉ (MRAC); Elisabethville, XI 1925, 1, Ch. SEYDEL (MRAC), 9 III 1939, 1, H. J. BRÉDO (IRSN), XI-XII 1956-I 1957, 10, A. ALLAER

(MRAC); Haut Uele, fl. Duru, III 1927, 1, F. S. PATRIZI (MZSNG); Haut Uele, Kapili, III 1927, 1, F. S. PATRIZI (MZSNG); Ituri, Nioka, VII 1934, 2, J. V. LEROY (MRAC); Jadotville, IX-X 1945, 2, P. GRAVEZ (MRAC); Jadotville, Mwera, XII 1956-V 1957, 2, Th. DE CATERS (MRAC); Kasai, Gandajika, 1952, 1, P. DE FRANQUEN (MRAC), IV 1959, 1, J. DUBOIS (MRAC); Kasongo, VIII-IX 1959, 3, L.G. BENOIT (MRAC); Kassongo à Stanleyfalls, 2 (IRSN); Katanga, Jadotville, X 1947, 1, J. VAN MOL (MRAC); Katanga, Kafakumba, X 1930, 1, F. G. OVERLAET (IRSN); Katanga, Kakanda, Mutaka, 15 XII 1953-4 I 1954, 1, Th. DE CATERS (MRAC); Katanga, Kaniama, 2 II 1939, 1, H.J. BREDO (IRSN); Katanga, Kinda, 1927, 13, F.G. OVERLAET (IRSN); Katanga, Kipopo, Elisabethville, 26 XI 1961, 1, R. MARÉCHAL (MRAC); Katanga, Malonga, VI 1943, 1, H.J. BREDO (IRSN); Katanga, Mwera, 1956, 2, Th. DE CATERS (MRAC); Katanga Ht., Panda, 10 XII 1929, 2, J. ROMIEUX (MHNG); Katanga, Sandoa, X 1931, 12, F.G. OVERLAET (IRSN); Kelea, 10-18 XII 1957, 1 (FMNH); Kisantu, 1, P. GOOSSENS (MRAC); Kivu, Costermansville, 13, coll. ROELOFS (IRSN); Kivu, Tshishulue, Kabare, 1800-2000 m, XI 1953, 1, A.E. BERTRAND (MRAC); Kivu, Uvira, VI 1962, 1, R. KISS (MRAC); Kivu, Vall. de la Ruzizi, Kanambo, III 1959, 4, G. BENOIT (MRAC); Libenge, 17 X 1947, 1, R. CREMER and M. NEUMANN (IRSN); Lidjo à Blukwa, 4 V 1929, 2, A. COLLART (IRSN); Lisala, 29 VIII 1947, 1, R. CREMER and M. NEUMAN (IRSN); Lualaba, Kolwezi, III 1958, 2, V. ALLARD (MRAC); Lulua, Kapanga, XII 1932, 1, I 1933, 1, F.G. OVERLAET (MRAC); Lulua, Luashi, XI 1938, 1, F. FREGNE (MRAC); Lulua, Sandoa, XI 1931, 1, F.G. OVERLAET (MRAC); Luluabourg, Kasai, 21 I 1963, 1, J. DEHEEGHER (MRAC); Mahagi, Abok, 6 III 1929, 1, A. COLLART (IRSN); Maniama, Terr. Kasongo, Mufala, 1960, 1, L.G. BENOIT (MRAC); Mukunkoto, XI 1937, 1, F. G. OVERLAET (IRSN); Ngowa, V-VI 1939, 1, R.P.J. MERTENS (IRSN); Sankuru, Gandajika, 1956, 4, P. DE FRANQUEN (MRAC); Stanleyville, 5 VI 1929, 1, 11 VI 1929, 1, 24 XII 1929, 1, 28 XII 1929, 2, 31 XII 1929, 1, A. Collart (IRSN); Tugulu, 17 XI 1946, 1, Miss. Tanganika (IRSN); Upemba Nat. Park, Mukana, 1810 m, 15-19 I 1948, 1, G. F. DE WITTE (MRAC).

ZAMBIA: Abercorn, 15 XII 1943, 2, 4 VI 1944, 1, H. J. BRÉDO (IRSN); Broken Hill, I 1929, 2, III 1930, 4 (DZPAS), Chingombe, V 1929, 2, (ex coll. SOLMAN, DZPAS); Livingstone, 1929, 1 (ITZ); Mpika, 28 I 1981, 1, J. MORAVEC (UA); Mweru-Wantipa, 22 I 1944, 3, H. J. BRÉDO (IRSN).

ZIMBABWE: Bindura, V 1938, 1 (NMM); NMM, 20 II 1923, 1, SWINBURNE and STEVENSON (TM); XII 1977, 1, D. K. B. WHEELER (NMM); NMM, Burnside, 12 XI 1981, 1, R. MAUFE (NMM); Chipinga, 28 XII 1963, 1 (NMM); Hillside, 16 I 1923, 1, SWINBURNE and STEVENSON (TM); Matatsi, Delaware Ranch, 29 IX 1973, 2, F. DE MOOR (NMM); Salisbury, 1, G. A. MARSHALL (BMNH), 2 (MRAC), 4-16 XI 1976, 2, R. K. BROOKE (NMM); Sawmills, 31 XII 1921, 2, N. JONES (NMM); Umtali, 1 (IFAN).

VARIA: Afr. or., 3 (lectotype and 2 paralectotypes of *A. adjuncta* WEISE, present designation, DEI).

***Conchyloctenia illota* (BOHEMAN, 1854)**

(figs. 81, 111-115)

Cassida illota BOHEMAN, 1854: 339 (syntypes in NRS); 1856: 120; 1862: 293.*Conchyloctenia illota*: SPAETH, 1914: 79; 1924: 299.*Aspidomorpha* (*Conchyloctenia*) *illota*: SHAW, 1956b: 263.*Aspidomorpha Gorhami* WEISE, 1900: 445 (type in ?).*Conchyloctenia Gorhami*: SPAETH, 1902a: 450; 1914: 79 (as syn.).

DESCRIPTION

Length: 7.3-8.7 mm, width: 4.7-5.4 mm, pronotum length: 2.4-3.0 mm, pronotum width: 4.3-5.0 mm. Body elongate, almost parallelsided (fig. 111).

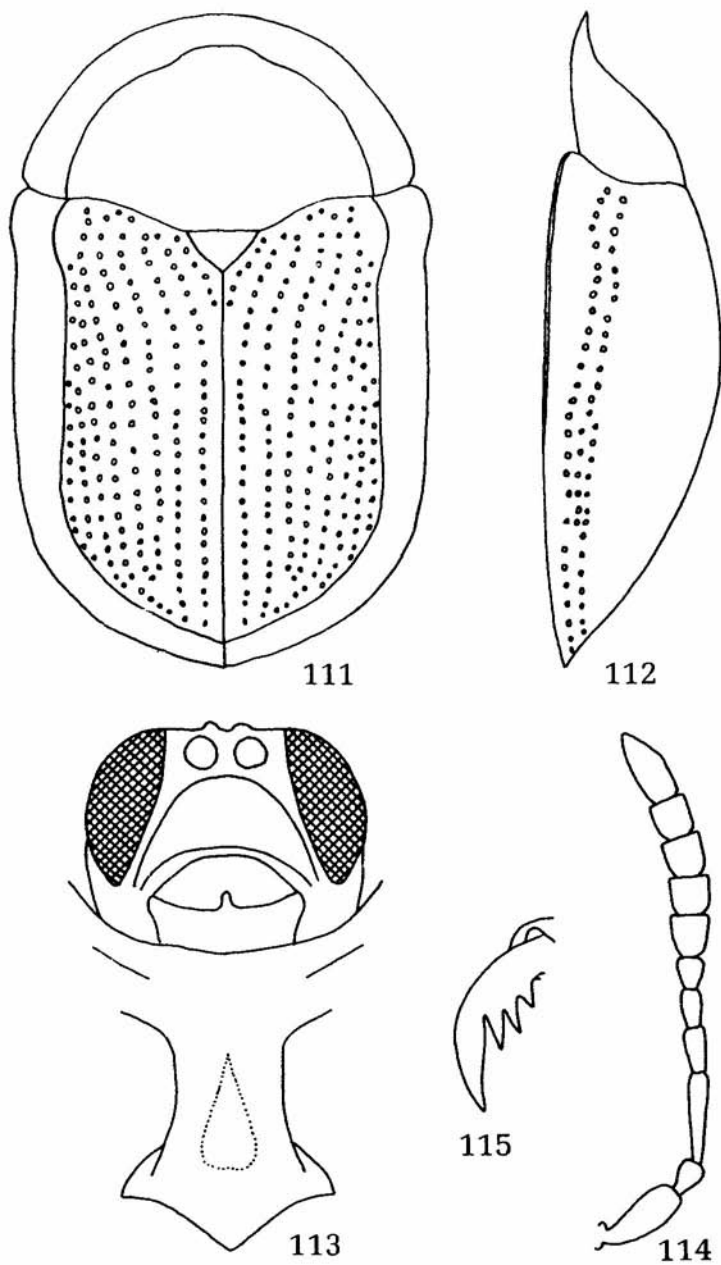
Pronotum and elytra uniformly pale yellow, punctures only slightly darker. Ventrites mostly black, including clypeus. Lateral plates of thorax, lateral margin of abdomen, and apex of the last sternite yellow. Legs yellow, basal half of femora often infuscate, or femora with brownish rings. Antennae yellow, distal segments more or less infuscate, last two or three segments often black.

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, glabrous, microreticulate with scarce, very fine pricks, distance between punctures distinctly wider than puncture diameter. Explanate margin indistinctly bordered from disc, subhorizontal, forming a shallow gutter, with honeycomb structure, its surface glabrous, impunctate.

Scutellum triangular. Base of elytra as wide as base of pronotum. Disc moderately convex (fig. 112), regularly punctate, punctures arranged in deep rows. Punctuation large, more regular than in other species, distance between punctures in anterior half of disc as wide as puncture diameter or slightly larger, in apex of disc punctures often touching each other. Intervals 2-2.5 times wider than rows, distinctly convex, its surface smooth, glabrous. Marginal row distinct. Explanate margin as wide as 1/4 width of each elytron, horizontal, forming a distinct gutter, lateral margination distinct. Surface of explanate margin with transverse or irregular wrinkles appears irregular to slightly rugose.

Clypeus broad (fig. 113), strongly elevated, with distinct median impression, microreticulate but glabrous, with a few larger punctures. Labrum emarginate to 1/3 length. Antennae moderately long, extending to apex of mesosternum. Length ratio of antennal segments: 100:42:103:50:46:36:50:42:42:89. Segment 3 about 2.5 times longer than 2 (fig. 114).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically (fig. 113), with deep median impression, but usually not canaliculate in appearance. Legs slim, tarsi moderately broad, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, about twice shorter than claw (fig. 115), outer margin with three or four teeth about twice shorter than those of inner pecten.



111-115. *Conchyloctenia illota*: 111 - body in dorsal view, 112 - body in lateral view, 113 - head and prosternum, 114 - antenna, 115 - tarsal claw

Host plant and bionomics unknown.

DISTRIBUTION

South Africa (Cap, Natal, Transvaal, Lesotho, fig. 81).

REMARKS

Uniformly pale yellow pronotum and elytra, and strongly, regularly punctate elytral disc place this species close to *C. aspidiformis*. *C. illota* differs in marginal interval without irregular punctures (strongly irregularly punctate in *C. aspidiformis*), and mostly black ventrites (yellow in *C. aspidiformis*). Other strongly punctate species (*C. hybrida*, *C. tigrina*, *C. bipuncticollis*) differ in pronotum or/and elytra with distinct pattern, only pale yellow immaculate form of *C. hybrida* resembles *C. illota* but differs in elytral puncturation with black centre (without black in *C. illota*), and punctures arranged in less regular rows (very regular in *C. illota*). *C. illota*, like *C. bipuncticollis* has a small distribution range limited to southern part of South Africa, contrary to other species of the genus which are usually widespread.

MATERIAL EXAMINED

LESOTHO: Likhoele, 1, DIETERLIN (CTM).

SOUTH AFRICA: Afr. mer., 1 (ZMHU); Cape Prov., Middelburg, 16 X 1988, 1, M. DE JAGER (NIC); Cape Province, Wellwood, Graff-Reinet, 14 XII 1983, 13, LOUW and VAN RENSBURG (9 BM, 4 LB); Cap, 1, KREBS (ZMHU); Lydenburg, 1896, 1, P. A. KRANTZ (TM); Natal, Port Natal, 1 (ZMHU), 1, SCHAUM. HAAG (ER); Plat-river, I-II 1903, 1, V. JUTZENCKA (TM).

Conchyloctenia mouffleti (BOHEMAN, 1854)

(figs. 116-123, 127)

Cassida Mouffleti BOHEMAN, 1854: 346 (type in NRS); 1856: 120; 1862: 294.

Conchyloctenia mouffleti: SPAETH, 1902a: 450; 1914: 75; 1916: 41; 1924: 303; 1925: 4; BOROWIEC, 1985a: 237.

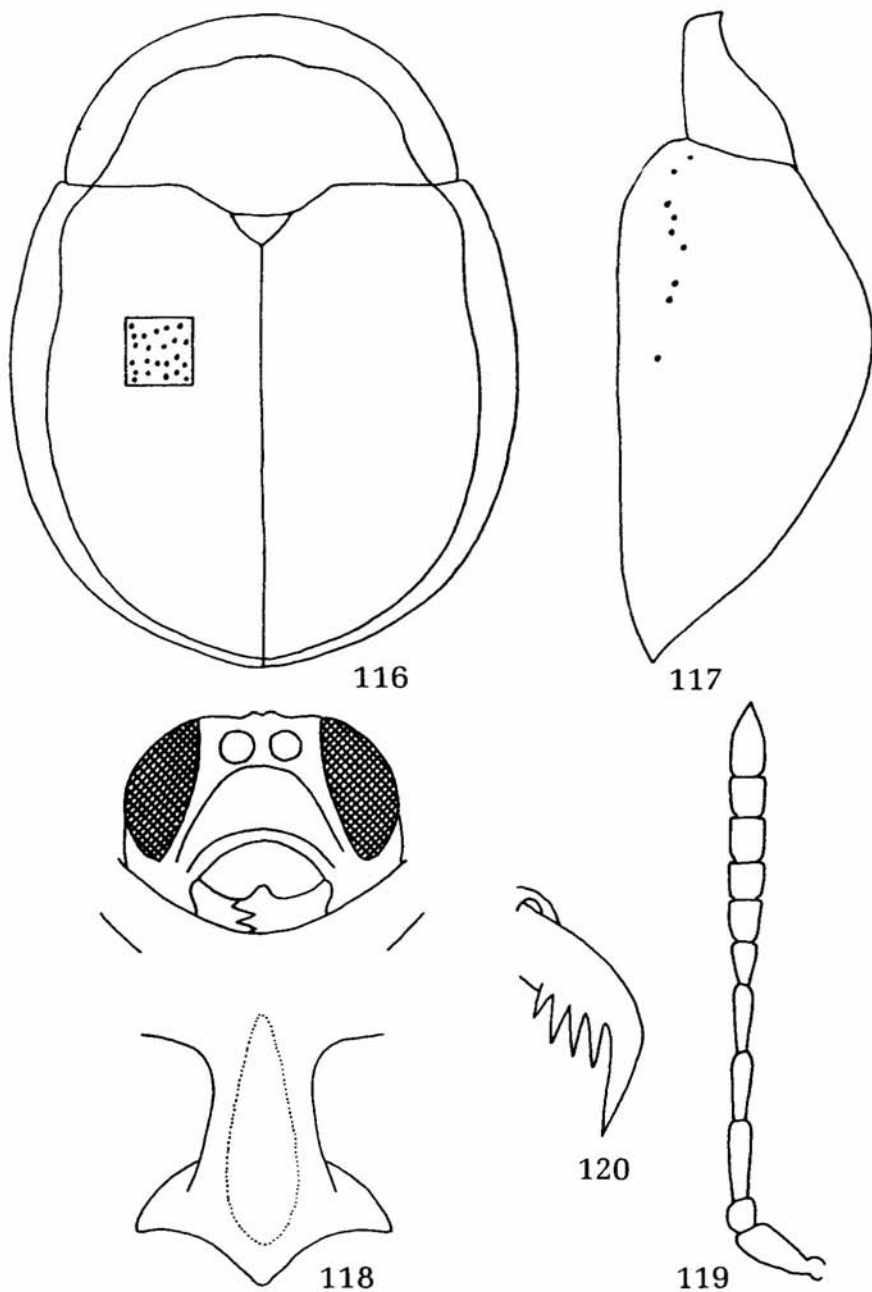
Aspidomorpha (Conchyloctenia) mouffleti: SPAETH, 1943: 54; SHAW, 1955: 235; 1956a: 595; 1961: 23; 1963: 460.

Conchyloctenia Mouffleti var. *Clavareau* SPAETH, 1902a: 451 (syntypes in IRSNB, MM).

Conchyloctenia Mouffleti ab. *Clavareau*: SPAETH, 1914: 80; 1924: 303.

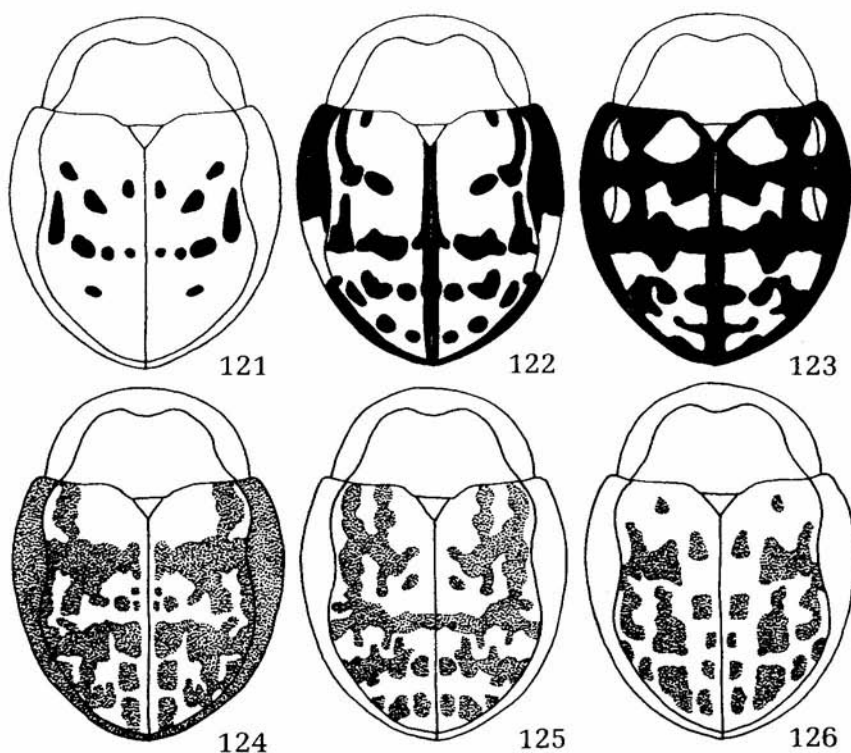
DESCRIPTION

Length: 8.6-12.2 mm, width: 6.5-9.3 mm, pronotum length: 2.9-3.9 mm, pronotum width: 5.0-7.1 mm. Body short-oval (fig. 116), stout, males slightly stouter than females.



116-120. *Conchyloctenia mouffleti*: 116 - body in dorsal view, 117 - body in lateral view, 118 - head and prosternum, 119 - antenna, 120 - tarsal claw

Pronotum yellow to reddish-brown, unicoloured, or in the darkest form basal half of lateral margin infuscate to black. Elytra yellow to reddish brown with black pattern (figs. 121-123). In the palest form only suture and spot on humerus are black, in the darkest form whole elytra including explanate margin are black (= *clavareai*). In the most common form elytra are mostly yellow to reddish brown with black suture, elongate spot on humerus, elongate spot in posthumeral area, spot in 2/3 length of explanate margin, and three irregular transverse bands, each resulting from fusion of three spots. Sometimes bands are divided into three separate spots, or bands are connected by additional spots and pattern forms a more or less regular black reticulation. In pale forms explanate margin is usually without spots, in dark forms it is mostly or completely black. Occasionally the pattern is dark brown, and thus coloured specimens are extremely similar to *C. fibrata*, but in *C. mouffleti* the pattern is always more regular than in *C. fibrata*, and spots have more distinct borders. Head yellow to brown, thorax usually black, in pale forms sometimes prosternal collar yellow to brown, abdomen varying from uniformly yellow to brown, to completely black, only lateral margins usually yellowish. Legs black, only in the palest form femora yellowish in the middle. Basal 5-6 antennal segments yellowish, remainder infuscate to black.



121-126. Variation of dorsal maculation: 121-123 - *Conchyloctenia mouffleti*, 124-126 - *C. fibrata*

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, varying from dull to glabrous, with scarce, extremely fine pricks. Explanate margin distinctly bordered from disc, subhorizontal, with honeycomb structure, its surface microreticulate with scarce, extremely fine pricks.

Scutellum triangular. Base of elytra not or only slightly wider than base of pronotum. Disc strongly, regularly convex (fig. 117), irregularly punctured. Punctures fine, scarce, distance between punctures usually 2-3 times wider than puncture diameter, but often punctures grouped 2-4 together. In many populations punctures on pale parts of disc are distinctly larger than those on dark spots. In extreme cases punctures on dark spots are extremely fine and scarce, appearing like fine pricks, while punctures on pale spots are distinct, many times larger than those on dark spots. In extremely pale forms puncturation on whole disc is rather uniform. Surface between punctures microreticulate, varying from dull to glabrous. No marginal row. Explanate margin as wide as 1/4 width of each elytron, declivous, without lateral margination, with honeycomb structure, its surface microreticulate, mostly impunctate, only along border between disc and explanate margin groups of small punctures occur.

Clypeus moderately broad (fig. 118), distinctly elevated, anterior margin rounded. Surface microreticulate, dull, with several punctures, in the middle with shallow impression. Labrum emarginate to 1/4-1/3 length. Antennae moderately long, extending to apex of prosternal process. Length ratio of antennal segments: 100:48:108:85:80:48:57:54:54:54:100. Segment 3 about 2.3 times longer than 2 (fig. 119).

Prosternal collar large, with transverse sulci. Prosternal process broad, strongly expanded apically (fig. 118), distinctly canaliculate medially, often with deep pit in the middle. Legs slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, about twice shorter than claw (fig. 120), outer margin with three or four teeth about twice shorter than those of inner pecten.

Host plant and bionomics unknown.

DISTRIBUTION

Woodland regions of West and Central Africa east to Ruanda. From West Africa known only from a few specimens from Liberia and Guinea (fig. 127).

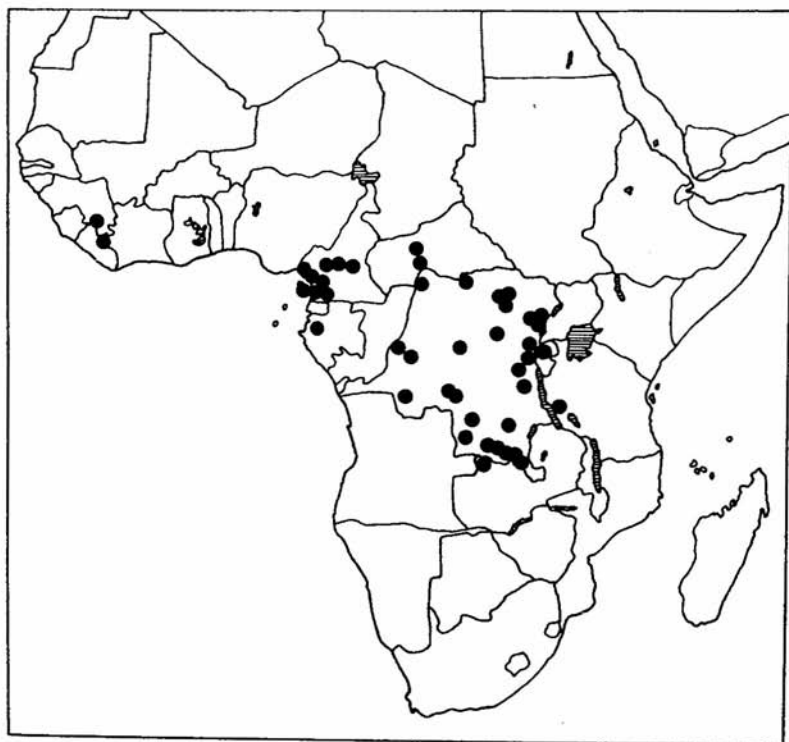
REMARKS

It belongs to moderately large species with strongly convex elytra, irregular elytral puncturation, lateral margin of elytra without margination. The group comprises also *C. signatipennis* and *C. fibrata*. *C. signatipennis* differs distinctly in more elongate body. *C. fibrata* is an extremely similar, vicariant species. Puncturation of elytra in *C. fibrata* is usually slightly larger than in *C. mouffleti*, elytral pattern paler,

brownish, and more irregular with less distinct borders. *C. fibrata* is a mountain species of African rift from Ethiopia to Ruanda, *C. mouffleti* is a typical lowland species, in rift region it lives only in highland of Ruanda.

MATERIAL EXAMINED

CAMEROON: Balanga, 3 (NMP); Batanga, III 1914, 43, IV 1914, 37, F.H. HOPE (CMNH); Dengdeng, 16 IV 1914, 1 (BMNH); Efulen, I 1911, 1, J.A. REIS (CMNH), 24 V 1910, 1, 13 IX 1911, 1, 2 X 1911, 1, 18 XI 1911, 2, 1 I 1918, 1, 10 I 1918, 1, 16 I 1918, 1, H.L. WEBER (CMNH); Elat, 10 XII 1926, 1, A.I. GOOD (CMNH); Joko, VII 1912, 2 (FMNH); Joko, 2 (HNHM); Kamerunberg, 5 km S Muëlli, 560 m, 21 II 1958, 1, H. KNORR (ZSM); Lolodorf, VI 1914, 1, 1 III 1916, II 1921, 2, A.I. GOOD (CMNH), 15 V 1918, 1, J.A. REIS (CMNH); Mbili near Badere, 19 IV 1914, 1 (BMNH); Mt. Balmayo, 1, J. CANTALOUBE (MRAC), 1, M'BARGA (MRAC); Neu Kamerun, Sardi b. Dengdeng, 3 IV 1914, 1, MILD BRAED (ZMHU); Nkolbisson, Dept. Nyong-Sanga, IX 1963, 1, L. SEGERS (MRAC); Tazada, 21 IV 1914, 1 (BMNH).



127. Distribution of *Conchyloctenia mouffleti*

EQUATORIAL GUINEA: Fernando Poo Is., Basile, VIII 1901, 1, L. FEA (MCSNG); Fernando Poo Ins., Moka, 9 XII 1951, 2, H. VILLIERS (IFAN).

GABON: Bas-Ogooué, 3 (IRSN); Bas-Ogooué, Lambaréné, 1 (NMP); Kangvé, Ogové R., 8, A.C. GOOD (CMNH); Ogové R., 74, A.C. GOOD (CMNH).

GUINEA: Macenta, Mt. Baki, 30 I 1942, 1, H. LAMOTTE (IFAN).

LIBERIA: crest of Mt Nimba, 1400 m, 15 VIII 1966, 5, E. S. ROSS and K. LORENZEN (CAS).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 3 (IRSN); Fort Sibut, 1 (IRSN); Nola, 2 (IRSN).

RUANDA: Cyangugu Prov., Nyakabuye, 23-25 I 1984, 1, 23 II 1984, 1, 28 XI 1984, 1, 1-15 V 1985, 1, H. MÜHLE (MD).

TANZANIA: Sibweza, Mpanda, IV 1973, 1, J. KIELLAND (NNML).

ZAIRE: Albert Nat. Park, Mont Hoyo, grotte Yolohafiri, 1030 m, 25-28 VII 1955, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mont Hoyo, mont Sengule, 1380 m, 2-4 III 1955, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Reg. Oycha, 1100 m, IV-V 1950, 3, J. DE WILDE (MRAC); Albert Nat. Park, Secteur Nord, Anduani, reg. Oisha, 1100 m, 4 VI 1951, 1, P. VANSCHUYTBROECK (MRAC); Bambesa, 1 (FMNH), 1 (SMF), 10 X 1933, 1, J. V. LEROY (MRAC), 1-2 VI 1937, 11, 3 VI 1937, 1, 7 VI 1937, 1, 10 VI 1937, 2, 17 VI 1937, 8, 11 VIII 1937, 2, 20 VIII 1937, 8, 26 VIII 1937, 30, 1 IX 1937, 1, 2 IX 1937, 11, 11 IX 1937, 25, 18 IX 1937, 12, 28 IX 1937, 1, 22 IX 1937, 1, 28 IX 1937, 1, 2 X 1937, 4, 6 X 1937, 1, 30 X 1937, 1, 5 XI 1937, 3, 6 XI 1937, 3, 13 XI 1937, 1, 29 X 1937, 2, 30 XI 1937, 1, 6 VII 1938, 1, 20 XII 1939, 2, J.M. VRIJDAGH (IRSN); Eala, IX 1930, 1, P. STANER (MRAC); Elisabethville, I 1939, 1, H.J. BRÉDO (IRSN); Ituri, Beni, 1, L. BONNEVIE (MRAC); Katanga, Busumba, VIII-IX 1957, 1, R. DE CATER (MRAC); Katanga, Colline de Kibwe, terr. Kambowe, X 1956, 1, N. LELEUP (MRAC); Katanga, Kakanda (Mutaka), 15 XII 1953-4 I 1954, 1, R. DE CATER (MRAC); Katanga, Kamwale, Rte Sakania, terr. E'ville, XII 1955, 2, M. LIPS (MRAC); Katanga, Kipopo (E'ville), 15 X 1961, 1, R. MARÉCHAL (MRAC); Katanga, Lualaba-Maka, 25 I 1939, 11, H.J. BRÉDO (IRSN); Katanga, Mwera, 1956, 5, R. DE CATER (MRAC); Kivu, Irangi, 21 VI 1967, 1, Dr. JILLY (SMNS), 22 II 1985, 1, 25 V 1985, 1, 1-2 II 1986, 1, H. MÜHLE (Döberl), 24 VIII 1986, 1, H. MÜHLE (HK); Kivu, forêt Kahuzi, XI 1971, 1, R. GELLENS (MRAC); Kivu, Lwiro, XI 1966, 1, 16 XII 1966, 2, Dr. JILLY (SMNS); Kivu, Masisi, 5, A. COLLART (IRSN); Lac Leopold II, Bokalakala, 1957, 1, N'KELE (MRAC); Lualaba, Kakanda (Mutaka), XII 1953, 1 (MRAC); Lualaba-Maka, 25 I 1939, 2, H.J. BRÉDO (IRSN); Lualaba, Zilo, 11 XI 1958, 1, V. ALLARD (MRAC); Lukolela, 2, R. MASSART (IRSN); Lulua, Sandoa, X 1930, 2, G. F. OVERLAET (MRAC); Luluabuorg, 1, var. *Clavareau*, coll. CLAVAREAU (holotype of *Clavareau*, MRAC), 1, DE VRIESE (paratype of *Conchyloctenia mouffleti* var. *Clavareau*, MM); Mambasa, I 1972, 1, J. TAVERNIERS (MRAC); Maniema, 1953, 1, P. LEFEVRE (MRAC); Mayumba, 2 (NMP); Orientale Prov., Bas-Uele Distr., Bambesa, III 1957, 2 (FMNH); Orientale Prov., Bas-Uele Distr., Bongide, 10 VIII 1957, 1, 10 IX 1958, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Kaibi, 3 VIII 1957, 1 (FMNH); 45 mls E Kama, 750 m, 16 VIII 1957, 2, E. S. ROSS and R. E. LEECH (CAS); Orientale

Prov., Bas-Uele Distr., Matala, 20 V 1958, 2 (FMNH); Orientale Prov., Haut-Uele Distr., Rte to Wamba, 7 XII 1956, 1 (FMNH); Sankuru, M'Pemba Zoo (Gandajika), 1 V 1960, 1, R. MARÉCHAL (MRAC); Stanleyville, 18 II 1928, 1, A. COLLART (IRSN); Stanleyville, Yangambi, V 1954, 1, J. DECELLE (MRAC); Station de Gandajika, 1957, 2, P. DE FRANQUEEN (MRAC); Uele, Bambesa, 1937/1938, 2, J. VRYDAGH (MRAC); Uele, Dingila, XI 1933, 1, H. J. BRÉDO (MRAC); Uele, Dingilla, Itimbiri, 29 IX 1932, 1, ab. *schelleri*, J. VRYDAGH (MRAC); Zongo, Mokoangcy, 2 (paratypes of *Conchyloctenia mouffleti* var. *Clavareaui*, 1 IRSN, 1 MM).

ZAMBIA: W of Ikelenge, Isombo R., Kafweku, 8-10 V 1983, 1, L. HANCOCK (NMM); N Mwinilunga, Ikelenge, Sakeji School, 13 IV 1972, 1, DE MOOR (NMM).

***Conchyloctenia multimaculata* SPAETH, 1917**

(figs. 128-133, 145-147)

Conchyloctenia multimaculata SPAETH, 1917: 430 (syntypes in MM); 1924: 299; 1935a: 173.

Aspidomorpha (Conchyloctenia) multimaculata: SHAW, 1961: 23.

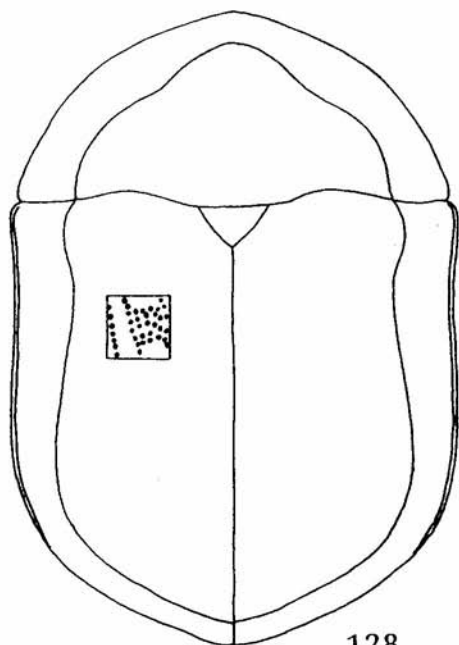
DESCRIPTION

Length: 9.9-11.3 mm, width: 6.9-7.7 mm, pronotum length: 3.5-3.8 mm, pronotum width: 6.1-6.9 mm. Body broadly oval, almost parallelsided (fig. 128).

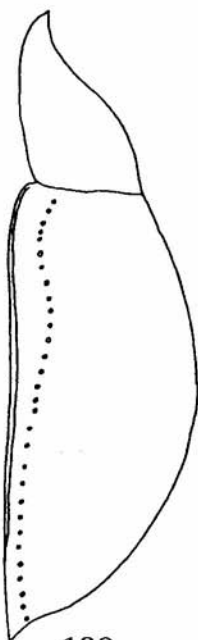
Pronotum pale to deep yellow, disc with 9 spots: two at base, one in the middle, two on each side of disc, and two close to anterior margin of disc. Anterior spots often very small, sometimes reduced to indistinct brown maculation, occasionally internal spot of each pair of side of disc obsolete. Scutellum black with yellow centre. Elytral disc pale to deep yellow with numerous (21-25), small black spots of various size (figs. 145-147). Explanate margin yellow, immaculate, or anterior and sutural margin infuscate to black, or with distinct humeral, posterolateral, and sutural spots. Clypeus and thorax black. Abdomen testaceous, or each sternite with two black spots in the middle. Legs black, or femora with yellowish spot, or/and tibiae partly yellowish. Antennal segment 1-7 yellow, remainder black, apex of segment 7 often infuscate, the last segment often with yellow spot on underside.

Pronotum semicircular, 1.7-1.8 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, glabrous or slightly dull, with extremely fine, scarce puncturation. Distance between punctures as wide as to thrice larger than puncture diameter. Explanate margin distinctly bordered from disc, broad, subhorizontal, forming a shallow gutter, with honeycomb structure, its surface microreticulate, impunctate or with fine pricks.

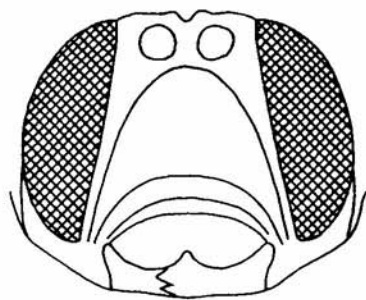
Scutellum triangular. Base of elytra as wide as base of pronotum. Disc moderately, regularly convex (fig. 129), with mixed regular and irregular puncturation. On pale parts of disc punctures form more or less regular, not sunken rows, interrupted by black spots, and partly disturbed by additional punctures on intervals (fig. 128). Punctures in rows small, distance between punctures varying from about equal to



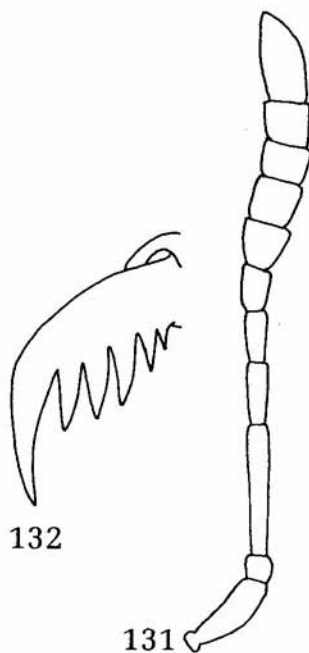
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129



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131



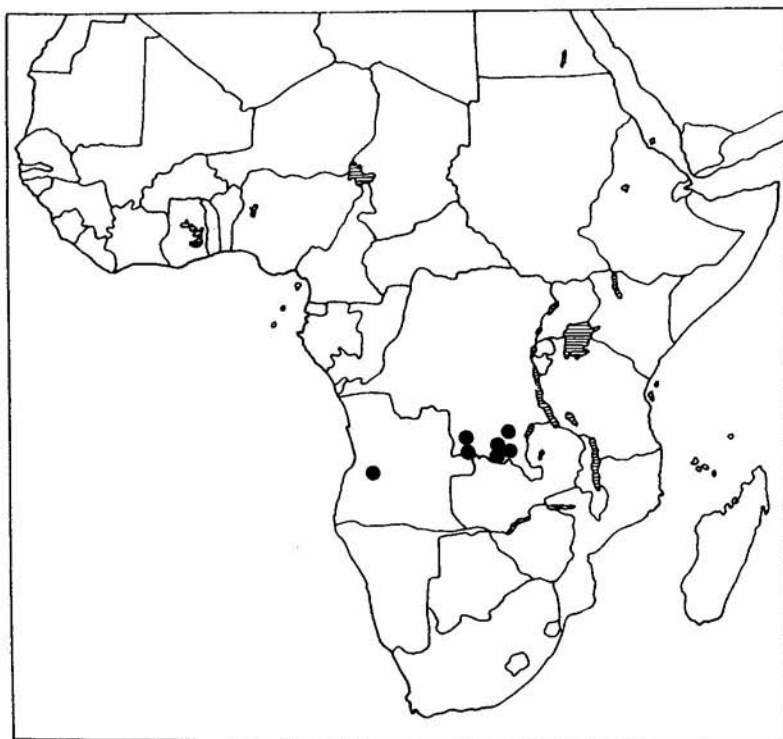
132

128-132. *Conchyloctenia multimaculata*: 128 - body in dorsal view, 129 - body in lateral view, 130 - head and prosternum, 131 - antenna, 132 - tarsal claw

puncture diameter to twice or thrice larger. Black spots punctured irregularly, the punctures distinctly larger than those in rows, dense, distance between punctures smaller than puncture diameter. Intervals flat, many times wider than rows, their surface microreticulate but glabrous. Marginal row distinct, with large punctures, about twice larger than those on black spots. Explanate margin broad, about as wide as $1/3$ width of each elytron, or slightly wider, subhorizontal, with honeycomb structure, forms a shallow gutter, its surface with indistinct, shallow wrinkles, impunctate, glabrous.

Clypeus moderately broad (fig. 130), moderately elevated, anterior margin rounded. Surface flat or slightly impressed in the middle, microreticulate with a few small punctures, dull to slightly glabrous. Labrum emarginate to $1/3$ length. Antennae long, extending to anterior third of metathorax. Length ratio of antennal segments: 100:34:125:71:60:46:52:43:43:46:91. Segment 3 about four times longer than 2 (fig. 131).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with shallow longitudinal canaliculation (fig. 130). Legs slim,



133. Distribution of *Conchyloctenia multimaculata*

tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length extending to half length of claw (fig. 132), outer margin with three teeth about twice shorter than those of inner pecten.

Bionomics and host plant unknown.

DISTRIBUTION

Angola and S Zaire (fig. 133).

REMARKS

It is an intermediate species between regularly punctate *hybrida*-group, and irregularly punctate *C. punctata*. Also *C. praecox* has a similar elytral puncturation and maculate pronotum. It differs in pronotal pattern forming an M-shaped figure (separate spots in *C. multimaculata*), elytral pattern with tendency to form transverse bands (separate spots in *C. multimaculata*). *C. praecox* is generally smaller, with irregular puncturation of black spots not as dense as in *C. multimaculata*. *C. praecox* has more western and southern distribution, it occurs from S. Zaire to Malawi south to South Africa, while *C. multimaculata* is known from Angola and neighbouring parts of Zaire.

MATERIAL EXAMINED

ANGOLA: Benguela, Cubango, 1 (NMP); W. Afr., Angola, 3 (syntypes, MM); Kalukembe, XII 1932, 1, Miss. sc. suisse (LB).

ZAIRE: Jadotville, 1 (LB), II 1946, 1, J. VAN MOL (MRAC); Katentania, V 1924, 1, Ch. SEYDEL (MRAC); Lualaba, Kolwezi, XII 1956, 1, V. ALLARD (MRAC); Lulua, Luashi, XI 1938, 1, F. FREYNE (MRAC); Lulua, Sandoa, XI 1931, 1, XII 1931, 1, F. G. OVERLAET (MRAC, holotype of "*conjungens*" Spaeth, unpublished name); Upemba Nat. Park, Kamitundu af. Lusinga, 1700 m, 4-7 III 1947, 2, Miss. DE WITTE (1 MRAC, 1 LB); Upemba Nat. Park, Lusinga, 1760 m, 18 VII 1947, 1, Miss. DE WITTE (MRAC), 19 III 1947, 1, Miss. DE WITTE (MM); Upemba Nat. Park, Mubale, 1480 m, 6-10 V 1947, 1, Miss. DE WITTE (LB).

Conchyloctenia praecox (BOHEMAN, 1854)

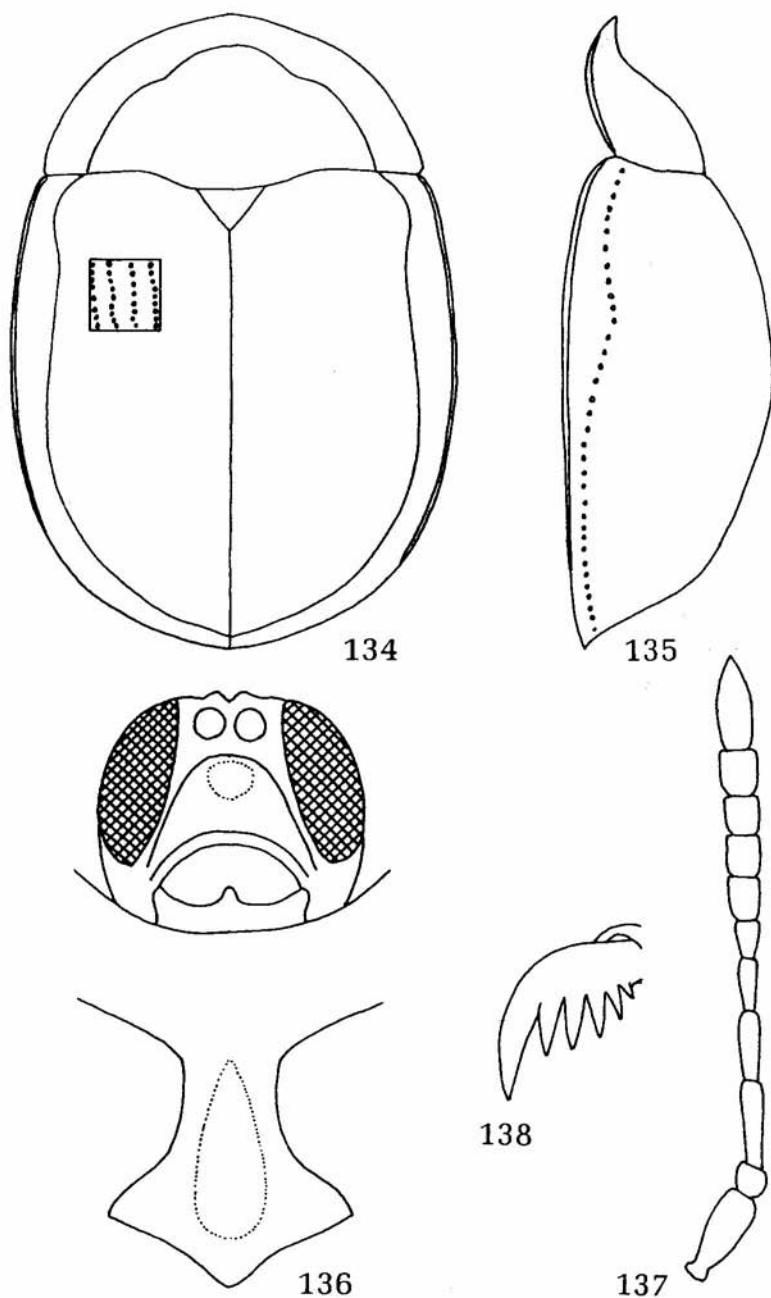
(figs. 134-144, 148)

Cassida praecox BOHEMAN, 1854: 334 (type in NRS); 1856: 118; 1862: 289.

Conchyloctenia praecox: SPAETH, 1902a: 450; 1906: 399; 1912b: 504; 1914: 80; 1924: 298, 300.

Aspidomorpha (*Conchyloctenia*) *praecox*: SHAW, 1956b: 264; 1961: 23; 1972: 68.

Conchyloctenia praecox ab. *obscurilla* SPAETH, 1906: 399 (syntype in MM); 1914: 80; 1924: 300; JOLIVET, 1957: 50.



134-138. *Conchyloctenia praecox*: 134 - body in dorsal view, 135 - body in lateral view, 136 - head and prosternum, 137 - antenna, 138 - tarsal claw

Cassida externeguttata FAIRMAIRE, 1882: 58 (type in MHNP); SPAETH, 1906: 399 (as syn. of *picta*).

Conchyloctenia externeguttata: SPAETH, 1902a: 450.

Conchyloctenia praecox ab. *externeguttata*: SPAETH, 1924: 300.

Aspidomorpha picta WEISE, 1898: 219 (syntypes in DEL), n. syn.

Conchyloctenia picta: SPAETH, 1902a: 80.

Conchyloctenia praecox ssp. *picta*: SPAETH, 1914: 80; 1924: 300.

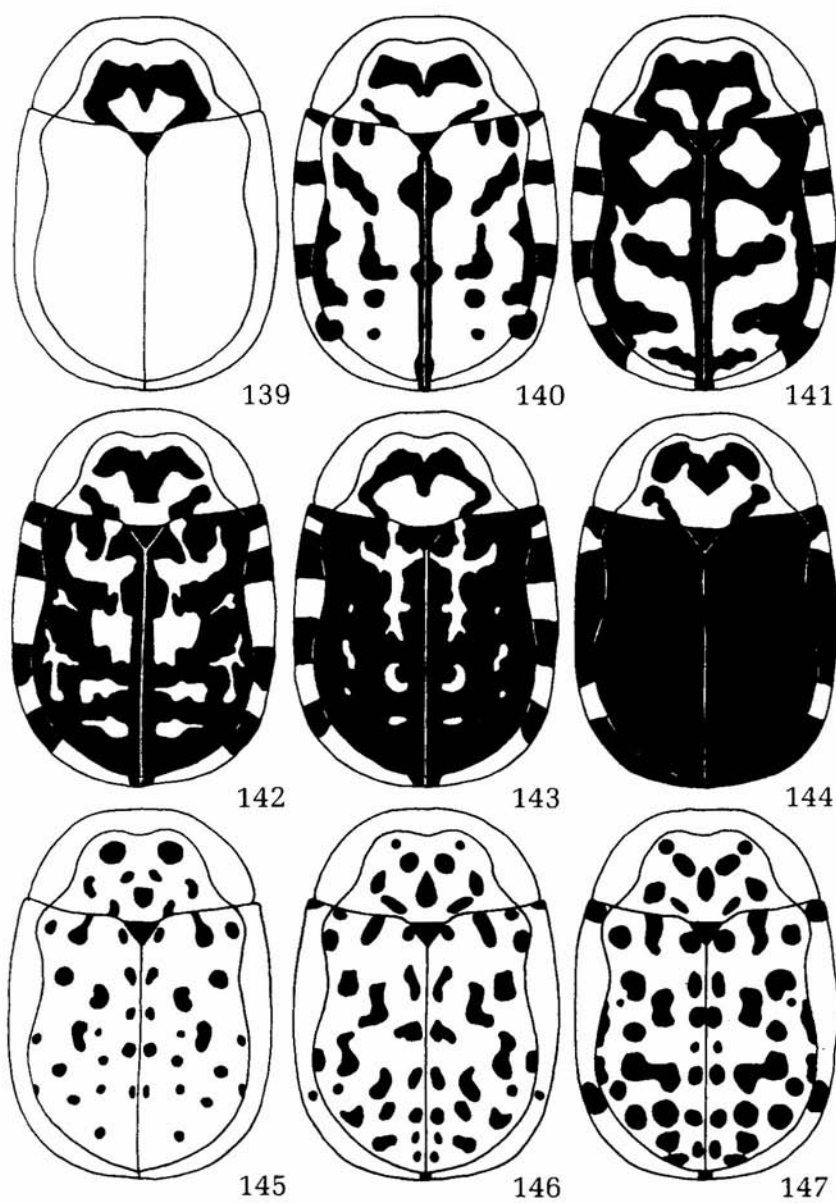
DESCRIPTION

Length: 8.3-11.7 mm, width: 5.7-8.3 mm, pronotum length: 2.8-3.9 mm, pronotum width: 5.1-7.1 mm. Body oval, almost parallelsided (fig. 134).

Pronotum yellow to reddish-brown, disc with M-shaped black pattern. This pattern sometimes is reduced to transverse spots in the middle of disc, or black occupies almost whole disc, except two yellow spots in front of scutellum. Explanate margin always immaculate. Scutellum black. Elytra yellow to reddish-brown with extremely variable black pattern (figs. 139-144). In the palest form only suture is slightly infuscate, in the darkest form elytra are black except two yellow spots on explanate margin of each elytron (= *obscura*). In the most common form suture, spot on humerus, spot in front of humeral impression, band along posterior 2/3 of marginal intervals, and three transverse bands from marginal band to suture are black, the third band often interrupted. Between typically coloured form and extreme pale and dark forms there exist all intermediates. Ventrites vary from uniformly yellow or reddish-brown to black, only clypeus always yellowish. There is no correlation between dark upper- and underside, forms with mostly black elytra have ventrites pale (= *externeguttata*) or black (= *obscura*), also typical forms have ventrites black or partly or completely pale (= *picta*). Legs usually black, sometimes fore tibiae brownish, occasionally all legs yellowish to pale brown with paler basal half of fore femora and pale rings on mid and hind femora. Basal six segments yellowish, remainder black, segments 5 and/or 6 usually partly infuscate.

Pronotum semicircular, about 1.8 times wider than long, posterior corners obtuse to subangulate. Disc regularly convex, microreticulate, glabrous, with extremely fine, scarce pricks. Lateral parts of black pattern often with a few larger punctures. Explanate margin distinctly bordered from disc, broad, with honeycomb structure, microreticulate, impunctate, glabrous, forms a shallow gutter.

Scutellum triangular. Base of elytra as wide as base of pronotum or slightly wider. Disc moderately convex (fig. 135), double punctured. Small punctures arranged in more or less regular rows; in the same population there are specimens with almost regular rows of small punctures, and specimens with rows mostly irregular, interrupted, or lost within additional punctures of intervals. Larger, irregular punctures occur on black elytral pattern, especially on sides of disc. In forms without pattern there is at least one group of irregular punctures, especially in posterior half of submarginal intervals. Occasionally irregular punctures occupy whole apex of disc. Intervals flat, many times wider than rows, often with several additional small



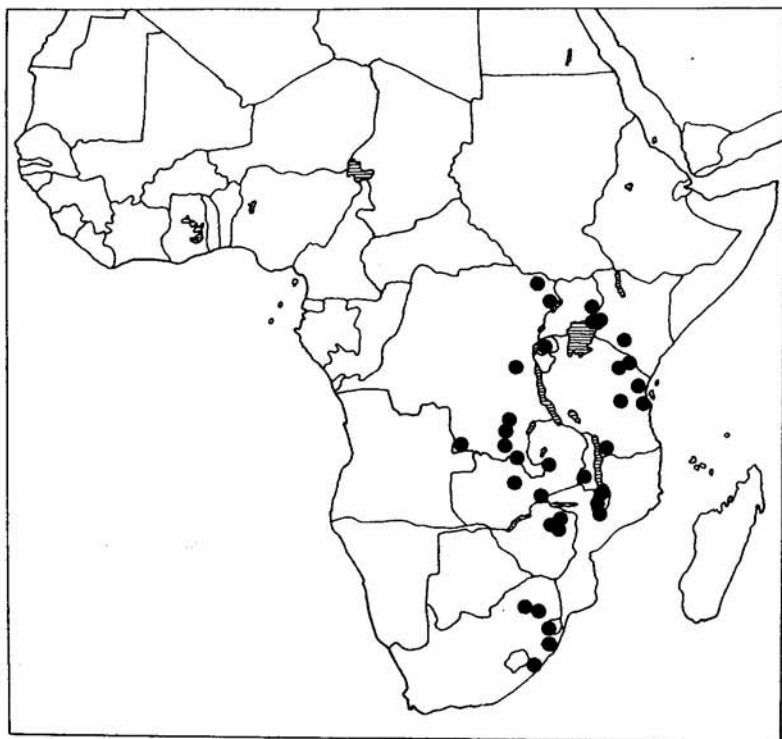
139-147. Variation of dorsal maculation: 139 - *Conchyloctenia praecox*, 145-147 - *C. multimaculata*

punctures. Surface of intervals indistinctly microreticulate, glabrous. Marginal row distinct. Explanate margin as wide as 1/4 width of each elytron, with honeycomb structure, subhorizontal, forming a shallow gutter, lateral margin distinctly marginate. Surface glabrous, with transverse wrinkles, especially along margin of disc, sometimes appears irregular to slightly rugose.

Clypeus moderately broad (fig. 136), strongly elevated, anterior margin rounded. Surface usually with deep median impression, microreticulate, impunctate or with a few punctures. Antennae moderately long, extending to apex of mesosternum. Length ratio of antennal segments: 100:40:120:94:73:50:63:56:56:56:110. Segment 3 about thrice longer than 2 (fig. 137).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with shallow longitudinal canaliculation (fig. 136), often with median impression. Legs slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length extending to half length of claw (fig. 138), outer margin with three teeth about twice shorter than those of inner pecten.

Bionomics and host plant unknown.



148. Distribution of *Conchyloctenia praecox*

DISTRIBUTION

East Africa north to Kenya, South Africa, and southern part of Central Africa (fig. 148).

REMARKS

With *C. multimaculata* it forms a group of oval, almost parallelsided species with elytral puncturation partly regular. Other elongate species of *C. hybrida* group differ in stronger elytral puncturation, arranged in more regular rows. *C. multimaculata* differs in pronotum with separate spots (usually M-shaped pattern in *C. praecox*), and elytral disc with numerous separate spots (uniformly yellow or black, or with black reticulation in *C. praecox*).

MATERIAL EXAMINED

KENYA: Kakamega Forest St., 1500 m, 3-6 IV 1981, 2, J. KRIKKEN et al. (NNML); Nairobi, 1 (NMP); Yala R., S edge of Kagumga Forest, 4800-5300 ft., 21-28 V 1911, 3, S. A. NEAVE (BMNH).

MALAWI: Blantyre, 1 (MCZC); Chintechi, 23 XII 1975, 1, R. JOCQUÉ (MRAC); Chisasira, 3 III 1978, 1, R. JOCQUÉ (MRAC); S. Cholo, 1, R. C. WOOD (ER), 4, R. C. WOOD (3 MM, 1 LB); Kasungu Distr., Kaluluma, 2 XII 1986, 1, E. HOLM and E. MARAIS (WM); Lomba, Upp. Shire Riv., 3000 ft., X-XII 1895, 2, P. RENDALL (MCZC); Mlanje, 3 III 1913, 2, 5 III 1913, 1, S. A. NEAVE (2 BMNH, 1 LB); S Soche Forest Res., 800 m, 18 I 1985, 1, BELLAMY and SCHOLZ (TM); Thyolo, 3 XI-18 XII 1984, 1, B. PETTERSSON (LU).

SOUTH AFRICA: Lydenburg, 1896, 1, P. A. KRANTZ (LB); Natal, Pietermaritzburg, 9 I 1915, 1, G. KOBROW (TM); Waterkloof, Pretoria Distr., 5, NOOME (4 TM, 1 LB); Zululand, Nyala Game Res., X 1975, 1, 1, P. E. REAVELL (TM).

TANZANIA: Arusha-Ju, XII 1905, 1, KATONA (USNM); Dar-es-Salaam, 13 VII 1948, 1, A. LOVERIDGE (MCZC); Kangala, 10 VII 1916, 1, A. LOVERIDGE (LB); Kigonsera, 3 (2 ZMHU, 1 LB), 1903, 1, ERTL (syntype of *Conchyloctenia praecox* ab. *obscura*, MM), 2 (FMNH); Kilossa, 27 XI 1920, 1, 21 I 1921, 1, A. LOVERIDGE (1 MCZC, 1 LB); Moschi, 1 (LB); O Usambara, Amani, V 1949, 1, T. H. JACKSON (BMNH).

UGANDA: Siroko R., near W foot of Mt. Elgon, 3600 ft, 12-14 VIII 1911, 1, S. A. NEAVE (LB).

ZAMBIA: Brokenhill, I 1929, 1, II 1929, 1, XI 1929, 1, XII 1929, 1, XII 1930, 1 (ex coll. SOLMAN, DZPAS); Mission Katondwe, XII 1933, 1 (LB); Serenje Distr., 26 XII 1907, 1 (LB).

ZAIRE: Elisabethville, XI 1911, 1, Miss. Agric (MRAC); Jadotville, X 1950, 1, J. VAN MOL (MRAC); Kivu, Ibanga, 1952, 1, M. VANDELANNOITE (MRAC); Lac Albert, Ishwa, IX 1935, 1, ab. *picta*, H. J. BREDO (MRAC); Lukoshi-Luco (Luashi), XI 1937,

1, ab. *obscura*, F. FREYNE (MRAC); 4 mls Sampwe, 980, 20 I 1958, 1, 21 I 1958, 1, E. S. ROSS and R. E. LEECH (CAS); Upemba Nat. Park, Gorges de la Pelenge, 1150 m, 10 VI 1947, 1, Miss. DE WITTE (MM); Upemba Nat. Park, Kalumegongo, 1800 m, 18 IV 1947, 1, Miss. DE WITTE (LB); Upemba Nat. Park, riv. Luanana, piste Pelenge-Lufira, 1400 m, 13 XI 1947, 1, Miss. DE WITTE (LB); Upemba Nat. Park, Mubale, 1480 m, 10-13 V 1947, 1, Miss. DE WITTE (MRAC).

ZIMBABWE: Arlington, Ft. Salisbury, II 1895, 3, CORYNODON (MCZC); Marandellas, XI 1962, 1, N. PATERSON (NMM); Mazoe, XII 1905, 1, G. A. MARSHALL (BMNH); Salisbury, 1 (TM), X 1898, under bark, 2, XI 1987, 1, G. A. MARSHALL (BMNH), 12 II 1913, 1, J. O'NEIL, 14-16 XI 1976, 4, R. K. BROOKE, 19-31 XII 1976, 1, R. K. BROOKE (NMM, LB), 3 III 1913, 2, J. O'NEIL (CTM).

VARIA: without data, 2 (probably syntypes of *A. picta* WEISE, DEI).

Conchyloctenia punctata (FABRICIUS, 1787)

(figs. 149-164)

Cassida punctata FABRICIUS, 1787: 64 (syntypes in ZMC); ZIMSEN, 1964: 91.

Aspidomorpha punctata: WEISE in Graf von GÖTZEN, 1895: 400; KOLBE, 1898: 344; HARRIS, 1937: 488.

Conchyloctenia punctata: SPAETH, 1902a: 450; 1914: 80; 1924: 300; 1935a: 174; BOROWIEC, 1985a: 236; 1985b: 444.

Aspidomorpha (*Conchyloctenia*) *punctata*: SHAW, 1955: 236; 1956b: 264; 1961: 24; 1968a: 370; 1972: 68.

Cassida hebes BOHEMAN, 1854: 347 (type in ZMHU); 1856: 120; 1862: 295; SPAETH, 1943: 53 (as syn. of *punctata*).

Conchyloctenia hebes: SPAETH, 1902a: 450.

Conchyloctenia punctata var. *hebes*: SPAETH, 1914: 80.

Cassida luteicollis BOHEMAN, 1854: 353 (type in NRS); SPAETH, 1943: 53 (as syn. of *punctata*).

Aspidomorpha luteicollis: WEISE, 1899: 261.

Aspidomorpha punctata var. *luteicollis*: WEISE, 1899: 262.

Conchyloctenia punctata var. *luteicollis*: SPAETH, 1902a: 450; 1914: 80.

Conchyloctenia punctata ssp. *luteicollis*: SPAETH, 1924: 301.

Cassida maculipennis BOHEMAN, 1854: 348.

Aspidomorpha punctata var. *maculipennis*: WEISE, 1899: 262.

Conchyloctenia punctata var. *maculipennis*: SPAETH, 1902a: 450; 1914: 80.

Conchyloctenia punctata ab. *maculipennis*: SPAETH, 1924: 301.

Cassida parummaculata BOHEMAN, 1854: 349 (syntypes in NRS); 1856: 121; 1862: 295, n. syn.

Aspidomorpha punctata var. *parummaculata*: WEISE, 1899: 262.

Conchyloctenia punctata var. *parummaculata*: SPAETH, 1902a: 450.

Conchyloctenia punctata ssp. *parummaculata*: SPAETH, 1909: 277; 1912b: 504; 1914: 80; 1916: 41; 1922: 1000; 1924: 298, 301; 1925: 4; 1943: 54.

Aspidomorpha (*Conchyloctenia*) *punctata parummaculata*: SHAW, 1955: 236.

Aspidomorpha (*Conchyloctenia*) *punctata* var. *parummaculata*: SHAW, 1956b: 264.

Cassida atripennis FAIRMAIRE, 1869: 253 (type in NMHN).

Conchyloctenia atripennis: SPAETH, 1902a: 450; 1915b: 154 (as syn. of *punctata*).

Conchyloctenia punctata var. *atripennis*: SPAETH, 1914: 80.

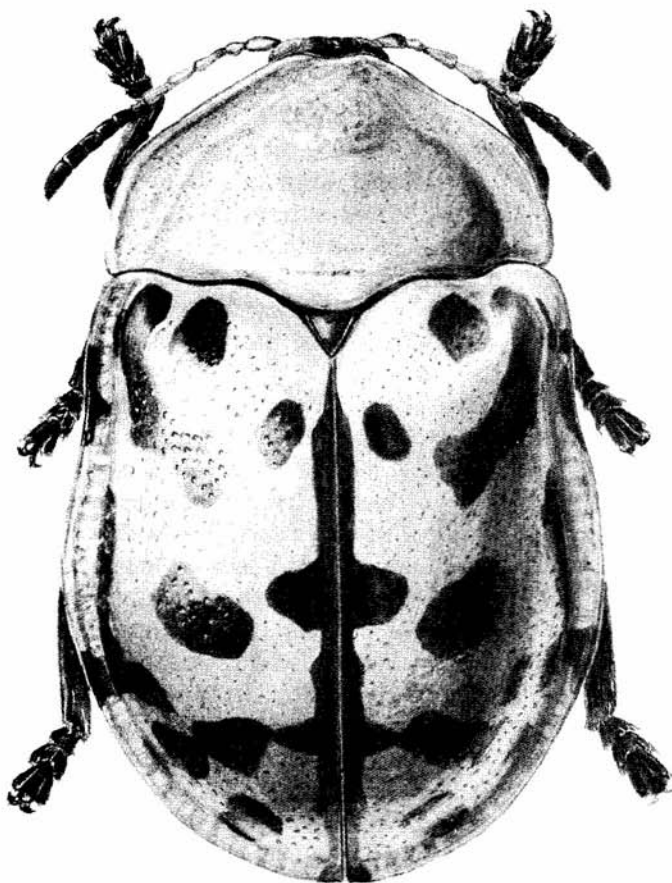
Conchyloctenia punctata ab. *atripennis*: SPAETH, 1924: 301.

Ischyrosomyx hospes DOHRN, 1881: 311 (holotype in IZPAS); SPAETH, 1902a: 450 (as syn. of *punctata*).

Cassida exsanguis GEARSTECKER, 1884: 62 (type was preserved in Hamburg, destroyed during Second World War); SPAETH, 1909: 277 (as syn. of *parummaculata*).

Conchyloctenia exsanguis: SPAETH, 1902a: 450.

Conchyloctenia austro-occidentalis SPAETH, 1935b: 7 (syntypes were preserved in Hamburg, destroyed during Second World War); BOROWIEC, 1985b: 444 (as syn. of *punctata*).



149. *Conchyloctenia punctata*, dorsal view

DESCRIPTION

Length: 8.9-12.1 mm, width: 5.8-7.5 mm, pronotum length: 3.1-3.8 mm, pronotum width: 4.9-6.5 mm. Body elongate (fig. 149), in females longer, almost parallelsided, in males stouter, slightly rounded on sides.

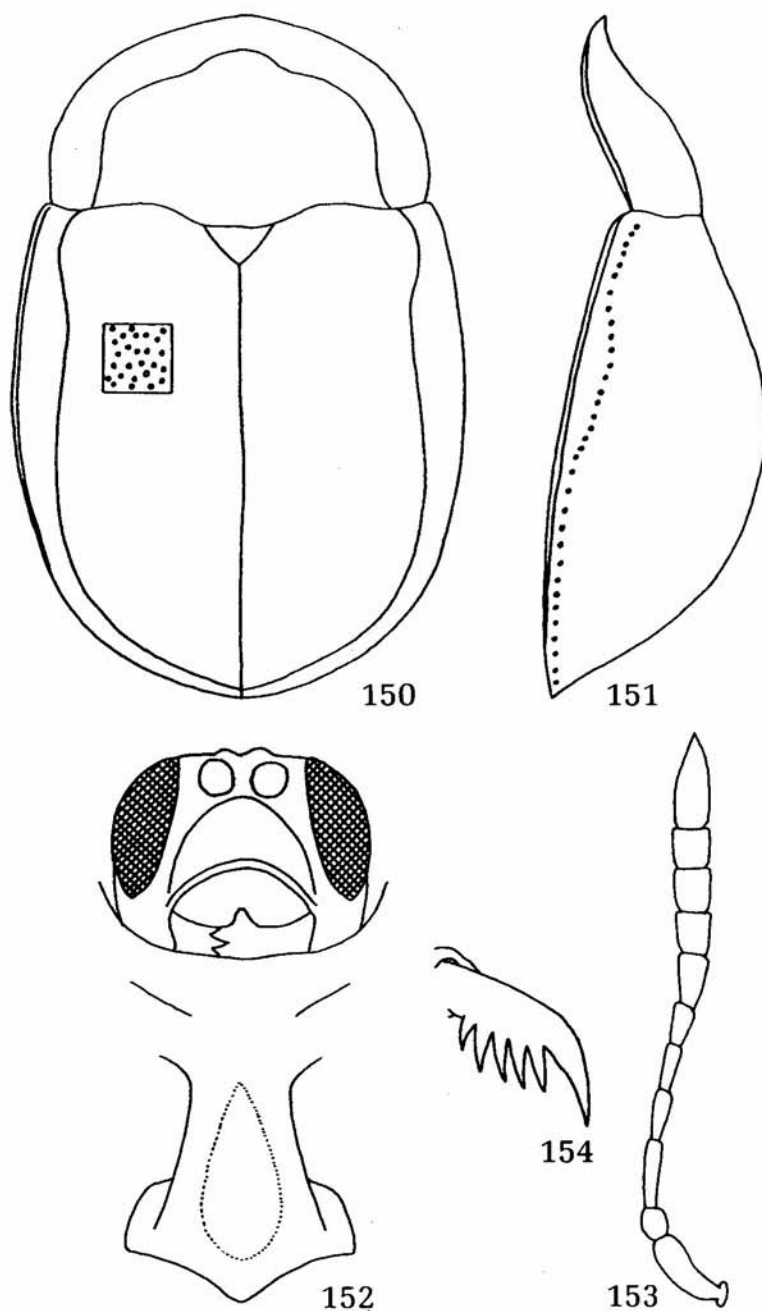
Extremely variable species (figs. 155-163). Pronotum yellow to dark reddish-brown, usually immaculate. In rare forms from South and South-West Africa disc with large, transverse, brown spot (= *austrooccidentalis*). Scutellum varies from yellow to black. Elytra in the palest form yellow with small, round, black spot on humerus, in the darkest form elytra uniformly black. Between these forms all intermediates occur with elytra yellow to reddish brown, with pattern of black spots. Sometimes spots are separate (= *parummaculata*) or mostly connected, forming reticulation (= *maculipennis*). Explanate margin varies from uniformly yellow to partly or completely black. Ventrites usually black, sometimes clypeus partly yellowish, or the last sternite brownish, or abdomen mostly yellowish to brown. Abdomen in forms with completely black elytra varies from completely black (= *luteicollis*) to completely yellowish (= *atripennis*). Legs black. Basal six antennal segments yellowish, remainder black, often basal segments infuscate, or mostly black with only bases paler.

Pronotum semicircular, 1.6-1.7 times wider than long, posterior corners angulate. Disc regularly convex, microreticulate, with scarce fine pricks, glabrous or slightly dull. In form with maculate pronotum dark spot with scarce small punctures, distinctly larger than pricks on pale parts of disc. Explanate margin distinctly bordered from disc, with honeycomb structure, subhorizontal, forming a shallow gutter, its surface microreticulate, glabrous or slightly dull.

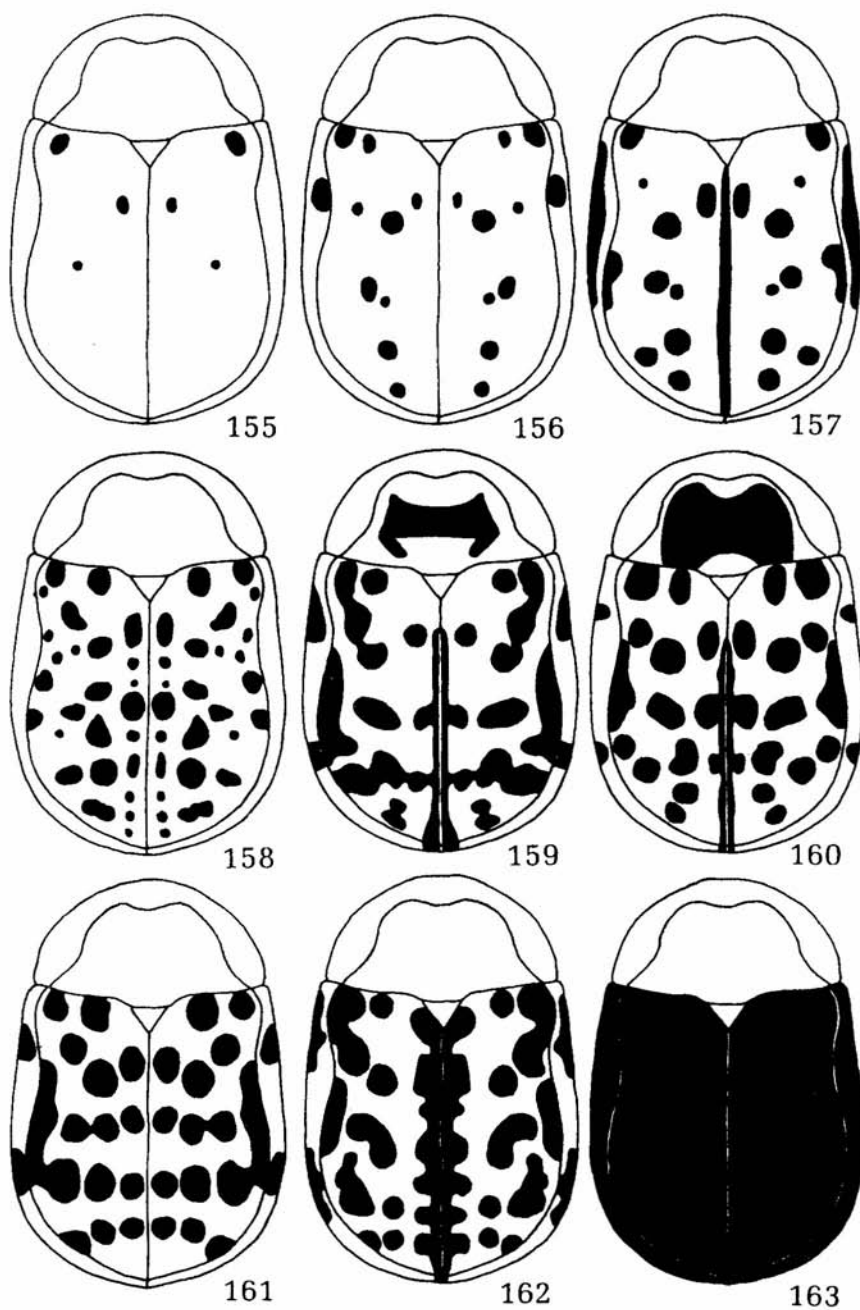
Scutellum triangular. Base of elytra not or only slightly wider than base of pronotum. Disc moderately convex (fig. 151), irregularly punctate. Punctuation rather homogenous, moderately large, moderately dense, distance between punctures about as wide as or slightly larger, or smaller, than puncture diameter. On sides of disc punctuation usually slightly larger than in sutural part of disc. Sometimes along suture, homologous to the third interval, runs a narrow, impunctate area. Surface between punctures more or less distinctly microreticulate, glabrous to slightly dull. Marginal row distinct, its punctures distinctly larger than those on sides of disc. Explanate margin narrow, about as wide as 1/6 width of each elytron, with honeycomb structure, subhorizontal, forming a shallow gutter, lateral margin distinctly marginate. Surface with transverse rows, more or less microreticulate, glabrous to slightly dull.

Clypeus broad (fig. 152), distinctly elevated, anterior margin rounded. Surface microreticulate, with several small punctures. Labrum emarginate to 1/3 length. Antennae long, extending to 1/4 length of metasternum. Length ratio of antennal segments: 100:34:100:85:80:51:57:57:51:57:102. Segment 3 about thrice longer than 2 (fig. 153).

Prosternal collar moderately large, with transverse sulci, prosternal process broad, strongly expanded apically, with distinct longitudinal canaliculation, often with median impression (fig. 152). Legs slim, tarsi broad, the last segment longer than



150-154. *Conchyloctenia punctata*: 150 - body in dorsal view, 151 - body in lateral view, 152 - head and prosternum, 153 - antenna, 154 - tarsal claw



155-163. *Conchyloctenia punctata*, variation of dorsal maculation

the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length extending to half length of claw (fig. 154), outer margin with three teeth about twice shorter than those of inner pecten.

Host plant: *Convolvulaceae*: *Hewittia sublobata*, *Ipomea cairica*, *I. batatas*, *Convolvulus farinosus* (HERON, 1992). Bionomics: the larvae were found to be strictly gregarious up to the end of the third instar. During the period of the first two instars and the early third, the larvae formed tight clusters, head inwards, and fed by stripping away the leaf tissue from the underside, leaving the transparent cuticle intact. From the late third instar until the end of the fourth (and, in many cases, including the fifth), the larvae fed gregariously from the leaf margins. During the first four instars, cast exuviae were retained in the supra-anal processes (faeces were scattered), but all exuviae were discarded during the moult into the fifth instar. Even when gregarious during the final instar, the larvae scattered to pupate. Social wasps of the genus *Belonogaster* and *Salticidae* spiders were observed taking larvae, especially the later instars (HERON, 1992).

DISTRIBUTION

East, South, and Central Africa. Specimens from West Africa probably introduced (fig. 164)

REMARKS

With *C. adspersa* it forms a separate group of species with elytra completely irregularly punctate but with distinct lateral margination. Both species are vicariant, *C. adspersa* has more northern and western distribution. *C. punctata* is usually larger, with more distinct pattern (in *C. adspersa* pattern is usually reduced to a few spots). Pale, small forms of *C. punctata* are extremely similar to *C. adspersa* and differ only in slightly wider and more distinctly emarginate explanate margin of elytra. *C. punctata* is the commonest species of the genus.

MATERIAL EXAMINED

ANGOLA: Angola, 1 (ex coll. SOLMAN, DZPAS); Sá da Bandeira, 2 X 1949, 1, B. MALKIN (CAS).

BOTSWANA: Bechuanaland, 1 (MCZC); Kuke Pan, 21-30 III 1930, 1, Kalahari Exp. (TM); Mahalapye, II 1971, 2, R. CHAPPLE (NMM); Metsimaklaba, 7-12 III 1930, 1, Kalahari Exp. (TM).

BURUNDI: Plaine de la Ruzizi, I-III 1963, 1, IV 1966, 1, N'DANI (MRAC).

CAMEROON: Joko, 1 (HNHM).

ETHIOPIA: Eritrea, VII 1908, 1, KRSITENSEN (IZPAS); Gojeb, 65 km SW Jimma, 1450 m, 17 VII 1971, 1, R. CLARKE (MRAC); Gojeb Vall., 80 km SW Jimma, 1650 m, 24 VII 1971, 1, R. CLARKE (MRAC); Harrar, 1 (FMNH); Kaffa Prov., Gojeb

Vall., VIII 1971, 1, G. DE ROUEMONT (MRAC).

GABON: Bas-Ogooué, 3 (IRSN); Gabon, 1 (IRSN).

GUNIEA: Conakry, 2 VIII 1990, 1, L. LEBLANC (CNCI).

KENYA: Kikuyu Esc., Kijabe to Limeru, 6800-7400 ft., 6-10 III 1911, 1 (BMNH); Kisumu, 2 VI 1975, 1, H. GONGET (ZMC); Malindi, Gedi Forest, IV 1973, 4, V 1973, 3, H. GONGET (ZMC, 2 LB); Mt. Kenya, 2000 m, 29 XII 1991, 1, J. MAUSER (JM); Nairobi, 6000 ft., 1, H. L. ANDREWES (BMNH), 3-4 III 1970, 1, T. PALM (LU); Nairobi, Norfolk Hotel, 13 XI 1969, 1, M. E. IRWIN and E. S. ROSS (CAS); Tana Riv., 1 (NMP).

MALAWI: Angoniland, Dedza Distr., 4000-5000 ft., 21-27 V 1910, 1, S. A. NEAVE (BMNH); Chintechi, 15 XII 1977, 1, 24 I 1978, 1, R. JOUQUÉ (MRAC); Mlanje, 11 II 1913, 2, 14 II 1913, 1, 23 IV 1913, 1, 26 V 1913, 2, S. A. NEAVE (BMNH, 1 LB); 10 km SSW Nkhata Bay, 11-12 XII 1986, 2, E. HOLM and E. MARAIS (WM).

MOZAMBIQUE: Magude, X 1918, 1, C. J. SWIERSTRA (TM); Vall. of Kola Riv., near Mt. Chipirone, 1500-2000 ft., 7 IV 1913, 2, S. A. NEAVE (1 BMNH, 1 LB); Marromeu, 13, v. ELDIK (NNML).

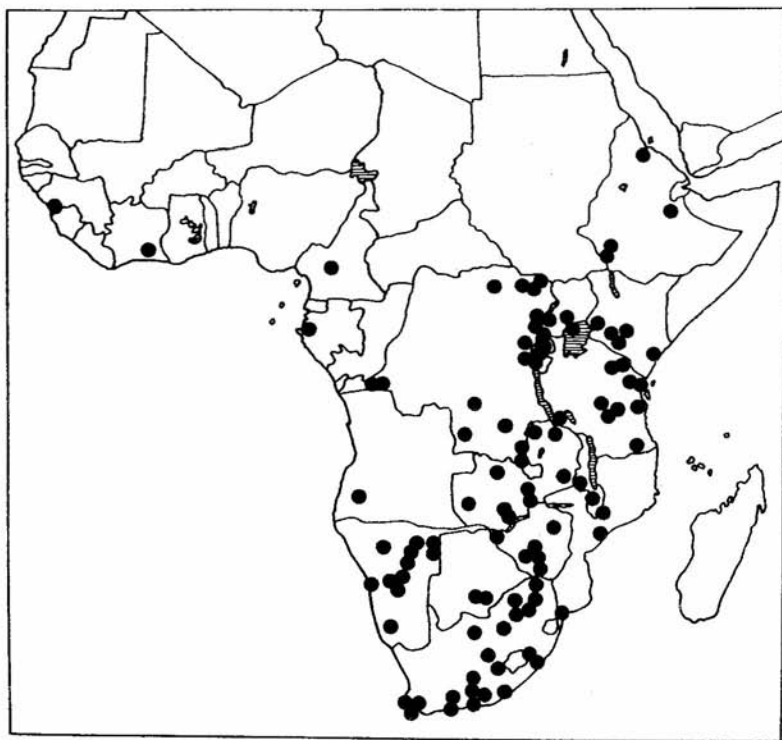
NAMIBIA: Abachaus, Otjiwarongo Distr., XII 1951, 8, III 1953, 8, G. HOBOM (TM, 3 LB), I 1958, 1, G. HOBOM (MM); Damaraland, Grootfontein, VI 1951, 1, C. KOCH (TM); Damaraland, Swakopmund, 1 (LB); Gautscha Pan, Kaukau-Kungv., IX 1951, 2, C. KOCH (1 TM, 1 LB); Grootfontein Distr., Askavold, XII 1988, 2, V. EGGERT (WM); Hereroland, Gam, 19 I 1984, 1, J. IRISH (WM); Hereroland, Otjikondo Farm, 24 VI 1978, 1, S. ENDRÖDY-YOUNGA (TM); Okahandja, 20 III 1954, 1 (LB), 3 IV 1954, 1, F. GAERDES (MM); Rosh Pinah, VI 1970, 1, R. B. COPLEY (TM); S. W. Afrika, Waterberg, 1 (paratype of *Conchyloctenia austro-occidentalis*, MM); Windhoek, 1919, 1 (CTM), XII 1953, 2, F. R. SCHERZ (TM), 19 III 1979, 1 (WM), 27 III 1979, 6, J. TOEL (WM), XI 1979, 1, S. LOUW (WM); 10 mls S Windhoek, 1850 m, 8 V 1958, 1, E. S. ROSS and R. E. LEECH (CAS); Tsumkve, Kungveld, I 1958, 3, C. KOCH (TM).

RUANDA: env. Astrida, 1954/55, 1, G. FOUCART (MRAC); Gabiro, 1935, 1, ab. *luteicollis*, R. VERHULST (MRAC); Kapogo, Ruhengeri, 1900 m, 29 I 1953, 1, ab. *parummaculata*, P. BASILEWSKY (MRAC); Katumba, 1500-1800 m, XI 1951, 1, A. BERTRAND (MRAC).

SOMALIA: Barire, 15 VIII 1959, 1, Miss. Biologica (MZUF).

SOUTH AFRICA: Bloemfontain, 5 IV-20 V 1975, 1, 3-30 XII 1976, 1, ROUX, VAN EE and DE WAAL (BM); Bloemfontain, The Willows, XI 1984, 1 (BM); Cap., Algoa Bay, 10 I 1897, 1, H. BRAUNS (TM); Cape, Karroo, Zwartskraal farm, 26 VI 1980, 1, R. OOSTHUIZEN (TM); Cape, Vryburg, 24 II 1984, 14, PENRITH and MÜLLER (TM, LB); Cap b. Sp., 1 (lectotype of *Cassida punctata*, present designation, ZMC); Cap. b. sp., 1 (NMP); Cape Colony, Dunbrody, 1, J. A. O'NIE (CTM); Cape Province, Grahamstown, 8 XII 1977, 5, S. ENDRÖDI (HNHM); Cape Province, Oviston, Colesberg, 23-26 II 1976, 1, S. VAN EE (BM); Cape Prov., Keurboonis Riv., Groenkloof, Ladybrand, 1-12 II 1977, 8, G. W. and M. C. FERREIRA (BM); Cape Prov., 8 mls E Caledon, 25 IV 1958, 400 m, E. S. ROSS and R. E. LEECH (CAS); Cape Town, 4 IX 1955, 1 (TM); East London, 30 I 1922, 1 (TM); Hluhluwe, X 1935, 1, R. F. LAWRENCE (TM); Hoopstad, 15-19 III

1976, 1, S. VAN EE (LB); Johannesburg, III 1908, 1, G. KOBROW (TM); Kalkheuvcl, Pretoria Distr., X 1908, 1, C. J. SWIERSTRA (TM); Kapstadt, 29 X-2 XI 1991, 6, U. GOLLNER (ZMHU); Knysna, I 1931, 1, K. H. BARNARD (CTM); Ladybrand, 19-22 I 1976, 1, G. W. FERREIRA (LB); Lady Gray, 3 I 1924, 1, R. I. NEL (TM); Natal, Durban, XII 1907, 1, G. F. LEIGH (TM); Natal, Estcourt, VIII-XI 1894, 1, G. A. MARSHALL (BMNH); Natal, Pinetown, 1, G. H. BURN (NMP); Natal, St. Lucia, 30 ft., 9 II 1969, 1, R. T. SIMON-THOMAS (ITZ); Natal, Umtenweni, 15 III 1973, 1, C. H. DRAPER (TM); Nova, Ladybrand, 19-22 I 1976, 1, G. W. FERREIRA and S. VAN EE (BM); Pienaars, 1898, 7, X-XI 1900, 3, v. JUTRZENCKA (TM); Plat-river, I-II 1903, 4, v. JUTRZENCKA (TM); Port Elisabeth, 25 XII 1950, 1, D. RORKE (TM); Port Elisabeth, Humewood, 20 IX 1961, 2, A. C. v. BRUGGEN (NNML); Pretoria, III 19170, 1, A. STRYDOM, 1 (LB); Pretoria, Sunnyside, 16 I 1960, 5, A. C. v. BRUGGEN (NNML); Rawsonswille, 14 XII 1943, 1, J. J. LEROUX (CTM); Rooiplaat, 1 I 1904, 3, BREGEV (TM); Rustenburg, 7 IX 1909, 1, M. MANSFELD (1, PH, 1, TM); Transvaal, 1 (holotype of *I. hospes*, IZPAS); Transvaal, Brits, XII 1986, 6, K. WERNER (MD); NW Transvaal, Huwi Nature Res., Ellisras, 6 XII 1977, 1, RAPHAEL (LB); N Transvaal, Johannesburg, I 1937, 1, W. G.



164. Distribution of *Conchyloctenia punctata*

KOBROW (LB); Transvaal, Mimabolela estate, 8 III 1973, 2, S. ENDRÖDY-YOUNGA (TM); Transvaal, Pretoria, X 1954, 1, A. D. MEENSE (TM), IV 1957, 1, XI 1961, 1, C. KOCH (TM); III 1970, 12, A. STRYDOM (TM), 4600 ft., 25 I-5 III 1969, 1, R. T. SIMON-THOMAS (ITZ), 30 XI-5 XII 1977, 1, 1-7 XII 1980, 1, S. ENDRÖDI (HNHM), 1400 m, 8 I 1957, 1, 16 XI 1957, 4, 3-11 I 1958, 1, R. ZUR STRASSEN (SMF); Transvaal, Pretoria, Waterkloof, 15 II 1974, 1, S. ENDRÖDY-YOUNGA (TM); Transvaal, Schoemansville, II 1932, 1, G. KOBROW (TM); Transvaal, Zoutpansberg, Mp'home, 1, M. KNÖTHE (ZMHU); Waterberg, 1898-99, 12, v. JUTZENCKA (TM).

TANZANIA: Dar-es-Salaam, 1, R. v. BENINGSSEN (IZPAS), 18 II 1961, 1, G. HEINRICH (ZSM); Kassenga, 1 II 1899, 2, WEDLER (ZMHU); Kilimandjaro, 3 (BMNH); Korogwe, 24 IV 1962, 1 (ZSM); Lukuledi, 3 (LU); Morogoro, I 1963, 1, H. HEINRICH (ZSM); Mpwapwa, 2 (MCZC); Mt. Meru, Eslope, 5700 ft., 26 I 1966, 1, J. SZUNYOGHY (HNHM); Mwanza, 18-19 I 1968, 1, D. GILLISSEN and L. BLOMMERS (ITZ); Sumbawanga, 22 II 1967, 2, on *Ipomea batatas*, I. A. ROBERTSON (BMNH); Tanga, 1 (LU); Uluguru, XI-XII 1893, 1, GÖTZE (ZMHU); Uluguru Mts., Kimboza Forest, 300 m, 1 XII 1984, 1, M. STOLTZE (ZMC); Usambara, 1 (NMP), 1 (BMNH); Usambara, Bumbuli, 1500 m, 4 XI 1952, 1, LINDEMANN and PAVLITZKI (ZSM); Usambara, Kanadai-Geb., 1, HEINZEN (ZMHU); Usambara, Kwai, 1, P. WEISE (ZMHU); Usambara, Mazumbai, 1600 m, 1 VIII 1980, 1, M. STOLTZE and N. SCHARFF (ZMC); Usambara, Nguelo, 1 (IRSN); Usambara, Sakarani, 1500 m, 10 XI 1952, 1, LINDEMANN and PAVLITZKI (LB).

UGANDA: Budongo Forest, V 1972, 1, H. GØNGET (ZMC); Kampala, Muyenga, II 1973, 1, H. GØNGET (ZMC); Kampala, Tank Hill, 1300 m, 10 X 1970, 1, H. GØNGET (ZMC); Kibale Forest, XII 1972, 1, H. GØNGET (ZMC); Ruwenzori, XII 1972, 1, H. GØNGET (ZMC); Victoria L., Nsadi, 18 II 1919, 2, G. D. CARPENTER (BMNH).

ZAIRE: Albert Nat. Park, Lac N'Goma, 1460 m, 19 VI 1935, 4, H. DAMAS (MRAC); Albert Nat. Park, Mont Hoyo, riv. Kofuhola, affl. Kalakala, 1285 m, 25 VII-10 VIII 1955, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mont Hoyo, Piste Matupi, 1200 m, 14 VII 1955, 1, P. VANSCHUYTBROECK (MRAC); Bambesa, 2 X 1937, 1, J.M. VRIJDAGH (MRAC); Bas Congo, Lemfu, I-V 1945, 7, R. DE BEIR (MRAC); Bogamoyo, 1, ab. *atripennis*, coll. CLAVAREAU (MRAC); Haut Uele, Duru, III 1927, 1, F. S. PATRIZI (MZSNG); Kasenga, 2 II 1912, 1, ab. *parummaculata*, 1, ab. *luteicollis*, Dr BEQUAERT (MRAC); Katanga, La Kafubu, 1937, 1, ab. *atripennis*, R. P. v. AELBROECK (MRAC); Kivu, Bwito, 1700 m, VII-IX 1934, 1, ab. *parummaculata*, L. MARLIER (MRAC); Kivu, Costermansville, 7, coll. ROELOFS (IRSN); Kivu, Katana, X 1932, 1, L. BURGEON (MRAC); Kivu, Masisi, 3 (SD); Lac Tanganika, Baie d'Utinta, riv. Kafumbwe, 18 II 1947, 1, Miss. Tangan. (IRSN); Lulua, Kapanga, XI 1932, 2, F. G. OVERLAET (MRAC); Lulua, Sandoa, IX 1930, 1, F. OVERLAET (MRAC); Mayidi, 1942, 1, P. VAN EYEN (MRAC); Ruwenzori, Mutawanga, 100-1300 m, II-III 1937, 2, HACKARS (MRAC); Sankuru, Gandajika, 1952, 1, P. DE FRANQUEN (MRAC); Sesenge, Angwande, 16 III 1930, 1, A. COLLART (IRSN); Uele, Gangala-na-Bodio, XI 1956, 1, M. POLL (MRAC); Upemba Nat. Park, Gorges de la Pelenge, 1150 m, 6-10 VI 1947, 1, Miss. DE WITTE (LB); Upemba Nat. Park, Mabwe, 650 m, 3-6 I 1949, 1, ab. *luteicollis*, 585 m, 21-28 I 1949, 1, Miss. DE WITTE (MRAC).

ZAMBIA: Abercorn, X 1943, 1, H. J. BRÉDO (IRSN); Barotse, Mongu, 1952, 2, J. M. NIEMEYER (TM); Broken Hill, II 1929, 1 (ex coll. SOLMAN, DZPAS); Chikuni, XII 1930, 1 (ex coll. SOLMAN, DZPAS); Fort Jameson, 1, 30 I 1963, 1 (LB); Monze, XI-XII 1929, 1, L. CIPRIANI (MZUF); Mweru-Wantipa, II 1944; I 1945, 1, H. J. BRÉDO (IRSN); Pemba, 1917, 1, CACCET (CTM); Solwezi, I 1917, 3, H. C. DOLLMAN (BMNH, 1 LB).

ZIMBABWE: Arlington, Ft. Salisbury, II 1895, 4, CORYNODON (MCZC); Bembezi, 9 II 1975, 1, F. DE MOOR (NMM); Bulawayo, 10 II 1925, 1, H.R. STEVENSON (LB); Matsheamhlope, 27 I 1966, 1, 11 II 1966, 1, S. JOHNSTON, 1-3 II 1976, 3, 6 II 1976, 1, D. K. B. WHEELER (NMM); Matabeleland, 1 (LU); 4.8 km N Rutenga, 152, 29 VI 1972, 2, E. S. ROSS (CAS); Salisbury, 172 (MRAC, LB), Salisbury, I 1898, 1, G. A. MARSHALL (BMNH), 31 I 1911, 1, 1915, 1, M. MELLE (CTM); Salisbury, 12 XI 1974, 1, R. K. BROOKE (NMM); Sawmills, II 1924, 1 (TM); Umtali, Vumba Mts., XI 1963, 1, 12 X 1981, 2, D. K. B. WHEELER (NMM); Victoria Falls, 6-13 IX 1938, 1, D. L. UYTENBOOGAART (ITZ).

VARIA: Zambesi, Bradshaw, 1878, 33 (ITZ).

Conchyloctenia signatipennis (BOHEMAN, 1854)

(figs. 165-176)

Cassida signatipennis BOHEMAN, 1854: 345 (syntypes in NRS).

Aspidomorpha signatipennis: WAGENER, 1880: 161.

Conchyloctenia signatipennis: SPAETH, 1902a: 450; 1914: 80 (as syn. of *spilota*); 1924: 301; BOROWIEC, 1985a: 237; 1986: 802.

Aspidomorpha (*Conchyloctenia*) *signatipennis*: SPAETH, 1902a: 452; SHAW, 1955: 236; 1972: 69.

Conchyloctenia signatipennis var. *jecorsa* SPAETH, 1902a: 451 (syntype in MM).

Conchyloctenia signatipennis ab. *jecorsa*: SPAETH, 1924: 301.

Conchyloctenia signatipennis var. *maculipunctata* SPAETH, 1902a: 451 (syntypes in IRSN, MM), n. syn.

Conchyloctenia signatipennis ssp. *maculipunctata*: SPAETH, 1924: 301.

Aspidomorpha (*Conchyloctenia*) *signatipennis* var. *maculipunctata*: SHAW, 1956a: 595.

Cassida spilota BOHEMAN, 1854: 343 (type in BMNH), n. syn.

Conchyloctenia spilota: SPAETH, 1902a: 450; 1914: 80; 1916: 41; 1924: 302.

Cassida lyncea BOHEMAN, 1854: 344 (type in BMNH), n. syn.

Conchyloctenia lyncea: SPAETH, 1902a: 450; 1914: 79; 1924: 302.

Cassida nigrosellata BOHEMAN, 1862: 294 (type in BMNH), n. syn.

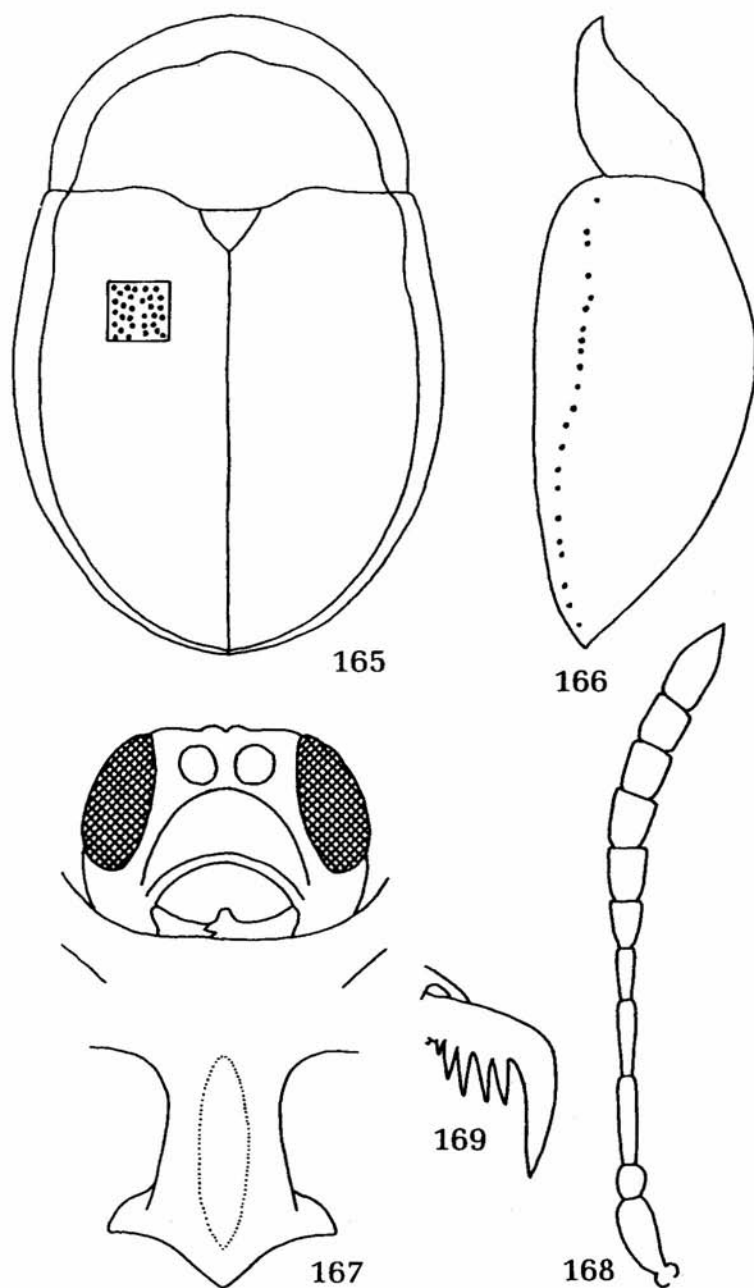
Conchyloctenia nigrosellata: SPAETH, 1902a: 450; 1914: 80; 1929: 160.

Conchyloctenia signatipennis ssp. *nigrosellata*: SPAETH, 1924: 301.

Aspidomorpha Schelleri KARSCH, 1882: 401 (type in ?).

Conchyloctenia Schelleri: SPAETH, 1902a: 450; 1914: 80; 1935: 94 (as syn. of *mouffleti*).

Conchyloctenia signatipennis ab. *Schelleri*: SPAETH, 1924: 301.

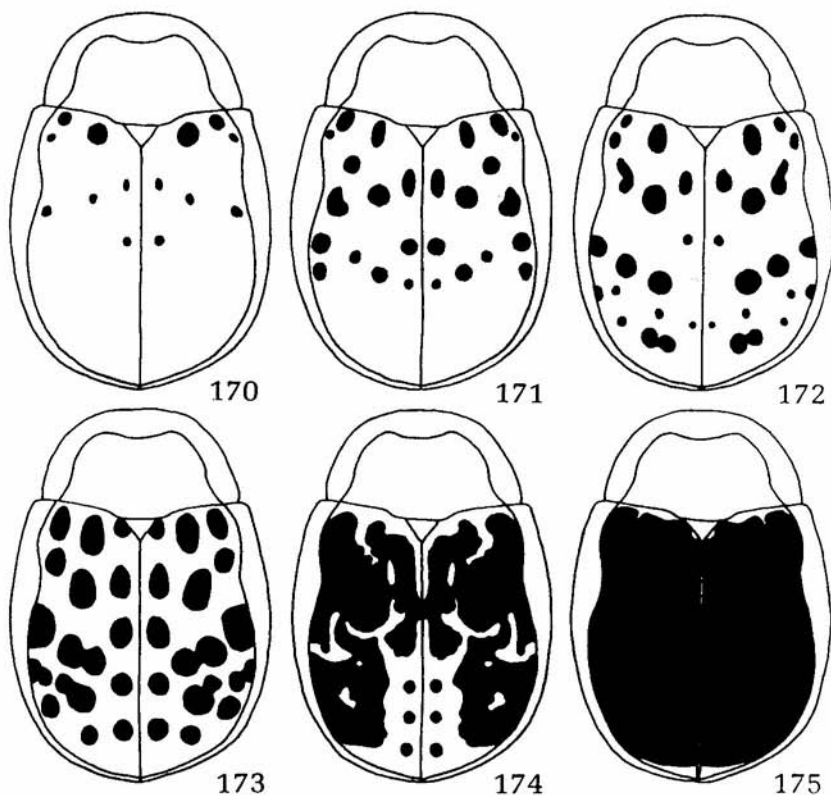


165-169. *Conchyloctenia signatipennis*: 165 - body in dorsal view, 166 - body in lateral view, 167 - head and prosternum, 168 - antenna, 169 - tarsal claw

DESCRIPTION

Length: 9.6-12.9 mm, width: 6.8-8.7 mm, pronotum length: 3.5-4.0 mm, pronotum width: 5.5-6.9 mm. Body oval (fig. 165), rounded on sides, males distinctly stouter than females.

Pronotum reddish-brown to brown, always immaculate. Elytra reddish brown to brown with black pattern (figs. 170-175). In the palest form only humerus with small black spot (= *jecorsa*), in the darkest form whole disc, except apex, is black (= *nigrosellata*). In the most common form each elytron has 14-21 black spots of various size and shape. The spots only occasionally connected, and sometimes form bands, especially along margin of disc. Explanate margin always pale, without pattern. Clypeus reddish-brown to brown, thorax black, abdomen yellowish to brownish, often infusate in the middle. Legs black. Antennal segments 1-6 testaceous, remainder black.



170-175. *Conchyloctenia signatipennis*, variation of dorsal maculation

Pronotum semicircular, 1.6-1.7 times wider than long, posterior corners straight. Disc regularly convex, microreticulate, glabrous to slightly dull, with scarce fine pricks or small punctures. Forms from the mountains are usually slightly stronger punctured than those from lowlands. Explanate margin distinctly bordered from disc, subhorizontal, does not form a distinct gutter, its surface microreticulate, impunctate, glabrous to slightly dull.

Scutellum triangular. Base of elytra not or only slightly wider than base of pronotum. Disc regularly convex (fig. 166), more convex than in species with regularly punctate elytra, but less convex than in species of the *mouffleti-hepatica* complex. Puncturation irregular, moderately large, in forms from lowlands usually uniform, scarce, distance between punctures as wide as to twice wider than puncture diameter; in mountain forms, especially from African rift, black spots are distinctly stronger and denser punctured than pale background, sometimes punctures on black spots are extremely dense, almost touching each other, and spots appear slightly rugose (= *maculipunctata*). Surface between punctures microreticulate, glabrous to slightly dull. Marginal row indistinct, especially in posterior half of disc. Explanate margin declivous, with honeycomb structure, without lateral margination, microreticulate, usually impunctate, sometimes with scarce punctures along margin of disc.

Clypeus broad (fig. 167), distinctly elevated, anterior margin rounded. Surface flat or slightly impressed in the middle, microreticulate, with several small punctures, dull. Antennae moderately long, extending to apex of mesosternum. Length ratio of antennal segments: 100:34:114:71:68:51:63:51:51:54:100. Segment 3 long, 2.8-3.4 times longer than 2 (fig. 168).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with shallow longitudinal canaliculation, often with median impression (fig. 167). Legs slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length extending to half length of claw (fig. 169), outer margin with three teeth about twice shorter than those of inner pecten.

Host plant and bionomics unknown.

DISTRIBUTION

West and Central Africa, including mountain regions of African rift from Ethiopia to Tanzania (fig. 176).

REMARKS

It belongs to the species with lateral margin of elytra not marginate. It differs from all other species of this group in more elongate, and less convex body. At first glance it is more similar to irregularly punctate species of *punctata* group, but they differ in distinctly marginate elytral margin.

MATERIAL EXAMINED

BURUNDI: Bururi, 1, R. GIRAUDIN (MRAC).

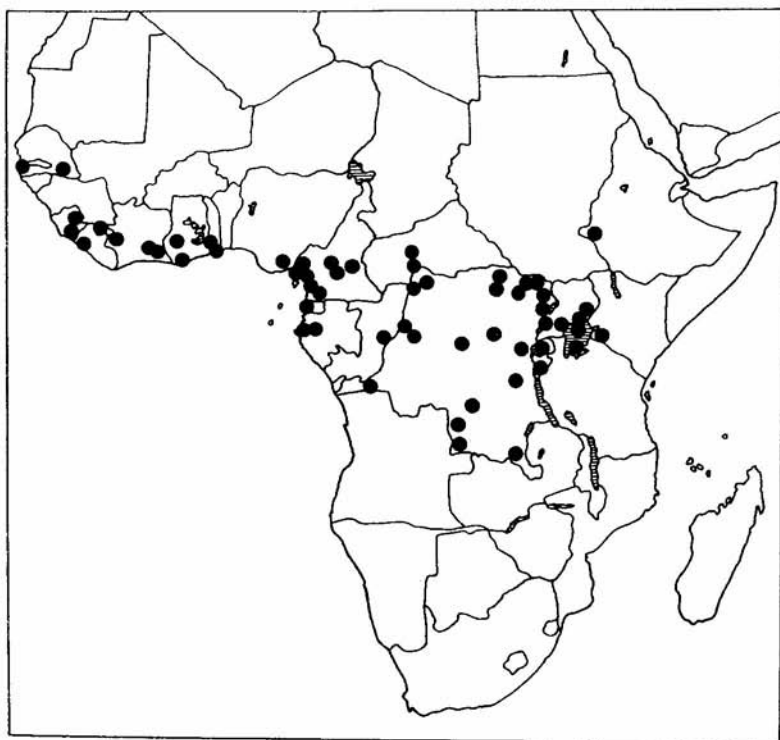
CAMEROON: Adamana, 1 (FMNH); Batanga, IX 1910, 1, II 1911, 3, VI 1911, 1, A.I. GOOD (CMNH); Betare, 23 IV 1914, 1 (BMNH); Duala, 1 (IRSN), 3 (NMP); Edea, VII 1922, 1, 1 VII 1922, 1, 17 VIII 1922, 2, 28 VIII 1922, 1, 4 IX 1922, 1, J.A. REIS (CMNH); Joko, 2 (NMP), 3 (HNHM), 1 (LU), Joko, VII 1912, 6, 1 ab. *nigrosellata* (FMNH); Lolodorf, III 1911, 1, A.I. GOOD (CMNH); Mt. Balmayo, 1, BARGA (MRAC); Pipinde, 1, ZENKER (ZMHU); Sasse-Buea, IV-V 1951, 1, S. TITA (CAS); Uam, Bosum, 1-31 V 1914, 1, 1-10 VI 1914, 1, TESSMANN (ZMHU); Victoria, 1 (holotype of *Conchyloctenia signatipennis* var. *jecorsa*).

EQUATORIAL GUINEA: Benito, 4 (NMP).

ETHIOPIA: Ilubabor Prov., Gambela, X 1972, 1, G. DE ROUGEMONT (MRAC).

GAMBIA: Bakau, 6-26 XI 1984, 1, T. PALM (LU); Bathurst, I 1968, 6, T. PALM (LU).

GABON: Bas-Ogooué, 3 (IRSN); Bas-Ogooué, Lambaréné, 8 (NMP); Gabon, XII 1909, 1, A.I. GOOD (CMNH); Kangvé, Ogové, 15, A.C. GOOD (CMNH); Ndole, XI-



176. Distribution of *Conchyloctenia signatipennis*

XII 1902, 1, L. FEA (MZSNG); Voka, XII 1977, 1, ONORE (SZ); Ogove R., 22, A.I. GOOD (CMNH).

GHANA: Ashanti Reg., Kumasi, Nhasu, 30 IX 1967, 1, S. ENDRÓDY-YOUNGA (HNHM); Mamso Anenfi, IV 1968, 7 (MRAC); Takoradi, IV-XI 1967, 87, BESNARD (MRAC, LB).

GUINEA: Nzerekore, 28 VIII 1972, 1, K. FERENCZ (HNHM).

IVORY COAST: Adzopé, IX 1948, 1 (MHNG); Bonaké, VII 1977, 1, P. ELSÉN (MRAC); Dimbroko, 4 (NMP); Man, VIII 1948, 2 (MHNG).

KENYA: Monianku, Kisii, 9 I 1978, 1, J. W. WASKEVICH (PMNH).

LIBERIA: Monrovia, 1 (IZPAS).

NIGERIA: 5 mls W Alagba, 50 m, 7 IX 1966, 1, E. S. ROSS and K. LORENZEN (CAS).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 5 (IRSN); Fort Sibut, 4 (IRSN), 9 (NMP).

REPUBLIC OF CONGO: Mossaka, XI 1980, 2 ONORE (OSU).

SENEGAL: Senegal, 1, ex coll. CHEVROLAT (holotype of *Cassida lyncea*, BMNH).

SIERRA LEONE: Kenema, 1975, 4, M. VERHAEGHE (MRAC, 1 LB); SEFADU, 1934, 1 (IFAN); Sierra Leone, 1 (IRSN).

TANZANIA: Victoria-Nyansa, Ukerewe Ins., 1, CONRADS (ZMHU).

TOGO: Misahöhe, X 1894, 1, E. BAUMANN (ZMHU); Plateau de Daye, V 1982, 1, L. HEYMIG (MD); Togo, 1 (FMNH).

UGANDA: Buvuma Is., vill. Magyo (L. Victoria), III 1968, 2, E. VERTRIEST (1 MRAC, 1 LB); between Jinja and Busia, E Busoga, 28 VII-1 VIII 1911, 1, S. A. NEAVE (BMNH); Kadungum, Eastern Prov., 1-10 I 1914, 1, C. C. GOWDEY (BMNH); near Mpumu, 14-15 VII 1911, 1, S. A. NEAVE (BMNH); NW shores of Victoria Nyanza, 3800-3900 ft., 12-15 IX 1911, 1, S. A. NEAVE (BMNH).

ZAIRE: Albert Nat. Park, Mutsora, 1939, 9, HACKARS (MRAC, 2 LB); Albert Nat. Park, Secteur Nord, Bumali, Mutawanga, 1300 m, 7 IX 1951, 1, R. CHRISTIAENS (MRAC); Albert Nat. Park, Secteur Nord, riv. Ihunga, af. Semliki, 960 m, 28 VIII 1957, 1, P. VANSCHUYTBROECK (MRAC); Bambesa, 1-2 VI 1937, 1, 26 VIII 1937, 1, 7 IX 1937, 1, 9 X 1937, 1, 19 XI 1937, 1, 1 I 1939, 1 ab. *nigrosellata*, 3 I 1940, 1 ab. *nigrosellata*, 12 I 1940, 1 ab. *nigrosellata*, J. VRYDAGH (MRAC, 1 LB); Biruwa à Matenda, 21 IX 1929, 1, A. COLLART (IRSN); Biruwe-Buhunde, 17 IX 1929, 1, A. COLLART (IRSN); Congo belge, 2, coll. CLAVAREAU (lectotype and paralectotype of ssp. *maculipunctata*, present designation, MRAC); Dungu, X 1919, 1, ab. *nigrosellata*, P. VAN DEN PLAS (MRAC); Elisabethville, 1957-58, 1, Ch. SEYDEL (MRAC); Equateur, Flandria, 1928, 1, B. P. HULSTAERT (MRAC); Gandajika, 1 II 1939, 1, H.J. BRÉDO (IRSN); Garamba Nat. Park, 24 IV 1951, 1, 16 VIII 1952, 1, ab. *nigrosellata*, Miss. H. DE SAEGER (MRAC); Haut Uele, fl. Duru, III 1927, 1, F. S. PATRIZI (MZSNG); Haut-Uele, Yebo Moto, X 1926, 1, ab. *nigrosellata*, L. BURGEON (MRAC); Ikenge, 18 IX 1912, 2, R. MAYNÉ (MRAC); Kabambari, 3, CLAVAREAU (syntypes of *Conchyloctenia signatipennis* var. *maculipunctata*, MM); Kibali, Ituri, Kilomines, IV 1957, 1, C.

SMOOR (MRAC); Kisantu, V 1919, 1, P. VANDERIJST (MRAC), 1 (IRSN); Kivu, Kavumu a Kabunga, km 82 (Mingazi), XI-XII 1951, 1, H. BOMANS (MRAC); Lac Albert, Kasenyi, 5 V 1935, 1, H. J. BRÉDO (MRAC); Libenge, Liki-Bembe, 28 II 1948, 1, R. CREMER and M. NEUMAN (IRSN); Libenge-Mawuya, 4 XI 1947, 1, R. CREMER and M. NEUMANN (IRSN); Lulua, Kapanga, X 1932, 1, I 1933, 1, I 1934, 1, F. OVERLAET (MRAC); Orientale Prov., Bas-Uele Distr., Bambesa, 31 III 1957, 1 (FMNH); Sandoa, I 1932, 1, F. G. OVERLAET (MRAC); Stanleyville, 16 VI 1932, 1, J. VRYDAGH (MRAC), 4 III 1928, 1, 11 III 1928, 1, 17 III 1928, 1, 8 VII 1928, 1, 23 VIII 1928, 1, 28 VIII 1928, 2, 4 VI 1929, 1, 10 VI 1929, 15 XII 1929, 24 XII 1929, 2, 7 I 1930, 1, A. COLLART (IRSN); Stanleyville, Lokilo, 1954, 1, SAUSSUS (MRAC); Tshuapa, Bokuma, XII 1951-III 1954, 33, R. LOOTENS (MRAC, LB); Tshuapa, Ikela, 1955-XI 1956, 9, R. LOOTENS (MRAC); Ubangi, Bosobolo, 1, ab. *nigrosellata*, 1, Dr. VACHANDEZ (MRAC); Uele, 1 (HNHM); Uéré, Angu, 13 XI 1913, 1, Dr. RODHAIN (MRAC); Uele, Bambesa, 1937/38, 1, J. VRYDAGH (MRAC); Uele, Gangala-na-Bodio, XI 1956, 1, M. POLL (MRAC).

VARIA: Old Calabar, 1, MURRAY (syntype of *Cassida spilota*, BMNH); Senegambia (!*Cassida lignea* BOH.), 1 (ZMHU).

Conchyloctenia tigrina (OLIVIER, 1808)

(figs. 177-187, 191)

Cassida tigrina OLIVIER, 1808: 957 (type in ?).

Aspidomorpha tigrina: KOLBE, 1898: 344; MUIR and SHARP, 1904: 7 (ootheca, larva).

Conchyloctenia tigrina: SPAETH, 1902b: 450; 1924: 296, 299; MAULIK, 1916: 586; BOROWIEC, 1986: 801.

Aspidomorpha (*Conchyloctenia*) *tigrina*: SHAW, 1956b: 264; 1963: 457.

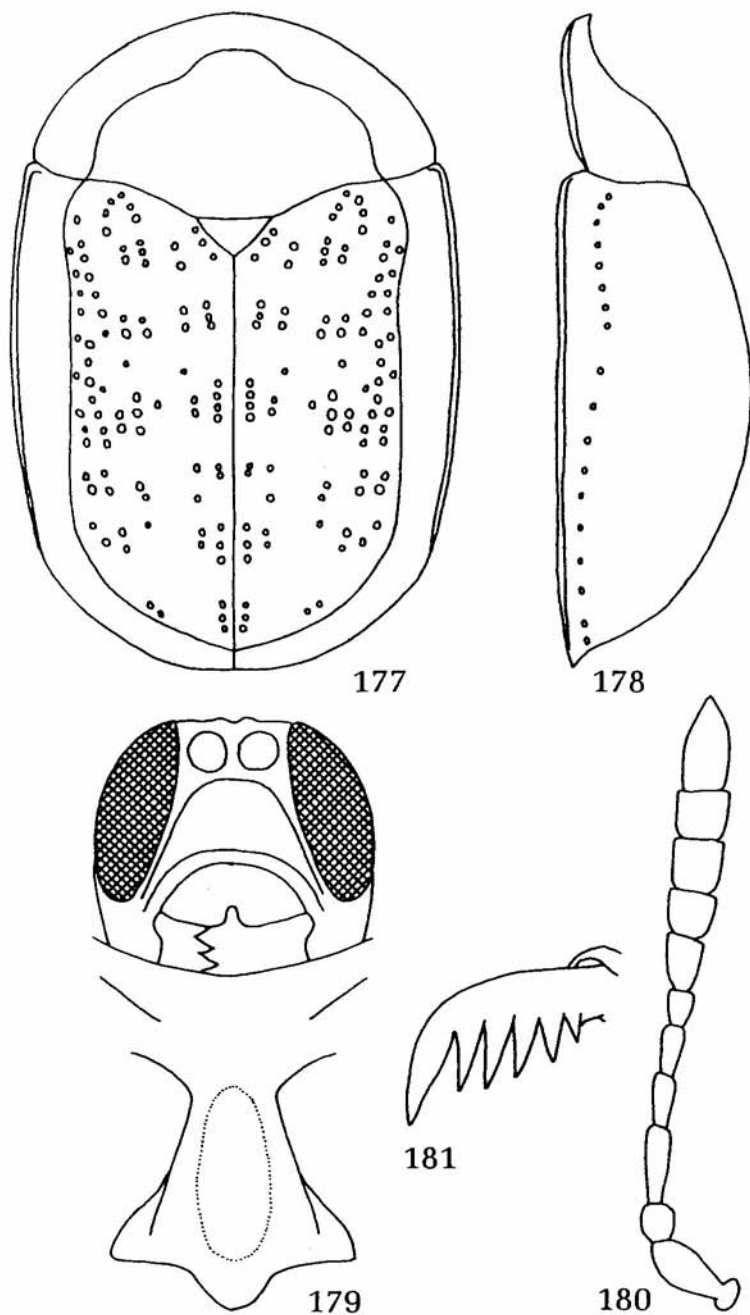
Cassida tripuncticollis BOHEMAN, 1862: 289 (type in NRS).

Conchyloctenia tripuncticollis: SPAETH, 1902a: 450; 1914: 80 (as syn.).

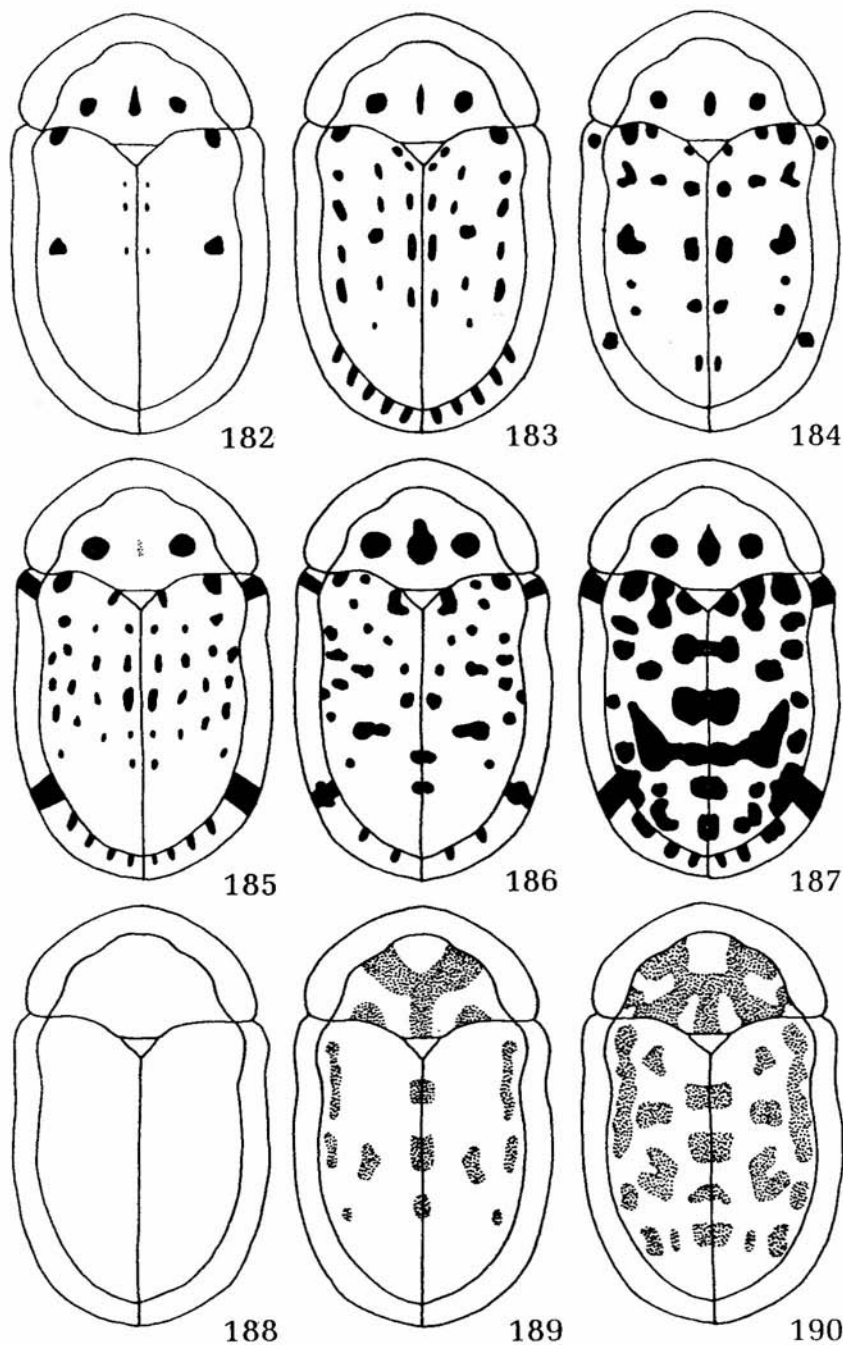
DESCRIPTION

Length: 8.7-11.2 mm, width: 5.6-7.3 mm, pronotum length: 3.0-3.6 mm, pronotum width: 5.0-6.4 mm. Body elongate, almost parallelsided (fig. 177).

Pronotum yellow, disc with three black spots, medial spot often smaller than lateral spots, sometimes reduced to black line or obsolete. Occasionally lateral spots are smaller than median spot, in extremely rare cases pronotum immaculate. Elytra yellow, disc with numerous black spots of varied shape and size (figs. 162-187). In the palest form only humerus with small black spot, in the darkest form spots partly coalescent and black area occupies as large part of disc as yellow area. In the most common form spots are separated, 20-24 on each disc of elytron. Explanate margin immaculate, or with humeral and posterolateral black spots. Clypeus black, thorax varies from mostly yellow to mostly or completely black, in the palest form only posterior margin of metathorax is black. Abdomen yellow, or only slightly infuscate in the middle. Legs yellow, coxae and trochanters usually infuscate to black. Antennal



177-181. *Conchyloctenia tigrina*: 177 - body in dorsal view, 178 - body in lateral view, 179 - head and prosternum, 180 - antenna, 181 - tarsal claw



182-190. Variation of dorsal maculation: 182-187 - *Conchyloctenia tigrina*, 188-190 - *C. hybrida*

segments 1-7 yellow, remainder black, segment 7 often infusate apically, the last segment on ventral side often with yellow spot.

Pronotum semicircular, about 1.7 times wider than long, posterior corners obtuse. Disc regularly convex, microreticulate, glabrous, with extremely scarce and fine pricks. Explanate margin distinctly bordered from disc, with honeycomb structure, subhorizontal, forming a shallow gutter, its surface microreticulate, glabrous, impunctate.

Scutellum triangular. Base of elytra not wider than base of pronotum, anterior margin slightly bisinuate, crenulate. Disc moderately convex (fig. 178), strongly regularly punctate. Punctures arranged in impressed rows, distance between punctures varies from smaller to distinctly larger than puncture diameter. Punctures often grouped 2-4 together, in strongly maculate species punctures often grouped on black spots, and rows appear interrupted. Intervals slightly elevated, in sutural half of disc about twice wider than rows, the third interval slightly wider, about thrice wider than neighbouring rows. On sides of disc intervals slightly wider than rows, often appear irregular because yellow parts of interval are more elevated than black parts. Marginal row distinct. Explanate margin about as wide as 1/4 width of each elytron, with honeycomb structure, subhorizontal, forms a shallow gutter, lateral margination distinct. Surface glabrous, with transverse wrinkles, especially in internal half of explanate margin.

Clypeus moderately broad (fig. 179), strongly elevated, surface flat or impressed in the middle, microreticulate, with a few punctures, glabrous to slightly dull. Labrum emarginate to 1/3 length. Antennae moderately long, extending to apex of mesosternum. Length ratio of antennal segments: 100:40:100:60:50:46:60:56:56:60:110. Segment 3 about 2.5 times longer than 2 (fig. 180).

Prosternal collar large, with transverse sulci, prosternal process broad, strongly expanded apically, with distinct longitudinal canaliculation, often with median impression (fig. 179). Legs slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length extending to half length of claw (fig. 181), outer margin with three teeth about twice shorter than those of inner pecten.

Host plant: *Solanaceae*: *Solanum mauritianum* (label data), *Solanum* sp. (H. HERON letter's inf.). Bionomics and immature instars were described by SHARP and MUIR (1904): "eggs with ootheca. Larva feeds generally on the underside of the leaf. In colour it varies from a light yellow to green. It is surrounded with spikes, and the ninth abdominal spikes are enlarged. The tenth abdominal segment is very mobile and retractile, and the excrement passes out in long slender filaments and hardens on exposure to the air. When the filament has reached a certain length the tenth segment is curved upwards and the filament fixed to the base of the ninth abdominal spikes. At each ecdysis the old skin is retained on the ninth abdominal spike and also the filaments attached to it. The pupa varies from yellow to green in colour. The spikes round the pronotum and abdomen are slightly bordered with black, and a dark mark runs down each side of the back. The pronotum is expanded into a semitransparent

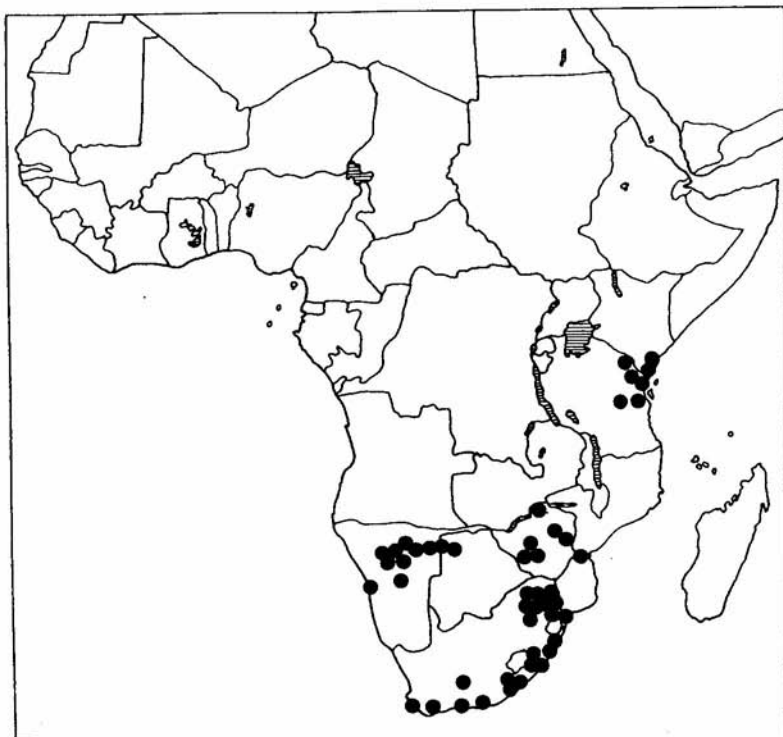
shield surrounded with fine spikelets, two pairs of which are often larger than the rest. The pro- and metanotum lose all traces of spikes. The first five abdominal spikes become flattened into thin transparent lanceolate membranes surrounded with small spikes. The remaining four pair of spikes are greatly rounded in size, and the ninth pair hold the cast larval skins and attached, intestinally-made filaments”.

DISTRIBUTION

South and East Africa north to Kenya (fig. 191).

REMARKS

It belongs to the group of species with elongate body and strongly, regularly punctate elytra. *C. hybrida*, *C. illota*, and *C. aspidiformis* differ in pronotum without black spots. *C. bipuncticollis* differs in pronotum with only two spots (three in *C. tigrina*) and elytra without black spots (usually maculate in *C. tigrina*). Extremely rare form of *C. tigrina* with immaculate pronotum and elytra is very similar to form of *C.*



191. Distribution of *Conchyloctenia tigrina*

hybrida without brown maculation. It differs in elytral punctures without black centre (with black in *C. hybrida*), and humerus with small black spot (always without spot in *C. hybrida*).

MATERIAL EXAMINED

BOTSWANA: Okavango, Thamalakane, XII 1973, 3, P. REAVEL (TM, 1 LB).

KENYA: Djani Beach, IV 1957, 1, N. L. KRAUSS (BMNH); Malindi, 28 X 1971, 1, M. A. ERTEL (SMNS); Mombasa, 3-9 VII 1952, 4, 8-11 VII 1952, 1, LINDEMANN and PAVLITZKI (ZSM, 1 LB), 13 VI 1989, 1, SHIMO LA TEWA (MD).

MOZAMBIQUE: Chibaba, Lower Buzi Riv., XII 1906, 1, C. F. SWYNNERTON (BMNH); Lourenco-Marques, 1, G. AUDEUD (LB); Makulane, 3, G. AUDEUD (MHNG); Maputo, Matola, 10-11 IV 1982, 1, G. G. SCHULTEN (ITZ).

NAMIBIA: Damaraland, Abachaus, I 1947, 9, XII 1951, 6, III 1953, 2, G. HOBOM (TM, 1 LB); between Gautscha and Kubasche, Kundveld, I 1958, 3, C. KOCH (TM); Grootfontein, 2, F. GAERDES (FMNH), 6 I 1948, 1, GAERDES (WM); Grootfontein Distr., Askavold, XII 1988, 1, V. EGGERT (WM); Okahandja, 15 I 1928, 1, H. D. BRADFIELD (TM); Okahandja, Otjekongo, 24 VI 1978, 1, M.-L. PENRITH and S. LOUW (WM); Oshikango, 1, C. KOCH (TM); Otjiwarongo, Okawaka, 10 I 1972, 5, 11 I 1972, 2 (WM); Outjo, Ike, 10-14 III 1979, 1, S. LOUW and M.-L. PENRITH (WM); Swakopmund, 2 (ZMHU); Swartzerand, II 1955, 1 (TM); Tsumeb, 8 I 1946, 2, GAERDES (WM); Tsumkve, Kungveld, I 1958, 22, C. KOCH (TM); Waterberg, 22 VI 1978, 1, S. ENDRÖDY-YOUNGA (TM).

SOUTH AFRICA: Cap, 1 (IRSN); Cap, Algoa Bay, 1, BRAUNS (TM); Cap. b. sp., 3 (MCZC), 1 (NMP), 1 (LU); Cap Bonae Spei, Alexandria, 25 X 1961, 2, A. C. v. BRUGGEN (NNML); Cape Colony, Dunbrody, 2, R. P. O'NEIL (MRAC); Cape Prov., Harkerville for. res., Gr. Letaba, 30 XII 1902, 1, BREYER (TM); Knysna, 9-10 XI 1972, 4, VAN REENEN (TM); East London, 1, MARTIN (LB), X 1912, 7 (CTM), 16 II 1919, 1, H. K. MUNRO (TM), 29 X 1923, 1, G. v. SON (TM), II 1932, 2, G. KOBROW (TM); E London, Bonza Bay, 12 II 1976, 1, R. E. PARROT (TM); Kruger Nat. Park, Nwanedzi near Satara, III 1969, 1, A. KEMP (TM); Leydsdorp, 16 X 1907, 3, G. MAUGHTON (TM), 10 II 1927, 1, G. v. SON (TM); Lydenburg, 1896, 1, P. A. KRANTZ (TM); Natal, 1 (ex coll. SOLMAN, DZPAS), 1 (IRSN), 10 XII, 1, 18 XII, 1, TRAGARDH (LU); Natal, Durban, 2, P. REINECK (ITZ), 1 (NMP), 3 X 1906, 1, 23 XII 1906, 3, G. F. LEIGH (TM); Natal, Margate, X 1939, 1, G. KOBROW, 1 (TM); Natal, New Hanover, 4 XII 1914, 1, HARDENBERG (TM); Natal, Pongola, XII 1986, 6, K. WERNER (MD); Natal, Sarnia, 7 I 1912, 5, 8 I 1912, 1, A. J. JANSE (TM, 1 LB); Natal, Verulam, 12 XII 1902, 1 (TM); Natal, Weenen, XI 1900, 1 (TM); Nelspruit, X 1917, 1, H. G. BRAIJER (TM); Nylstroom, 16-31 XII 1921, 4, G. P. VAN DAM (TM, 1 LB); Pienaars Riv., 1898, 4, v. JUTRZENCKA (TM); Plat-river, I-II 1903, 7, v. JUTRZENCKA (TM); Pondoland, Port St John, II 1917, 4, H. SWINNY (TM), 24-30 XI 1956, 2, R. M. MARTIN (TM); Riversdale, 1 (MCZC); Tongaat, 1909, 3 (TM); Transkei, Xora R. mouth, 4 XI 1986, 1, S. NESER (NIC); Transvaal, Blouberg, NW of Pietersburg, 31 V 1988, 1, on *Solanum mauritianum*,

S. NESER (NIC); Transvaal, Blouberg, N side Glenfernees, 16-21 I 1955, 2, Tvl. Mus. Exp. (TM); E Transvaal, Blydolifant Nat. R., indigenous bush, 14 IV 1974, 1, L. SCHULZE (TM); E Transvaal, Graskop, XII 1974, 1, P. E. REAVEL (TM); Transvaal, 500 m, Guersney Farm, 15 km E Klaserie, 22 XII 1985, 1, 27 XII 1985, 4, 19-31 XII 1985, 2, H. and A. HOWDEN (CMN); Transvaal, Kruger Nat. Park, Satara, 15-18 XII 1985, 1, H. A. HOWDEN (CMN); Transvaal, 8 mls E Northan, I 1970, 1, L. SCHULZE (TM); Transvaal, North Rand, II 1944, 1, G. KOBROW (TM); E Transvaal, Penge, 13-17 XI 1972, 1, A. STRYDOM (TM); Transvaal, Warmbaths, I 1914, 3, G. KOBROW (TM); N Transvaal, Waterberg, Farm 223, grassnetting, 12 II 1976, 3, A. STRYDOM (TM); N Transvaal, Waterberg, Lapalala Wilderness, 18 VIII 1975, 1, under stones, S. ENDRÖDY-YOUNGA (TM); Waterberg, 1898-99, 17, O. V. JUTRZENCKA (TM); Waterkloof, Distr. Pretoria, 2, F. NOOME (TM); Witenhage, 9 XII 1910, 5 (TM); Zululand, Amagaya, 1 (MCZC); Zululand, Hluhluwe Game res., 31 X 1970, 1, O. BOURQUIN (TM); Zululand, Lake Bhangazi, 18 XII 1976, 1, S. ENDRÖDY-YOUNGA (TM); Zululand, Ndugu Game Res., IV 1970, 3, C. BESNARD (MRAC, 1 LB); Zululand, Nyala game res., X 1975, 1, P. E. RAEVELL (TM); Zululand, Ubombo, 10 XI 1955, 1 (MRAC).

TANZANIA: Dar-es-Salaam, 2 (FMNH), 2, coll. FRUHSTORFER (ZSM), 2, N. L. KRAUSS (BMNH); Kibateni, 10 VI 1904, 1 (ZMHU); Kiemoni, 14 VII 1904, 1, KARASEK (LB); Kilimandjaro, 1, Don. S. R. Zool. Anvers (MRAC); Kilossa, 21 I 1921, 2, A. LOVERIDGE (MCZC); Pongwe, 19 III 1904, 1 (ZMHU); Sisima, 27 IX 1904, 1, KARASEK (ZMHU); Tanga, 3 VII 1904, 3, KARASEK (ZMHU), 20 XI 1952, 2, LINDEMANN and PAVLITZKI (1 ZSM, 1 LB); Tanga Prov., IV-V 1950, 3, at light, R. C. SWEENEY (BMNH); Usambara, Bumbuli, 2 (NMP).

ZIMBABWE: Bulawayo, Matsheamklope, 6 II 1976, 3, D.K. WHEELER (2 NMM, 1 LB); Katombora Rapids, Zambezi Riv., 8 XII 1982, 1 (LB); Hillside, 28 II 1923, 1, SWINBURNE and STEVENSON (TM); Matopos, Mtshabezi Vall., 19 II 1972, 1, F. DE MOOR (NMM); Salisbury, 1 (TM), 1913, 1, J. O'NEIL (CTM); Sawmills, 31 XII 1921, 2 (NMM); Umtali, 1 (IFAN); Zambesi Riv., Katombora Rapids, 8 XII 1982, 2 (NMM).

VARIA: Zambesi, Bradshaw, 1878, 1 (ITZ).

Genus: *Mahatsinia* SPAETH, 1919

Mahatsinia SPAETH, 1919: 191 (type species: *Lacoptera nodulosa* WEISE, 1910, by monotypy); HINCKS, 1952: 337; SEENO and WILCOX, 1982: 175.

Small cassids with subcircular body. Pronotum and elytra strongly sculptured. Antennae with only four basal glabrous segments. Clypeus flat. Both inner and outer margin of claws with short pecten.

Distribution: Madagascar.

Mahatsinia nodulosa (WEISE, 1910)

(figs. 192-197, 203)

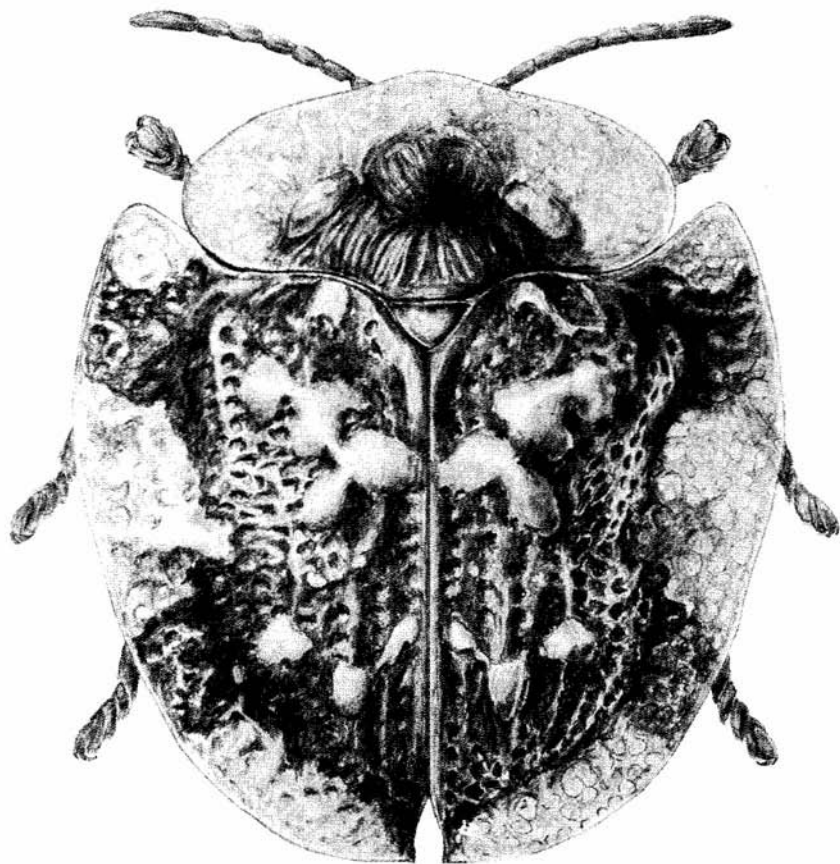
Lacoptera nodulosa WEISE, 1910: 480 (type in ZMHU).

Mahatsinia nodulosa: SPAETH, 1919: 191; BOROWIEC, 1985a: 239.

DESCRIPTION

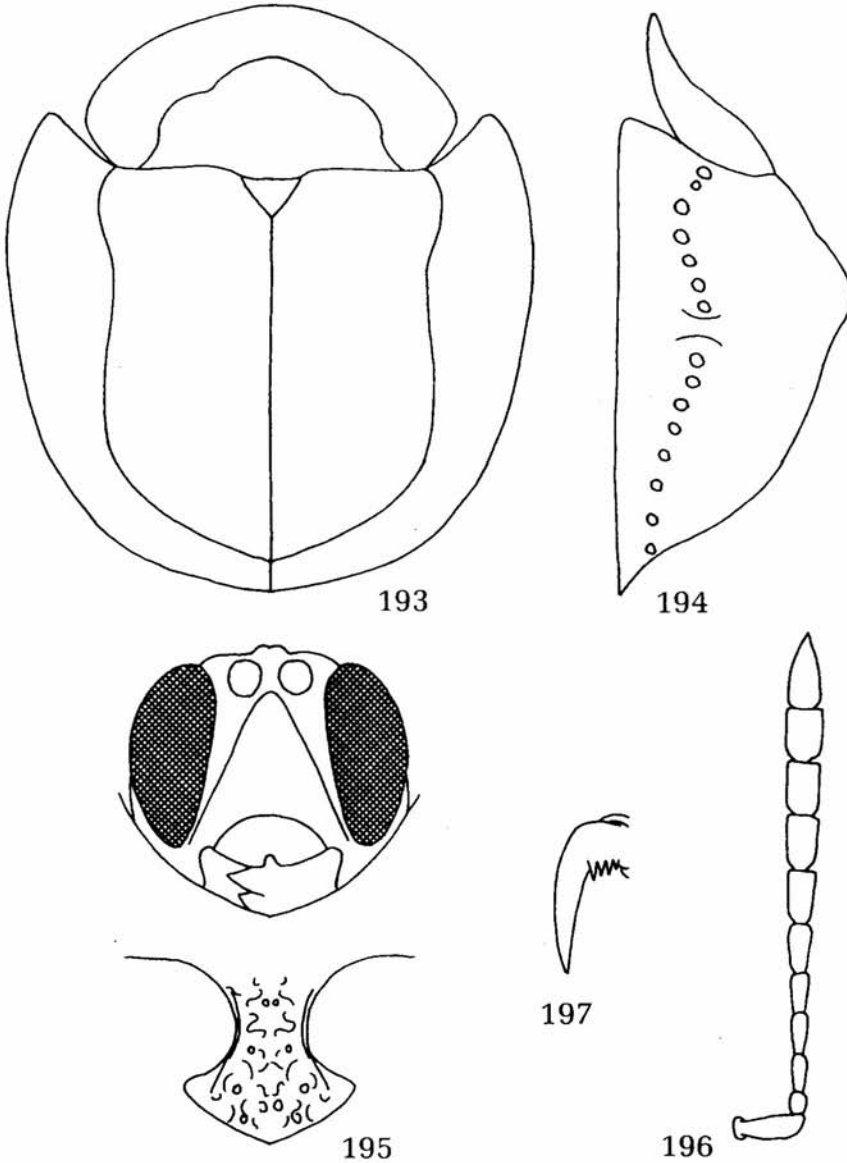
Length: 5.3-5.5 mm, width: 4.7-4.8 mm, pronotum length: 1.9 mm, pronotum width: 3.3-3.5 mm. Body subcircular (fig. 192).

Pronotum yellow, disc black, only lateral elevations partly or completely yellow. Elytral disc black, with yellow elevations: one small at base, an irregularly X-shaped postscutellar elevation, two behind the middle, a lateral elevation of marginal interval, and sometimes few small elevations between postscutellar elevation and posterior elevations. Explanate margin yellow with broad black humeral and posterolateral



192. *Mahatsinia nodulosa*, dorsal view

spot, external part of anterior margin broadly yellow. Clypeus yellow. Thorax mostly black, usually apex of mesosternum and anterior part of metasternum yellow to infusate; abdomen yellow. Legs and antennae yellow, the last antennal segment usually infusate.



193-197. *Mahatsinia nodulosa*: 193 - body in dorsal view, 194 - body in lateral view, 195 - head and prothorax, 196 - antenna, 197 - tarsal claw

Pronotum broad, about 1.8 times wider than long, elliptical, with broadly rounded sides, no posterior corners. Maximum width of pronotum in the middle. Disc moderately elevated, glabrous, with strong longitudinal striation, especially in basal half. Part above head distinctly lower than basal part. On each side of disc oval elevation, depressed at top, bordered from explanate margin and the other side of disc by a deep sulcus. Surface of the elevation not striated. Explanate margin very broad, distinctly bordered from disc, subhorizontal, does not form a gutter, with honeycomb structure, its surface microreticulate, with wrinkles and granules, appears irregular but glabrous.

Scutellum triangular. Base of elytra distinctly wider than pronotum (fig. 193). Anterior margin distinctly bisinuate, crenulate, humeri strongly protruding anterad. Disc strongly convex (fig. 194), with low x-shaped postscutellar elevation, distinctly elevated third interval, elevated median part of fifth interval, and transverse fold behind the middle of disc between rows 4 and 7; also two lateral intervals with large transverse fold. Praescutellar impressions with distinctly elevated margins. Punctuation of elytra large, dense, regular, but rows partly interrupted and disturbed by elytral sculpture. Punctures in rows almost touching each other. Intervals except elevated interval 3 and partly 5 very narrow, distinctly narrower than rows, surface appears irregular to partly rugose. Marginal row distinct. Explanate margin very broad, about as wide as half width of each disc, with honeycomb structure, humeral angles subangulate. Surface strongly, shallowly punctate, with irregular wrinkles, appears irregular to partly rugose. Lateral margination extremely fine.

Clypeus flat, about as long as wide, with deep clypeal grooves converging in sharp angle (fig. 195). Surface microreticulate, with a few large punctures, glabrous. Labrum narrow, emarginate to 1/4 length. Antennal insertions touching each other. Antennae long, extending to 2/3 length of metasternum. Length ratio of antennal segments: 100:56:60:60:65:56:60:60:60:65:130. Segment 3 slightly longer than 2 (fig. 196).

Prosternal collar moderately large, with sides not angulate. Prosternal process broad, moderately expanded apically, its surface punctured and with irregular wrinkles, appears rugose (fig. 195). Legs slim, tarsi moderately broad, the last segment as long as the third. Claws on both inner and outer margin with very short pecten, only slightly extending behind ventral margin of claw (fig. 197).

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar (fig. 203).

REMARKS

It is a unique species within the Afrotropical *Aspidimorphini*. It differs distinctly from all species of the tribe in only four basal, glabrous antennal segments. At first

glance it resembles members of the genus *Lacoptera*, especially in similar, strongly sculptured pronotum and elytra; but species of the genus *Lacoptera* differ in larger prosternal collar with angulate sides, and more or less elevated clypeus; species of the genus *Lacoptera* are larger, always above 5.5 mm. It is also similar to some species of the genus *Cassida*, but they differ in simple or appendiculate tarsal claws.

MATERIAL EXAMINED

MADAGASCAR: Forêt Tanala, 1 (SD); Madagascar, 2 (DEI); Madagascar inter. austr., 3, HILDEBRANDT (ZMHU); Mahatsinjo near Tananarive, 6 (5 MM, 1 LB); Perinet, 24 VII 1991, 1, R. SIAKY (SZ); Tananarive, 1 (MM).

Genus: *Hybosinota* SPAETH, 1909

Hybosinota SPAETH, 1909: 282 (type species: *Cassida nodulosa* BOHEMAN, 1854, designated by HINCKS, 1952); 1914: 81; SEENO and WILCOX, 1982: 175.

Body elongate-oval, parallelsided. Antennae with six basal segments glabrous. Clypeus distinctly elevated. Ventral side of pronotum with short antennal grooves. Prosternal collar large, with angulate sides. Claws with large pecten only on inner margin, outer margin micropectinate. Elytra with large tubercles, also in posterior half of disc.

Distribution: South and southern part of Central Africa, East Africa north to Tanzania.

KEY TO THE SPECIES

1. Pronotal disc dull. Elytral tubercles high, tubercle between the two largest tubercles forms transverse fold. Antennae usually uniformly yellow, sometimes distal segments slightly infuscate: *turrigera*
- Pronotal disc glabrous. Elytral tubercles lower, tubercle between the two largest tubercles forms longitudinal fold. Last three antennal segments black: *nodulosa*

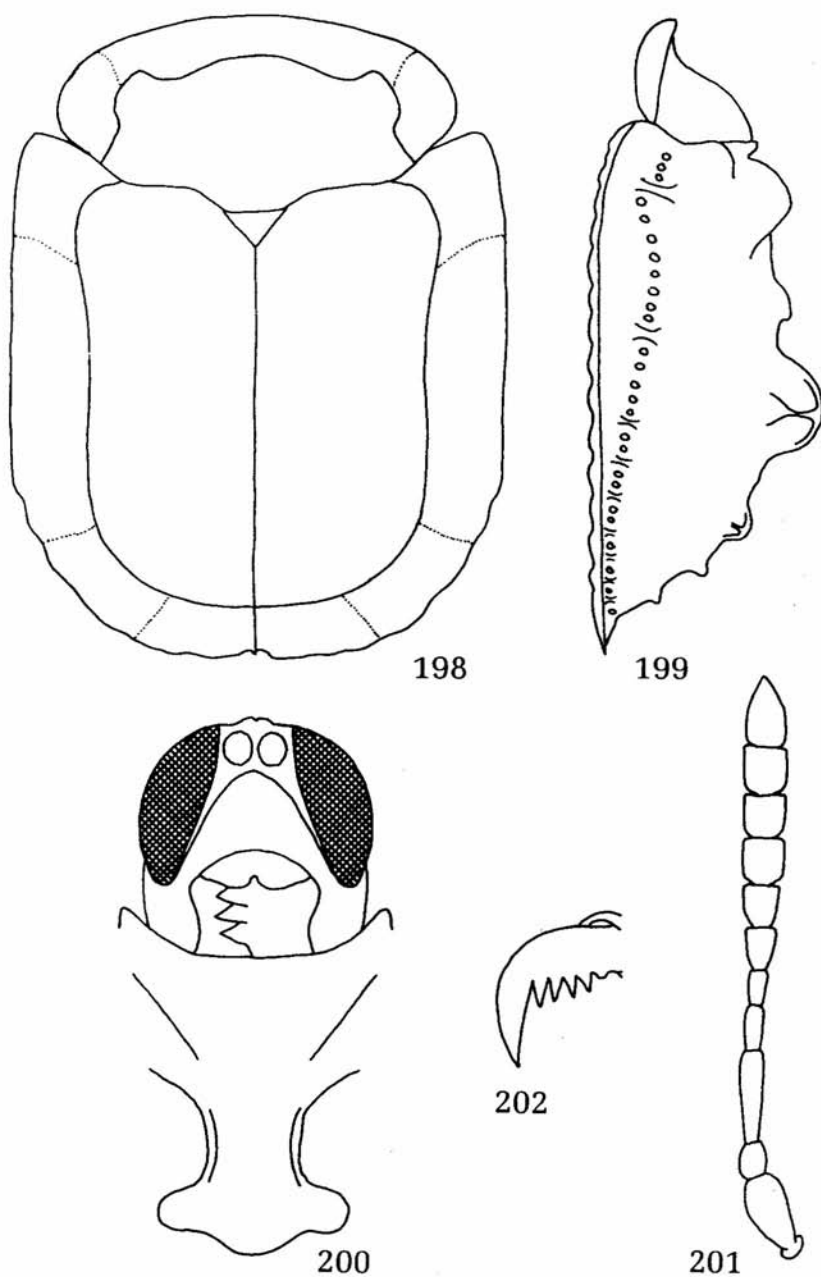
Hybosinota nodulosa (BOHEMAN, 1854)

(figs. 198-203)

Cassida nodulosa BOHEMAN, 1854: 331 (type in NRS).

Asphalesia nodulosa: WEISE, 1899: 247.

Hybosinota nodulosa: SPAETH, 1909: 283; 1914: 81; SHAW, 1956b: 265.

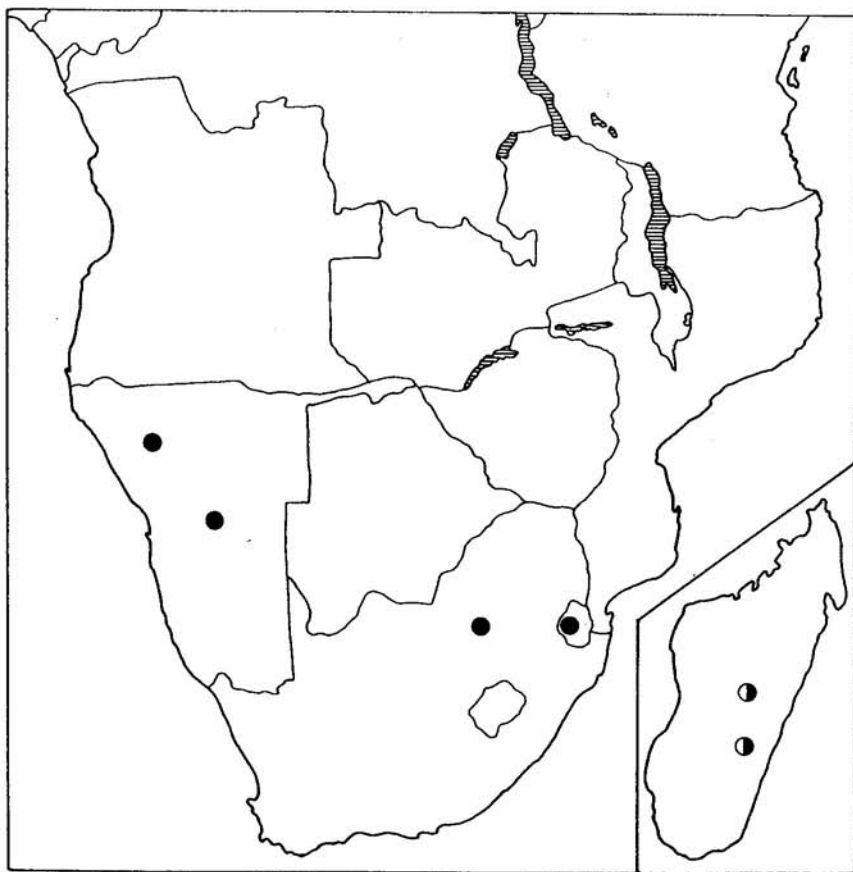


198-202. *Hybosinota nodulosa*: 198 - body in dorsal view, 199 - body in lateral view, 200 - head and prosternum, 201 - antenna, 202 - tarsal claw

DESCRIPTION

Length: 7.0-7.7 mm, width: 4.9-5.7 mm, pronotum length: 2.4-2.5 mm, pronotum width: 4.1-4.7 mm. Body parallelsided (fig. 198).

Pronotum in pale form yellow with disc and lateral part of explanate margin reddish. Disc with two black elongate spots in the median line, and two spots on each side. Explanate margin with elongate brown to black spot along border between pale yellow and reddish parts of margin. In dark form whole disc black, explanate margin with lateral parts brown, and often with brown spot in the median line. Elytral disc in pale form yellow-reddish with blackish anterior tubercle and blackish sharp margins and tops of other tubercles. Explanate margin yellow-reddish with 5-6



203. Distribution of *Hybosinota nodulosa* (black circles) and *Mahatsinia nodulosa* (white and black circles)

blackish, transverse spots. In dark form elytral disc is mixed yellow and black, yellow occupies mostly prescutellar area and surface between the largest tubercles. Black occupies lateral and posterior half of disc and margins of tubercles, but no area is uniformly black or yellow. Explanate margin yellow with broad humeral, posterolateral and sutural black spots. Humeral spot extending to anterior margin. Yellow area between humeral and posterolateral spot with a few small black spots. Scutellum in both forms yellow to reddish, in the middle often with dark spot. Ventrites yellowish-red. Legs yellow, femora with brown spot in the middle, and sometimes spot at base. external surface of tibia in the middle also with brown spot. Seven basal antennal segments yellow, remainder brown to black, the last segment on ventral side with yellow spot.

Pronotum about 1.8 times wider than long, with broadly rounded sides, no posterior corners. Maximum width of pronotum in the middle. Disc regularly, strongly convex, surface microreticulate but glabrous, with extremely scarce and fine punctures. Explanate margin broad, distinctly bordered from disc by a sulcus, with honeycomb structure, forms a deep gutter. Surface microreticulate, glabrous, with fine pricks.

Scutellum triangular. Base of elytra wider than pronotum, anterior margin strongly bisinuate, crenulate. Disc regularly convex, strongly tuberculate (fig. 199). Tubercle between the largest two tubercles slightly to twice lower than the largest tubercle, forms a longitudinal fold. Tubercles at scutellar apex very low or obsolete. Tubercle behind the largest posterior tubercle with apex broadly rounded, tubercles on sides of disc with apex obtuse and usually without sharp margins. Punctuation large, dense, regular, but rows interrupted by elytral tubercles. Distance between punctures about twice narrower than puncture diameter, sometimes punctures touching each other. Intervals flat between tubercles, twice to thrice wider than rows. Marginal row distinct. Explanate margin about as wide as 1/3 width of each disc, humeral angles rounded, with honeycomb structure, forms a shallow gutter. Lateral margination very narrow. Surface partly irregular, especially dark spots with transverse folds, glabrous. Elytral outline slightly irregular but not broadly crenulate.

Clypeus 1.8 times wider than long, distinctly elevated, anterior margin rounded (fig. 200). Surface flat, microreticulate, with several small punctures, glabrous. Labrum emarginate to 1/3 length. Antennal insertions slightly separated. Antennae short, extending to the middle of prosternal process. Length ratio of antennal segments: 100:44:128:52:52:44:56:52:52:56:100. Segment 3 about thrice longer than 2 (fig. 201).

Venter of pronotum with short antennal groove, margined externally by sharp carina. Prosternal collar broad, without transverse sulci, sides strongly angulate. Prosternal process broad, strongly expanded apically, with no special sculpture (fig. 200). Legs slim, tarsi moderately broad, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length, extending almost to half length of claw (fig. 202). Inner margin of claws micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

South and Southwest Africa (fig. 203).

REMARKS

It is similar to *H. turrigera* but differs in lower elytral tubercles, glabrous pronotal disc, and antennae with dark distal segments. Elytral outline in *H. nodulosa* is more regular than in *H. turrigera*.

MATERIAL EXAMINED

BOTSWANA: Nathane, 10 I 1975, 1 (LB).

NAMIBIA: Kamanyab, I 1925, 1, Mus. Exp. (CTM); Windhoek, Richthofen, 7 I 1978, 1, 1-28 II 1978, 1, 1-31 III 1978, 1, 1-28 II 1979, 1, 1-31 III 1979, 2, S. LOUW and M.-L. PENRITH (WM).

SOUTH AFRICA: Transvaal, Mimabolela, 1 (LB); Transvaal, Potchefst. Distr., 1879, 1, T. AYRES (CTM).

VARIA: Caffrerie, 1 (NMP).

Hybosinota turrigera (BOHEMAN, 1862)

(figs. 204-210)

Cassida turrigera BOHEMAN, 1862: 283 (holotype in NRS).

Aspidomorpha turrigera: SPAETH, 1898b: 540.

Sindia turrigera: SPAETH, 1898b: 540.

Hybosinota turrigera: SPAETH, 1909: 283; 1914: 81; MAULIK, 1916: 587; SHAW, 1972: 70.

Asphalesia tuta WEISE, 1904: 172 (lectotype in ZMHU); SPAETH, 1914: 81 (as syn.); BOROWIEC, 1987: 413.

DESCRIPTION

Length: 7.6-8.0 mm, width: 5.5-5.9 mm, pronotum length: 2.5 mm, pronotum width: 4.7-5.0 mm. Body parallelsided (fig. 204).

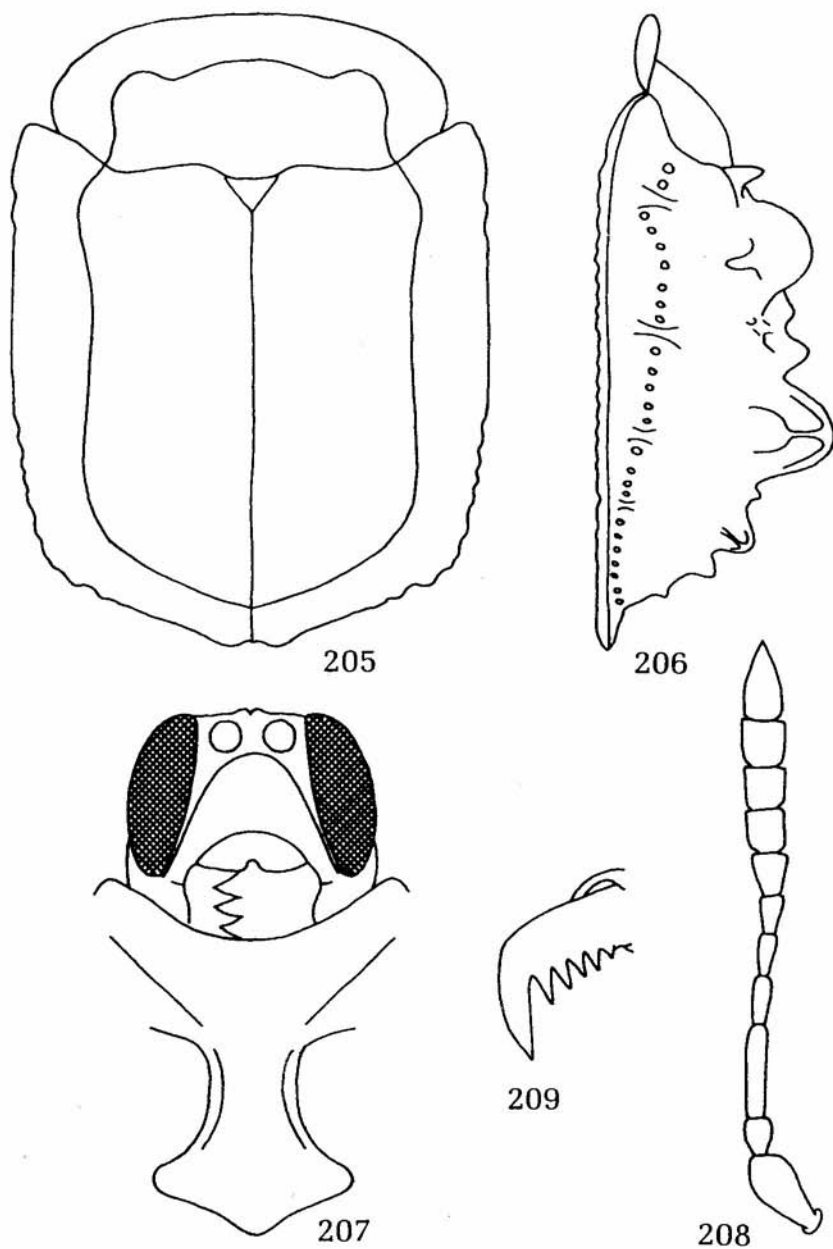
Pronotum black with yellow anterior part of explanate margin, posterior half of explanate margin often transparent brown. Scutellum yellow with small brown spot in the middle. Elytral disc with mixed yellow and black, similar as in dark form of *H. nodulosa*. Explanate margin with broad brown to black humeral, posterolateral, and sutural spots. Humeral spot extending to anterior margin of elytra. Ventrites yellowish to brown. Legs yellow, femora in the middle and sometimes at base with brown spot, tibiae on external surface in the middle with brown spot. Antennae yellow or distal segments slightly infusate.

Pronotum 1.8-2.0 times wider than long, in populations from Tanzania distinctly wider than from other parts of distribution area, with broadly rounded sides, no posterior corners. Maximum width of pronotum in the middle. Disc regularly, strongly convex, surface strongly microreticulate dull, with extremely scarce and fine pricks or completely impunctate. Explanate margin broad, distinctly bordered from disc by a sulcus, with honeycomb structure, forms a deep gutter. Surface microreticulate, glabrous to slightly dull, impunctate.

Scutellum triangular. Base of elytra wider than pronotum (fig. 205), anterior margin strongly bisinuate, crenulate. Disc regularly convex, strongly tuberculate (fig. 206). Tubercle between the largest two tubercles distinctly lower than the largest tubercle, forms a transverse fold. Tubercles at scutellar apex high with angulate apex. Tubercle behind the largest posterior tubercle with apex subangulate to angulate,



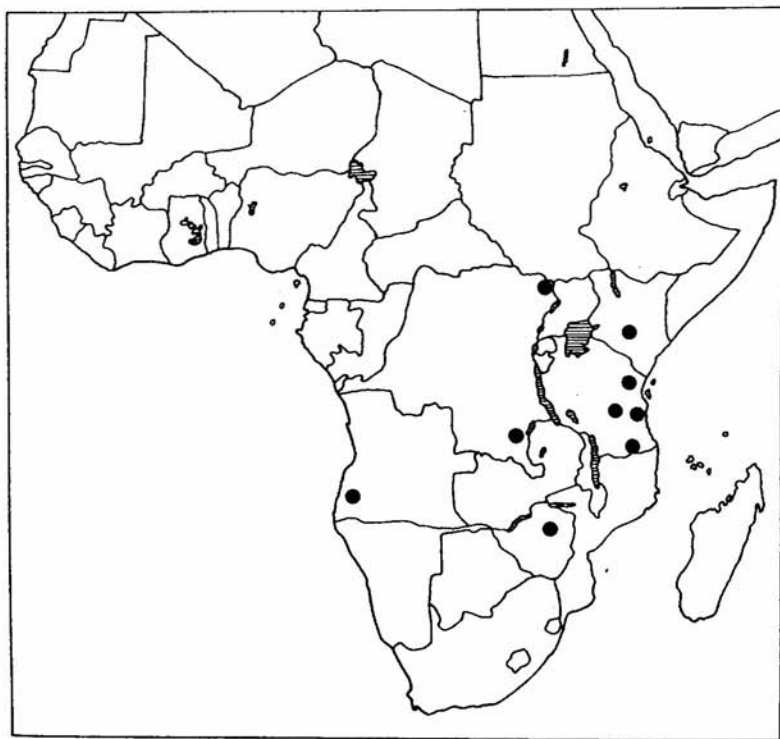
204. *Hybosinota turrigera*, dorsal view.



205-209. *Hybosinota turrigera*: 205 - body in dorsal view, 206 - body in lateral view, 207 - head and prosternum, 208 - antenna, 209 - tarsal claw

tubercles on sides of disc with subangulate to angulate apex and usually with sharp margins. Punctuation large, dense, regular, but rows interrupted by elytral tubercles. Distance between punctures about twice narrower than puncture diameter, sometimes punctures touching each other. Intervals flat between tubercles, twice to thrice wider than rows. Marginal row distinct. Explanate margin about as wide as $1/3$ width of each disc, humeral angles rounded, with honeycomb structure, forming a shallow gutter. Lateral margination very narrow. Surface partly irregular, especially dark spots with transverse folds, glabrous. Elytral outline irregular, especially in specimen from Kenya broadly crenulate.

Clypeus 1.8 times wider than long, distinctly clavate, anterior margin rounded (fig. 207). Surface flat, microreticulate, with several small punctures, glabrous. Labrum emarginate to $1/3$ length. Antennal insertions slightly separated. Antennae short, extending to the middle of prosternal process. Length ratio of antennal segments: 100:43:126:52:52:44:56:52:52:56:100. Segment 3 about thrice longer than 2 (fig. 208).



220. Distribution of *Hybosinota turrigera*

Venter of pronotum with short antennal groove, margined externally by sharp carina. Prosternal collar broad, without transverse sulci, sides strongly angulate. Prosternal process broad, strongly expanded apically, with no special sculpture, or slightly impressed longitudinally (fig. 207). Legs slim, tarsi moderately broad, the last segment distinctly longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten of teeth of equal length, extending almost to half length of claw (fig. 209). Inner margin of claws micropectinate.

DISTRIBUTION

Northern part of South Africa, north to Angola, S Zaire and Kenya, south to Botswana (fig. 210).

REMARKS

It differs from *H. nodulosa* in dull pronotal disc, distinctly larger elytral tubercles, antennae usually uniformly yellow to only slightly infuscate distally. Elytral outline in *H. turrigera* is more irregular than in *H. nodulosa*, in some specimens broadly crenulate.

MATERIAL EXAMINED

ANGOLA: Lungo, Vila Arriaga, 3 IX 1956, 1, under logs in thin mopane vegetation on very dry ground, G. RUDEBECK (LU).

BOTSWANA: Eranchi, 15-31 XII 1954, 1, A. L. CAPENER (MM).

KENYA: Kitui, 1, HILDEBRANDT (LB).

MOZAMBIQUE: Nyaka, II 1924, 1, R. F. LAWRENCE (CTM).

TANZANIA: Berega, leaf of bush, 1 (OSU); Makonde Pl., IV 1912, 1 (ZMHU); Pugu, 26 III 1902, 1, HOLTZ (ZMHU); Usambara, 1 (lectotype of *Asphalesia tuta*, ZMHU); Usambara, Neu Bethel, IV 1903, 2 (ZMHU).

ZAIRE: Garamba Nat. Park, Nagero, 1-23 IV 1954, 1, C. NEBAY (MRAC); Kundelungu, 1, Mme TINANT (MRAC).

ZAMBIA: Chingombe, 1 (LB).

ZIMBABWE: Salisbury, 22 VI 1913, 1, J. O'NEIL (NMM), 29 VIII 1916, 1 (LB).

Genus: *Lacoptera* BOHEMAN, 1855

Lacoptera BOHEMAN, 1855: 55 (type species: *Lacoptera excavata* BOHEMAN, 1855, designated by MAULIK, 1919); SPAETH, 1914g: 82; HINCKS, 1952: 337; SEENO and WILCOX, 1982: 176.

Patrisma FAIRMAIRE, 1891: 272 (type species: *Lacoptera murrayi* BOHEMAN, 1862 = *Patrisma pyramidalis* FAIRMAIRE, 1891, by monotypy); SEENO and WILCOX, 1982: 176, subgenus.

Sindia WEISE, 1897: 105 (type species: *Cassida sulcata* OLIVIER, 1808 = *Cassida clathrata* FABRICIUS, 1798 nec LINNAEUS, 1758, by monotypy); SEENO and WILCOX, 1982: 176, subgenus.

- Asphalesia* WEISE, 1899: 246 (type species: *Asphalesia confragosa* WEISE, 1899, designated by SPAETH, 1914); SPAETH, 1914: 82 (as subgenus of *Patrisma* FAIRMAIRE, 1891); SEENO and WILCOX, 1982: 176, subgenus.
- Orphonoda* WEISE, 1899: 247 (type species: *Laccoptera cancellata* BOHEMAN, 1855, designated by HINCKS, 1952); SPAETH, 1914: 84; SEENO and WILCOX, 1982: 176, subgenus.
- Orphonodella* SPAETH, 1902b: 20 (type species: *Cassida abyssinica* BOHEMAN, 1856, designated by HINCKS, 1952); SPAETH, 1914: 84; SEENO and WILCOX, 1982: 176, subgenus.
- Sindiola* SPAETH, 1903a: 111 (type species: *Sindiola (Aspidomorpha) parallelipennis* SPAETH, 1903, by monotypy); SEENO and WILCOX, 1982: 176, subgenus.
- Parorphonoda* SPAETH, 1932: 228 [Parorphonoda in original description, error typogr.] (type species: *Laccoptera excavata* BOHEMAN, 1855, by original designation); HINCKS, 1952: 337 (as objective syn. of *Laccoptera* BOHEMAN, 1855); SEENO and WILCOX, 1982: 176.
- Orphonodina* SPAETH, 1932: 229 (type species: *Orphonoda distans* SPAETH, 1902, designated by HINCKS, 1952); SEENO and WILCOX, 1982: 176 subgenus.
- Indocassis* SPAETH in HINCKS, 1952: 345 (type species: *Cassida foveolata* BOHEMAN, 1856, by monotypy); SEENO and WILCOX, 1982: 176; BOROWIEC, 1992: 158 (as syn. of *Orphonodella* SPAETH, 1902).
- Laccopteroidea* SPAETH in HINCKS, 1952: 345 (type species: *Cassida tredecim-punctata* FABRICIUS, 1801, by monotypy); SEENO and WILCOX, 1982: 176, subgenus.
- Eulaccoptera* HINCKS, 1952: 337 (nom. nov. pro *Laccoptera* s. str. SETISU SPAETH, 1932 nec BOHEMAN, 1855, type species: *Cassida corrugata* SAHLBERG, 1823, by monotypy); SEENO and WILCOX, 1982: 176; BOROWIEC, 1992: 158 (as syn. of *Orphonodella* SPAETH, 1902).

Moderately large to large cassids, with body subtriangular, or subpentagonal, or parallelsided, usually uniformly yellowish-brown to brown coloured. Elytra with strong sculpture, pronotal disc usually with folds or wrinkles. Clypeus distinctly elevated. Antennae with six basal glabrous segments. Prosternal collar large, usually with angulate sides. Claws in all African subgenera with pecten only on inner margin, outer margin micropectinate.

Distribution: tropics and subtropics of the Old World.

KEY TO THE SUBGENERA

1. Body subpentagonal, elytral disc with more or less developed postscutellar tubercle (figs. 212, 217, 222, 230, 232, 237, 419). Madagascar, only one species in tropical Africa 2.
- Body subtriangular to parallelsided, regularly convex (figs. 260, 267, 285, 292) to strongly gibbous (figs. 242, 248, 254, 274) but usually without postscutellar tubercle. Tropical Africa except Madagascar 3.
2. Pronotal disc smooth, without rugosities. Prosternal collar only slightly angulate on sides. Antennal segment 3 distinctly longer than 4. Central Africa: *Patrisma*
- Pronotal disc rugose. Prosternal collar strongly angulate on sides. Antennal segment 3 not or only slightly longer than 4. Madagascar: *Asphalesia*

3. Clypeus elevated with margins not carinate 4.
 - Clypeus impressed with margins strongly elevated and carinate (fig. 243):
 *Laccoptera s. str.*
4. Lateral margin of elytra not or indistinctly marginate, only in two species distinctly marginate. Usually small to moderately large species, length below 10.5 mm, only two species larger. Numerous species in whole tropical Africa 5.
 - Lateral margin of elytra strongly double marginate (figs. 279, 285). Large species, length usually above 10.5 mm. Only two species in South Africa :
 *Orphonoda*
5. Large species, length above 10.5 mm. Antennal segment 3 more than thrice longer than 2. Body almost parallelsided, stout, regularly convex:
 *Orphonodina*
- Smaller species, length below 10.5 mm. Antennal segment 3 usually less than 2.5 times longer than 2. Body varies from subtriangular to parallelsided, from regularly convex to slightly gibbous:
 *Orphonodella*

Subgenus: *Asphalesia* WEISE, 1899

Body subpentagonal. Pronotal disc rugose. Elytral disc with distinct postscutellar tubercle. Prosternal collar strongly angulate on sides. Antennal segment 3 not or only slightly longer than 4.

Distribution: Madagascar.

KEY TO THE SPECIES

1. Large species, body length above 9.5 mm. Postscutellar tubercle large, conical (figs. 212, 217, 222) 2.
 - Smaller species, body length below 8.5 mm. Postscutellar tubercle smaller, obtuse (fig. 227):
 *regularis*
2. Anterior margin of each elytron forms a soft angle, humeral angles moderately protruding anterad (figs. 211, 216). Last five antennal segments infusate 3.
 - Anterior margin of each elytron forms a strong angle, humeral angles strongly protruding anterad (figs. 221, 226, 231). Last four antennal segments infusate to black, or whole antennae testaceous 4.
3. Prosternal process canaliculate only in basal half. Pronotal tubercles lower with rugosities. Elytra uniformly pale reddish, folds sometimes paler yellowish-red:
 *pallicolor*
- Prosternal process deeply canaliculate on whole length. Pronotal tubercles high, tops without rugosities. Elytra of mixed reddish and black:
 *confragosa*

4. Antennae unicoloured or last three or four segments indistinctly infusate 5.
 -. Antennae with basal seven segments yellow and four distal segments black, segment 8 sometimes with yellowish base:
 *perrieri*
 5. Larger, body length above 11 mm. Explanate margin of elytra with black posterolateral spot:
 *spectrum*
 -. Smaller, length below 11 mm. Explanate margin of elytra without posterolateral spot:
 *undulata*

***Laccoptera (Asphalesia) confragosa* WEISE, 1899**

(figs. 211-215)

Asphalesia confragosa WEISE, 1899: 247 (type in ZMHU); SPAETH, 1919: 190.

Patrisma (Asphalesia) confragosa: SPAETH, 1914: 82.

Laccoptera (Asphalesia) confragosa: SPAETH, 1932: 228.

Laccoptera confragosa: HINCKS, 1962: 250.

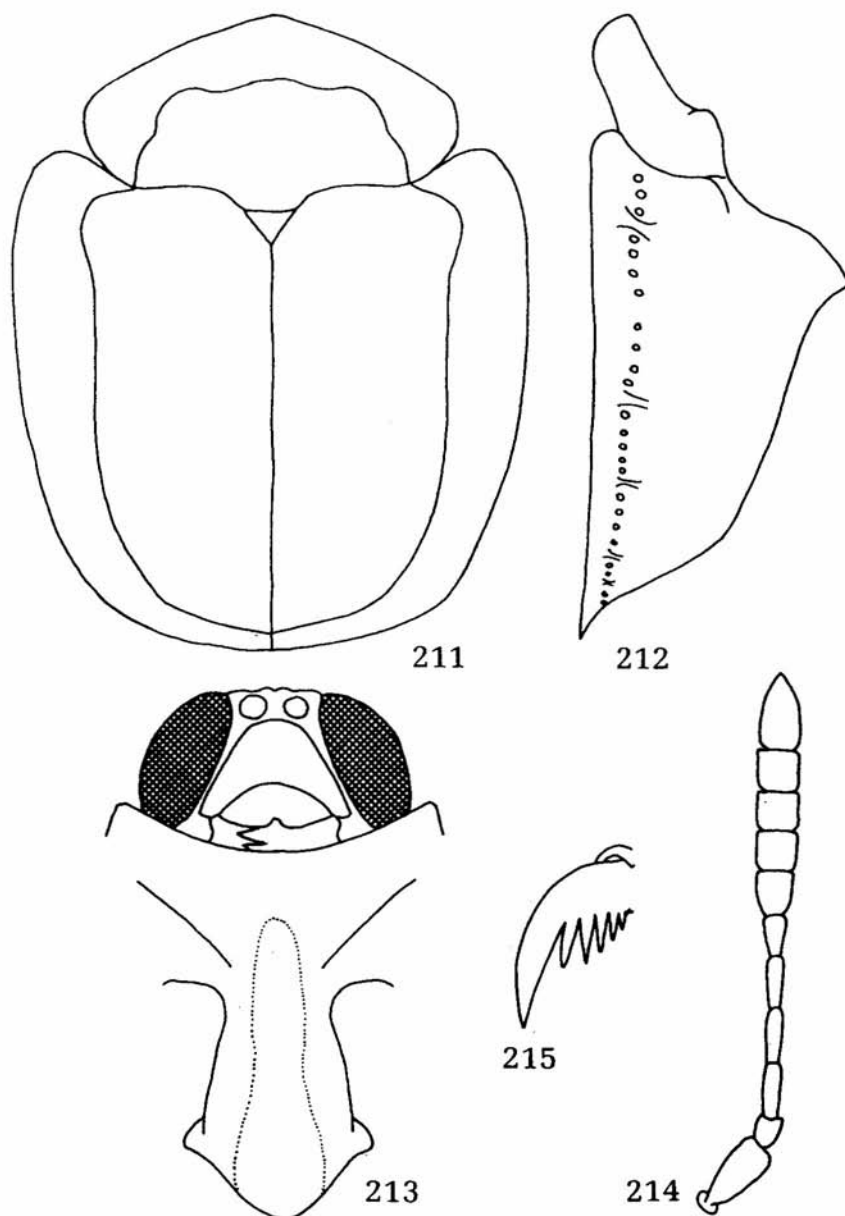
DESCRIPTION

Length: 11.4 mm, width: 9.2 mm, pronotum length: 3.7 mm, pronotum width: 6.6 mm. Body subpentagonal, regularly rounded on sides (fig. 211).

Pronotum yellowish-red, disc with blackish pattern of blurred borders. Scutellum reddish-brown. Elytral disc mostly blackish, costae and folds reddish. Explanate margin yellowish-brown, in the middle with paler yellow window, transverse large folds darker brown coloured. Ventrites mostly yellowish-brown, metasternum and sternites mostly infusate. Legs yellowish, fore and mid femora in 1/3 length, hind femur in half length with brown spot.

Pronotum elliptical, about 1.8 times wider than long, maximum width in the middle, posterior corners straight. Pronotal disc strongly convex, with lower anterior half, and higher basal half, only on sides with a few wrinkles, basal part with two large, obtuse tubercles. At base of tubercle, laterally, shallow impression, posteriorly deep pit, behind pits sinuate sulcus. Anterior part of disc without rugosities, with a few larger punctures and short sulci. Explanate margin indistinctly bordered from disc, moderately broad, subhorizontal, with honeycomb structure, surface with irregular wrinkles, appears rugose. Rugosities indistinctly microreticulate, glabrous.

Scutellum triangular, distinctly elevated in the middle. Base of elytra distinctly wider than base of pronotum, anterior margin forms a soft angle, humeri moderately protruding anterad. Disc strongly convex, with large, conical postscutellar tubercle (fig. 212), and high, sharp costae and folds. Postscutellar impressions margined by sharp costa, divided into two parts by oblique costa. Third interval irregular, sharp,



211-215. *Laccoptera (Asphalesia) confragosa*: 211 - body in dorsal view, 212 - body in lateral view, 213 - head and prosternum, 214 - antenna, 215 - tarsal claw

fifth interval obsolete. Humeral costa extremely high and sharp. Punctuation large, on sides of disc tends to form regular rows, interrupted by elytral sculpture. Marginal row distinct, interrupted by five large, transverse folds, behind the first fold deep cavity. Explanate margin of elytra slightly narrower than half width of each elytron, moderately declivous, with honeycomb structure, humeral angles rounded. Surface irregular, with irregular wrinkles, rugose, microreticulate but glabrous, lateral margination fine, simple. Apex of elytral epipleura with scarce, erected hair.

Clypeus about 2.3 times wider than long, strongly elevated, anterior margin rounded (fig. 213), slightly impressed in the middle, surface without impression, flat, microreticulate with a few punctures. Labrum with extremely small median emargination. Antennal cavities slightly separated. Antennae moderately long, extending to apex of prosternum. Length ratio of antennal segments (female): 100:37:67:65:62:45:50:45:50:50:100. Segment 3 about 1.8 times longer than 2 (fig. 214).

Prosternal collar extremely large, with transverse sulci, sides form a right angle. Prosternal process moderately broad, moderately expanded apically, with deep longitudinal canaliculation on whole length, including apex. Legs moderately slim, tarsi broad, the last segment about as long as the third. Inner margin of claws with large pecten, extending to almost half length of claw (fig. 215), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

With *L. pallicolor* it belongs to the group of species with elytral sides regularly rounded and anterior margin of elytron forming a soft angle. It differs from *L. pallicolor* in partly black elytral disc (uniformly reddish in *L. pallicolor*), and prosternal process canaliculate on whole length (in *L. pallicolor* canaliculate in basal 2/3 length). Pronotal tubercles and elytral carinae and folds in *L. confragosa* are distinctly higher and sharper than in *L. pallicolor*, especially humeral costa in *L. pallicolor* is low and obtuse. *L. confragosa* differs distinctly from all large species of the subgenus in very large pecten of claws, only small *L. regularis* has a similar claw pecten.

MATERIAL EXAMINED

MADAGASCAR: Madagascar, 1 (MM).

Laccoptera (Asphalesia) pallicolor (FAIRMAIRE, 1901)

(figs. 216-220)

Cassida pallicolor FAIRMAIRE, 1901b: 247 (type in NMHN).*Patrisma (Asphalesia) pallicolor*: SPAETH, 1914: 82; 1915b: 154.*Asphalesia pallicolor*: SPAETH, 1919: 190.*Laccoptera (Asphalesia) pallicolor*: SPAETH, 1932: 228.*Laccoptera pallicolor*: HINCKS, 1962: 250.

DESCRIPTION

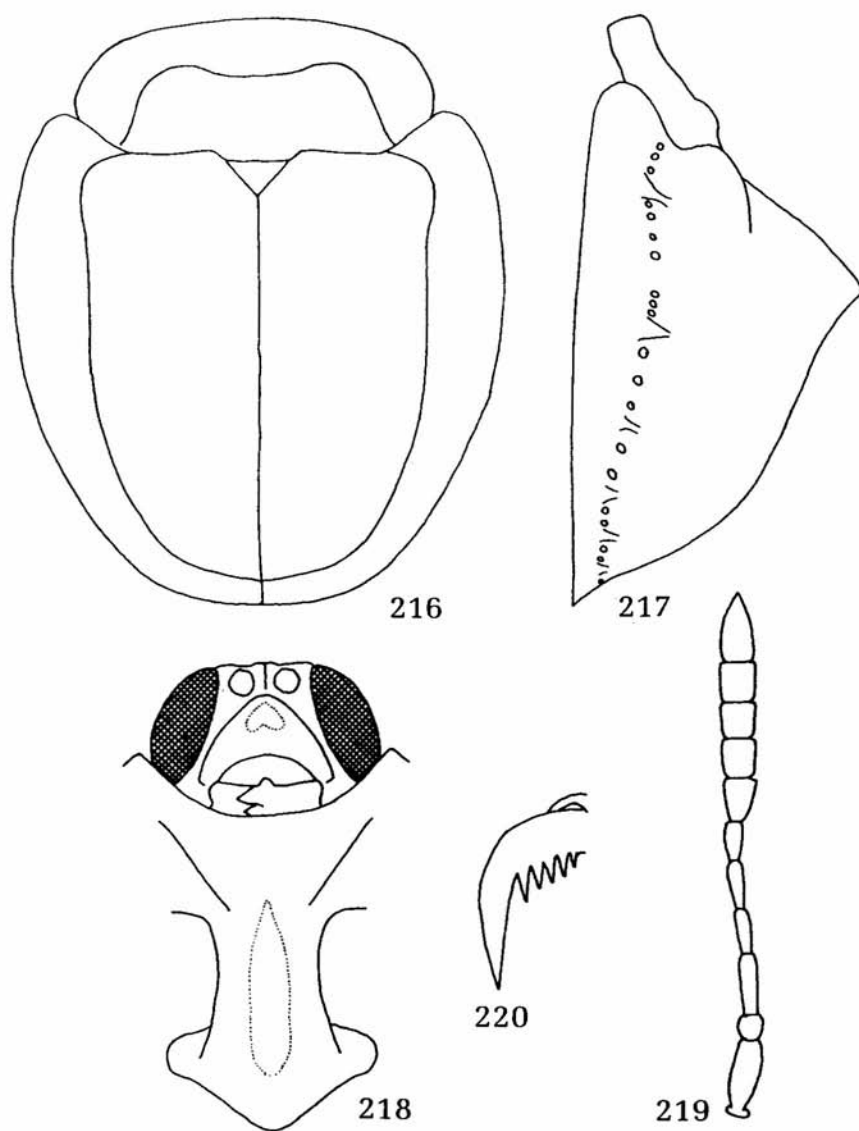
Length: 12.5-12.7 mm, width: 10.0-10.8 mm, pronotum length: 3.9-4.2 mm, pronotum width: 7.2-7.8 mm. Body subpentagonal, regularly rounded on sides, with no angle in 2/3 length of elytra (fig. 216).

Pronotum and elytra uniformly reddish, elytral costae sometimes paler, yellowish. Ventrites uniformly yellowish-red. Legs yellowish. Seven basal antennal segments yellowish, remainder brown to black, segment 8 sometimes slightly paler than segments 9-11.

Pronotum elliptical, about 1.8 times wider than long, with maximum width in the middle, posterior corners obtuse. Disc strongly convex, divided in the middle by an arched sulcus into two parts: anterior, less rugose, and posterior, strongly rugose, with several irregular folds and two obtuse tubercles. Surface microreticulate but glabrous. Explanate margin indistinctly bordered from disc, broad, with honeycomb structure, with large transverse folds, surface microreticulate, glabrous.

Scutellum triangular, with several small punctures, without tubercles or folds. Base of elytra distinctly wider than pronotum. Anterior margin crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with large, conical postscutellar tubercle (fig. 217). Outline behind top of the tubercle slightly concave. Whole disc with obtuse folds and rugosities. Postscutellar impressions margined laterally by obtuse carina. Third interval irregular, forms longitudinal carina, also fifth interval in the middle forms an irregular carina. Humeral carina large but obtuse. Punctures large, but vanishing between folds, on sides of disc tend to form regular rows. Marginal row distinct, interrupted by 6 large, transverse folds. Explanate margin slightly wider than 1/3 width of each elytron, moderately declivous, with honeycomb structure, lateral margination fine, simple. Surface with irregular folds and tubercles, appears rugose, microreticulate, glabrous. Apex of elytral epipleura with scarce, erected hair.

Clypeus about 2.2 times wider than long (fig. 218), strongly elevated, anterior margin subangulate, surface in the middle with distinct impression, microreticulate, with a few small punctures, glabrous. Labrum emarginate to 1/5 length. Antennal insertions separated. Antennae moderately long, extending to 1/5 length of metasternum, in males slightly longer than in females. Length ratio of antennal segments: 100:38:88:70:70:62:57:50:50:55:105. Segment 3 about 2.3 times longer than 2 (fig. 219).



216-220. *Laccoptera (Asphalesia) pallicolor*: 216 - body in dorsal view, 217 - body in lateral view, 218 - head and prosternum, 219 - antenna, 220 - tarsal claw

Prosternal collar very large, with transverse sulci, on sides forms a right angle. Prosternal process moderately broad, strongly expanded apically, in basal 2/3 length deeply canaliculate longitudinally; its apex flat, without rugosities (fig. 218). Legs moderately slim, tarsi broad, the last segment about as long as the third. Inner margin of claws with very short pecten, about as long as 1/6 length of claw (fig. 220), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

With *L. confragosa* it forms a group of species with body regularly rounded on sides, elytral outline with no angle in 2/3 length, and anterior margin of elytra forming a soft angle. *L. confragosa* differs in bicoloured elytra, reddish and black, and pronotal disc with large tubercles. In *C. pallicolor* elytral rugosities are broader and more obtuse than in other large species of *Asphalesia*.

MATERIAL EXAMINED

MADAGASCAR: Diego Suarez, 2 (1 NMP, 1 LB), Madagascar, 1 (MM); Tamatave, 1 (MM).

Laccoptera (Asphalesia) perrieri FAIRMAIRE, 1898 (figs. 221-225)

Laccoptera Perrieri FAIRMAIRE, 1898: 429 (type in NMHN); HINCKS, 1962: 250.

Patrisma (Asphalesia) Perrieri: SPAETH, 1914: 82.

Asphalesia Perrieri: SPAETH, 1919: 191.

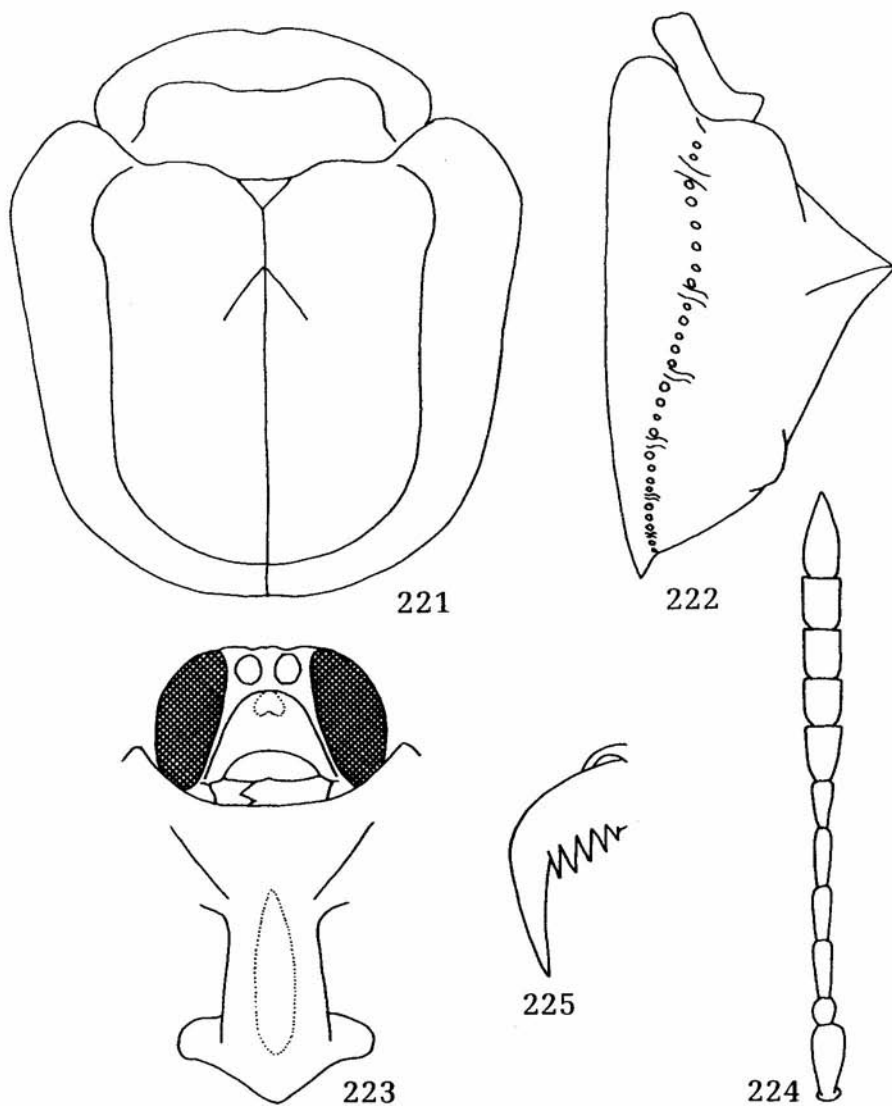
Laccoptera (Asphalesia) perrieri: SPAETH, 1932: 228.

DESCRIPTION

Length: 10.1-10.8 mm, width: 8.6-9.2 mm, pronotum length: 3.3-3.5 mm, pronotum width: 5.8-6.3 mm. Body subpentagonal, elytral outline to 2/3 length almost straight, in apical 1/3 length strongly converging posterad (fig. 221).

Pronotum yellowish to reddish, rarely unicoloured, usually disc with black pattern. Elytral disc yellowish to reddish, uniform, or surface mostly blackish and costae and tubercles mostly yellowish to reddish. Explanate margin yellowish to reddish, rarely uniform, usually with broad, black posterolateral spot, and more or less distinct brownish or deeper red humeral spot. The border between dark and pale pattern is often indistinct, blurred. Ventrites and legs uniformly yellow. Seven basal

antennal segments yellow, remainder black, segment 8 sometimes slightly paler than segments 9-11.



221-225. *Laccoptera (Asphalesia) perrieri*: 221 - body in dorsal view, 222 - body in lateral view, 223 - head and prosternum, 224 - antenna, 225 - tarsal claw

Pronotum elliptical, about 1.8 times wider than long, with maximum width in the middle, posterior corners straight. Disc strongly convex, divided into lower anterior part, and higher basal part, with irregular wrinkles. Basal part with two large, angulate tubercles, top of the tubercle without rugosities, smooth, glabrous. Sides of disc less rugose than central area. Explanate margin distinctly bordered from disc, moderately broad, subhorizontal, with honeycomb structure, surface with irregular wrinkles and tubercles, microreticulate, glabrous.

Scutellum triangular, often with longitudinal elevation in the middle, apex with transverse sulci. Base of elytra distinctly wider than pronotum, anterior margin forms a strong angle, humeral angles strongly protruding anterad. Disc strongly convex, with large, conical postscutellar tubercle (fig. 222). Outline of disc behind top of tubercle deeply concave. Whole disc with sharp carinae and folds. Postscutellar impressions margined by sharp carina, and divided into two parts by oblique carina. Third interval irregular, forms a sharp, longitudinal carina, fifth interval obsolete. Sides of disc with transverse folds, humeral carina sharp. Punctuation large, on sides of disc with tendency to form regular rows, but punctures vanish between folds and tubercles. Surface microreticulate, on dark area slightly dull, pale area and costae glabrous. Marginal row distinct, interrupted by five sharp transverse folds, behind the first fold deep cavity. Explanate margin broad, about as wide as half width of each elytron, moderately declivous, with honeycomb structure, humeral angles rounded, lateral margination faint, simple. Surface with irregular wrinkles, rugose, microreticulate but glabrous. Apex of elytral epipleura with scarce, erected hair.

Clypeus about 1.7 times wider than long, strongly elevated, deeply impressed in the middle, apex with distinct impression, anterior margin rounded (fig. 223). Surface microreticulate, with a few small punctures, glabrous. Sides of clypeus coarsely, strongly punctate, appear rugose. Labrum not emarginate, or with very fine, hardly visible emargination. Antennal insertions almost in contact. Antennae long, extending to the middle of metasternum. Length ratio of antennal segments (male): 100:40:82:77:77:68:68:63:65:71:122. Segment 3 about twice longer than 2 (fig. 224). Antennae in male slightly longer than in female, the last segment in male not depressed, without long erected hairs on ventral side.

Prosternal collar very large, with transverse sulci, sides form almost right angle. Prosternal process moderately broad, strongly expanded apically, in basal 2/3 length distinctly longitudinally canaliculate, apex convex, without rugosities (fig. 223). Legs moderately slim, tarsi broad, the last segment slightly longer than the third. Inner margin of claws with very short pecten, not longer than 1/5 length of claw (fig. 225), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

With *L. spectrum* and *L. undulata* it forms a group of species with elytral outline in anterior 2/3 length almost straight and strongly convergent posterad, and anterior margin of elytron forming a strong angle. It differs in four distal antennal segments: black (unicoloured antennae or only slightly infuscate distally in *L. spectrum* and *L. undulata*). Antennae in the male in *L. perrieri* are distinctly shorter than in *L. spectrum* and *L. undulata*, especially the last segment in both those species is long, depressed, with dense, long hair on ventral side.

MATERIAL EXAMINED

MADAGASCAR: Ampijoroa, Ankarafantsika, I 1957, 1 (LB); Diego Suarez, 1 (MM); Madagascar, 1 (NMP); M. des Français, I 1916, 1 (LB); Suberbieville, 2 (1 MM, 1 LB); Tamatave, 1 (MM).

Laccoptera (Asphalesia) regularis FAIRMAIRE, 1898
(figs. 226-230)

Laccoptera regularis FAIRMAIRE, 1898: 429 (type in NMHN); HINCKS, 1962: 249, 250.

Laccoptera (Laccoptera) regularis: SPAETH, 1914: 83.

Laccoptera (Asphalesia) regularis: SPAETH, 1932: 228.

DESCRIPTION

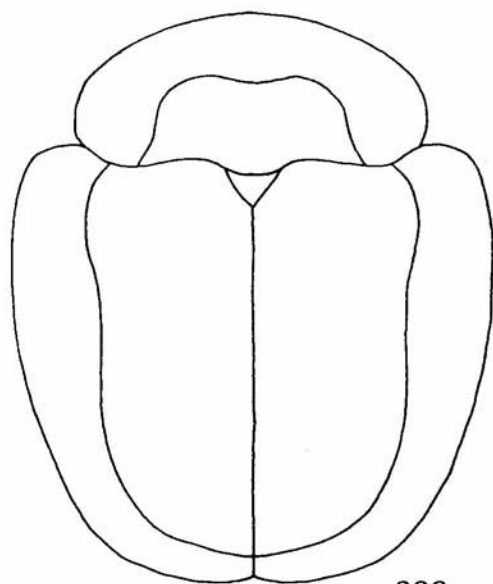
Length: 7.1-8.2 mm, width: 5.3-6.0 mm, pronotum length: 2.5-2.8 mm, pronotum width: 4.3-4.8 mm. Body subpentagonal, with rounded sides (fig. 226).

Pronotum and elytra uniformly brown, sides of disc sometimes darker brown to blackish. Ventrites uniformly yellowish. Legs yellowish. Basal six antennal segments yellow, remainder infuscate to black.

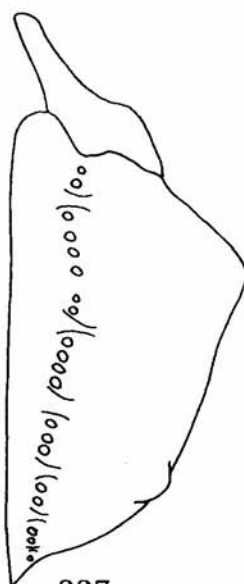
Pronotum almost semicircular, about 1.7 times wider than long, with maximum width slightly in front of the base, posterior corners straight. Disc strongly convex, with more or less regular longitudinal and oblique wrinkles, appears rugose. Part above head distinctly bordered from posterior part by transverse sulcus. Top of disc without tubercles or with two larger and more convex folds homologous to tubercles of other species of the genus. Each side of disc with deep oblique sulcus. Explanate margin indistinctly bordered from disc, broad, with honeycomb structure, its surface with irregular wrinkles, appears rugose.

Scutellum triangular, without tubercles or folds. Base of elytra distinctly wider than base of pronotum, humeral angles broadly rounded. Anterior margin crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex with obtuse postscutellar tubercle (fig. 227). Outline behind top of the tubercle almost straight to slightly concave. Postscutellar impressions margined by a sharp

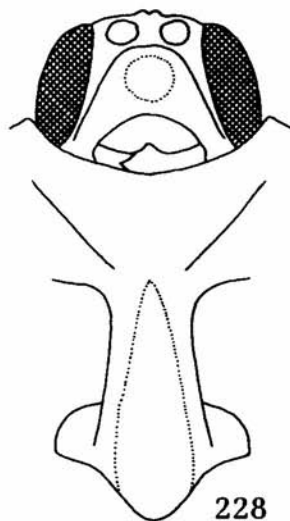
carina, in the middle with a sharp oblique carina. Third interval completely irregular, sharply carinate, sides of disc with three sharp, transverse costae, and several small wrinkles and tubercles. Humeral costa low, obtuse. Punctuation within closed areas



226



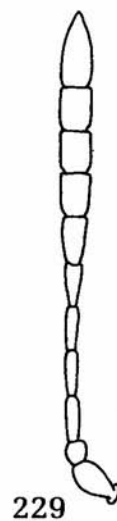
227



228



230



229

226-230. *Laccoptera (Asphalesia) regularis*: 226 - body in dorsal view, 227 - body in lateral view, 228 - head and prosternum, 229 - antenna, 230 - tarsal claw

margined by costae irregular, large, distance between punctures about as wide as puncture diameter. On sides of disc punctures arranged in short regular rows interrupted or disordered by elytral sculpture. Surface microreticulate, dull, only costae slightly glabrous. Marginal row distinct, interrupted by 5 large transverse folds. Explanate margin slightly narrower than half width of each elytron, moderately declivous, with honeycomb structure, lateral margination faint, simple. Surface coarsely, shallowly punctate, and with irregular wrinkles, appears rugose. Apex of elytral epipleura with scarce, erected hair.

Clypeus about twice wider than long, strongly elevated, in the middle with large and deep impression (fig. 228), surface microreticulate, impunctate or with a few small punctures, glabrous. Labrum emarginate to 1/5-1/4 length. Antennal insertions separated. Antennae in the male long, extending to the first abdominal sternite, in the female shorter, extending to the middle of metasternum. Length ratio of antennal segments (male): 100:52:100:96:84:84:96:88:84:88:172. Segment 3 about twice longer than 2 (fig. 229). Last segment in male slightly depressed, and on ventral side with long hair.

Prosternal collar very large, with transverse sulci, on sides broadly angulate. Prosternal process moderately broad, strongly expanded apically, in basal 2/3 length deeply canaliculate longitudinally (fig. 228), apex rugose. Legs moderately slim, tarsi broad, the last segment as long as the third, not extending behind marginal setae. Inner margin of claws with pecten of teeth of equal length, extending to 1/4-1/3 length of claw (fig. 230), outer margin micropectinate.

Bionomics and host plant unknown.

DISTRIBUTION

Madagascar.

REMARKS

It is a unique species. It differs from all other species of the subgenus in small body size, length below 8.5 mm (other species longer than 9.5 mm), smaller postscutellar tubercle (in other species it is large, conical), pronotal disc without distinct tubercles (tuberculate in other species). At first glance *L. regularis* is more similar to African species of the subgenus *Orphonodella*, especially to *L. corrugata* group, but they differ in rather subtriangular body, and very low postscutellar elevation, not forming a distinct tubercle.

MATERIAL EXAMINED

MADAGASCAR: Ampijoroa, Ankarafantsika, I 1957, 1 (LB); Ampijoroa, Tsaranandrosa, 1 (MM); Sambirano, 1 (LB); Suberbieville, 2 (1 NMP, 1 MM).

***Laccoptera (Asphalesia) spectrum* BOHEMAN, 1855**

(figs. 231-235)

Laccoptera Spectrum BOHEMAN, 1855: 63 (type in NMHN); HINCKS, 1962: 250.*Patrisma (Asphalesia) spectrum*: SPAETH, 1914: 82.*Asphalesia spectrum*: WEISE, 1899a: 247; SPAETH, 1919: 190.*Laccoptera (Asphalesia) spectrum*: SPAETH, 1932: 228.*Asphalesia Weisei* BRANCSIK, 1910: 187 (type in MM); SPAETH, 1919: 188 (as syn. of *spectrum*).

DESCRIPTION

Length: 12.5-13.5 mm, width: 11.0-12.0 mm, pronotum length: 3.9 mm, pronotum width: 7.2-7.5 mm. Body subpentagonal, in apical 1/3 length strongly converging posterad (fig. 231).

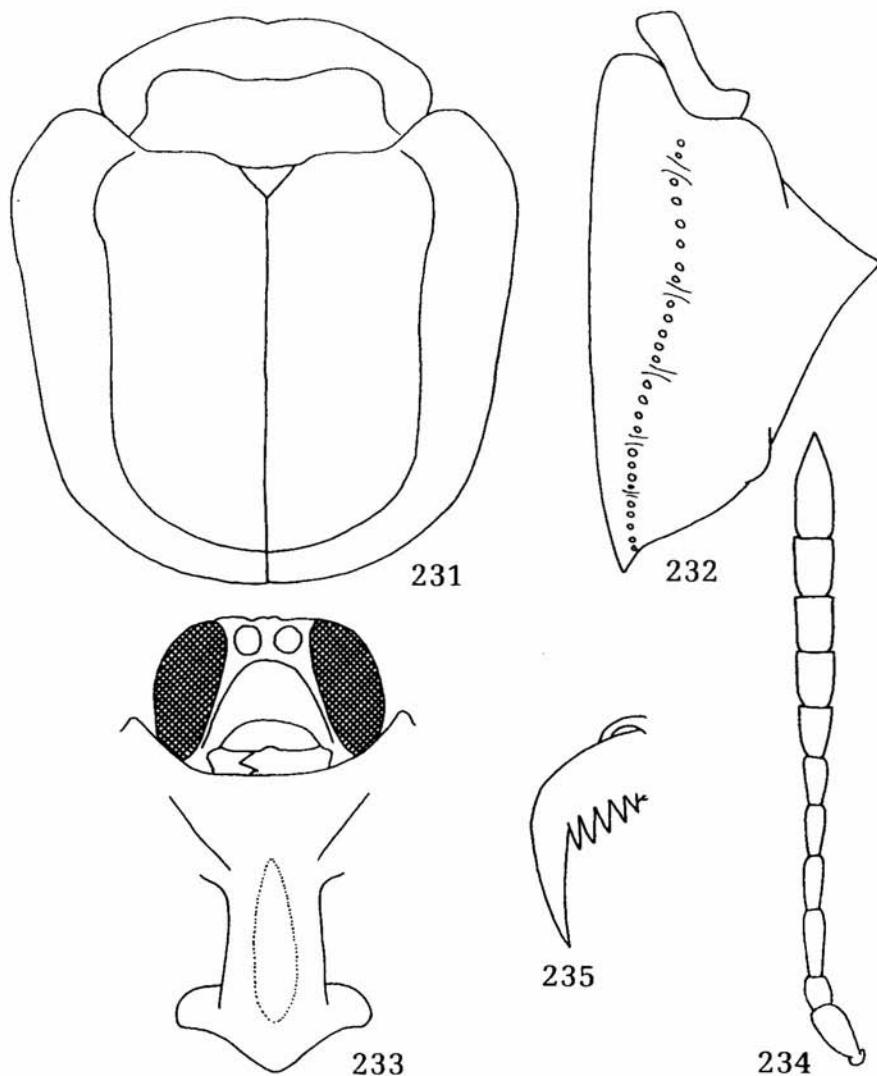
Pronotum yellowish to reddish. Elytral disc reddish, in posterior third with indistinct blackish transverse band. Explanate margin yellowish to reddish, with broad, black posterolateral spot, and deeper red humeral spot. The border between dark and pale pattern is indistinct, blurred. Ventrites and legs uniformly yellow. Seven basal antennal segments yellow, remainder brownish.

Pronotum elliptical, about 1.8 times wider than long, with maximum width in the middle, posterior corners straight. Disc strongly convex, divided into lower anterior part, and higher basal part, with irregular wrinkles. Basal part with two large, angulate tubercles, top of the tubercle without rugosities, smooth, glabrous. Sides of disc less rugose than central area. Explanate margin distinctly bordered from disc, moderately broad, subhorizontal, with honeycomb structure, surface with irregular wrinkles and tubercles, microreticulate, glabrous.

Scutellum triangular, often with longitudinal elevation in the middle, apex with transverse sulci. Base of elytra distinctly wider than pronotum, anterior margin forms a strong angle, humeral angles strongly protruding anterad. Disc strongly convex, with large, conical postscutellar tubercle (fig. 232). Outline of disc behind top of tubercle deeply concave. Whole disc with sharp carinae and folds. Postscutellar impressions margined by sharp carina, and divided into two parts by oblique carina. Third interval irregular, forms a sharp, longitudinal carina, fifth interval obsolete. Sides of disc with transverse folds, humeral carina sharp. Punctuation large, on sides of disc with tendency to form regular rows, but punctures vanish between folds and tubercles. Surface microreticulate, on dark area slightly dull, pale area and costae glabrous. Marginal row distinct, interrupted by five sharp transverse folds, behind the first fold deep cavity. Explanate margin broad, about as wide as half width of each elytron, moderately declivous, with honeycomb structure, humeral angles rounded, lateral margination faint, simple. Surface with irregular wrinkles, rugose, microreticulate but glabrous. Apex of elytral epipleura with scarce, erected hair.

Clypeus about 1.7 times wider than long (fig. 233), strongly elevated, deeply impressed in the middle, apex with longitudinal impression, anterior margin rounded.

Surface microreticulate, with a few small punctures, glabrous. Sides of clypeus coarsely, strongly punctate, appear rugose. Labrum not emarginate, or with very fine, hardly visible emargination. Antennal insertions almost in contact. Antennae long, extending to the posterior margin of metasternum. Length ratio of antennal segments



231-235. *Laccoptera (Asphalesia) spectrum*: 231 - body in dorsal view, 232 - body in lateral view, 233 - head and prosternum, 234 - antenna, 235 - tarsal claw

(male): 100:40:82:82:82:72:72:72:69:75:135. Segment 3 about twice longer than 2 (fig. 234). Antennae in male slightly longer than in female, the last segment in the male depressed, without long erected hairs on ventral side.

Prosternal collar very large, with transverse sulci, sides form almost right angle. Prosternal process moderately broad, strongly expanded apically, in basal 2/3 length distinctly longitudinally canaliculate, apex convex, without rugosities (fig. 233). Legs moderately slim, tarsi broad, the last segment slightly longer than the third. Inner margin of claws with very short pecten, not longer than 1/6 length of claw (fig. 234), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

MATERIAL EXAMINED

MADAGASCAR: Madagascar, 1 (MM); Miandrivazo, 1 (MM).

REMARKS

It is very similar to *L. perrieri* and *L. undulata*, especially in distinctly subpentagonal body outline. *L. perrieri* differs in black last four antennal segments (brownish in *L. spectrum*), and *L. undulata* differs in smaller body and elytra without black pattern.

Laccoptera (Asphalesia) undulata (SPAETH, 1919)

(figs. 236-240)

Asphalesia undulata SPAETH, 1919: 191 (syntypes in MM).

Laccoptera (Asphalesia) undulata: SPAETH, 1932: 228.

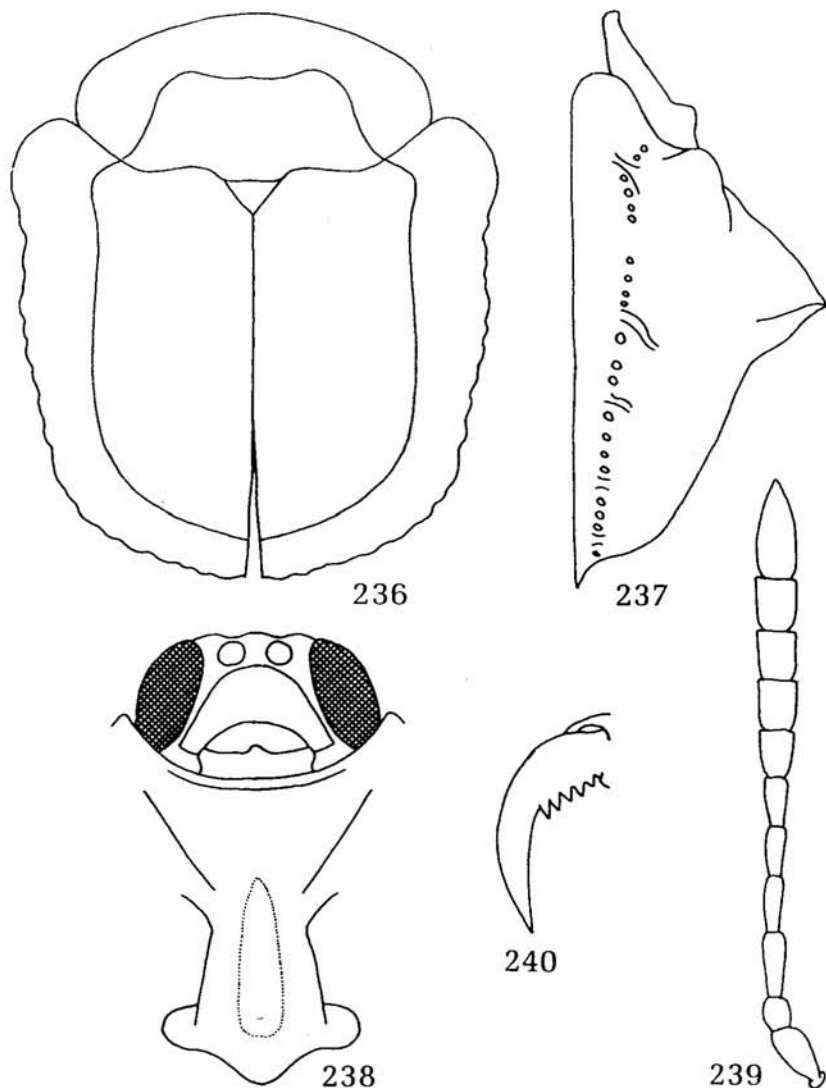
Laccoptera undulata: HINCKS, 1962: 250.

DESCRIPTION

Length: 9.8-10.2 mm, width: 8.3-8.9 mm, pronotum length: 3.0-3.4 mm, pronotum width: 5.9-6.3 mm. Body subpentagonal, elytral outline in anterior 2/3 length almost straight, in apical 1/3 length converging posterad (fig. 236).

Pronotum brown. Elytral disc brown with paler costae, explanate margin brown with yellowish brown median window and slightly paler brown apices. Ventrites testaceous, legs testaceous, fore and mid femora in 1/3 length, hind femur in half length with brown spot. Antennae uniformly testaceous, or the last four segments slightly infusate.

Pronotum elliptical, about 1.9 times longer than wide, with maximum width in the middle, posterior corners rounded. Disc strongly convex, sides and higher posterior part with irregular wrinkles, anterior part without distinct rugosities. Basal part with two low, obtuse tubercles. Surface microreticulate and dull. Explanate



236-240. *Laccoptera (Asphalesia) undulata*: 236 - body in dorsal view, 237 - body in lateral view, 238 - head and prosternum, 239 - antenna, 240 - tarsal claw

margin indistinctly bordered from disc, subhorizontal, with honeycomb structure, with irregular folds, appears rugose. Surface microreticulate, dull.

Scutellum triangular with small rugosities. Base of elytra distinctly wider than pronotum, anterior margin of elytron forms a strong angle, humeral angles strongly protruding anterad. Disc strongly convex with large, conical postscutellar tubercle (fig. 237). Outline behind top of the tubercle deeply concave. Surface with irregular folds and costae. Postscutellar impressions margined by obtuse costae, divided in two parts by oblique costa. Third interval forms irregular costa only in anterior 2/3 length, in apical 1/3 length obsolete, fifth interval obsolete, humeral costa low and obtuse. Punctures large, on sides of disc with tendency to form regular rows interrupted by transverse folds. Marginal row distinct, interrupted by six transverse folds, cavity behind the first fold moderately deep. Surface of disc microreticulate, dull, only costae slightly glabrous. Explanate margin slightly wider than half width of each elytron, moderately declivous, with honeycomb structure, humeral angles broadly rounded. Outline irregular, broadly crenulate, lateral margin fine, simple. Surface with irregular folds, along margin row of extremely large punctures, microreticulate, dull.

Clypeus about twice wider than long, strongly elevated, only slightly impressed in the middle, anterior margin subangulate to rounded (fig. 238). Labrum with very small median emargination. Antennal cavities separated. Antennae long, extending to half length of metasternum. Length ratio of antennal segments: 100:44:76:71:60:53:63:63:58:58:100. Segment 3 about 1.7 times longer than 2 (fig. 239).

Prosternal collar very large, with transverse sulci, sides form a right angle. Prosternal process moderately broad, strongly expanded apically, in basal 2/3 length canaliculate, apex slightly convex, without rugosities (fig. 238). Legs moderately slim, tarsi broad, the last segment about as long as the third. Inner margin of claws with very short pecten, only slightly extending behind ventral margin of claw (fig. 240), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Madagascar.

REMARKS

It belongs to the group of large species with anterior margin of elytron forming a strong angle, and elytral outline in anterior 2/3 length almost straight and strongly converging posterad. It differs from *L. perrieri* in antennae unicoloured or only slightly infuscate distally (with the last four segments black in *L. perrieri*). *L. spectrum* is most similar but differs in variegate elytral pattern (almost unicoloured elytra in *L. undulata*). *L. undulata* has dorsal surface dull, while both *L. spectrum* and *L. perrieri* are glabrous. Elytral rugosities in *L. undulata* are slightly lower and more obtuse than in *L. spectrum* and *L. perrieri*.

MATERIAL EXAMINED

MADAGASCAR: Ambovombe, Plateau de l'Androy, 4, coll. DONCKIER (lectotype and 2 paralectotypes, present designation, MM, 1 LB); Maevantanana, 1, coll. DONCKIER (paralectotype, MM).

Subgenus: *Laccoptera s. str.*

Large *Laccoptera*, with body length always above 10 mm, strongly regularly convex to gibbous but with no conical postscutellar tubercle. Clypeus elevated, but strongly impressed in the middle, margins sharply carinate.

Distribution: South and East Africa.

KEY TO THE SPECIES

1. Body regularly convex or only slightly gibbous (figs. 260, 261, 267) 2.
- Body strongly gibbous (figs. 242, 248, 254, 274) 3.
2. Pronotal disc irregularly rugose on whole surface, or in front of scutellum elevated, punctate, glabrous:
 - *rugosicollis*
 - Pronotal disc only on sides and anterior half irregularly rugose, in front of scutellum with slightly depressed, regularly, longitudinally punctate or/and striated area, surface of the area slightly dull:
 - *weisei*
3. Postscutellar gibbosity very high, profile behind the top of the gibbosity slightly concave (figs. 242, 248) 4.
- Postscutellar gibbosity lower, profile behind the top of the gibbosity straight (figs. 254, 274) 5.
4. Pronotal disc without rugosities:
 - *aurosa*
 - Pronotal disc with irregular rugosities:
 - *brancsiki*
5. Basal half of pronotal disc with irregular rugosities:
 - *zambesiaca*
 - Basal part of pronotal disc with depressed, dull area without rugosities, with elongate punctures:
 - *excavata*

Laccoptera (s. str.) aurosa FAIRMAIRE, 1891

(figs. 241-246)

Laccoptera aurosa FAIRMAIRE, 1891: 307 (type in NMHN); KOLBE, 1898: 344; WEISE, 1899: 249; SPAETH, 1909: 284; 1912b: 508; 1919: 187; 1922: 1000; 1924: 304; BOROWIEC, 1985a: 238.

Laccoptera (Laccoptera) aurosa: SPAETH, 1914: 83.

Laccoptera (Parorphonoda) auxosa [sic]: SPAETH, 1932: 228.

Laccoptera longicornis WEISE, 1898: 250 (lectotype and 4 paralectotypes in ZMHU); 1899: 249 (as syn.); KOLBE, 1898: 344; BOROWIEC, 1987: 415.

DESCRIPTION

Length: 10.0-11.9 mm, width: 8.5-9.3 mm, pronotum length: 3.6-4.0 mm, pronotum width: 6.4-7.2 mm. Body subtriangular, sides distinctly converging posterad (fig. 241).

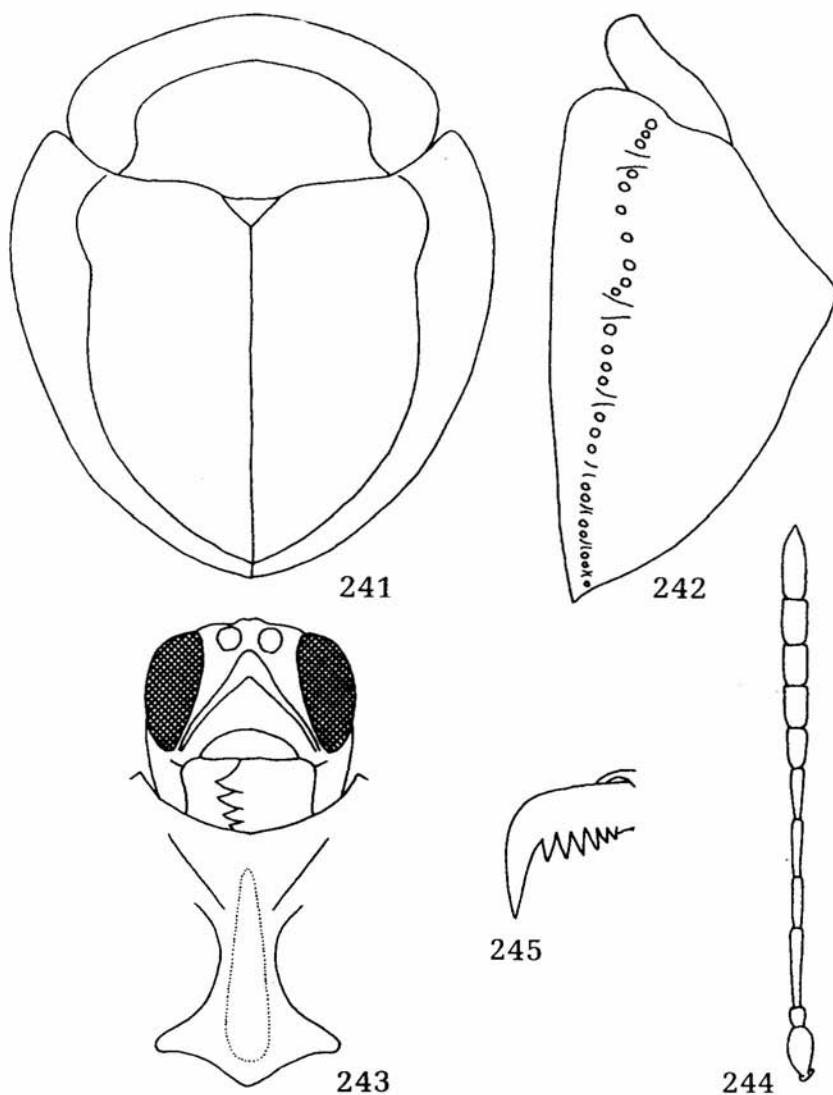
Pronotum and elytra uniformly yellowish-brown to brown. Ventrites usually dark brown to black, occasionally testaceous to pale brown. Clypeus usually paler, testaceous to pale brown. Sides of sternites often testaceous to pale brown. Legs black, only in specimens with testaceous ventrites legs also testaceous. Antennal segments 1-4 on dorsal side brown to black, on ventral side testaceous, segments 5-11 black.

Pronotum elliptical, about 1.8 times wider than long, with maximum width in the middle, posterior corners rounded. Disc moderately convex, without wrinkles, sometimes with a few indistinct longitudinal folds. Surface microreticulate, impunctate, slightly dull. Explanate margin distinctly bordered from disc, broad, with honeycomb structure, subhorizontal, with shallow radial sulci and low folds, but not rugose. Surface microreticulate, impunctate, slightly dull.

Scutellum triangular, flat, or slightly impressed in the middle and/or with 2-3 faint transverse sulci. Base of elytra distinctly wider than pronotum. Anterior margin of elytron only slightly crenulate, forming a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with very large postscutellar gibbosity, outline of elytra behind the top of the gibbosity slightly concave (fig. 242). Each elytron with large, elevated reticulation, intervals completely irregular. Postscutellar impressions margined by obtuse fold. Each field of the reticulation with depressed bottom with large punctures on sides. In the fields along suture and on sides of disc punctures tend to form regular rows, interrupted by elytral sculpture. Marginal row distinct, interrupted by several transverse folds, behind the first fold deep cavity. Surface of disc microreticulate, slightly dull. Explanate margin declivous, about as wide as 2/3 width of each elytron, with honeycomb structure, extremely coarsely punctate, punctures almost touching each other. Lateral margination fine, simple. Apex of elytral epipleura pubescent.

Clypeus about twice wider than long, distinctly elevated, triangular, with angulate apex, surface in the middle deeply impressed, margins elevated, sharp (fig. 243). Labrum with very faint median emargination. Antennal insertions separated.

Antennae long, in male extending to process of first abdominal segment, in female to half length of metasternum. Length ratio of antennal segments (male): 100:44:150:110:115:105:92:92:89:97:157. Segment 3 about 3.4 times longer than 2 (fig. 244). Apical segments in male with long erected hair on inner margin.



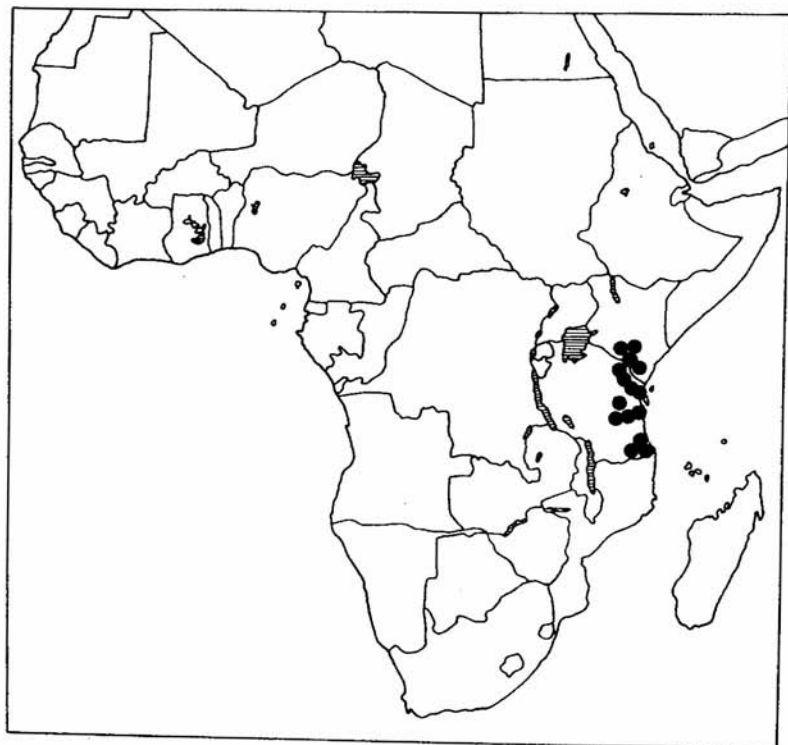
241-245. *Laccoptera (s. str.) aurosa*: 241 - body in dorsal view, 242 - body in lateral view, 243 - head and prosternum, 244 - antenna, 245 - tarsal claw

Prosternal collar large, without transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, longitudinally canaliculate on almost whole length, channel ends in shallow apical impression (fig. 243). Legs moderately slim, tarsi broad, the last segment slightly longer than the third. Inner margin of claws with moderately long pecten, extending to 1/3 length of claw (fig. 245), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

East Africa, south to Mozambique, north to Kenya, most records from Tanzania (fig. 246); record from Natal of South Africa is doubtful, or concerns an introduced individual.



246. Distribution of *Laccoptera* (s. str.) *aurosa*

REMARKS

It belongs to the species with strongly gibbous elytra. It is the only species with pronotal disc without rugosities, other gibbous species have pronotal disc completely or partly rugose.

MATERIAL EXAMINED

KENYA: Afr. or. anglaise, Voi, 1906, 1, M. DE ROTSCCHILD (MM); Kibwezi, 1, SCHEFFLER (LB); Nairobi, 2 (NMP); Sansibar, Kitui, 2, HILDEBRANDT (ZMHU).

MOZAMBIQUE: Mozambique, 4 (NMP).

SOUTH AFRICA: Natal, 1 (MM).

TANZANIA: Amani, 1, (IRSN), 23 XI 1935, 2 (BMNH), 1 II 1904, 1, KARASEK (ZMHU); Dar-es-Salaam, 2, coll. DONCKIER, 1, coll. V. D. POLL, 1 (MM), 3 (ZMHU), 3 (NMP), 3 (ZSM), 24 III 1913, 1, KÖLLER (ZMHU); Kilimandjaro, Litema, 2 (ZMHU), 1 (LU), 1 (LB); Lindi, 2 (IRSN), 2 (NMP), XII 1903, 1 (FMNH), Lindi, 2, coll. LE MOULT (MRAC), XII 1896, 1, REIMER (ZMHU); Lukuledi, 1, ERTL (MRAC), 1 (ZMHU); Mikindani, 1897, 1, REIMER (MM), 1 (ZMHU); Mlingano, V 1950, 1, R. C. SWEENEY (BMNH); Mombo, 2 (ZMHU); Namupa, 1 (ZMHU); Ngade, I 1904, 1, P. KRANTZ (TM); Pare Mts., 1 (lectotype of *L. longicornis*, ZMHU); Pugu, 2 (ITZ), 7 (FMNH), 13 XII 1903, 1, HOLTZ (MM); Tanga, 4 (IRSN), 10 (NMP), 1903, 1, KARASEK (ZMHU); Ukami, 2 (ZMHU), 1 (FMNH); Uluguru Mts., Kimboza Forest, 18 VII 1981, 2, M. STOLTZE and N. SCHARFF (ZMC); Uluguru Mts., Kinola, 1500-1760 m, 6-13 VI 1971, 3, Miss. Mts. Uluguru (MRAC, 1 LB); Usambara, 1, Don. S. R. Zool. Anvers (MRAC); Usambara West., 1 (ITZ); Usambara, Amani, 23 I-6 II 1977, 12, O. LOMHOLDT and O. MARTIN, 5 VIII 1979, 1, M. STOLTZE, 10 VII 1980, 1, M. STOLTZE and N. SCHARFF (ZMC, 2 LB); Usambara, Derema, 1, CONRADT (IZPAS); Usambara, Neu Bethel, 1 (ZMHU), IV 1903, 1 (ZMHU); Usambara, Nguelo, 2 (MM), 3 (ZMHU), 16 (IRSN), 1 (ER), 7 (LB); between Voi and Moschi, 4, KATONA (HNHM); Zanguebar, 6, coll. DONCKIER and V. D. POLL (MM); Zanguebar, Mhonda-Ouzigona, 1 Trim. 1880, 2, A. HACQUARD (MM); Zanzibar, 4, DONCKIER (paralectotypes of *L. longicornis*, ZMHU).

Laccoptera (s. str.) brancsiki SPAETH, 1919

(figs. 247-252)

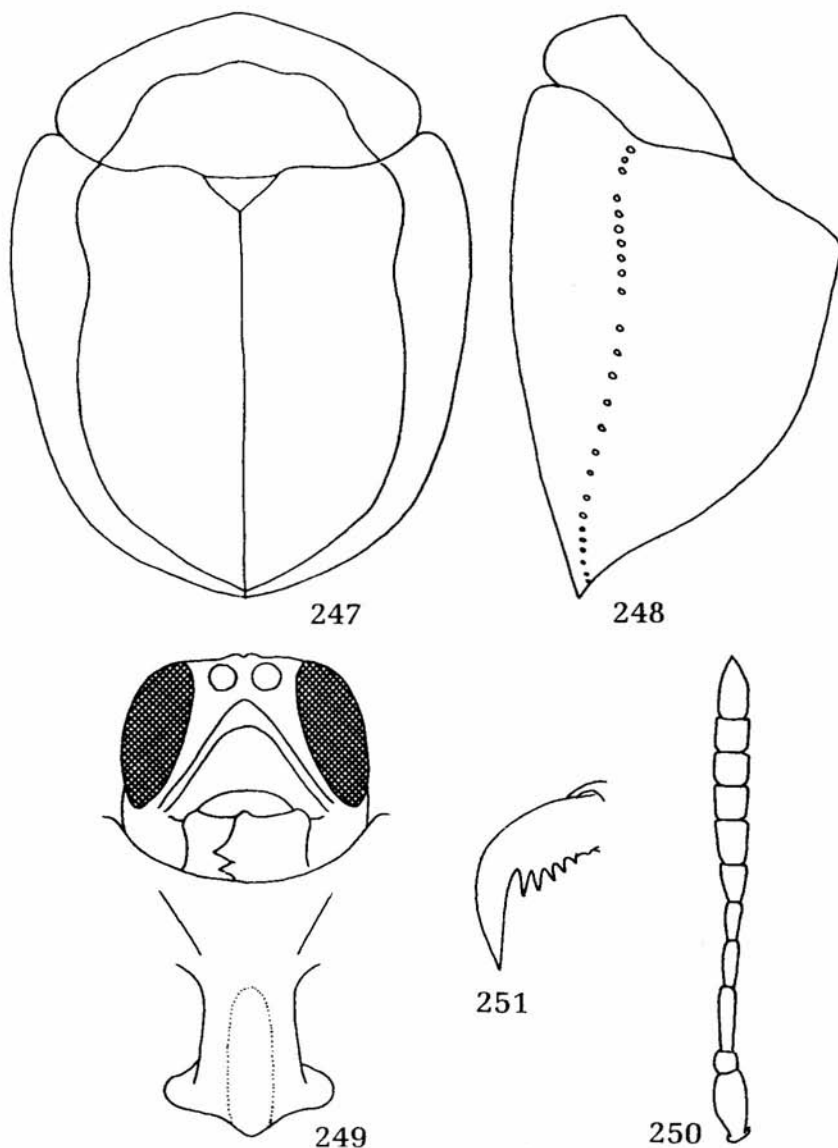
Laccoptera (in spec.) *Brancsiki* SPAETH, 1919: 186 (syntypes in HNHM, MM).

Laccoptera (*Parorphonoda*) *brancsiki*: SPAETH, 1932: 228.

DESCRIPTION

Length: 10.4-11.4 mm, width: 9.0-9.3 mm, pronotum length: 3.7-3.8 mm, pronotum width: 6.7-6.9 mm. Body broadly oval, sides regularly rounded, moderately converging posterad (fig. 247).

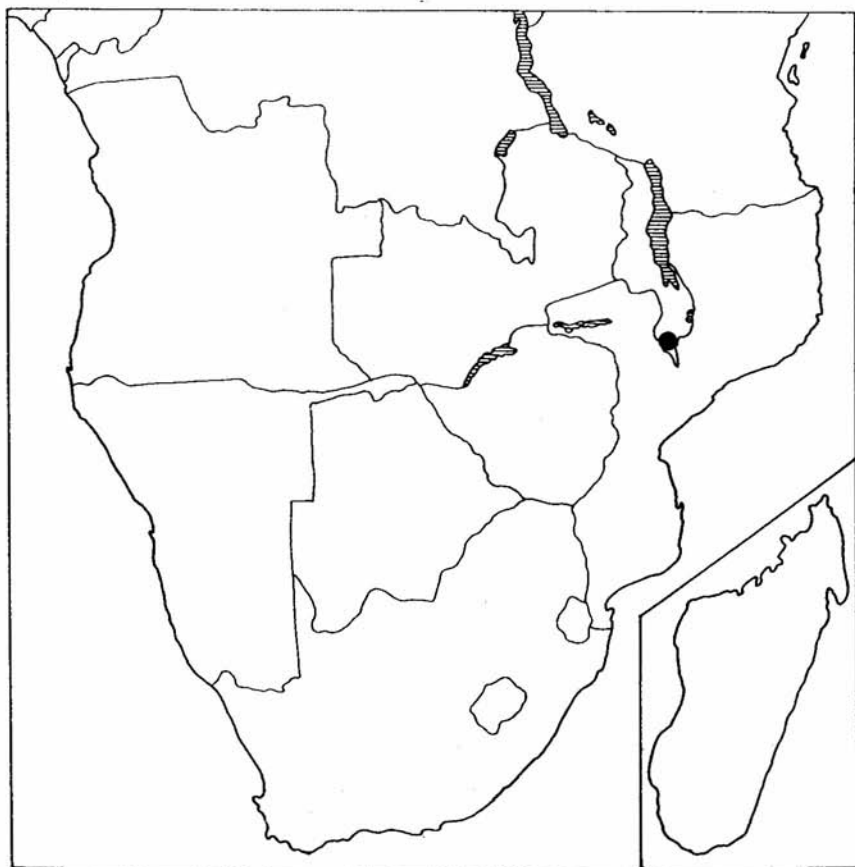
Pronotum and elytra uniformly testaceous. Ventrites testaceous, or thorax and abdomen mostly infusate, or brown, sides and posterior margins of abdominal sternites always paler, testaceous to pale brown. Legs testaceous, femora in the middle sometimes infusate. Six basal antennal segments testaceous, remainder black, segment 6 often infusate apically.



247-251. *Laccoptera (s. str.) brancsiki*: 247 - body in dorsal view, 248 - body in lateral view, 249 - head and prosternum, 250 - antenna, 251 - tarsal claw

Pronotum elliptical, about 1.8 times wider than long, with maximum width slightly in front of the middle, posterior corners broadly rounded. Disc moderately convex, in posterior half and on sides with irregular wrinkles, rugose, in slightly lower part above head rugosities lower, sometimes indistinct. Basal area without longitudinal sulcus. Surface microreticulate, glabrous. Explanate margin indistinctly bordered from disc, declivous, with honeycomb structure, surface with low folds or tubercles, irregular, microreticulate, glabrous.

Scutellum triangular, with shallow median impression and transverse faint sulcus. Base of elytra distinctly wider than pronotum, anterior margin of elytron finely crenulate, forming a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with large postscutellar gibbosity, outline behind the top of gibbosity slightly to distinctly concave (fig. 248). Each elytron with extremely large, mostly irregular puncturation, punctures almost touching each other. Divisions between punctures slightly convex, so surface of elytra appears slightly reticulate. Postscutellar impressions margined by very low and obtuse fold. Third and fifth interval distinct,



252. Distribution of *Laccoptera* (s. str.) *brancsiki*

slightly convex. Surface microreticulate, glabrous. Punctuation in sutural part, and on sides of disc tends to form regular rows. Marginal row distinct, interrupted by several, low, transverse folds, cavity behind the first fold shallow. Explanate margin about as wide as $2/3$ width of each elytron, declivous, with honeycomb structure, strongly, coarsely, shallowly punctate, surface microreticulate, glabrous. Lateral margination fine, simple. Apex of elytral epipleura pubescent.

Clypeus about 1.9 times wider than long, strongly elevated, triangular, in the middle deeply impressed, margins elevated, sharp (fig. 249). Labrum with fine median emargination. Antennal cavities separated. Antennae long, in male extending to the first abdominal sternite, in female to the middle of metathorax. Length ratio of antennal segments (female): 100:33:111:75:69:64:58:52:56:56:108. Segment 3 about 3.4 times longer than 2 (fig. 250).

Prosternal collar large, with transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, shallowly canaliculate on whole length (fig. 249). Legs moderately slim, tarsi broad, the last segment only slightly longer than the third. Inner margin of claws with moderately long pecten, about as long as $1/3$ length of claw (fig. 251).

Bionomics and host plant unknown.

DISTRIBUTION

Malawi and Zambia (fig. 252). Known from only 6 specimens.

REMARKS

It belongs to the group of strongly gibbous species. Only in *L. aurosa* and *L. brancsiki* outline of elytral disc behind the top of the gibbosity is concave. *L. brancsiki* differs in rugose pronotal disc (without rugosities in *L. aurosa*). The body in *L. brancsiki* is more rounded on sides than in *L. aurosa*, elytral sculpture lower, especially reticulation is less distinct, intervals 3 and 5 always distinct (completely irregular in *L. aurosa*), cavity behind the first fold of marginal row shallow (deep in *L. aurosa*). The surface in *L. brancsiki* is glabrous, while in *L. aurosa* it is rather dull. *L. zambeziaca* and *L. excavata* differ in less gibbous body, and stronger crenulate anterior margin of elytron.

MATERIAL EXAMINED

MALAWI: Chiromo, 2, R. C. WOOD (BMNH).

ZAMBIA: Zambesi, Boroma [Boruma], 4, BRANCSIK and KNIRSCH (holotype and 2 paratypes, MM, 1 LB).

***Laccoptera (s. str.) excavata* BOHEMAN, 1855**
(figs. 253-257)

Laccoptera excavata BOHEMAN, 1855: 56 (syntypes in NRS); 1856: 154; 1862: 382; Weise, 1899: 249; Muir and SHARP, 1904: 8, 15 (ootheca, larva); SPAETH, 1919: 187; SHAW, 1956b: 265.

Laccoptera (Laccoptera) excavata: SPAETH, 1914: 84; HINCKS, 1952: 337.

Laccoptera (Parorphonoda) excavata: SPAETH, 1932: 228.

DESCRIPTION

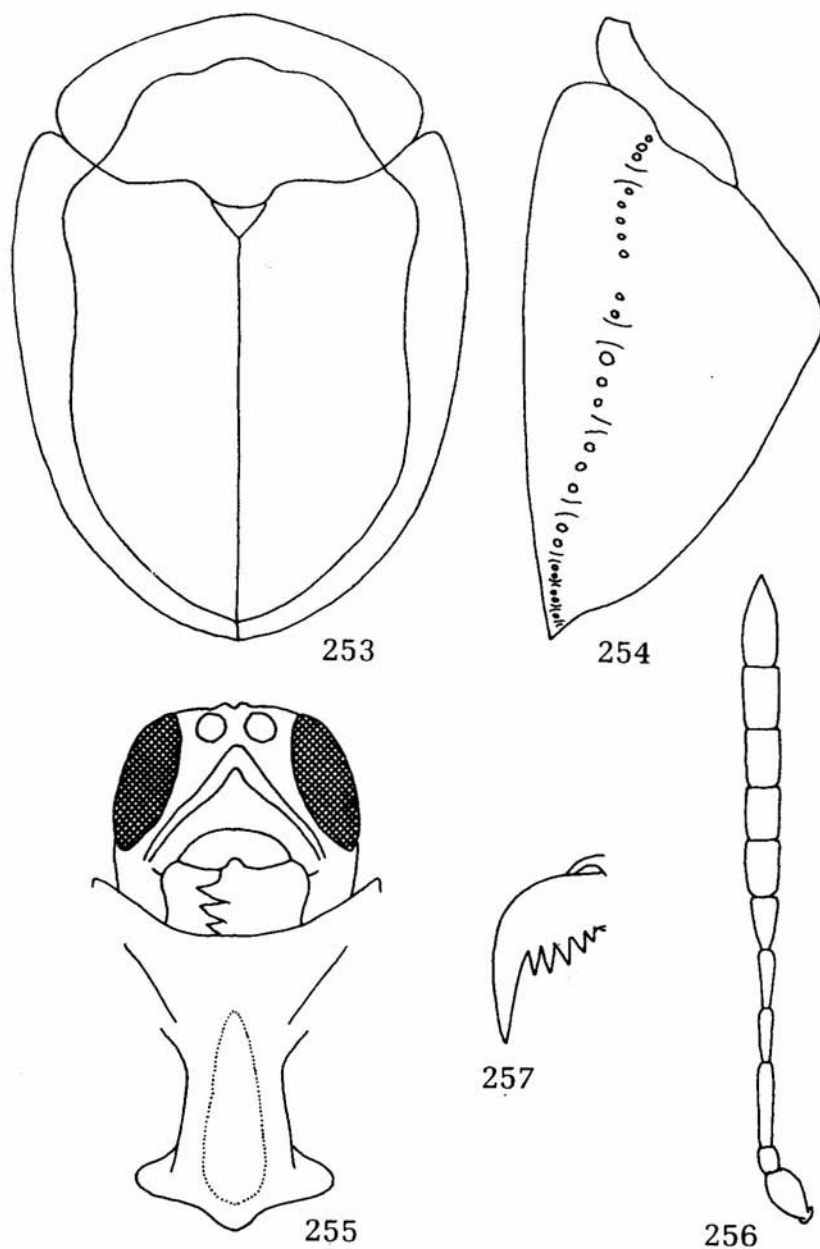
Length: 11.0-12.0 mm, width: 8.3-8.9 mm, pronotum length: 3.8-4.0 mm, pronotum width: 6.8-7.3 mm. Body short-oval, moderately converging posterad (fig. 253).

Pronotum and elytra uniformly brown. Ventrites brown, metasternum and abdominal sternites often darker, sometimes black. Legs brown, middle of femora, and tibiae often darker brown. Two basal antennal segments testaceous, on dorsal side often infusate, remainder black, or segments 2-3 on ventral side paler, testaceous to brown.

Pronotum elliptical, about 1.8 times wider than long, with maximum width in the middle, posterior corners broadly rounded. Disc strongly convex, divided by arcuate sulcus in two parts, anterior lower, and posterior higher. Anterior part, above head, usually without rugosities, punctate, microreticulate, glabrous. Basal part with deep longitudinal sulcus, slightly depressed, dull, without rugosities, with elongate scarce punctures. Lateral parts of disc with irregular wrinkles, rugose. Explanate margin distinctly bordered from disc, broad, subhorizontal, with honeycomb structure, with radial folds and granules, rugose, surface microreticulate, glabrous.

Scutellum triangular, impressed in the middle. Base of elytra distinctly wider than base of pronotum, anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with large postscutellar gibbosity, outline behind the top of the gibbosity straight (fig. 254). Postscutellar impressions margined by indistinct, obtuse fold. Each elytron with large reticulation of costae and folds. Third and fifth intervals indistinct, lost between large folds. Punctuation extremely large, irregular, only in sutural part and on sides of disc punctures tend to form regular rows, interrupted or disordered by elytral sculpture. Surface microreticulate, glabrous. Marginal row distinct, interrupted by 4-6 large, transverse folds, behind the first fold deep cavity. Explanate margin slightly wider than half width of each elytron, declivous, with honeycomb structure, strongly, coarsely punctured, rugose. Lateral margination faint, simple. Apex of elytral epipleura scarcely, shortly pubescent. In dried specimens hairs often broken.

Clypeus about twice wider than long, strongly elevated, triangular, in the middle deeply impressed, margins strongly elevated, sharp (fig. 255). Labrum emarginate to 1/5-1/4 length. Antennal cavities separate. Antennae long, in male extending to apex of metasternum, in female to the middle of metasternum. Length ratio of antennal

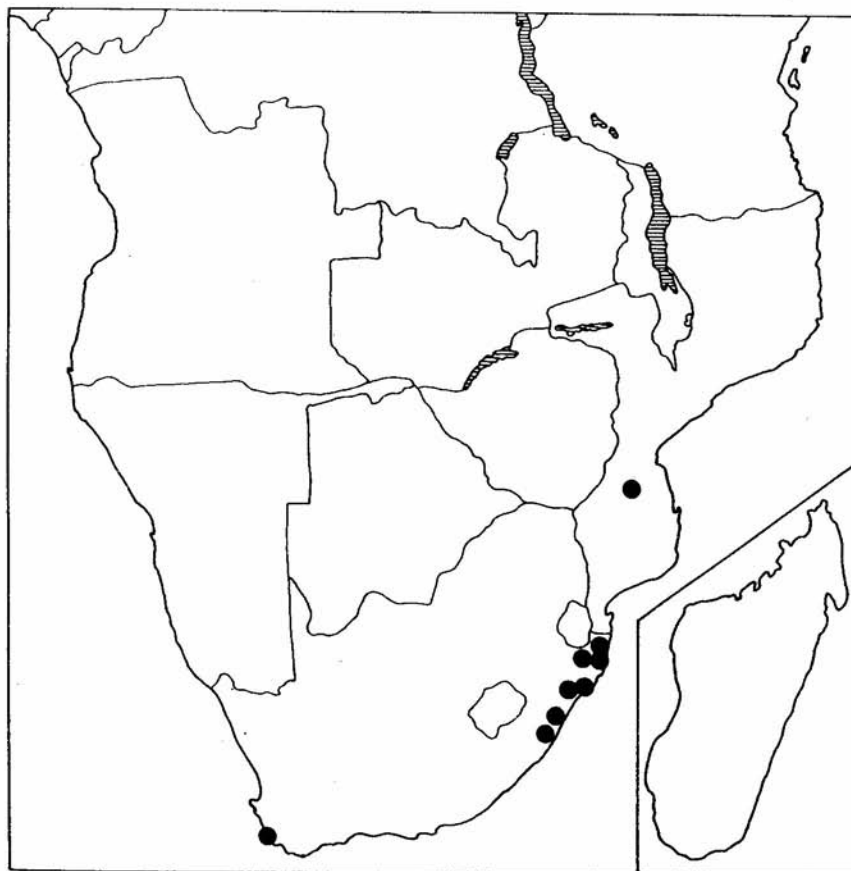


253-257. *Laccoptera (s. str.) excavata*: 253 - body in dorsal view, 254 - body in lateral view, 255 - head and prosternum, 256 - antenna, 257 - tarsal claw

segments (male): 100:47:145:97:92:80:87:87:85:90:137. Segment 3 about thrice longer than 2 (fig. 256). Distal segments in male, on internal margin, with long erected hair.

Prosternal collar large, with or without transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, canaliculate on almost whole length (fig. 255). Legs moderately slim, tarsi broad, the last segment only slightly longer than the third. Inner margin of claws with moderately long pecten, about as long as 1/3 length of claw (fig. 257), outer margin micropectinate.

Host plant: *Convolvulaceae*: *Ipomea holosericea*: (Muir and Sharp, 1904), *Ipomea pes-caprae*: (Heron, 1992), *Ipomea filifolia*: (H. Heron letter inf.). Bionomics: "Eggs group 2-4 in ootheca. Larva is very dark, almost black, the spikes surrounding it are rather small. The ninth abdominal spikes are longer than the others. Shortly after hatching, these ninth abdominal spikes are covered with excrement, and before the larva is two days old a "shield" is formed, under which the larva can hide itself. At each ecdysis the old skin is worked into shield and covered with excrement. The larva



258. Distribution of *Laccoptera* (s. str.) *excavata*

feeds freely upon the upper surface of its host plant. The pupa is of a golden colour, marked with black. The pronotum is enlarged and edged with spikelets, a pair of which is larger than the rest. The first five abdominal spikes are flattened into thin membranes edged with spikelets. The other spikes are greatly reduced in size" (Muir and Sharp, 1904). Larvae are strictly solitary (Heron, 1992).

DISTRIBUTION

South Africa and Mozambique (fig. 258).

REMARKS

It belongs to the species group with gibbous elytra. It differs from all species of the group in sculpture of pronotum, with basal part of disc depressed with dull, elongate punctate plate. *L. weisei* has a similar structure of pronotum but its elytra are regularly convex, without gibbosity. In Natal and S Mozambique there occur specimens with pronotum intermediate between *L. excavata* and *L. zambesiaca*. It suggests natural hybridization between the two species, but the problem needs study in the field. Also *L. weisei* is intermediate between *L. excavata* and *L. rugosicollis*, and may be a natural hybrid between the two.

MATERIAL EXAMINED

MOZAMBIQUE: Makulane, 2, G. AUDEAUD (MHNG).

SOUTH AFRICA: Cap, 3 (NMP); Cap. b. sp. (Cap of Good Hope), 1, coll. WAGENER (MM), Cap. b. sp., 1 (lectotype, coll. DEJEAN, *Cassida excavata* mihi, present designation, Helsinki), 1 (NMP); Natal, 3, PLASON (MM), 1 (NMP), 1, Dr. MARTIN (IRSN), 1 (HNHM); Natal, Durban, 1 (NMM), 1 (NMP), 6, coll. DONCKIER (MM), 1, MJOBERG (LU); II 1891, 1, B. MARLEY (CTM), 24 IX 1906, 1 (TM); 21 IX 1963, 1, A. C. ALLYN (FMNH); ; Natal, Malvern, 1, BARKER (CTM), 23 X 1897, 1 (TM); Natal, Sordwana Bay, 8-10 XI 1984, 2, H. and A. HOWDEN (CMN); Natal Umkomaas R., 1. G. A. MARSHALL (BMNH); Zululand, Empangeni Univ., 28 VIII 1975, 1, XII 1976, 1, P. E. REAVEL (TM); Zululand, Eshowe, 15-18 III 1957, 2, A. CAPENER (MM); Zululand, Lake Sibuya, 10 XI 1984, 1, BELLAMY and SCHOLZ (TM); Zululand, Mapelane, 6 VIII 1975, 1, P. E. REAVEL (TM); Zululand, Ndumu Game Res., Fig Tree Forest, 13 I 1964, 1, A. C. v. BRUGGEN (NNML); Zululand, Sordwana Bay, 8-10 XI 1984, 1, BELLAMY and HOWDEN (TM).

Laccoptera (s. str.) *rugosicollis* (SPAETH, 1902) n. comb.

(figs. 259-264)

Orphonoda rugosicollis SPAETH, 1902b: 22 (syntypes in MM).

Laccoptera (*Orphonoda*) *rugosicollis*: SPAETH, 1914: 84.

Laccoptera (Parorphonoda) rugosicollis: SPAETH, 1932: 228.

Laccoptera rugosicollis: BOROWIEC, 1985a: 238.

Laccoptera contigua SPAETH, 1919: 187 (syntypes in MM), n. syn.

Laccoptera (Parorphonoda) contigua: SPAETH, 1932: 228.

Laccoptera warchalowskii BOROWIEC, 1985b: 445 (holotype in LU), n. syn.

DESCRIPTION

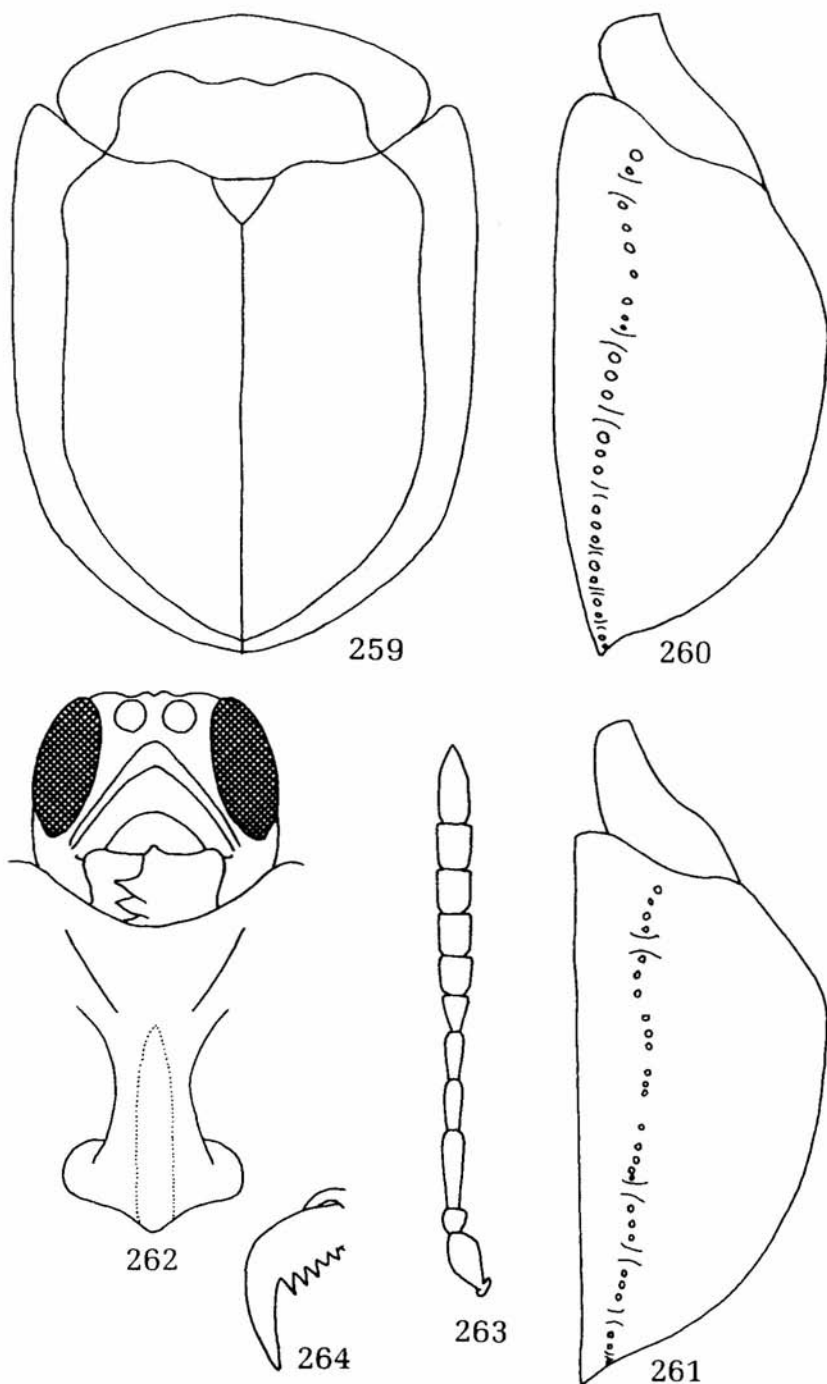
Length: 10.5-12.2 mm, width: 7.5-9.1 mm, pronotum length: 3.6-4.3 mm, pronotum width: 6.0-7.0 mm. Body short-oval, only slightly rounded on sides or paralle-sided (fig. 259).

Pronotum and elytra uniformly testaceous-brown to brown. Ventrites brown, thorax and abdomen often darker brown. Legs testaceous to brown, femora in the middle often with dark brown spot. Basal four antennal segments testaceous, remainder black, segment 4 often infuscate at apex.

Pronotum elliptical, 1.6-1.7 times wider than long, with maximum width in, or slightly behind the middle, posterior corners obsolete. Disc moderately to strongly convex, in populations from north and centre of the distribution range whole surface with irregular wrinkles, rugose, only part above head in the middle without wrinkles, irregularly punctate. Basal part with median longitudinal sulcus, bordered from part above head by arcuate sulcus. In populations from south and especially from south-west part of the range basal part is more convex, with very deep median sulcus, elevated parts on both sides of the sulcus without wrinkles, only punctate (= *warchalowskii*). Between forms with regularly rugose disc and forms with partly punctate disc all intermediates occur. Explanate margin distinctly bordered from disc, subhorizontal, with honeycomb structure, with radial folds and irregular tubercles, rugose. Surface of disc and explanate margin microreticulate, glabrous.

Scutellum triangular, flat to distinctly impressed in the middle, often with a few punctures. Base of elytra distinctly wider than pronotum, anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly, regularly convex (fig. 260), only in forms from north-east part of the distribution area disc is slightly gibbous in postscutellar area (= *contigua*, fig. 261). Disc strongly punctate, spaces between punctures elevated, disc appears reticulate. Postscutellar impressions margined by low and broad fold, third and fifth interval usually distinct, almost straight to slightly irregular, strongly elevated forming longitudinal costae. Punctures in sutural part and on sides of disc tend to form regular rows, interrupted or disordered by elytral sculpture. Surface microreticulate, glabrous. Marginal row distinct, interrupted by 5-6 large transverse folds, and often several smaller folds, cavity behind the first fold deep. Explanate margin slightly narrower than half width of each disc of elytron, declivous, with honeycomb structure, strongly, coarsely punctate, appears rugose, lateral margination fine, simple. Apex of elytral epipleura bare or with very short and scarce erected hair.

Clypeus about twice wider than long, triangular, in the middle strongly



259-264. *Laccoptera (s. str.) rugosicollis*: 259 - body in dorsal view, 260-261 - body in lateral view (261 - "contigua" form), 262 - head and prothorax, 263 - antenna, 264 - tarsal claw

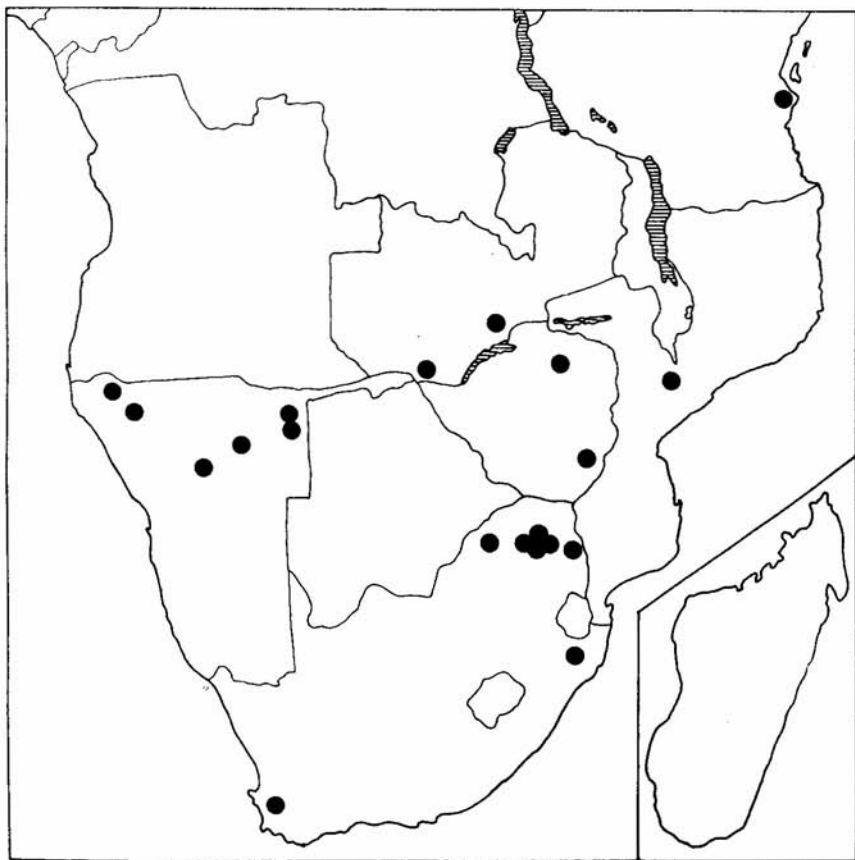
impressed, margins strongly clavated, sharp (fig. 262). Antennal cavities separated. Antennae long, in male extending to the first abdominal segment, in female to the middle of metasternum. Length ratio of antennal segments (male): 100:45:139:100:90:75:75:84:81:90:142. Segment 3 about thrice longer than 2 (fig. 263). Distal segments in male with long, erected hair on inner margin.

Prosternal collar large, with or without transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, canaliculate on almost whole length (fig. 262). Legs moderately slim, tarsi broad, the last segment only slightly longer than the third. Inner margin of claws with moderately long pecten, about as long as 1/3 length of claw (fig. 264), outer margin micropectinate.

Host plant: *Convolvulaceae* (label data), bionomics unknown.

DISTRIBUTION

South Africa north to Zambia and C Tanzania (fig. 265).



265. Distribution of *Laccoptera (s. str.) rugosicollis*

REMARKS

With *L. weisei* it forms a group of species with elytral disc regularly convex or only slightly elevated in postscutellar part. *L. weisei* differs in sculpture of pronotal disc, with basal part without rugosities, forming a depressed, dull plate with elongate punctures or/and fine regular longitudinal striation. *L. rugosicollis* is a widespread and variable species, extreme north-east and south-west forms were described as separate species. Population from Tanzania is slightly gibbous and more convex than populations from South Africa; it was described as *L. contigua*, but specimens from Mozambique and Zambia are intermediate and I have synonymized *L. contigua* with *L. rugosicollis*. Population from Namibia is characterized by pronotal base elevated, without rugosities, punctate. It was described as *L. warchalowskii*, but in the neighbouring areas of South Africa specimens occur with pronotal disc representing all intermediates between typical *L. rugosicollis* and *L. warchalowskii*. I have synonymized *L. warchalowskii* with *L. rugosicollis*.

MATERIAL EXAMINED

MOZAMBIQUE: Chemba, 1931, 1, A. RAVET (MRAC).

NAMIBIA: Abachaus, Otjivarongo, XII 1949, 1, G. HOBOM (TM); III 1950, 1, G. HOBOM (TM); Gautscha Pan, VIII 1951, 1, C. KOCH (TM); Gautscha Pan, Kankau-Kungv., IX 1951, 1, C. KOCH (TM); between Gautscha and Kubasche, Kundveld, I 1958, 4, C. KOCH (TM); Grootfontein, 2 I 1948, 3, F. GAERDES (1 FMNH, 2 WM); Kaokoveld, Epembe, 12 II 1975, 6, on *Convolvulaceae*, S. ENDRÖDY-YOUNG (TM); Otjitundua, 3 V 1961, 4, 4 V 1961, 4, F. GAERDES (4 ZSM, 4 WM); Tsumkve, Kungveld, I 1958, 4, C. KOCH (TM).

SOUTH AFRICA: Bandoliet Kap, 26 I 1931, 3, G. v. SON (TM); Blauwberg, 17 X 1931, 1, G. v. SON (TM); 6-8 mls N Louis Trichardt, XII 1965, 1, L. SCHULZE (TM); Moorddrift, X 1909, 2, C. J. SWIERSTRA (TM); Ngami, 1, coll. ANCEY, 2, coll. DONCKIER (MM); Sedula near Leydsdorp, 1 III 1928, 1, G. v. SON (TM); Transvaal, 1 (NMP); E Transvaal, Bedford, 12 IV 1967, 2, H. SNYMAN (TM); Transvaal, Ellisras, 27 XII 1973, 1, C. H. DRAPER (TM); NE Transvaal, Grootdraai, Olifants Riv., X 1927, 2, H. LANG (TM); N Transvaal, Hoederspruit, 29 XI 1974, 1, REAVEL (TM); N Transvaal, Pietersburg, XII 1965, 4, L. SCHULZE (TM); Transvaal, 9 km S Strijdom Tunnel, 30-31 1974, 4, W. W. MIDDLEKAUFF (CAS).

TANZANIA: Dar-es-Salaam, 2, STAUD. (syntypes of *L. contigua*, MM).

ZAMBIA: Boroma [Boruma], 1 (paralectotype of *Orphonoda rugosicollis*, MM), 1 (lectotype of *Orphonoda rugosicollis*, present designation, HNHM); Lusaka, Kafue City, Kafue Riv., 1200 m, 22 XI-2 XII 1987, 3, R. MOURGLIA (2 SZ, 1 Verona).

ZIMBABWE: Bindura, 1, D. COYHILL (CTM); Mateke Hill, VII 1962, 2, W. HAACKE (TM).

VARIA: Zambesi, Bradshaw, 1878, 5, v. ULSEN (ITZ).

Laccoptera (s. str.) weisei (SPAETH, 1902) n. comb.
(figs. 266-271)

Orphonoda Weisei SPAETH, 1902b: 21 (syntypes in MM, NMP).

Laccoptera (Orphonoda) Weisei: SPAETH, 1914: 84.

Laccoptera (Parorphonoda) Weisei: SPAETH, 1932: 228.

DESCRIPTION

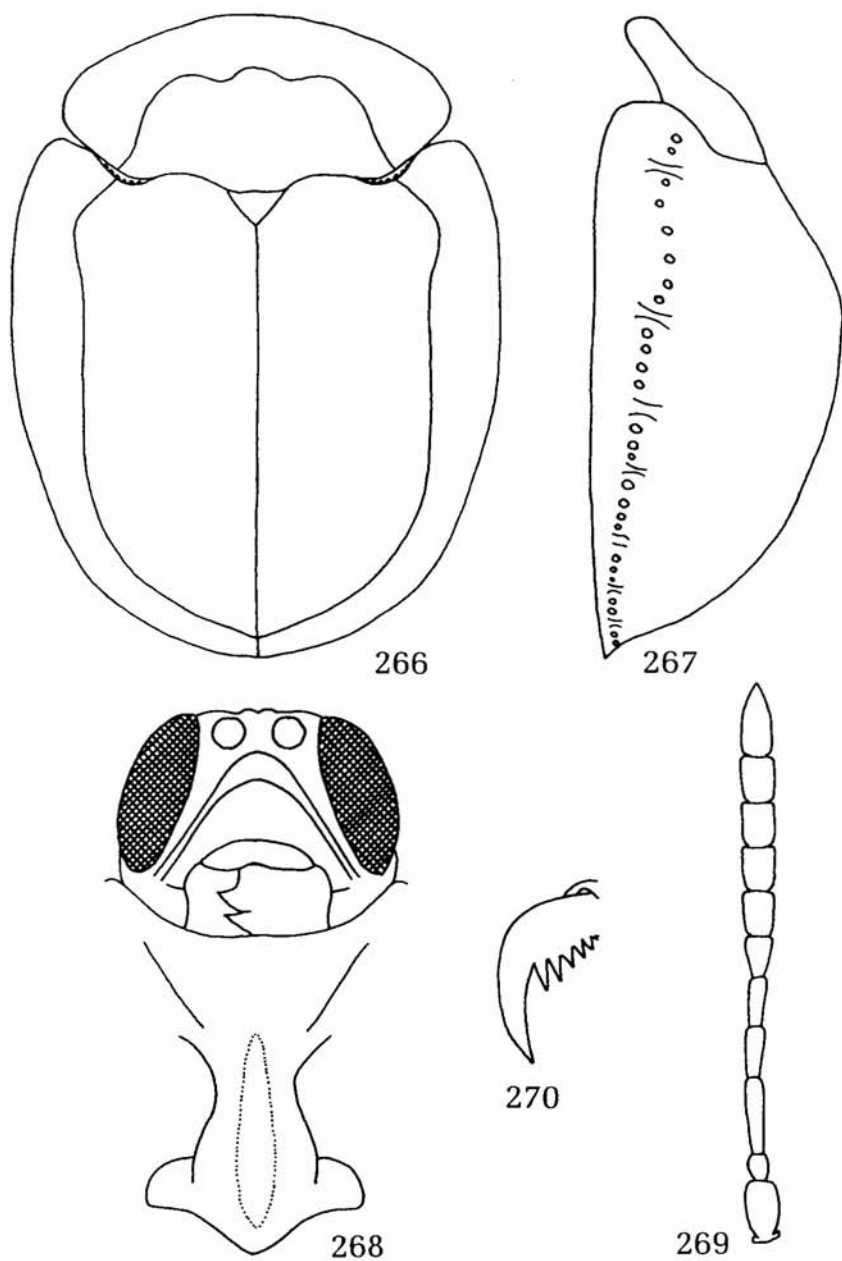
Length: 10.8-11.9 mm, width: 8.0-8.5 mm, pronotum length: 3.9-4.0 mm, pronotum width: 6.5-7.2 mm. Body short-oval, only slightly rounded on sides or paralle-sided (fig. 266).

Pronotum and elytra uniformly testaceous-brown to brown. Ventrites brown, thorax and abdomen often darker brown. Legs testaceous to brown, femora in the middle often with dark brown spot. Basal four antennal segments testaceous, remainder black, segments 3 and 4 often infuscate at apex.

Pronotum elliptical, 1.7-1.8 times wider than long, with maximum width in or slightly behind the middle, posterior corners obsolete. Disc moderately to strongly convex, basal part with median longitudinal sulcus, bordered from part above head by arcuate sulcus, forming a slightly depressed plate, with elongate punctures and/or fine longitudinal striation. Sides of disc with irregular wrinkles, strongly rugose, part above head only partly rugose, in the middle with several punctures. Explanate margin distinctly bordered from disc, subhorizontal, with honeycomb structure, with radial folds and irregular tubercles, rugose. Surface of disc and explanate margin microreticulate, glabrous.

Scutellum triangular, flat to distinctly impressed in the middle, often with a few punctures. Base of elytra distinctly wider than pronotum, anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly, regularly convex (fig. 267), strongly punctate, spaces between punctures elevated, disc appears reticulate. Postscutellar impressions margined by low to moderately high and broad fold, third and fifth intervals usually distinct, almost straight to slightly irregular, strongly elevated, form longitudinal costae. Punctures in sutural part and on sides of disc tend to form regular rows, interrupted or disordered by elytral sculpture. Surface microreticulate, glabrous. Marginal row distinct, interrupted by 5-6 large transverse folds, and often several smaller folds, cavity behind the first fold deep. Explanate margin slightly narrower than half width of each disc of elytron, declivous, with honeycomb structure, strongly, coarsely punctate, appears rugose, lateral margination fine, simple. Apex of elytral epipleura bare or with very short and scarce erected hair.

Clypeus about twice wider than long, triangular, in the middle strongly impressed, margins strongly elevated, sharp (fig. 268). Antennal cavities separated. Antennae long, in male extending to the first abdominal segment, in female to the middle of metasternum. Length ratio of antennal segments (male): 100:48:148-



266-270. *Laccoptera (s. str.) weisei*: 266 - body in dorsal view, 267 - body in lateral view, 268 - head and prosternum, 269 - antenna, 270 - tarsal claw

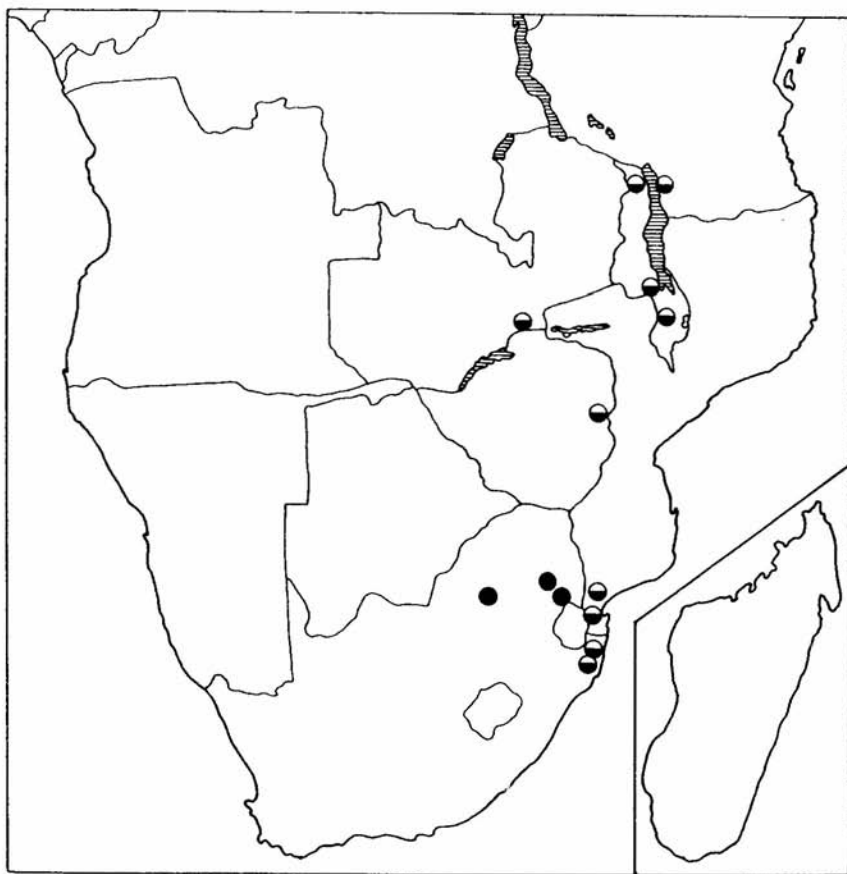
:100:90:71:82:84:77:88:140. Segment 3 about thrice longer than 2 (fig. 269). Distal segments in male with long, erected hair on inner margin.

Prosternal collar large, with or without transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, canaliculate on almost whole length (fig. 268). Legs moderately slim, tarsi broad, the last segment only slightly longer than the third. Inner margin of claws with moderately long pecten, about as long as 1/3 length of claw (fig. 270), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

South Africa (fig. 271).



271. Distribution of *Laccoptera* (s. str.) *weisei* (black circles) and *L. (s. str.) zambesiaca* (white and black circles)

REMARKS

With *L. rugosicollis* it forms a group of species with regularly convex to slightly gibbous elytral disc. *L. rugosicollis* differs in sculpture of pronotal disc with basal part completely rugose, or elevated with several round punctures, but never longitudinally striate or elongatedly punctate. *L. weisei* has pronotum very similarly sculptured as in *L. excavata*, and it is possible that *L. weisei* is a natural hybrid between *L. rugosicollis* and *L. excavata*.

MATERIAL EXAMINED

SOUTH AFRICA: Cape, 1, HEYNED (lectotype of *Orphonoda Weisei* SPAETH, present designation, MM), 2, HEYNED (paralectotypes, MM), paralectotype, 1 (NMP); Lydenburg, 1896, 2, P. A. KRANTZ (TM); Transvaal, Baberton, 2, v. ROLLE (MM), XII 1940, 1, W. G. KOBROW (TM); Transvaal, Johannesburg, 5, v. ROLLE (MM).

Laccoptera (s. str.) *zambesiaca* SPAETH, 1919 n. comb.

(figs. 271-277)

Laccoptera zambesiaca SPAETH, 1919: 187 (syntypes in MM).

Laccoptera (*Parorphonoda*) *zambesiaca*: SPAETH, 1932: 228.

DESCRIPTION

Length: 10.2-11.9 mm, width: 7.6-8.9 mm, pronotum length: 3.6-4.1 mm, pronotum width: 5.9-7.1 mm. Body short-oval, moderately converging posterad (fig. 272).

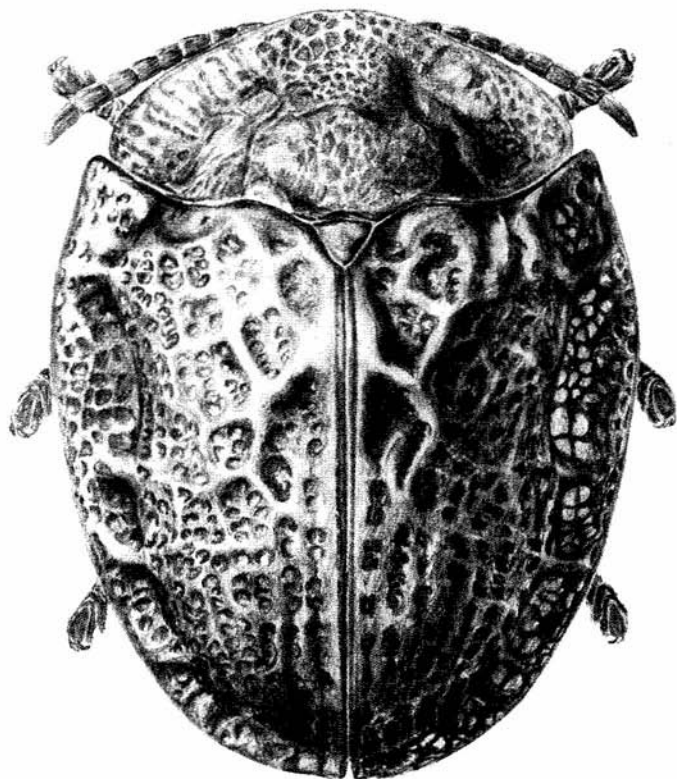
Pronotum and elytra uniformly brown. Ventriles brown, usually slightly darker than dorsal side, legs brown to dark brown. Five basal antennal segments testaceous, remainder black, sometimes segments 3-5 more or less infusate.

Pronotum elliptical, 1.6-1.7 times wider than long, with maximum width in the middle, posterior corners broadly rounded. Disc moderately convex, area above head lower, scarcely punctate, without rugosities, sides and basal part with irregular wrinkles, rugose. Basal area without longitudinal sulcus. Surface microreticulate, glabrous. Explanate margin distinctly bordered from disc by a shallow sulcus, broad, with honeycomb structure, with radial folds, granules, and tubercles, rugose except anterior part above head which lack rugosities.

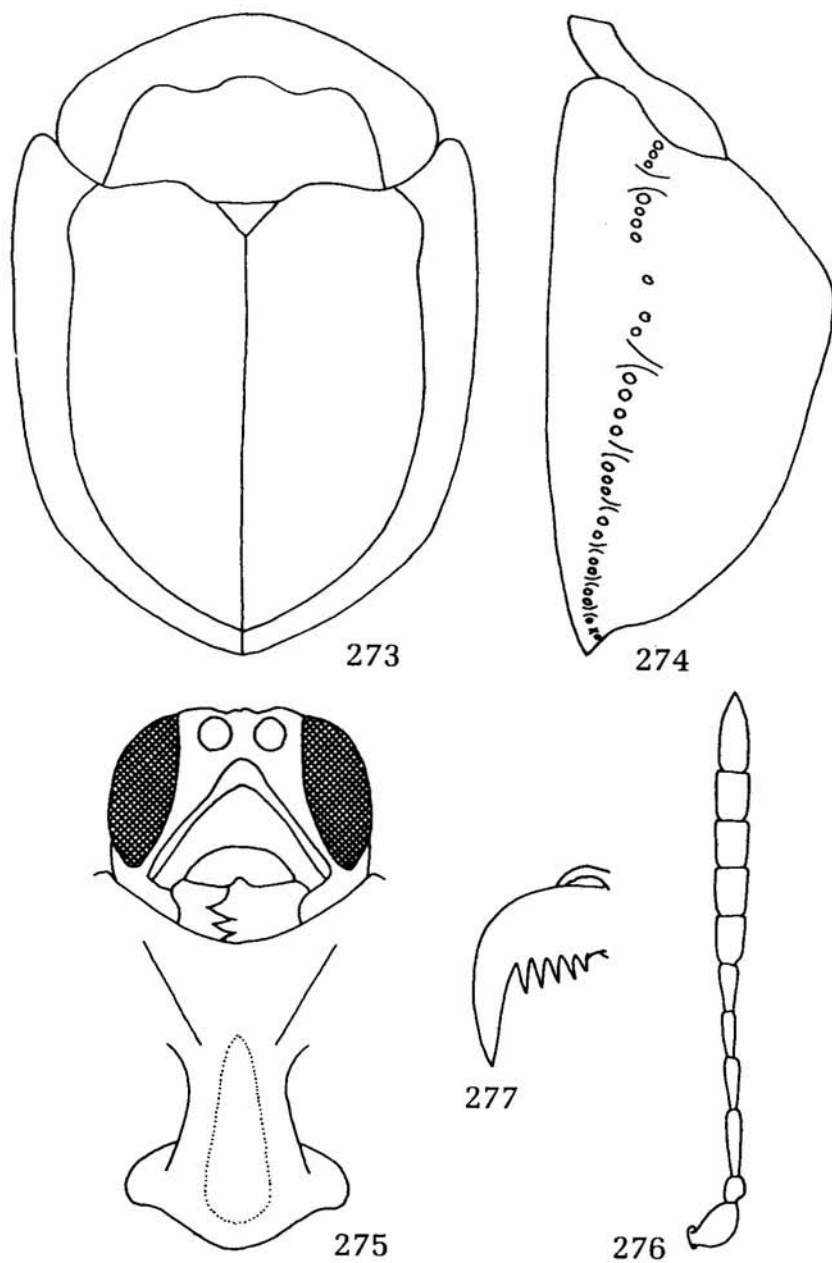
Scutellum triangular, usually flat, sometimes with transverse sulci. Base of elytra distinctly wider than pronotum (fig. 273), anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, gibbous, outline behind the top of the gibbosity straight to slightly convex (fig. 274). Postscutellar impressions margined by low but broad fold. Whole disc with large reticulation, in sutural part fields of reticulation larger than on sides of disc. Third and

fifth intervals irregular, but usually distinct, costate. Punctuation of disc very large, in sutural part and on sides punctures tend to form regular rows, interrupted by elytral sculpture. Surface microreticulate, glabrous. Marginal row distinct, interrupted by 5-6 large, transverse folds, behind the first fold deep cavity. Explanate margin slightly wider than $2/3$ width of each elytron, with honeycomb structure, declivous, with large punctures, rugose, microreticulate, glabrous. Lateral margination faint, simple. Apex of elytral epipleura pubescent.

Clypeus about twice wider than long, strongly elevated, triangular, in the middle deeply impressed, margins strongly elevated, sharp (fig. 275). Labrum emarginate to $1/5-1/4$ length. Antennal cavities separate. Antennae long, in male extending to apex of metasternum, in female to the middle of metasternum. Length ratio of antennal segments (male): 100:52:155:105:86:86:76:78:78:86:144. Segment 3 about thrice longer than 2 (fig. 276). Distal segments in male with long erected hair on internal margin.



272. *Laccoptera* (s. str.) *zambesiaca*, dorsal view



273-277. *Laccoptera (s. str.) zambesiaca*: 273 - body in dorsal view, 274 - body in lateral view, 275 - head and prosternum, 276 - antenna, 277 - tarsal claw

Prosternal collar large, with or without transverse sulci, sides form a soft angle. Prosternal process moderately broad, strongly expanded apically, canaliculate on almost whole length. Legs moderately slim, tarsi broad, the last segment only slightly longer than the third. Inner margin of claws with moderately long pecten, about as long as 1/3 length of claw (fig. 277), outer margin micropectinate.

Bionomics and host plant unknown.

DISTRIBUTION

Southern part of East Africa, Zambesi Region, Natal and Zululand in South Africa (fig. 271).

REMARKS

It belongs to the group of species with gibbous elytra. At first glance it is very similar to *L. brancsiki*, especially in completely rugose pronotal disc. It differs from *L. brancsiki* in less gibbous body, especially in postcutellar gibbosity lower, more obtuse, and profile behind the top of the gibbosity straight to slightly convex (concave in *L. brancsiki*). The cavity behind the first fold of marginal interval in *L. zambesiaca* is distinctly deeper than in *L. brancsiki*. Body colour in *L. zambesiaca* is darker, brown, while in *L. brancsiki* it is paler, testaceous. *L. excavata* is also very similar to *L. zambesiaca* but differs in pronotal disc with basal, dull area without rugosities but elongatedly punctate (irregularly rugose in *L. zambesiaca*). *L. excavata* differs distinctly in pronotum without rugosities. Northern forms of *L. rugosicollis* (described as *L. contigua*) with slightly gibbous body are, at first glance, similar to *L. zambesiaca* but have more elongate body, less convergent posterad, and postscutellar gibbosity distinctly lower.

MATERIAL EXAMINED

MALAWI: Karonge, 30 VI 1929, 1 (CMNH); Mkopi Hill, near Monkey Bay, 25 II 1946, 1, R. H. LOWE (BMNH); Mlanje, 1 XII 1913, 1, A. S. NEAVE (LB), 27 I 1914, 1, A. S. NEAVE (BMNH).

MOZAMBIQUE: Lourenco Marques, 3 (BMNH); Magude, X 1918, 1, C. J. SWIERSTRA (LB); Mussapa R. Forest, Serra Rotanda, 13 III 1973, 1 (LB).

SOUTH AFRICA: Natal, Sibaya Lake, 10 XI 1984, 1 (LB); Natal, Sordwana Bay, 8-10 XI 1984, 3, H. and A. HOWDEN (CMN); Zululand, St. Lucia, veget. coastal dunes, 7 XII 1975, 1, S. ENDRÖDY-YOUNGA (TM).

TANZANIA: Wiedhafen, Nyassa, 1, ERTL (syntype, MM), 2 (BMNH), 1 (LB).

ZAMBIA: Zambesi, 3 II 1911, 1 (holotype, MM).

ZIMBABWE: Umtali, 1200 m, 7 V 1958, 1, R. ZUR STRASSEN (SMF).

Subgenus *Orphonoda* WEISE, 1899

Large *Lacoptera*, body length exceeding 10 mm. Pronotum and elytra strongly sculptured. Lateral margination of elytra broad, double. Clypeus impressed in the middle, along middle of the impression narrow carina, margins of clypeus not strongly elevated.

Distribution: South Africa.

KEY TO THE SPECIES

1. Pronotal and elytral sculpture higher, sharper, especially basal part of pronotal disc with high, sharp folds. Pecten of claws shorter, extending to 1/3 length of claw (fig. 288). Dorsal side usually bicoloured, disc of pronotum and elytra dark brown to black, explanate margin testaceous to pale brown: *intertexta*
- Pronotal and elytral sculpture lower, basal part of pronotal disc with low, obtuse folds. Pecten of claws longer, extending to half length of claw (fig. 282). Dorsal side uniformly testaceous to brown: *cancellata*

Lacoptera (Orphonoda) cancellata BOHEMAN, 1855

(figs. 278-283)

Lacoptera cancellata BOHEMAN, 1855: 60 (syntypes in NRS, ZMHU); 1856: 154; 1862: 382.

Orphonoda cancellata: WEISE, 1899: 253.

Lacoptera (Orphonoda) cancellata: SPAETH, 1914: 84; 1932: 229.

Orphonoda marginata WEISE, 1899: 254 (lectotype and two paralectotypes in ZMHU), *n. syn.*

Lacoptera (Orphonoda) marginata: SPAETH, 1932: 229; SHAW, 1956b: 265.

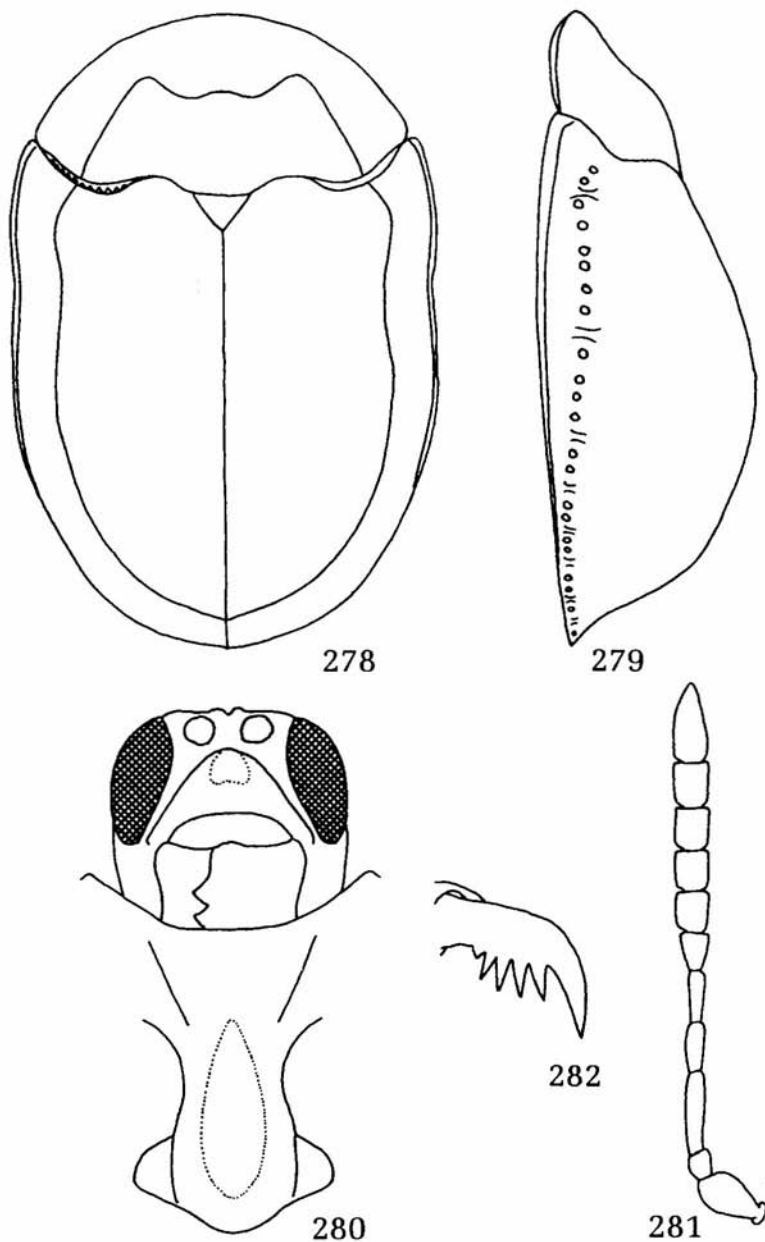
Lacoptera marginata: BOROWIEC, 1987: 415.

DESCRIPTION

Length: 10.4-12.5 mm, width: 7.4-8.5 mm, pronotum length: 3.5-4.2 mm, pronotum width: 6.1-7.1 mm. Body short-oval, almost parallelsided (fig. 278).

Pronotum and elytra uniformly testaceous to brown. Ventrites brown to black, clypeus and sides of abdominal sternites usually paler brown. Legs black, basal half of femora darker brown to black. Basal five antennal segments testaceous to brown, remainder black, dorsal side of basal segments often infuscate.

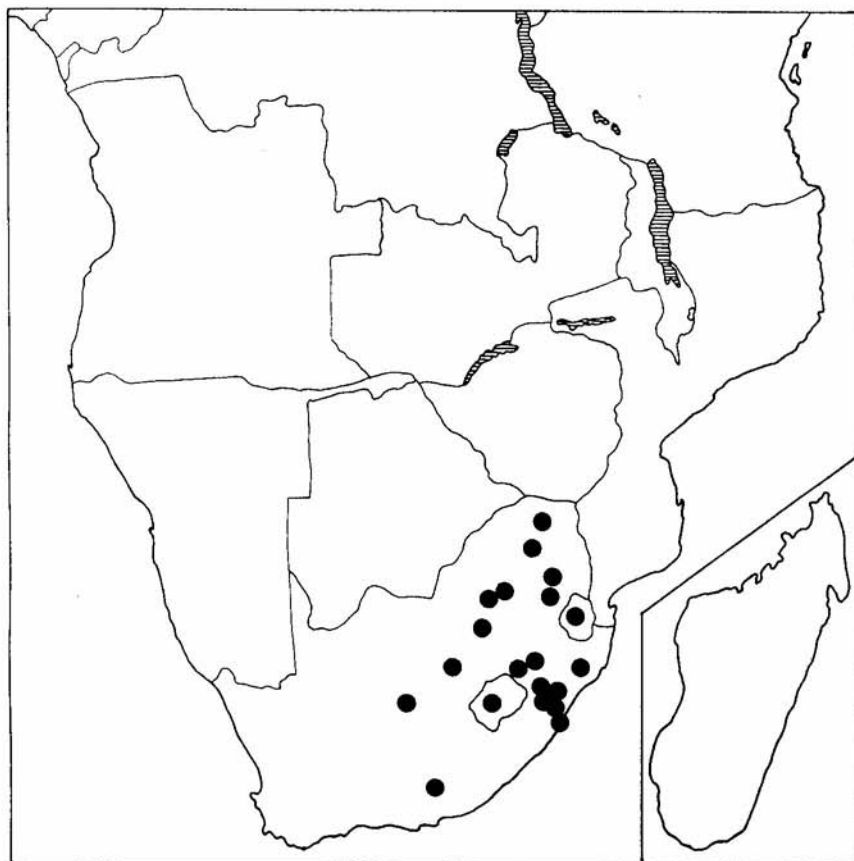
Pronotum about 1.7 times wider than long, semicircular, with maximum width at base, posterior corners subangulate. Disc strongly convex, divided by deep sulcus into lower anterior and higher posterior parts, deep sulcus borders also basal and lateral parts. Anterior part with very low wrinkles, basal part with irregular, moderately high wrinkles, rugose, with longitudinal, medial sulcus. Lateral parts also



278-282. *Laccoptera (Orphonoda) cancellata*: 278 - body in dorsal view, 279 - body in lateral view, 280 - head and prosternum, 281 - antenna, 282 - tarsal claw

with moderately high, irregular wrinkles, rugose. Surface microreticulate, dull. Explanate margin distinctly bordered from disc, with honeycomb structure, broadly margined, forms a shallow gutter. Surface only slightly irregular, not rugose, microreticulate, dull.

Scutellum triangular, usually flat, sometimes with a few transverse wrinkles. Base of elytra slightly wider than pronotum, anterior margin strongly crenulate, forms a moderate angle, humeral angles moderately protruding anterad. Disc regularly convex with no postscutellar elevation (fig. 279). Puncturation very large, in sutural part and on sides tends to form regular rows, disordered or interrupted by elytral sculpture. Third and fifth intervals moderately elevated, but distinct on whole length, almost straight. Between suture and third interval, and between third and fifth intervals transverse elevated folds, forming a distinct reticulation, on sides of disc spaces between punctures irregularly elevated but do not form a distinct reticulation. Surface microreticulate, dull. Marginal row distinct, interrupted by several transverse



283 - Distribution of *Laccoptera (Orphonoda) cancellata*

folds, subhumeral cavity shallow, sometimes indistinct. Explanate margin slightly narrower than 1/3 width of each disc of elytron, subhorizontal, with honeycomb structure, lateral margination very broad, double, strongly elevated. Surface strongly punctate and with transverse irregular folds, rugose. Apex of elytral epipleura bare.

Clypeus about 2.2 times wider than long, subtriangular, strongly elevated, with deep median impression divided in two parts by narrow longitudinal carina (fig. 280). Margins only slightly elevated, obtuse, apex subangulate, usually strongly impressed or emarginate. Labrum very shallowly emarginate. Antennal cavities separated. Antennae long, in male extending to apex of metasternum, in female to the middle of metasternum. Length ratio of antennal segments (male): 100:40:114:111:94:83:77:71:71:80:137. Segment 3 about 2.9 times longer than 2 (fig. 281). In male, inner margin of distal segments with long erected hair.

Prosternal collar large, with transverse sulci, sides form a soft angle. Prosternal process broad, strongly expanded apically, moderately to deeply canaliculate to 2/3 length, apex and sides rugose. Legs moderately slim, tarsi broad, the last segment as long as the third. Inner margin of claw with strong pecten, about as long as half length of claw (282), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

South Africa (fig. 283).

REMARKS

Very similar to *L. intertexta*. It differs especially in distinctly larger pecten of tarsal claws. Pronotal and elytral sculpture is slightly lower than in *L. intertexta*, colouration pale, uniformly testaceous to brown (partly black in *L. intertexta*).

MATERIAL EXAMINED

LESOTHO: Likhoele, 1, DIETERLIN (CTM).

SOUTH AFRICA: Brak Kloof, II 1895, 1, X 1895, 2, G. WHITE (MM); Johannesburg, Cyrildene, 6 XII 1961, 1, C. H. DRAPER (TM); O.F.S. Krugersdrifdam, 11 XII 1984, 1, H. and A. HOWDEN (CMN); Lydenburg, 1896, 6, P. A. KRANTZ (TM, 2 LB); Maritzburg, 1912, 1, C. FULLER (TM); Natal, 3 STAUD. (lectotype and 2 paralectotypes of *L. marginata*, ZMHU); Natal, 2 (1 MM, 1 LB); Natal, Drakensberg, 2, H. B. MARLEY (MM); Natal, Durban, 1898, 1, C. N. BARKER (CTM); Natal, Estcourt, 1 (LB); Natal, Frere, 1892, 1, A. MARSHALL (CTM); Natal, Port Natal [Durban], 1 (syntype of *L. cancellata*, BMNH); Natal, Tigers Kloof, 1, H. B. MARLEY (MM); Natal, Weenen, 1, G. H. BURN (ZMHU); S. Afrika, 1, coll. BALY (MM); Orange R. C., Smithfield, 1908, 1, KANNEMEYER (CTM); Parys, X 1948, 1, C. KOCH (TM); Swaziland, Eranchi, 15-31 XII 1954, 1, A. L. CAPENER (MM); Transvaal, 1, FRUHSTORFER

(ZMHU); Transvaal, Bonnefoi, 1 (MM); N Transvaal, Pietersburg, XII 1965, 1, L. SCHULZE (TM); Transvaal, Zoutpansberg, Mphome, 1, M. KNOTHE (ZMHU); Waterkloof, Pretoria Distr., 3, F. NOOME (TM, 1 LB); Zululand, Nagana Res. Lab., 1922, 1, H.H. CURSON (LB).

***Laccoptera (Orphonoda) intertexta* BOHEMAN, 1862**

(figs. 284-289)

Laccoptera intertexta BOHEMAN, 1862: 382.

Orphonoda intertexta: WEISE, 1899: 253.

Laccoptera (Orphonoda) intertexta: SPAETH, 1914: 84; 1932: 229.

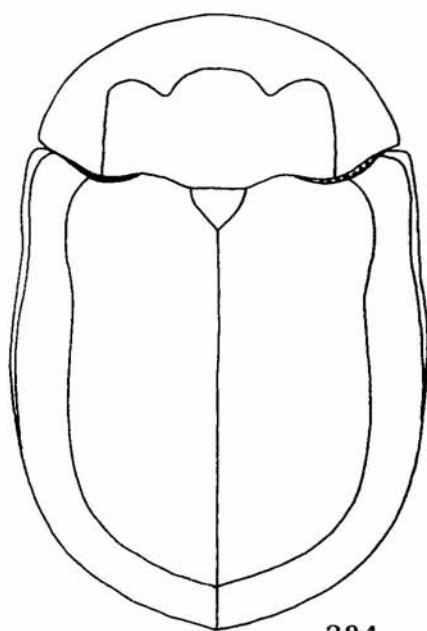
DESCRIPTION

Length: 10.0-11.1 mm, width: 7.0-7.7 mm, pronotum length: 3.4-3.7 mm, pronotum width: 5.8-6.5 mm. Body short-oval, almost paralle-sided (fig. 284).

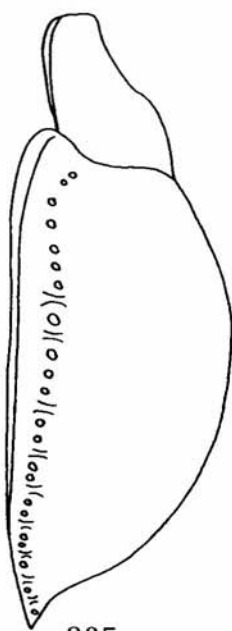
Pronotal and elytral disc dark brown to black, transverse folds often testaceous. Explanate margin of pronotum and elytra testaceous, transverse folds often brown to black. Ventrites black, sides of abdominal sternites with small testaceous spot. Legs black. Antennae mostly black, four basal segments on ventral side testaceous.

Pronotum about 1.7 times wider than long, semicircular, with maximum width at base, posterior corners subangulate. Disc strongly convex, divided by deep sulcus into lower anterior and higher posterior parts, deep sulcus borders also basal and lateral parts. Anterior part with low wrinkles, basal part with irregular, very high wrinkles, with tendency to form longitudinal striation, rugose, with longitudinal, medial sulcus. Lateral parts also with high, irregular wrinkles, rugose. Surface microreticulate, dull. Explanate margin distinctly bordered from disc, with honeycomb structure, broadly margined, forms a shallow gutter. Surface only slightly irregular or smooth, not rugose, microreticulate, dull.

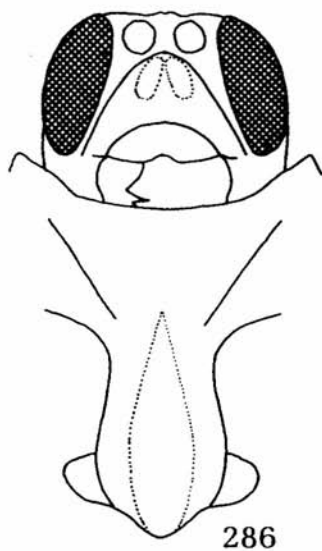
Scutellum triangular, usually flat, sometimes with a few transverse wrinkles or with median impression. Base of elytra slightly wider than pronotum, anterior margin strongly crenulate, forms a moderate angle, humeral angles moderately protruding anterad. Disc regularly convex with no postscutellar elevation (fig. 285). Punctuation very large, in sutural part and on sides tends to form regular rows, disordered or interrupted by elytral sculpture. Third and fifth intervals extremely elevated, sharp, distinct on whole length, almost straight. Between suture and third interval, and between third and fifth intervals transverse, strongly elevated folds, form a distinct reticulation, on sides of disc spaces between punctures irregularly elevated, partly forming a distinct reticulation. Surface microreticulate, dull. Marginal row distinct, interrupted by several transverse folds, subhumeral cavity shallow, sometimes indistinct. Explanate margin slightly narrower than 1/3 width of each disc of elytron, subhorizontal, with honeycomb structure, lateral margination very broad, double, strongly elevated. Surface strongly punctate and with transverse irregular folds, rugose. Apex of elytral epipleura bare.



284



285



286



288



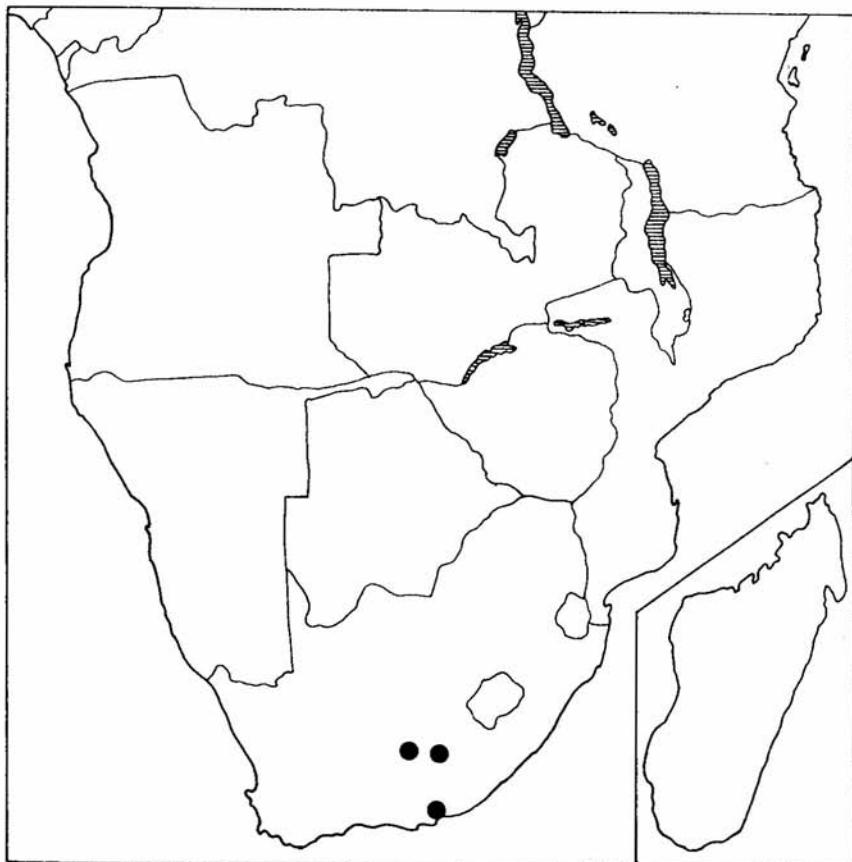
287

284-288. *Laccoptera (Orphonoda) intertexta*: 284 - body in dorsal view, 285 - body in lateral view, 286 - head and prosternum, 287 - antenna, 288 - tarsal claw

Clypeus about 2.2 times wider than long, subtriangular, strongly elevated, with deep median cordiform impression, divided in two parts by a narrow longitudinal carina (fig. 286). Margins only slightly elevated, obtuse, apex subangulate, usually strongly impressed or emarginate. Labrum very shallowly emarginate. Antennal cavities separated. Antennae long, in male extending to apex of metasternum, in female to the middle of metasternum. Length ratio of antennal segments (male): 100:37:114:91:68:68:68:65:71:77:128. Segment 3 about thrice longer than 2 (fig. 287). In male, inner margin of distal segments with long erected hair.

Prosternal collar large, with transverse sulci, sides form a soft angle. Prosternal process broad, strongly expanded apically, moderately to deeply canaliculate to $2/3$ length, apex and sides rugose (fig. 286). Legs moderately slim, tarsi broad, the last segment as long as the third. Inner margin of claw with short pecten, about as long as $1/3$ length of claw (fig. 288), outer margin micropectinate.

Host plant and bionomics unknown.



289. Distribution of *Laccoptera (Orphonoda) intertexta*

DISTRIBUTION

South Africa (fig. 289).

REMARKS

It differs from *L. cancellata* in distinctly shorter pecten of tarsal claws, stronger elytral sculpture and darker colouration. Its distribution is restricted to extreme south of South Africa (Cap, Natal), while *L. cancellata* is distributed more northwards (Transvaal).

MATERIAL EXAMINED

SOUTH AFRICA: Cape Prov., Middelburg, 21 IX 1988, 1, ex unbaited Pitfalls near *Pentzia* spp., M. DE JAGER (NIC); Cape Prov., Wellwood, Graff Reinet, 14 XII 1983, 10, LOUW and V. RENSBURG (Bloemfontein, 3 LB); Capland, Algoa Bay, 10 VII 1898, 1, BRAUNS (LB); Natal, 1, coll. DONCKIER (MM).

Subgenus: *Orphonodella* SPAETH, 1902

Small *Lacoptera*, body length always below 10.5 mm, usually below 10.0 mm. Body varying from parallelsided to subtriangular, regularly convex or with postscutellar gibbosity. Clypeus without deep impressions, or elevated margins. Antennal segment 3 usually less than 2.5 times longer than segment 2. Lateral margin of elytra usually simple marginate (only in two species double marginate).

Distribution: whole tropical Africa except Madagascar.

KEY TO THE SPECIES

1. Lateral margin of elytra broadly marginate (figs. 316, 389) 2.
- Lateral margin of elytra narrowly marginate (fig. 292) 3.
2. Whole pronotal disc with fine, regular longitudinal to oblique striation: *burorum*
- Only basal part of disc with regular longitudinal to oblique striation, sides of disc with irregular, broad folds and granules: *salebria*
3. Body elongate, almost parallelsided, or slightly rounded on sides, not or only slightly converging posterad (figs. 291, 309, 327, 345, 382, 392) 4.
- Body subtriangular to triangular, distinctly converging posterad (figs. 297, 303, 321, 333, 339, 350) 9.
4. Pronotum subtrapezial with maximum width distinctly behind the middle (fig. 291). Third antennal segment less than 2.5 times longer than segment 2 (fig. 294). Mostly Central and South African species 5.

- Pronotum elliptical, with broadly rounded sides (fig. 327). Third antennal segment more than 2.5 times longer than segment 2 (fig. 330). West African species, distributed from Senegal to Ghana, recorded also from Sudan:
..... *cicatricosa*
- 5. Smaller species, body length usually below 9.3 mm. Pronotum narrower, usually less than 1.8 times wider than long 6.
- Large species, body length always above 9.3 mm. Pronotum very broad, always more than 1.8 times wider than long:
..... *kapiriana*
- 6. Basal part of pronotal disc with irregular wrinkles, rugose, folds never form longitudinal striation 7.
- Basal part of pronotal disc strongly convex, with fine, longitudinal and oblique striation:
..... *ruginosa* (northern form)
- 7. Elytral sides slightly rounded, to almost half length slightly widened, then indistinctly converging posterad, or almost parallelsided, slightly emarginate behind humerus (figs. 291, 309) 8.
- Elytra with maximum width in posthumeral part, then slightly but distinctly converging posterad (fig. 392). N Zaire and S Republic of Central Africa:
..... *sassana*
- 8. Pronotum red, elytra deep black, or pronotum also mostly black, but without distinct transparent pale spots on anterior margin, usually whole margin paler, reddish. Elytra more rounded on sides:
..... *bicolor*
- Dorsal sides uniformly testaceous, brown, or black, but in black specimens anterior margin of pronotum always with pale transparent spots. Elytra less rounded on sides, almost parallelsided:
..... *abyssinica*
- 9. Elytra bicoloured, testaceous with black spots (figs. 303, 356) 10.
- Elytra unicoloured, testaceous, brown or black 11.
- 10. Anterior half of elytral disc, including postscutellar elevation, black (fig. 303):
..... *basalis*
- Only band from humerus to half length of elytra, and postscutellar elevation black, area between the elevation and humerus testaceous (fig. 356):
..... *nigricornis*
- 11. Pronotum red to brown, elytra deep black 12.
- Pronotum and elytra the same colour, or elytra only slightly darker than pronotum 14.
- 12. Body slimmer, length/width ratio 1.28-1.34, more triangular or less rounded on sides (figs. 350, 374) 13.
- Body very broad, length/width ratio 1.25, broadly rounded on sides (fig. 368):
..... *rubricollis*

13. Body more triangular, strongly converging posterad (fig. 350):
 *montivaga* (rare bicolour form)
- Body less triangular, moderately converging posterad (fig. 374):
 *rugicollis*
14. Pronotum and elytra testaceous to brown 15.
 - Pronotum and elytra deep black, only anterior margin of pronotum with two yellow spots:
 *atrata*
15. Only basal segments 1-2 partly testaceous to brown, remainder deep black, sometimes third segment on ventral side brown. Pecten of tarsal claws short, extending to 1/4 length of claw (figs. 366, 403) 16.
 - At least three antennal segments partly testaceous to brown. Pecten of tarsal claws long, extending at least to 1/3 length of claw (figs. 325, 337) 17.
16. Humeral angles strongly protruding anterad, less rounded to angulate. Sides of elytra almost straight, strongly converging posterad (figs. 398, 399):
 *triangula*
- Humeral angles moderately protruding anterad, more rounded. Sides of elytra slightly rounded, less converging posterad (fig. 362):
 *nunbergi*
17. Basal part of pronotal disc moderately convex, with irregular wrinkles, folds never form longitudinal striation 18.
 - Basal part of pronotal disc strongly convex, wrinkles form longitudinal striation:
 *ruginosa* (southern form)
18. Postscutellar elevation lower, body less angulate in profile (figs. 334, 340, 351). Body length usually above 7.3 mm, if less, then sides of elytral disc with strong reticulation. Widespread and common species from Central, West, and mountain regions of East Africa 19.
 - Postscutellar elevation higher, body strongly angulate in profile (fig. 322). Body length usually below 7.3 mm. Sides of elytra with indistinct reticulation. Rare species, restricted only to Republic of Congo:
 *caduca*
19. Base of elytra distinctly wider than pronotum (figs. 333, 350) 20.
 - Base of elytra indistinctly wider than pronotum (fig. 339):
 *deremensis*
20. Usually larger, less triangular and paler brown species. Sides of elytral disc with indistinct and lower reticulation. West and Central Africa:
 *corrugata*
- Usually smaller, more triangular, and darker brown coloured. Sides of elytral disc with distinct and higher reticulation. Central, and mountain regions of East Africa:
 *montivaga*

Lacoptera (Orphonodella) abyssinica (BOHEMAN, 1856)

(figs. 290-296)

- Cassida Abyssinica* BOHEMAN, 1856: 117 (type in NMHN); 1862: 285.
Lacoptera (Orphonodella) abyssinica: SPAETH, 1909: 285; 1914: 84; 1922: 1001; 1924: 307; 1932: 229; 1938: 61; SHAW, 1960: 370; TIBERGHIEN, 1976: 179.
Lacoptera abyssinica: SPAETH, 1912b: 508; BOROWIEC, 1985a: 239; 1985b: 445.
Lacoptera ruginosa BOHEMAN, 1855: 61 (part).
Lacoptera submetallica CHAPUIS, 1880: 31 (type in MZSNG); SPAETH, 1909: 286 (as syn. of *abyssinica*).
Lacoptera cicatricosa: CHAPUIS, 1880: 31 (misidentification).
Orphonoda submetallica: WEISE, 1899: 253.
Lacoptera ferruginea LINELL, 1896: 696 (USNM).
Lacoptera (Orphonodella) abyssinica ab. *ferruginea*: SPAETH, 1922: 1001.
Orphonoda ruginosa var. *usambarica* WEISE, 1899: 254 (lectotype and paralectotype in ZMHU).
Lacoptera (Orphonoda) usambarica: WEISE, 1904: 57.
Lacoptera usambarica: SPAETH, 1909: 285 (as syn. of *abyssinica*).
Lacoptera abyssinica ab. *usambarica*: SPAETH, 1912b: 508.
Lacoptera (Orphonodella) abyssinica ab. *Usambarica*: SHAW, 1972: 71.
Lacoptera ruginosa v. *usambarica*: BOROWIEC, 1987: 415.
Orphonoda ruginosa var. *atra* WEISE, 1899: 254 (syntypes in ZMHU).
Lacoptera usambarica var. *atra*: SPAETH, 1909: 285 (as syn. of *abyssinica*).
Lacoptera (Orphonodella) aethiopica SPAETH, 1938: 59 (holotype in Trieste); SHAW, 1972: 71, n. syn.
Lacoptera (Orphonodella) minima SPAETH, 1932: 230 (holotype in BMNH), n. syn.

DESCRIPTION

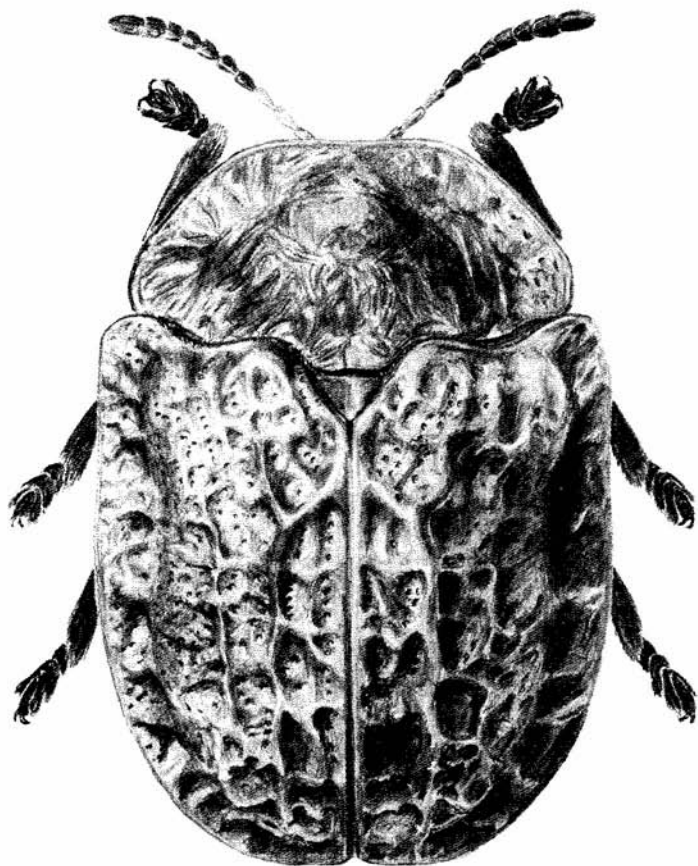
Length: 7.5-9.3 mm, width: 4.9-6.3 mm, pronotum length: 2.5-3.2 mm, pronotum width: 4.5-5.6 mm. Body elongate, almost parallelsided (fig. 290).

Pronotum and elytra varying from brown to black, sometimes elytra with paler transverse folds. In dark brown and black specimens anterior margin of pronotum with two yellow, transparent spots. Clypeus brown. Ventriles black, sides of abdomen sometimes with paler, testaceous to brown spots. Legs black. Basal three to four antennal segments testaceous, remainder black, segments 3 and/or 4 often infuscate.

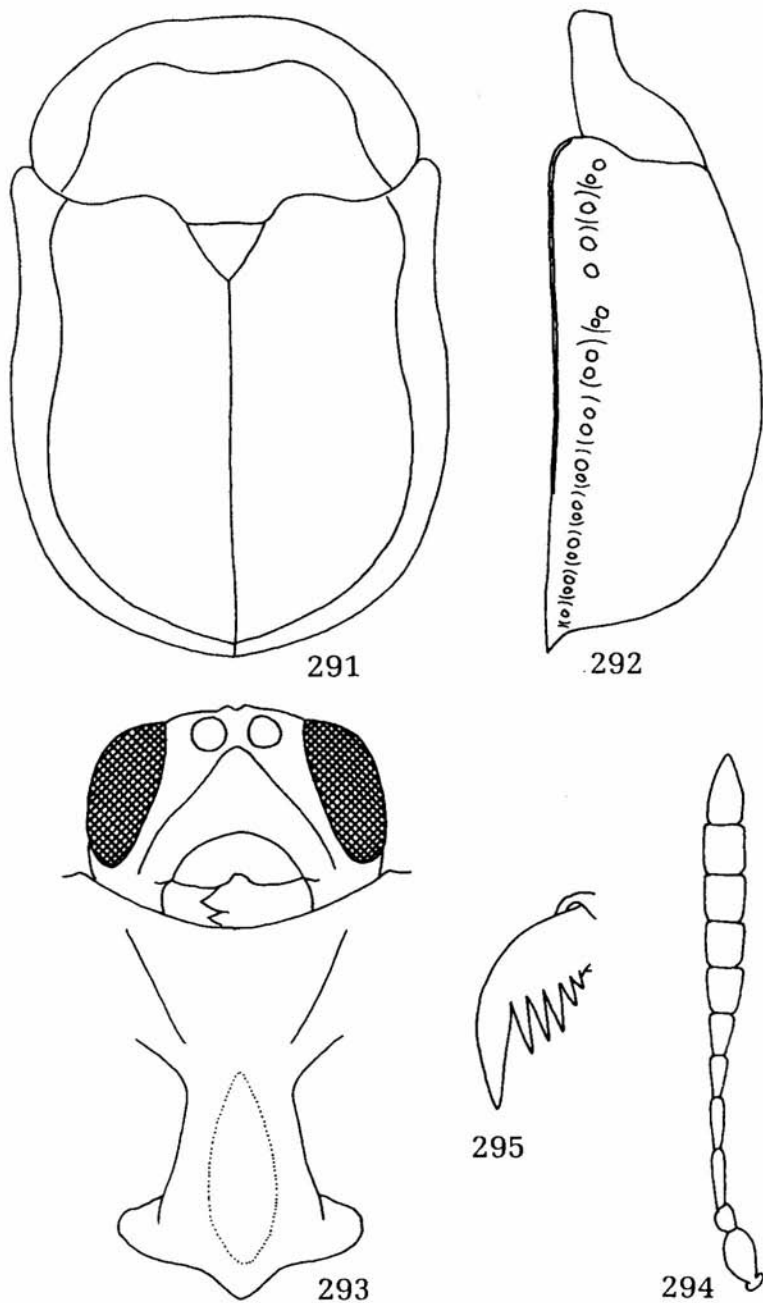
Pronotum almost semicircular, about 1.75 times wider than long, with maximum width in front of the base. Sides regularly rounded to slightly angulate, posterior corners angulate. Anterior margin often slightly impressed. Disc moderately convex, whole surface with irregular wrinkles, rugose. In some specimens in basal part of disc two more elevated, obtuse tubercles (= *minima*), not rugose at top. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in pale specimens. Surface microreticulate, slightly dull to glabrous.

Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles. Base of elytra more or less wider than pronotum, in specimens from

northern part of the distribution range usually elytra exceed pronotum in width more than in specimens from the south. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad; in specimens from north-eastern part of the distribution area, especially from Ethiopia, humeral angles are more protruding anterad than in specimens from its central and southern part. Sides of elytra, behind humeral angle, straight or more or less emarginate (fig. 291), especially specimens from Ethiopia have posthumeral part distinctly emarginate (= *aethiopica*). Maximum width of elytra in $1/3-2/5$ length, then elytra slightly converging posterad. Disc regularly convex, at top slightly depressed, with no postscutellar elevation (fig. 292). Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted,



290. *Laccoptera (Orphonodella) abyssinica*, dorsal view



211-215. *Laccoptera (Orphonodella) abyssinica*: 211 - body in dorsal view, 292 - body in lateral view, 293 - head and prosternum, 294 - antenna, 295 - tarsal claw

forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds; the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Puncturation of disc moderately large, mostly irregular, vanishes between elytral sculpture, only on sides of disc punctures tend to form regular rows, interrupted and disordered by elytral sculpture. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large punctures and numerous irregular wrinkles, rugose, honeycomb structure visible only in pale specimens. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, slightly dull to glabrous, in immature specimens surface of disc with extremely short, scarce erected setae, invisible in old, dried specimens. Apex of elytral epipleura bare.

Clypeus triangular (fig. 293), strongly elevated, about twice wider than long, surface flat or only shallowly impressed in the middle, usually with a few punctures. Labrum emarginate to 1/5-1/4 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:43:93:80:73:66:63:66:63:66:120. Segment 3 about 2.2 times longer than 2 (fig. 294). Distal segment in male, with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically, deeply canaliculate on almost whole length, apex with large, punctate impression (fig. 293). Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 295), outer margin micropectinate.

Host plant: *Convolvulaceae*: *Hewittia sublobata* (H. HERON letter inf.). Larvae are solitary, with cast exuviae and faeces fused into a solid shield-like mass in the supra-anal processes (HERON, 1992).

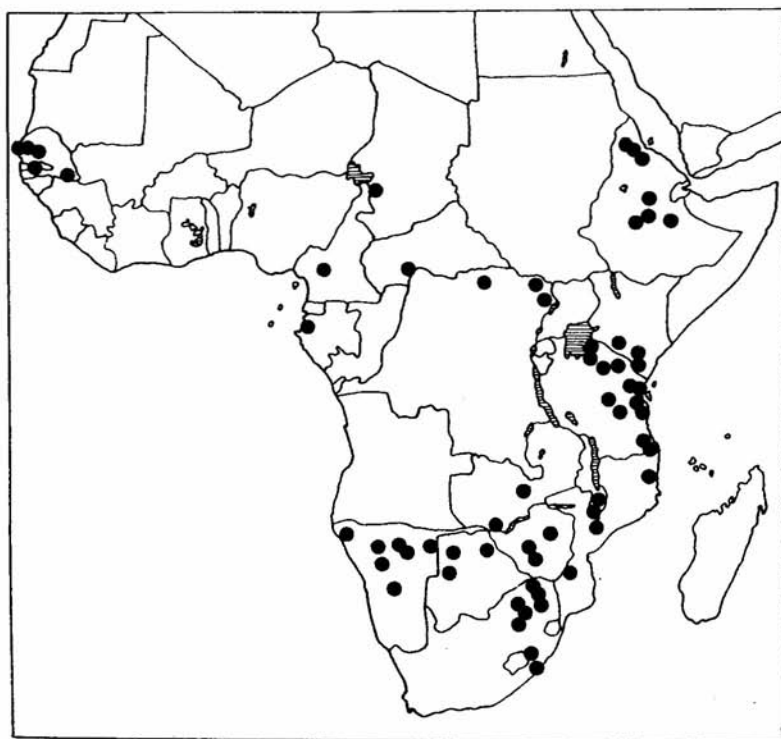
DISTRIBUTION

Africa south of Sahara, especially its eastern and southern part, except Madagascar (fig. 296).

REMARKS

It is the only species of *Laccoptera* distributed in the whole Afrotropical Region except Madagascar. It varies in body size, colouration, sculpture of pronotum and elytra. It belongs to the group of species with almost paralle-sided body and simple lateral margination of elytra. This group includes also *L. cicatricosa*, *L. bicolor*, *L. kapiiriana*, *L. sassana* and elongate forms of *L. ruginosa*. All are very similar and difficult to identify. *L. cicatricosa* is the most distinct, it differs in pronotum ellyptical

with broadly rounded sides (subtrapezial in other species), it is also the only species of *Orphonodella* with the third antennal segment more than 2.5 times longer than segment 2. *L. ruginosa* in which only northern forms have almost parallelsided body differs distinctly in sculpture of pronotum with basal part of disc covered with faint longitudinal and oblique striation (rather irregularly rugose in other species). *L. abyssinica*, *L. bicolor*, *L. kapingana* and *L. sassana* are extremely similar in body sculpture. *L. bicolor* differs in usually distinctly bicoloured body, with pronotum mostly red and elytra deep black. Only specimens with almost whole body black are similar to black form of *L. abyssinica*. *L. abyssinica* differs distinctly in anterior margin of pronotum with two pale, transparent spots, while in *L. bicolor* the whole margin of pronotum is reddish. *L. kapingana* differs in larger body, always above 9.3 mm (usually below 9.3 mm in *L. abyssinica*), and very broad pronotum, more than 1.8 times wider than long (always less than 1.8 times in *L. abyssinica*). *L. sassana* is the most similar species, and differs only in subtle characters of body shape, visible in comparison with series of properly identified specimens. The maximum width of elytra in *L. sassana* is in subhumeral part (in 1/4 length in *L. abyssinica*), then body



296. Distribution of *Laccoptera (Orphonodella) abyssinica*

slightly but distinctly converges posterad (slightly rounded in *L. abyssinica*). The postscutellar folds in *L. sassana* are slightly higher than in *L. abyssinica*, so the body profile is not as depressed as in *L. abyssinica*. The distribution range of *L. sassana* is restricted to N Zaire and S Republic of Central Africa.

MATERIAL EXAMINED

ANGOLA: Kuvangu, 1935, 1 (MM).

BOTSWANA: Eranchi, 5-10 I 1955, 2, A. L. CAPENER (MM); 70 mls NE Ghanzi, Kubi Pan, IX-XI 1961, 1, Marshall Exp. (TM); Okavango, 4 XII 1973, 1, PINKEY and FAL (NMM); Okavango, Crocodile camp, 17 II 1974, 1, P. E. REAVEL (TM); Okavango, Thamalakane riv., XII 1973, 1, P. REAVEL (TM); Pandamatinka [Panda ma Tenga], 1, HOLUB (MM); Tsumkwe, Kundveld, I 1958, 6, C. KOCH (TM).

CAMEROON: Bamum, VI 1912, 3, OLDENBURG (NMW).

ETHIOPIA: Arsi, Lole, 2500 m, 8 I 1989, under stones, 1, S. PERSSON (LU); Eritrea, 2 (ZMC), 1 (LU); Eritrea, Asmara, 10 (MM), 2 (HNHM), 3 (NMP); Eritrea, Keren, 1 (MM); Eritrea, Mareb, 1 (ITZ); Harar Prov., 400 km of Addis, 2550 m, 17 VIII 1971, 1, S. CLARKE (MRAC); Mega, 27 II 1971, 1, S. CLARKE (MRAC); Shoa Prov., 40 km of Addis-Abeba, 10 I 1973, 1, S. CLARKE (MRAC); Shoa Prov., Vall. of Chacha Riv., 14 VII 1973, 1, S. CLARKE (MRAC); Shoa Prov., Debbe-Bihan, 3 XII 1971, 1, G. DE ROUGE MONT (MRAC); Wollo Prov., Tiss Abba, Lima, 15-20 III 1974, 1, G. DE ROUGE MONT (MRAC).

GABON: Libreville, Grand Bassam, 1 (SD);

KENYA: Embakasi, 25 IV 1977, 1, H. GONGET (ZMC); Mtito Andei, XII 1950, 1, N. MITTON (TM); Nairobi, WAKikuyu et Masai, 2 IX 1903, 1, Ch. ALLUAUD (MM); Tsavo Nat. Park, 17-24 IV 1968, 1, U. FUNAIOLI and A. ARAGONE (MZUF).

MALAWI: SW Lake Chilwa, 9 I 1914, 1, S. A. NEAVE (BMNH); S Liwonda Nat. Park, 19 I 1985, 1, BELLAMY and SCHOLTZ (TM); Mlanje, 8 I 1913, 2, 24 I 1913, 1, S. A. NEAVE (BMNH).

MOZAMBIQUE: Massangena Distr., Save River, 10 XII 1972, 1, F. DE MOOR (NMM); Pemba, 1918, 1, CASSET (CTM); Port Amelia, IV 1960, 1, A. GOMES (TM).

NAMIBIA: W Caprivi, Kwando R., 13-16 XI 1979, 1, M.-L. PENRITH and C. G. COETZEE (WM); Damaraland, Abachaus, Otjivarongo Distr., I 1947, 1, III 1950, 3, XII 1951, 5, G. HOB OHM (TM); between Gautscha and Kubasche, Kundveld, I 1958, 6, C. KOCH (TM); Grootfontein, 19 I 1936, 1, 2 I 1948, 1, 17 I 1950, 1, F. GAERDES (2 FMNH, 1 WM); Kaoko Otavi, Kaokoveld, VII 1951, 1, C. KOCH (TM); Onguma Fin., 55 mls NW Tsumeb, 17-19 II 1972, 1, Southern Afr. Exp. (BMNH); Tsumeb, 3 I 1947, 1 (WM); Tsumeb, Onguma, 17-18 II 1972, 10 (WM, 2 LB); Windhoek, I 1978, 1, M. J. and M.-L. PENRITH (WM); Windhoek, Excelsior, 1-28 II 1978, 1, 1-31 I 1979, 3, 1-28 II 1979, 1, 1-31 III 1979, 1, S. LOUW and M.-L. PENRITH (WM); Windhoek, Richthofen, 7-31 I 1978, 1, 1-31 I 1979, 3, 1-28 II 1979, 2, 1-31 III 1979, 1, S. LOUW, M.-L. PENRITH (WM).

REPUBLIC OF CENTRAL AFRICA: Oubanghi-Chari, Bangi, 1, coll. LE MOULT (IRSN).

SENEGAL: Bandia, 7 X 1958, 1 (IFAN); M'Bambey, 25 III-9 IV 1940, 1, 9-15 IV 1940, 1, M. RISBE (MRAC), 1 X 1945, 2, A. VILLIERS (IFAN); M'Bas, XII 1945, 1, A. VILLIERS (IFAN); Dakar, 22 VIII 1981, 2, F.C. ROEST (NNML); Faun, X 1960, 1, R. ROY (IFAN); Okakanga, X 1949, 1, GRAFTO (IFAN); Senegal, 3 (MM); Thiès, Frere, 18 VIII 1961, 2, M. CLEMENT (IFAN).

SOUTH AFRICA: Natal, Dundee, 5 XII 1971, 1, C. H. DRAPER (TM); Natal, Port Natal [Durban], 1 (syntype of *Cassida ruginosa*, BMNH); Pienaars, 1898, 3, v. JUTRZENCKA (TM); Plat Riv., Waterberg Distr., 6-18 IV 1905, 2, G. SWIERSTRA (TM); Transvaal, Guersney Farm, 15 km E Klaserie, 28 XII 1985, 1, H. and A. HOWDEN (CMN); Transvaal, Johannesburg, II 1905, 1, G. KOBROW (TM); N Transvaal, Mmbabolela estate, 8 III 1973, 1, S. ENDRÖDY-YOUNGA (TM); Transvaal, Northrand, 1, W. G. KOBROW (TM); E Transvaal, Quernsey Farm, 15 km E Klaserie, 19-31 XII 1985, 1, M. SANBORNE (MCSNV); Transvaal, Waterberg, Lapalala Wilderness, under stones, 16 VIII 1975, 1, S. ENDRÖDY-YOUNGA (TM); Waterberg, 1898-99, 1, G. v. JUTRZENCKA (TM); Transvaal, Zoutpansberg, Entabeni Forest, 10-11 II 1965, 1, A. C. V. BRUGGEN (NNML).

TANZANIA: Bagamojo, 2 (MM); Dar-es-Salaam, 1 (ZMHU); Ikutha, 1 (ZMHU); Karan Bogos, 2, HEYNE (ZMHU); Korogwe, V 1893, 1, O. NEUMANN (ZMHU); Kwai, 1 (lectotype of *Orphonoda ruginosa* v. *usambarica*, ZMHU), Kwai, 1, Paul W. (paralectotype of *Orphonoda ruginosa usambarica*, ZMHU), Kwai, 3, PAUL (syntypes of *Orphonoda ruginosa* var. *atra*, ZMHU); Lindi, 1, III 1903, 2 (MM); Meru, V 1925, 1, VAN SOMEREN (holotype of *L. minima*, BMNH); Mikindani, 1 (MM); Ngorongoro, Rest Camp, 2400-2500 m, 6-19 VI 1957, 1 (MRAC); Nyembe-Mulungwa, 1914, 1, HAMMERSTEIN (IZPAS); Shirati, III 1909, 2, V 1909, 1, KATONA (HNHM); Tanga, 1 (MM); Ugogo, 1 (MM), 1, BERINGER (ZMHU); ; Usagara, 1, coll. ANCEY (MM); W Usambara, 1, ERTL (MM); Victoria-Nyansa, Mara, 2, KATONA (HNHM); Victoria Nyansa, desert Ruvana, 1, KATONA (HNHM).

ZAIRE: Garamba Nat. Park, Dedegwa, 21 V 1952, 1, H. DE SAEGER (MRAC); Haut-Congo, 1897, 1, Dr VÉDY (MRAC); Kibali-Ituri, Niarembe, 5 V 1935, 1, Ch. SCOPS (MRAC); Orientale Prov., Bas-Uele Distr., Beo, IV 1958, 1 (FMNH); Uele, Tukpwo, XII 1938, 1, J. VRYDAGH (MM).

ZAMBIA: Boroma, 1 (MM); Broken Hill, XI 1929, 1 (ex coll. SOLMAN, DZPAS); Chingombe, 1 (ex coll. SOLMAN, DZPAS).

ZIMBABWE: Balla Balla, 5 I 1974, 1, PINKEY and DE MOOR (NMM); NMM, 19 II 1923, 1, SWINBURNE and STEVENSON (TM); Chipese, Chikworakwora, 3 XII 1974, 1, F. DE MOOR (NMM); Salisbury, 2 (TM), 2, G. A. MARSHALL (BMNH), 30 I 1911, 1 (CTM), Salisbury, , 5050 ft., I 1900, 1, F.L. SNOW (SEMC), 9 VII 1917, 2 (NMM); Sawmills, 31 XII 1921, 1 (NMM), 10 II 1923, 1, SWINBURNE and STEVENSON (TM).

VARIA: Congo, Ludi, Lira, 1, A. REYNE (MM); Zambesi, Bradshaw, 1878, 5 (ITZ); Zanzibar, Muruo, 1872, 1 (MM).

Laccoptera (Orphonodella) atrata SPAETH, 1905 n. comb.

(figs. 297-302)

Laccoptera atrata SPAETH, 1905: 115 (type in NMW); 1916: 41; 1922: 1000; 1924: 304.*Laccoptera (Laccoptera) atrata*: SPAETH, 1914: 83; 1943: 56.*Laccoptera (Eulaccoptera) atrata*: SHAW, 1955: 236; 1972: 71.

DESCRIPTION

Length: 6.9-7.9 mm, width: 5.1-6.0 mm, pronotum length: 2.3-2.6 mm, pronotum width: 3.9-4.5 mm. Body subtriangular (fig. 297), males slightly stouter than females.

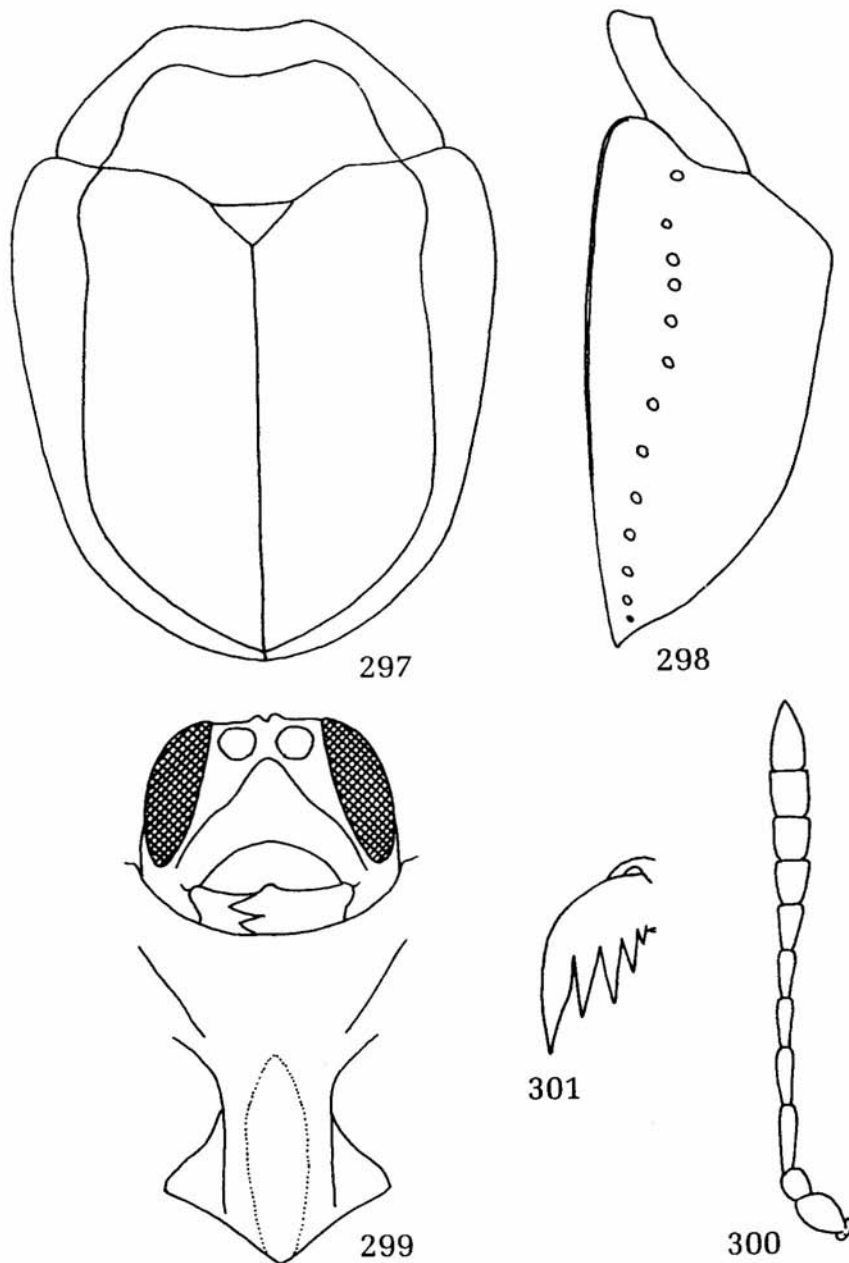
Pronotum and elytra deep black, only anterior margin of explanate margin of pronotum with two yellow spots. Clypeus yellow to brown. Ventrites and legs black. Two basal antennal segments testaceous, the third segment testaceous or in apical half infuscate, fourth segment dark brown, remainder black.

Pronotum trapezoidal, about 1.7 times wider than long, with maximum width at base, anterior margin shallowly emarginate, posterior corners obtuse. Disc moderately convex, with irregular wrinkles and folds, appears rugose, its surface microreticulate but glabrous. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular wrinkles, rugose, only pale spots on anterior margin with indistinct rugosities. Honeycomb structure visible only on pale spots of anterior margin.

Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex (fig. 298), with distinct postscutellar gibbosity. Postscutellar impressions deep, margined by distinct elevation. Whole surface of disc with large, elevated reticulation, the third interval forms irregular longitudinal costa. Puncturation of disc large, completely disordered by elytral sculpture, also on sides of disc. Marginal row distinct, with several transverse folds, posthumeral cavity moderately deep. Explanate margin moderately declivous, strongly, coarsely punctate, and with irregular wrinkles, appears rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, impressions dull. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 299), strongly elevated, its surface flat, with few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/5 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:80:73:60:60:56:53:53:60:106. Segment 3 about 1.6 times longer than 2 (fig. 300). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded



297-301. *Laccoptera (Orphonodella) atrata*: 297 - body in dorsal view, 298 - body in lateral view, 299 - head and prosternum, 300 - antenna, 301 - tarsal claw

apically, with deep sulcus on whole length (fig. 299). Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 301), outer margin micropectinate.

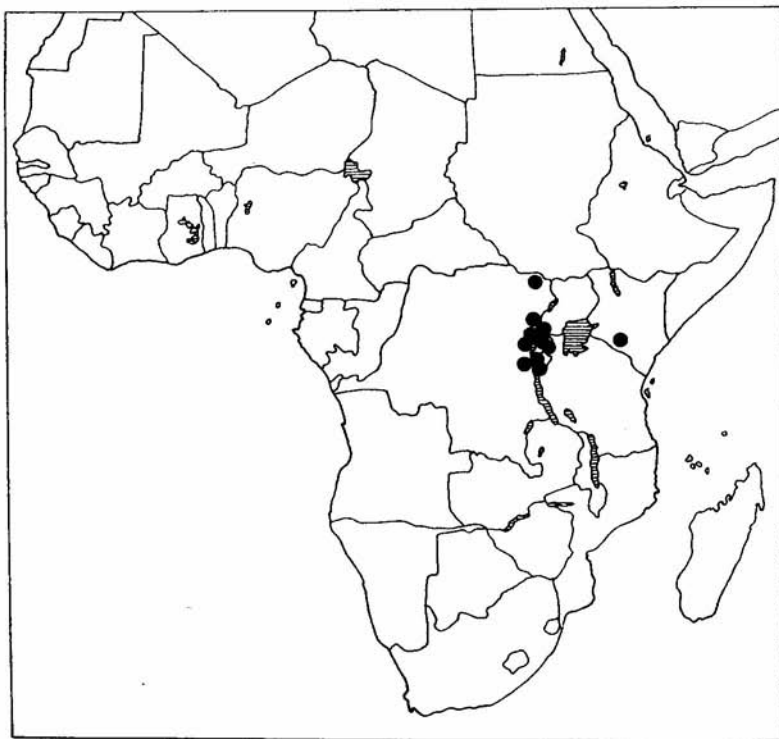
Host plant and bionomics unknown.

DISTRIBUTION

Mountain part of African rift from Uganda to Burundi (fig. 302). Specimen from Nairobi probably introduced.

REMARKS

It is the only subtriangular species with almost whole body deep black. Only dark specimens of *L. rugicollis* with dark brown pronotum are similar but differ in body only slightly converging posterad. Specimens of *L. montivaga* with deep black elytra



302. Distribution of *Laccoptera (Orphonodella) atrata*

are very similar but differ in pronotum never deep black, usually reddish to deep brown. *L. rubricollis* has also deep black elytra, but differs in red pronotum.

MATERIAL EXAMINED

BURUNDI: Bujumbura, V 1969, 1, GIRAUDIN (MRAC); Bururi, 1800-2000 m, 5-12 III 1953, 1, P. BASILEWSKY (MRAC).

KENYA: Nairobi, 1 (NMP).

RUANDA: Cyangugu Prov., Nyakabuye, 1-15 V 1983, 8, 10-25 IV 1984, 2, 17-19 III 1985, 1, H. MÜHLE (MD), 28 XI 1985, 1, H. MÜHLE (HK); Katumba, 1500-1800 m, VI 1951, 1, A.F. BERTRAND (MRAC); Ruhengeri, VIII 1984, 1, P. FINOTELLO and L. BARTOLOZZI (MZUF); Rwankuba, r. Kisenyi-Kibuye, 2200 m, 23 VIII 1953, 2, A.E. BERTRAND (MRAC).

UGANDA: Impenetrable, Kayonza Forest, 1300 m, III 1972, 2, F. CUYPERS (MRAC).

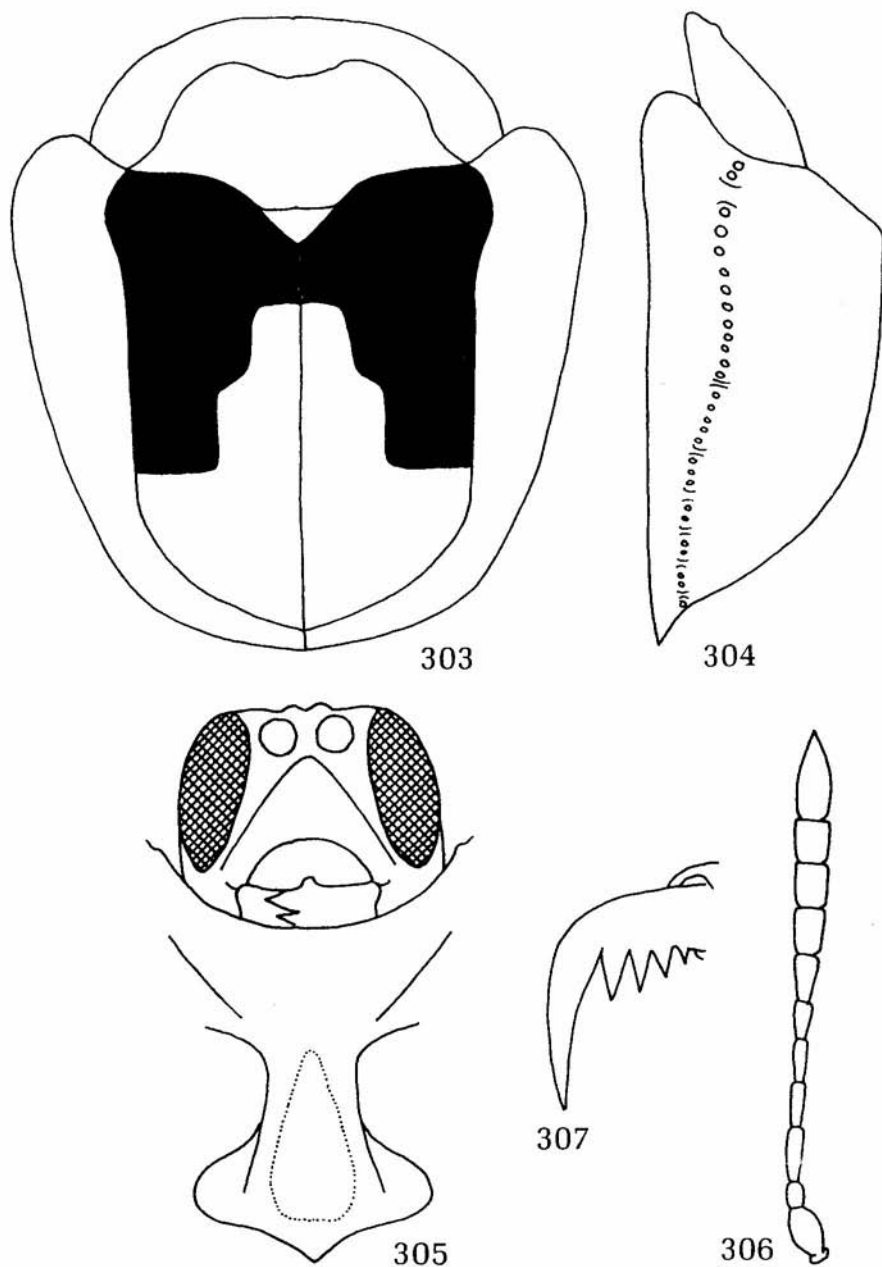
ZAIRE: Albert Nat. Park, Secteur Tshiaberimu, Buliwa-Susuwirwa, 2700 m, 20 IV 1955, 3, P. JOLIVET (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Hintumo, 2450 m, 24 III 1954, 2, P. VANSCHUYTBROECK and H. SYNAVE (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Kasisi, aff. Talia Nord, 2580 m, 20 IV 1955, 1, P. VANSCHUYTBROECK and R. FONTEYN (MRAC); Albert Nat. Park, Secteur Tshiaberimu, riv. Konjongungu, affl. Kavulinda, 2100 m, 25 IV 1955, 1, P. JOLIVET (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mbolu-Musavaki, 2150 m, 15 IV 1955, 2, P. JOLIVET (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mbulikerere, affl. Kalivina, 2720 m, 19 IV 1955, 3, P. JOLIVET (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mont Buliwa, 2450 m, 25 IV 1955, 1, P. VANSCHUYTBROECK and R. FONTEYN (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mont Musienene, près de Kirungu, 2680 m, 21 IV 1955, 1, P. VANSCHUYTBROECK and R. FONTEYN (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mont Musimba, 2450 m, 16 III 1954, 2, P. VANSCHUYTBROECK and H. SYNAVE (MRAC); Albert Nat. Park, Secteur Tshiaberimu, Mont Musimba, près riv. Musavaki, 2450 m, 18 IV 1955, 3, P. VANSCHUYTBROECK and R. FONTEYN (MRAC); Albert Nat. Park, Secteur Tshiaberimu, riv. Talia Nord, 2340 m, 28 III 1954, 2, P. VANSCHUYTBROECK and H. SYNAVE (MRAC); Albert Nat. Park, Secteur Tshiaberimu, riv. Talia Nord, affl. Semliki, 2340 m, 19 IV 1955, 1, P. VANSCHUYTBROECK and R. FONTEYN (MRAC); Kahuzi-Biega Park, VIII 1984, 1, P. FINOTELLO and L. BARTOLOZZI (MZUF); Kivu, Butembo, Vall. de la Musosa, V 1967, 1, LEJEUNE (MRAC); Kivu, contr. S. Kahuzi, 2300 m, 26-28 III 1953, 1, P. BASILEWSKY (MRAC); Kivu, Lwiro, 20 XII 1966, 1, Dr. JILLY (SMNS); Kivu, Masisi, 3 (SD), 2 (IRSN); N Lac Kivu, Bukima, IV 1948, 2000 m, 2, J. V. LEROY (MRAC).

Laccoptera (Orphonodella) basalis WEISE, 1899 n. comb.

(figs. 303-308)

Laccoptera basalis WEISE, 1899: 250 (type in ?).

Laccoptera (Laccoptera) basalis: SPAETH, 1914: 83.



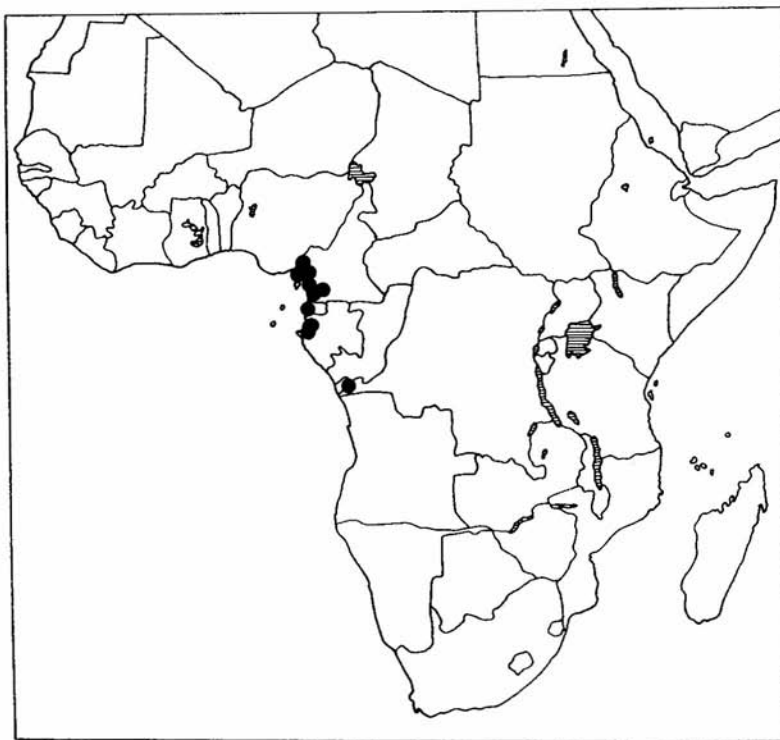
303-307. *Laccoptera (Orphonodella) basalis*: 303 - body in dorsal view, 304 - body in lateral view, 305 - head and prosternum, 306 - antenna, 307 - tarsal claw

DESCRIPTION

Length: 7.8-8.7 mm, width: 6.7-7.1 mm, pronotum length: 2.7-2.8 mm, pronotum width: 4.8-5.2 mm. Body subtriangular, strongly converging posterad (fig. 303).

Pronotum and elytra pale testaceous. Basal third to half of each elytron black, only suture behind the postscutellar gibbosity testaceous (fig. 303). Clypeus testaceous. Ventrites vary from mostly testaceous to mostly black, in pale specimens prosternum and metathorax testaceous with partly infusate to brown thoracic plates, but abdomen entirely testaceous, in dark specimens metasternum and abdomen black, but prosternum brown, occasionally ventrites wholly black except testaceous sides of abdomen. Legs black. Antennae black, or 1-2 basal segments partly testaceous to brown.

Pronotum subtrapezial, very broad, about 1.7-1.8 times wider than long, with maximum width at base, sides regularly rounded, anterior margin only slightly emarginate, posterior corners obtuse. Disc moderately convex, with fine regular wrinkles, appears longitudinally striate, its surface microreticulate but glabrous. Area



308. Distribution of *Laccoptera (Orphonodella) basalis*

above head without or with indistinct wrinkles. Explanate margin distinctly bordered from disc, subhorizontal, without rugosities or with only very low and broad transverse folds, but never appears rugose, at most slightly irregular. Honeycomb structure visible.

Scutellum triangular, with or without transverse sulcus. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a very soft angle, humeral angles moderately protruding anterad, subangulate to rounded. Disc strongly convex, with distinct but moderately high postscutellar gibbosity (fig. 304). Postscutellar impressions deep, margined by distinct elevation. Third interval forms regular longitudinal costa, often fifth interval tends to form a costa. Between suture and fifth interval behind postscutellar gibbosity only few transverse folds. Sides of disc without distinct sculpture. Punctuation of disc large, partly disordered by elytral sculpture, but in sutural part punctures tend to form regular rows which occupy more than 1/3 length of disc. On sides of disc punctures partly regular, especially rows 5-7 tend to be regular. Marginal row distinct, with several transverse folds, posthumeral cavity shallow. Explanate margin moderately declivous, strongly, coarsely punctate, space between punctures convex, and surface appears slightly rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 305), strongly elevated, its surface flat or impressed in the middle, with a few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/6 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:83:66:73:66:66:66:80:83:143. Segment 3 about 1.7 times longer than 2 (fig. 306). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically, with shallow sulcus on whole length (fig. 305). Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to 1/3 length of claw (fig. 307), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Cameroon. Equatorial Guinea, Gabon and Zaire (fig. 308).

REMARKS

With *L. nigricornis* it forms a group of subtriangular species with bicoloured elytra. *L. nigricornis* differs distinctly in markedly larger body, black pattern of elytral

disc limited to humeral part and postscutellar gibbosity, and median part of basal half of elytra testaceous (black in *L. basalis*). *L. triangula* and *L. nunbergi* are also similar to *L. basalis* but differ in elytra unicoloured, testaceous to pale brown.

MATERIAL EXAMINED

CAMEROON: Barombi, 1, CONRADT (LB); Batanga, VI 1911, 1, A.I. GOOD (CMNH), IV 1914, 1, F.H. HOPE (CMNH); Bibundi, 1-15 XI 1904, 3, G. TEßMANN (ZMHU); Bipindi, IV 1897, 1, XI 1898, 1, ZENKER (ZMHU); Cameroon, 1 (MM); Duala, 1 (ZMHU), X 1911, 1, v. ROTHKIRCH (LB); Efulen, 22 XI 1920, 2, VI 1922, 1, H.L. WEBER (CMNH); Eseka, III 1952, 1 (LB); Lolodorf, 19 II-7 VI 1895, 1, L. CONRADT (ZMHU), XI 1913, 1, A.I. GOOD (CMNH), 15 III 1919, 1, J.A. REIS (CMNH); Longji, 1, H. PASCHEN (ZMHU).

EQUATORIAL GUINEA: Benito, 5 (MM).

GABON: Kangvé, Ogové R., 3, A.C. GOOD (CMNH); Lambarene, V 1922, 1, A.C. GOOD (CMNH); Ogové R., 6, A.C. GOOD (CMNH).

ZAIRE: Mayumba, 1 (NMP).

Laccoptera (Orphonodella) bicolor SPAETH, 1937

(figs. 309-314)

Laccoptera (Orphonodella) bicolor SPAETH, 1937: 267 (syntypes in MM, MRAC); SHAW, 1972: 71.

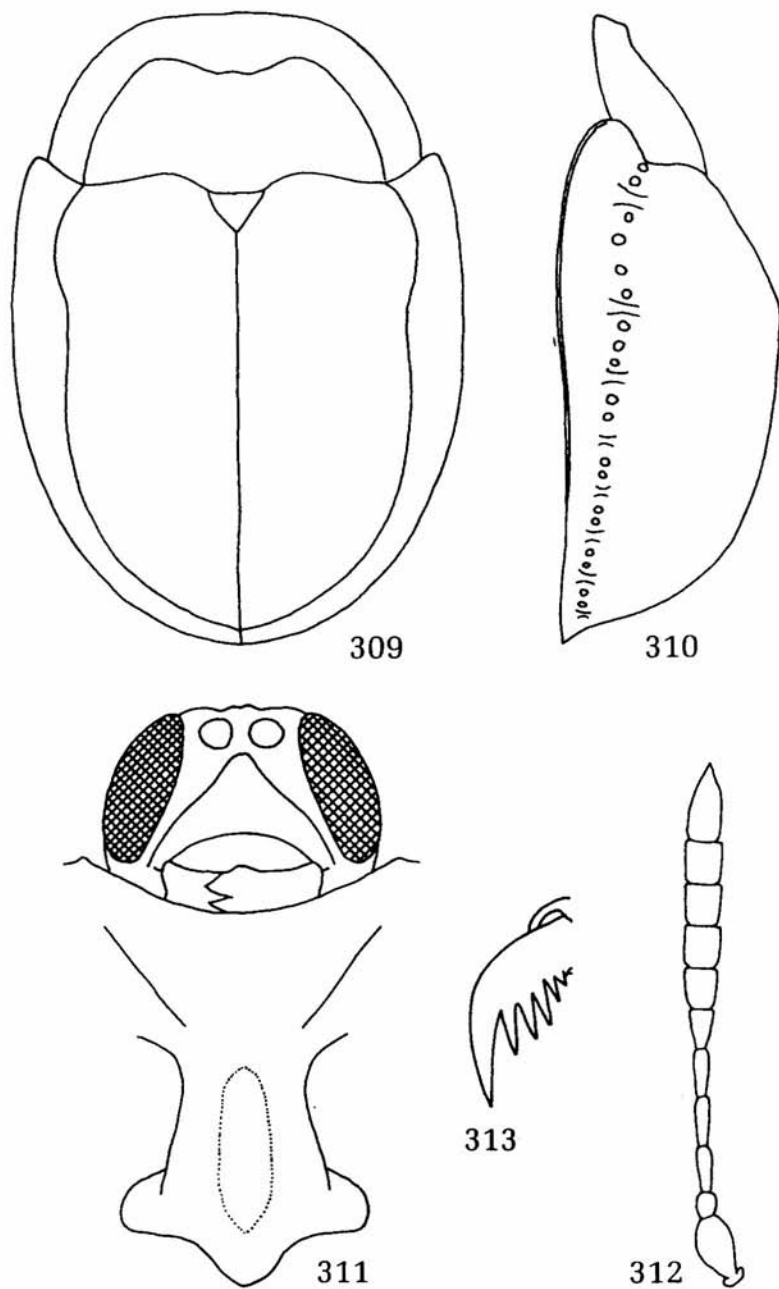
DESCRIPTION

Length: 8.2 mm, width: 6.0 mm, pronotum length: 2.9 mm, pronotum width: 4.9 mm. Body in basal third almost parallelsided, then moderately converging posterad (fig. 309).

Pronotum red. In some specimens pronotum is mostly infusate, but explanate margin always paler, reddish, without pale spots in front of head. Elytra deep black. Clypeus reddish-brown. Ventrites black, sides of abdomen sometimes with small, paler, reddish to brown spots. Legs black. Basal three to four antennal segments testaceous, remainder black, segments 3 and/or 4 often infusate.

Pronotum almost semicircular, about 1.7 times wider than long, with maximum width in front of the base. Sides regularly rounded, posterior corners subangulate. Anterior margin slightly impressed. Disc moderately convex, whole surface with irregular wrinkles, rugose. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in specimens with pale red explanate margin. Surface indistinctly microreticulate, glabrous.

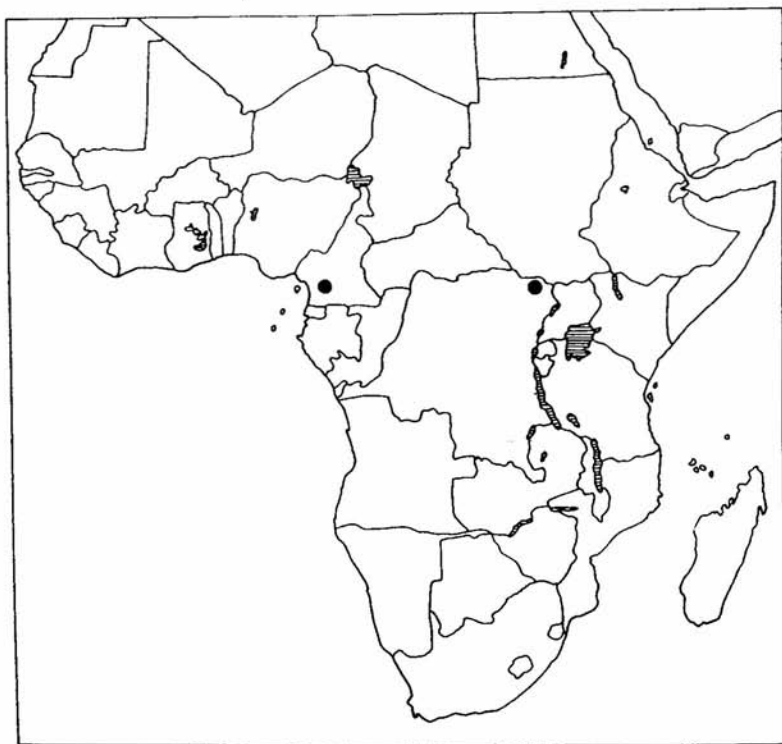
Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight, not emarginate. Maximum width of elytra in front of the middle, then elytra slightly converging posterad, so sides appear slightly



309-313. *Laccoptera (Orphonodella) bicolor*: 309 - body in dorsal view, 310 - body in lateral view, 311 - head and prosternum, 312 - antenna, 313 - tarsal claw

rounded. Disc regularly convex, with no postscutellar elevation (fig. 310), but with strong postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Puncturation of disc moderately large, mostly irregular, vanishes between elytral sculpture, never arranged in interrupted rows. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as $1/4$ width of disc of each elytron, moderately declivous, with large punctures, numerous irregular wrinkles, and transverse folds, rugose; honeycomb structure invisible. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, strongly glabrous. Apex of elytral epipleura bare.

Clypeus triangular (fig. 311), strongly elevated, about twice wider than long, surface flat or only shallowly impressed in the middle, with several punctures. Labrum



314. Distribution of *Laccoptera (Orphonodella) bicolor*

very shallowly emarginate to 1/6 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:42:69:69:66:60:63:63:63:75:115. Segment 3 about 1.6 times longer than 2 (fig. 312). Distal segment in male with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically, deeply canaliculate on almost whole length, apex with large, punctate impression (fig. 311). Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 313), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Cameroon and Zaire (fig. 314).

REMARKS

It belongs to the species group with almost parallelsided body. It differs distinctly in bicoloured body, with red pronotum and deep black elytra. In some specimens also pronotum is mostly blackish and they are similar to black forms of *L. abyssinica* and *L. sassana*, but in *L. bicolor* in the darkest form almost whole explanate margin of pronotum is reddish, while in *L. sassana* and *L. abyssinica* only two small spots on anterior margin of explanate margin of pronotum are pale. Sides of elytra in *L. bicolor* are slightly more rounded than in other species of the group.

MATERIAL EXAMINED

CAMEROON: Jaunde, 3 (syntypes, MRAC, MM).

ZAIRE: Garamba Nat. Park, 1 V 1950, 1, G. DEMOULIN (MRAC); Haut Congo, 1897, 1 (LB).

Laccoptera (Orphonodella) burorum (SPAETH, 1902)

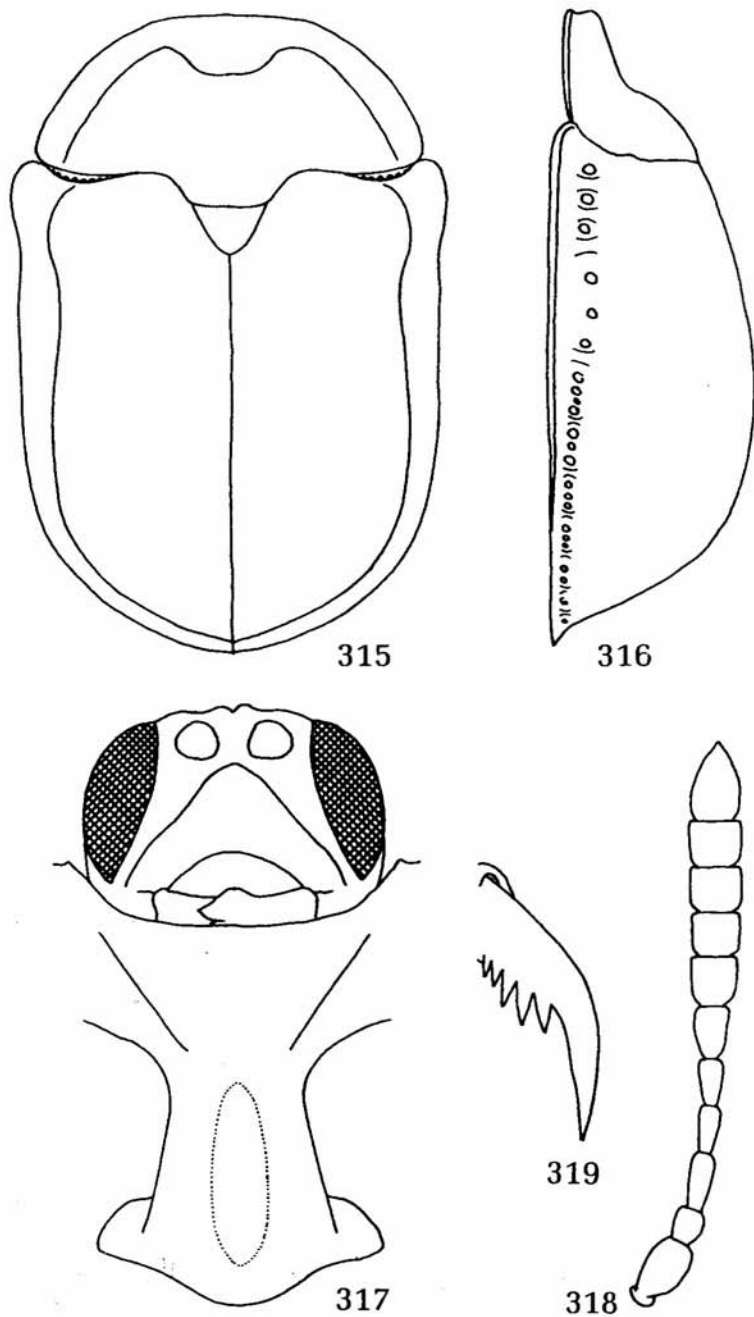
(figs. 315-320)

Orphonodella burorum SPAETH, 1902b: 24 (syntypes in MM).

Laccoptera (Orphonodella) burorum: SPAETH, 1914: 85; 1932: 229.

DESCRIPTION

Length: 8.2-9.1 mm, width: 5.6-6.1 mm, pronotum length: 2.6-3.1 mm, pronotum width: 4.9-5.4 mm. Body elongate, almost parallelsided (fig. 315).

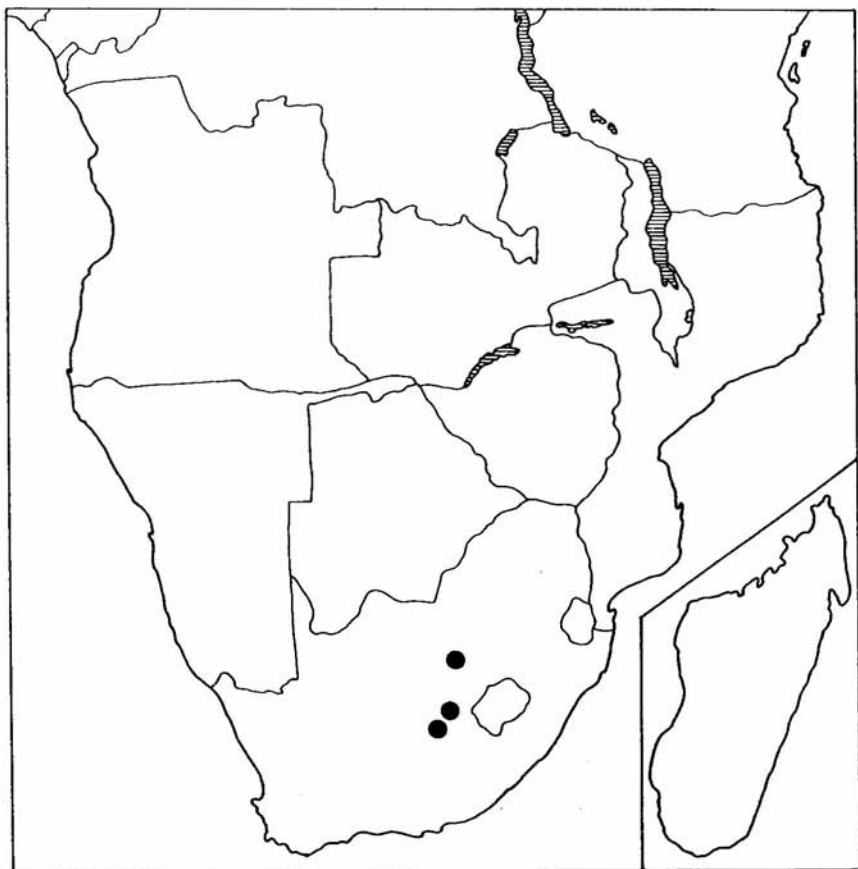


315-319. *Laccoptera (Orphonodella) burorum*: 315 - body in dorsal view, 316 - body in lateral view, 317 - head and prosternum, 318 - antenna, 319 - tarsal claw

Pronotum black, with two testaceous spots in front of head, or external half of explanate margin reddish-brown. Scutellum black, or in specimens with pale explanate margin reddish-brown. Elytra uniformly black, or explanate margin reddish-brown. Clypeus brown. Ventrites black, only sides of abdomen with small testaceous spots. Legs black. Two basal antennal segments testaceous, remainder black, in some specimens also segments 3-4 on ventral side testaceous, on dorsal side black.

Pronotum semicircular, 1.7-1.8 times wider than long, with maximum width at base, posterior corners subangulate. Disc moderately convex, with fine wrinkles forming regular, longitudinal and oblique striation. Surface microreticulate, glabrous. Basal part of disc without median sulcus. Explanate margin indistinctly bordered from disc, very narrow, with broad margination, on both sides of head distinctly impressed, surface irregular. Honeycomb structure invisible.

Scutellum triangular, flat, or with transverse wrinkles. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral



320. Distribution of *Laccoptera (Orphonodella) burorum*

angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight, or only slightly emarginate. Maximum width of elytra in the middle, then elytra broadly rounded posterad. Disc regularly convex (fig. 316), at top slightly depressed, with no postscutellar elevation, but with postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa, also seventh interval forms an irregular costa. Between suture and third interval, and between third and fifth, and fifth and seventh intervals several transverse and oblique folds. Sides of disc with numerous transverse folds and irregular wrinkles. Punctuation of disc moderately large, mostly irregular, vanishes between elytral sculpture, only penultimate row mostly regular. Marginal row distinct, interrupted by several transverse folds, no distinct postscutellar cavity. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, subhorizontal, with transverse folds, rugose, honeycomb structure invisible. Lateral margination broad, appears double. Surface of disc and explanate margin microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus triangular (fig. 317), strongly elevated, about twice wider than long, surface flat or only shallowly impressed in the middle, with several punctures. Labrum very shallowly emarginate to 1/6 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:46:83:66:60:50:56:56:60:106. Segment 3 about 1.8 times longer than 2 (fig. 318).

Prosternal collar large, with transverse sulci, sides form a very soft angle. Prosternal process very broad, strongly expanded apically, deeply canaliculate in anterior third (fig. 317), apex with deep pit, sides punctate. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with short pecten, extending to 1/4 length of claw (fig. 319), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

South Africa (fig. 320).

REMARKS

It belongs to the species group with almost paralleled body. It differs distinctly in broad lateral margination of elytra. Only *L. salebra* has similar margination but differs in brown body colour and less regular pronotal sculpture, with longitudinal striation only in basal part of disc. *L. ruginosa* has also similarly sculptured pronotum but differs in body more converging posterad, in southern population almost subtriangular, body colour brown, pronotal disc regularly striate only in basal part,

with striate area more convex than sides of disc and bordered from sides by distinct sulcus.

MATERIAL EXAMINED

SOUTH AFRICA: De Kalk, Jacobsdal, 1, LOUW, GAAJE and MOSALA (BM); Oranje, Bothaville, II 1951, 2, Dr. BRAUNS (TM, 1 LB); Oranje, Kaipfontein, VIII 1884, 1, HOLUB (paralectotype, MM); Oranje, Reddersburg, II 1951, 5, Dr. BRAUNS (TM, 1 LB); Süd-Africa, 1, LASKE (lectotype, present designation, MM); Trompsburg, X 1948, 1, C. KOCH (LB).

Laccoptera (Orphonodella) caduca n. sp.

(figs. 321-326)

ETYMOLOGY

Latin "*caducus*" means declivous. Named after strongly declivous elytra.

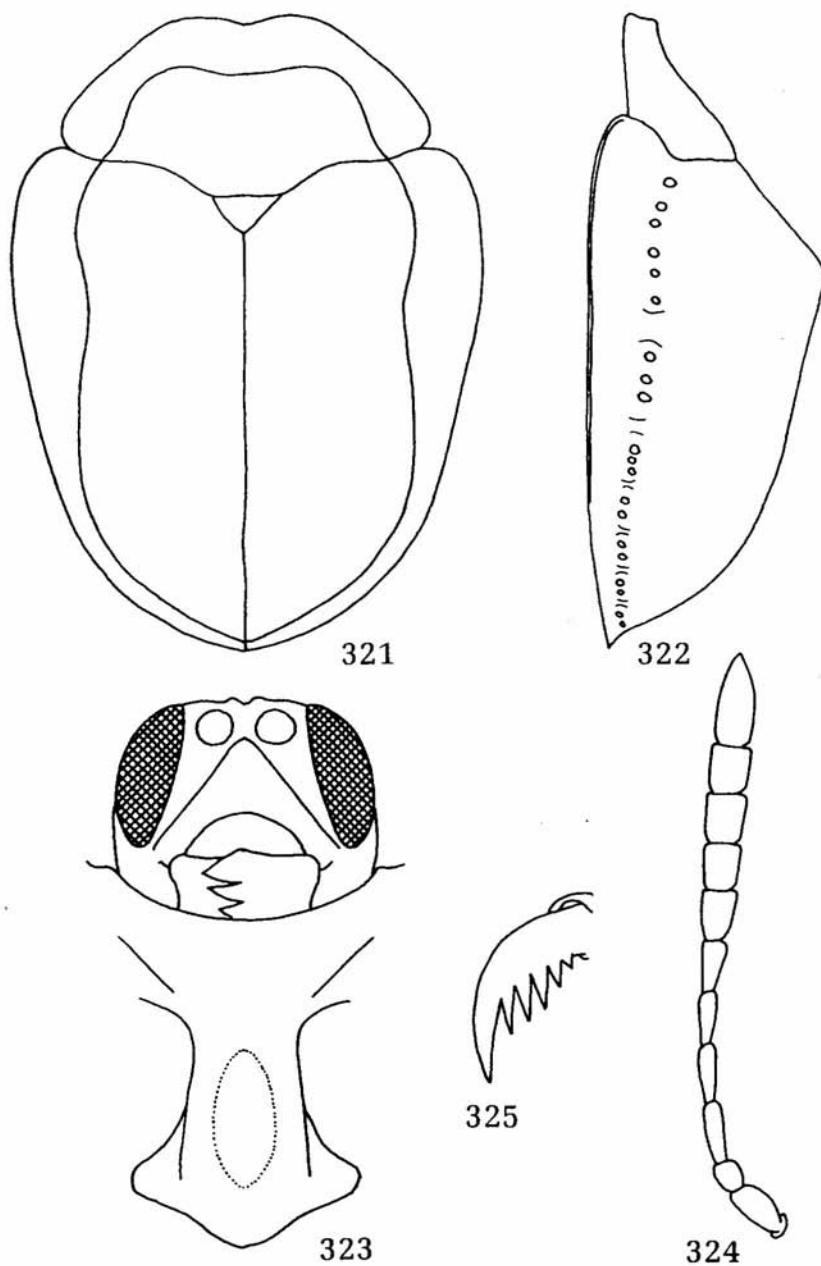
DESCRIPTION

Length: 7.0-7.6 mm, width: 5.4-5.7 mm, pronotum length: 2.4-2.6 mm, pronotum width: 4.0-4.4 mm. Body stout, subtriangular (fig. 321).

Pronotum and elytra testaceous to brown. Clypeus testaceous. Ventrites mostly brown, metathorax and central part of abdomen often black, sides of abdomen testaceous to partly infusate, also pro- and mesothorax partly testaceous to infusate. Legs black. Four basal antennal segments testaceous, third and fourth in apical half infusate, fourth segment sometimes dark brown, remainder black.

Pronotum trapezial, about 1.6-1.7 times wider than long, with maximum width at base, anterior margin shallowly emarginate, posterior corners obtuse. Disc moderately convex, with irregular wrinkles and folds, appears rugose, its surface microreticulate but glabrous. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular wrinkles, rugose. Part above head usually without rugosities, punctate. Honeycomb structure visible.

Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra distinctly wider than base of pronotum, sides moderately rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with high postscutellar gibbosity (fig. 322). Postscutellar impressions deep, margined by distinct elevation. Whole surface of disc with large, elevated reticulation, third interval forms irregular longitudinal costa. Puncturation of disc large, completely disordered by elytral sculpture, also on sides of disc. Marginal row distinct, with several transverse folds, posthumeral cavity moderately deep. Explanate margin strongly declivous, strongly, coarsely punctate, and with irregular wrinkles, appears rugose. Lateral margination



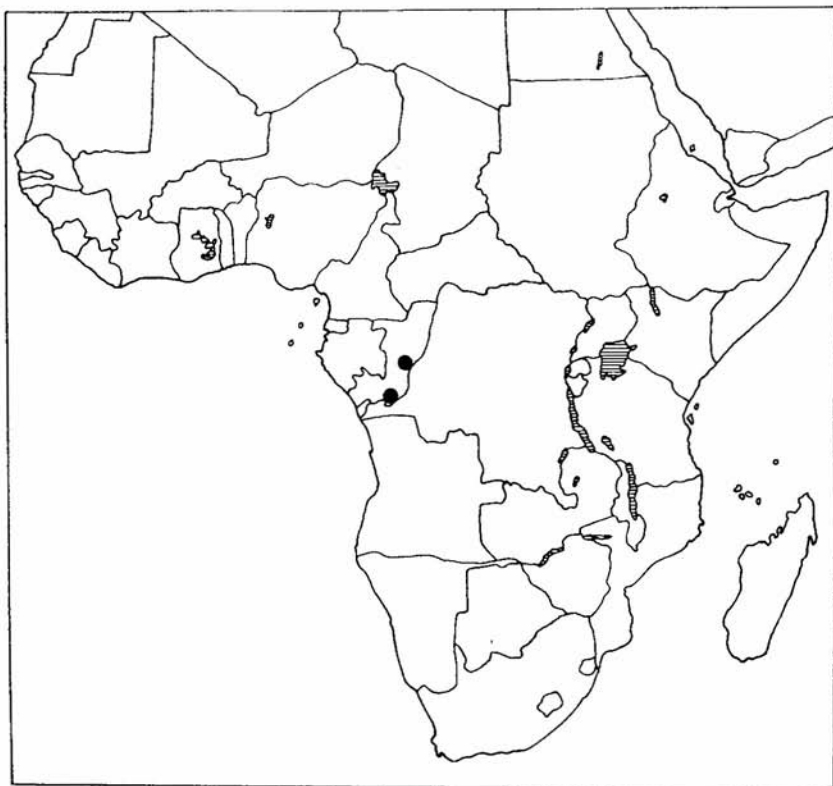
321-325. *Laccoptera (Orphonodella) caduca*: 321 - body in dorsal view, 322 - body in lateral view, 323 - head and prosternum, 324 - antenna, 325 - tarsal claw

simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, impressions dull. Honeycomb structure visible. Apex of elytral epipleura bare.

Clypeus about 2.2 times wider than long, triangular (fig. 323), strongly elevated, its surface flat, with few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/5 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:48:104:100:92:84:76:76:72:80:152. Segment 3 about 2.2 times longer than 2 (fig. 324). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically, with shallow sulcus on whole length (fig. 323). Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 325), outer margin micropectinate.

Host plant and bionomics unknown.



326. Distribution of *Laccoptera (Orphonodella) caduca*

DISTRIBUTION

Republic of Congo (fig. 326).

REMARKS

It belongs to the group of species with subtriangular body and elytra uniformly testaceous to brown. The group includes also *L. corrugata*, *L. nunbergi*, *L. triangula*, and *L. montivaga*. The first three species differ in generally larger body, sides of elytral disc without distinct rugosities, and lower postscutellar gibbosity. *L. montivaga*, especially pale, small specimens are very similar to *L. caduca*, but differ in lower postscutellar gibbosity, ventral part of body darker, mostly or completely black, and sides of elytra less rounded. I have not examined specimens of *L. montivaga* from Republic of Congo, but populations from the neighbouring Republic of Central Africa differ distinctly from *L. caduca* in generally longer body, very low postscutellar gibbosity, darker brown colouration and mostly black ventrites. *L. caduca* is more similar to the mountain populations of *L. montivaga* than to the lowland populations from areas adjacent to the distribution area of *L. caduca*.

MATERIAL EXAMINED

REPUBLIC OF CONGO: holotype, "Congo F.", "Brazzaville", "*caduca* m. cotyp [SPAETH's handwriting]", red label "cotypus", blue label "Syntype"; 6 paratypes, the same data; 1 paratype, "Congo F.", "Brazzaville BOUTAREL" (holotype and 4 paratypes in MM, 1 paratype in LB); paratypes, Mossaka, V 1980, 23, ONORE (coll. Carlo BRIVIO, 14 OSU, 4 PMNH, 5 LB), XI 1980, 1 (OSU).

***Laccoptera (Orphonodella) cicatricosa* BOHEMAN, 1855**

(figs. 327-332)

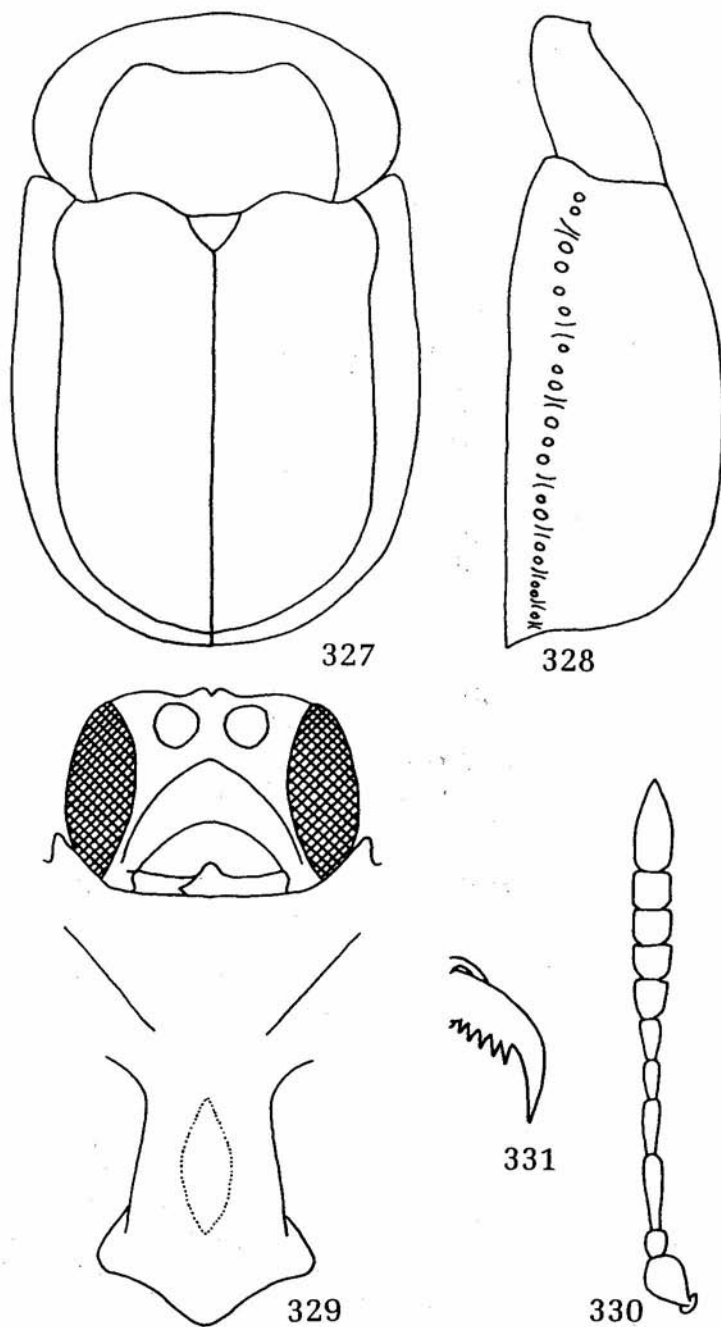
Laccoptera cicatricosa BOHEMAN, 1855: 62 (type in NRS); 1856: 154; 1862: 383; BOROWIEC, 1986: 803.

Laccoptera (Orphonodella) cicatricosa: SPAETH, 1914: 85; 1932: 229.

DESCRIPTION

Length: 8.1-8.7 mm, width: 5.3-5.9 mm, pronotum length: 2.8-3.0 mm, pronotum width: 4.8-5.2 mm. Body elongate, almost parallelsided (fig. 327).

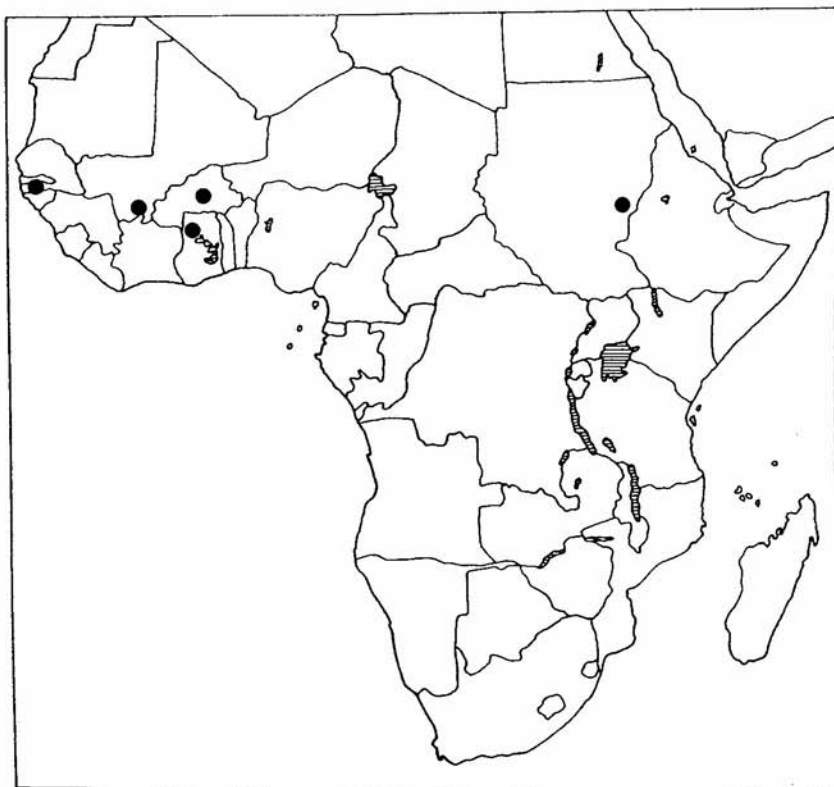
Pronotum and elytra varying from brown to black. In dark brown and black specimens anterior margin of pronotum with two paler spots. Transverse folds of elytral disc often paler, reddish brown, transverse folds of explanate margin of elytra usually darker than other parts. Clypeus brown. Ventrites brown to black, sides of abdomen usually paler brown. Legs brown to dark brown. Basal three to five antennal segments testaceous, remainder black, segments 4-5 often infuscate.



327-331. *Laccoptera (Orphonodella) cicatricosa*: 327 - body in dorsal view, 328 - body in lateral view, 329 - head and prosternum, 330 - antenna, 331 - tarsal claw

Pronotum elliptical, about 1.7 times wider than long, with maximum width in the middle. Sides regularly rounded, posterior corners obtuse. Anterior margin often slightly impressed. Disc moderately to strongly convex, whole surface with irregular wrinkles, rugose. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in pale specimens. Surface microreticulate, glabrous.

Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight. Maximum width of elytra in 1/2 length, then elytra regularly rounded posterad. Disc regularly convex, at top slightly depressed (fig. 328), with no postscutellar elevation, but with postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the



332. Distribution of *Laccoptera (Orphonodella) cicatricosa*

largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Punctuation of disc moderately large, irregular, vanishes between elytral sculpture, with no tendency to form regular rows. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large transverse folds and numerous irregular wrinkles, rugose, honeycomb structure visible only in pale specimens. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus triangular, strongly elevated, about twice wider than long (fig. 329), surface flat or only shallowly impressed in the middle, usually with a few punctures. Labrum emarginate to 1/3 length. Antennal cavities narrowly separated. Antennae short, extending to the apex of mesosternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:48:128:88:76:64:60:60:60:62:120. Segment 3 about 2.6 times longer than 2 (fig. 330). Distal segment in male, with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form almost right angle. Prosternal process very broad, strongly expanded apically, without longitudinal channel, apex with shallow, strongly punctate impression (fig. 329). Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with short pecten, extending to 1/3 length of claw (fig. 331), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

West Africa from Senegal to Ghana, recorded also from Sudan (fig. 332).

REMARKS

It belongs to the species group with almost parallelsided body. It is a very distinct species within the group. It differs in elliptical pronotum with maximum width in the middle (in front of the base in other species), antennal segment 3 more than 2.5 times longer than segment 2 (always less than 2.5 times in other species), sides of prosternal collar forming almost right angle (soft angle in other species). Pecten of tarsal claws in *L. cicatricosa* is distinctly shorter than in other elongate species. Records of *L. cicatricosa* outside West Africa and subsaharian region are doubtful and concern probably *L. abyssinica*.

MATERIAL EXAMINED

BURKHINA FASO: Ouagadougou, X 1970, 1, P.C. FERNANDEZ (LB).

GHANA: Northern R., Nyankpala, 15 V 1970, 1, S. ENDRÖDY-YOUNGA (HNHM).

MALI: Dogo, IX 1950, 1, on *Echinochloa pyramidalis*, G. REMAUDIÈRE (IFAN).
 SENEGAL: Casamance, Sedhiou, 2 (SD); IFAN, 1 (NMP); Senegal, 2, coll.
 BALY, 1 (MM), 1, DEYROLLE (coll. WAGENER, MM), 1, coll. ANCEY (MM), 1 (LB);
 M'Bambey, 22-27 I 1940, 1, 9-15 IV 1940, 1, M. RISBEC (MRAC).

***Laccoptera (Orphonodella) corrugata* (SAHLBERG, 1823) n. comb.**

(figs. 333-338)

Cassida corrugata SAHLBERG, 1823: 60 (type in ?).

Laccoptera corrugata: WEISE, 1899: 249; SPAETH, 1916: 41; 1929: 160; JOLIVET, 1957: 51; BOROWIEC, 1985a: 238; 1986: 803.

Laccoptera (Laccoptera) corrugata: SPAETH, 1914: 83.

Laccoptera (Eulaccoptera) corrugata: SHAW, 1956a: 595; 1963: 460; 1968a: 371; 1968b: 782.

Cassida intricata KLUG, 1835: 47 (type in ZMHU).

Laccoptera intricata: WAGENER, 1880: 161; KARSCH, 1882: 401; KOLBE, 1898: 344; WEISE, 1899: 249; SPAETH, 1902a: 455 (as syn. of *corrugata*); 1903b: 178.

Laccoptera morosa WEISE, 1899: 250 (lectotype and 2 paralectotypes in ZMHU); BOROWIEC, 1987: 415, n. syn.

Laccoptera (Laccoptera) morosa: SPAETH, 1914: 84.

Laccoptera modesta SPAETH, 1902a: 454 (lectotype and paralectotype in MM), n. syn.

Laccoptera (Laccoptera) modesta: SPAETH, 1914: 84.

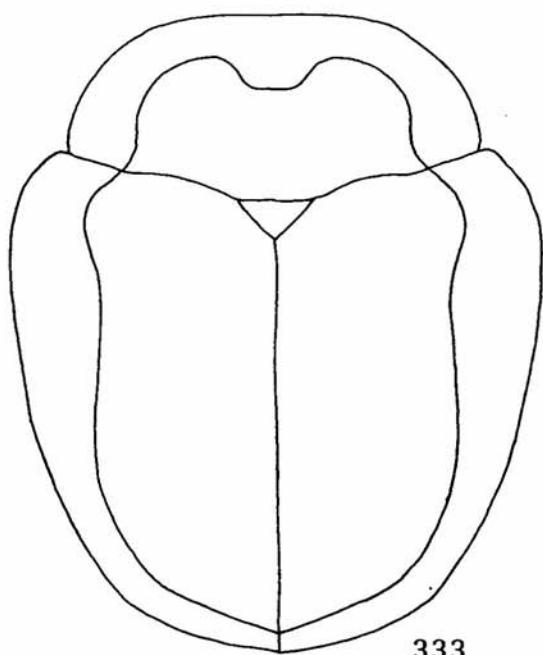
DESCRIPTION

Length: 7.4-10.3 mm, width: 5.9-8.0 mm, pronotum length: 2.7-3.3 mm, pronotum width: 4.6-5.9 mm. Body subtriangular, sides of elytra moderately rounded (fig. 333).

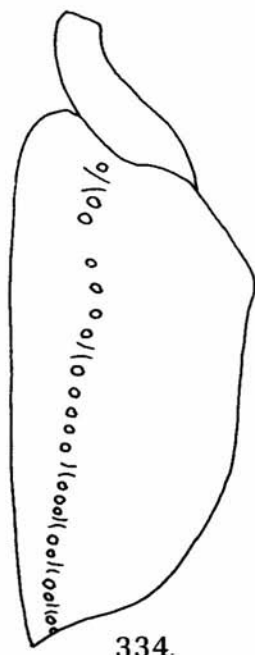
Pronotum and elytra testaceous to brown. Clypeus testaceous. Ventrites vary from mostly testaceous to almost wholly black. In the palest specimens only metathorax dark brown to black, in the darkest specimen only sides of abdomen brown, other parts black. Basal three to four antennal segments testaceous, the third segment wholly testaceous or in apical half infusate, or brown but never black, fourth segment brown to black, remainder black.

Pronotum trapezoidal, about 1.7-1.8 times wider than long, with maximum width at base, anterior margin shallowly emarginate, posterior corners obtuse. Disc moderately convex, with fine irregular wrinkles, appears rugose to longitudinally striate, its surface microreticulate but glabrous. Explanate margin indistinctly bordered from disc, subhorizontal, finely rugose, or only slightly irregular, occasionally without rugosities or folds. Honeycomb structure visible.

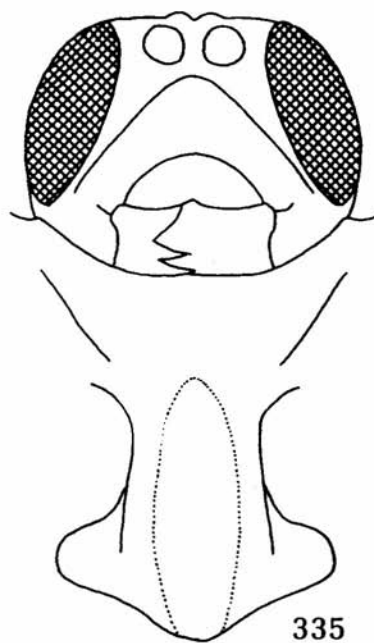
Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a soft angle, humeral angles moderately protruding anterad, broadly rounded. Disc strongly convex, with distinct but moderately high postscutellar gibbosity (fig. 334). Postscutellar impressions deep, margined by distinct elevation. Third interval forms irregular longitudinal costa,



333



334



335



337

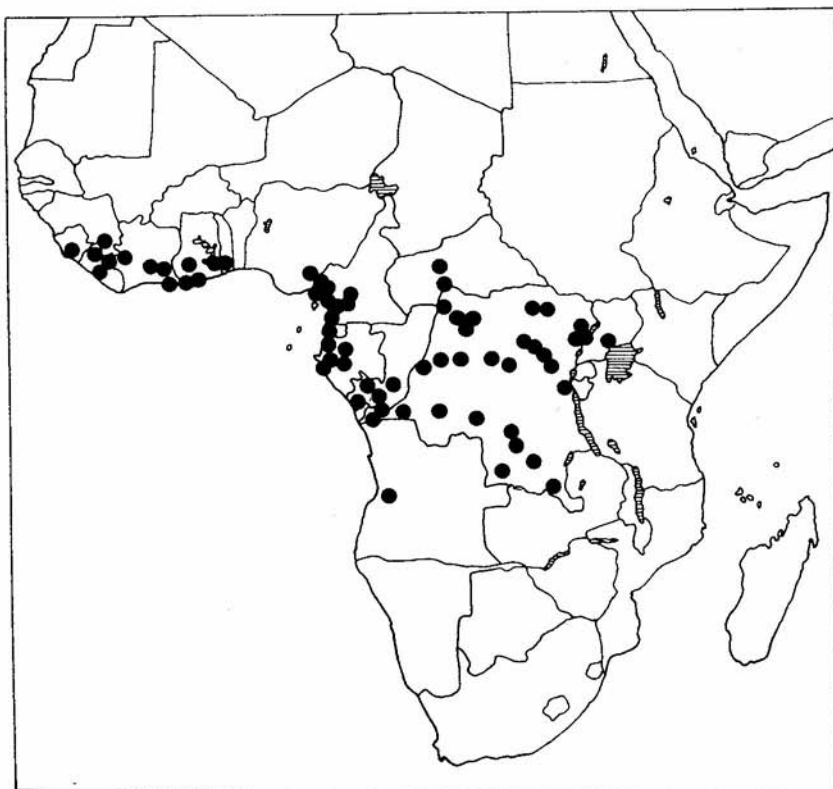


336

333-337. *Laccoptera (Orphonodella) corrugata*: 333 - body in dorsal view, 334 - body in lateral view, 335 - head and prosternum, 336 - antenna, 337 - tarsal claw

often fifth interval tends to form a costa. Between suture and fifth interval transverse folds form a large reticulation. Sides of disc without distinct sculpture. Punctuation of disc large, partly disordered by elytral sculpture, but on sides of disc punctures tend to form regular rows which occupy more than 1/3 length of disc. Marginal row distinct, with several transverse folds, posthumeral cavity shallow. Explanate margin moderately declivous, strongly, coarsely punctate, space between punctures convex, and surface appears slightly rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, bottom of impressions dull. Apex of elytral epipleura bare, or with scarce, short erected hair, which are usually broken in dried specimens.

Clypeus about 2.2 times wider than long, triangular (fig. 335), strongly elevated, its surface flat, with a few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/5 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:110:100:86:83:80:76:76:86:136. Segment 3 about 2.2 times longer than 2 (fig. 336). In male antennae slightly longer than in female, especially the last segment.



338. Distribution of *Laccoptera (Orphonodella) corrugata*

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 335), with deep sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 337), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

West and Central Africa, mostly lowlands, west to Guinea, south to C Angola, east to Uganda (fig. 338).

REMARKS

It belongs to the group of species with subtriangular body, base of elytra distinctly wider than base of pronotum, elytra and pronotum uniformly testaceous to brown. The group comprises also *L. nunbergi*, *L. triangula*, *L. montivaga* and *L. caduca*. The last two species differ distinctly in sides of disc distinctly sculptured, they are usually smaller, with pronotal rugosities more irregular and sharper. *L. triangula* and *L. nunbergi* differ in only two basal antennal segments testaceous, third segment completely black or only on ventral side brownish; they differ also in humeral angles more protruding anterad, and especially in *L. triangula* humeral angles are subangulate to acute (always rounded in *L. corrugata*).

MATERIAL EXAMINED

ANGOLA: Benguella, Ganda, 1 (MM).

CAMEROON: Abong Mbang, 1959, 1, LENCZY (HNHM); Barombi, 3, CONRADT (IZPAS); Batanga, 3 (MRAC), VI 1911, 3, A.I. GOOD (CMNH), I 1911, J.A. REIS (CMNH), IV 1914, 20, F.H. HOPE (CMNH); Djoungolo, Oman-r. Nkelkongo, 16 IX 1963, L. SEGERS (ZSM); Dschang, 1, LENCE (MRAC); Douala, 22, J. CANTALOUBE (MRAC); Duala, 43 (IRSN), I IX 1929, 7, A. DAVID (NMP); Edea, IX 1949, 1 (IFAN); Efulen, I 1911, 2, J.A. REIS (CMNH); Jaunde, 3, v. CARNAP (lectotype and paralectotypes of *L. morosa*, ZMHU), 1 (IRSN), 28 III 1923, 1 (CMNH); Kamerunberg, 5 km S Muëli, 580 m, 21 II 1950, 1, H. KNORR (ZSM); Kribi, 13, CARRET (MRAC), 0-30 m, 18-31 III 1974, 5, M. KÜHBAUDUER (ZSM); Lolodorf, III 1914, 1, 8 VI 1914, 1, 7 II 1918, 2, 15 III 1919, 1, J.A. REIS (CMNH); Malende-Banga, 125 m, 5-20 XII 1957, 2, 10 XII 1957, 1, H. KNORR (SMNS); Metet, XI 1918, 1, A.I. GOOD (CMNH); Mt. Balmayo, 5, BARGA (MRAC), 2, J. CANTALOUBE (MRAC), XI 1959, 1, VI 1969, 2, XII 1972, 1 (MRAC); Muëli, 560 m, 1 II 1958, H. KNORR (SMNS); Mvaa, XI 1960, 4, XII 1961, 1, CHASSOT (MRAC); Nanga Eboko, III-IV 1959, 2, VII-X 1959, 5, LENCZY (HNHM); Nkolbisson, 31 I 1963, 1, L. SEGERS (ZSM); Nkolbisson, Nyong-Sanaga, IX 1963, 2,

X 1963, 24, L. SEGERS (MRAC); Nkolbison, Yaounde-Bi, 24 II 1963, 1, 29 II 1963, 2, 20 V 1963, 1, L. SEGERS (ZSM); N'Kongsamba, 10, J. CANTALOUPE (MRAC); Okala, IV-V 1965, 4, R. POUGET (MRAC); Okola, Eboussi-r. Mbanize, 19 VII 1963, 3, 17 IX 1963, 2, L. SEGERS (ZSM); Okola, Etoud r. Méfou, 17 II 1963, 2, L. SEGERS (ZSM); Pipinde, 9, ZENKER (ZMHU); Sasse-Sappo, III 1952, 1, S. TITA (CAS); Victoria, Mabeta, 1 VI 1949, 1, B. MALKIN (CAS), VII-VIII 1949, 1, S. TITA (CAS).

EQUATORIAL GUINEA: Benito, 3 (MM), 2 (NMP); Nkolentangan, XI 1907-V 1908, 1, G. TEßMANN (ZMHU); Span. Guinea, 1, G. TEßMANN (ZMHU).

GABON: Bas-Ogooué, 10 (IRSN), 13 (NMP); Fernan Vaz, IX-X 1902, 2, J. FEA (MM); Gabon, 5 (IRSN); Ivindo, 1, coll. LE MOULT (IRSN); Lambarene, 1917, 3, FAUVEL (NMP); Libreville, 5 (SD); Ogove R., 2, A.C. GOOD (CMNH).

GHANA: Ashanti Reg., Kumasi, Nhasu, 30 IX 1967, 1, S. ENDRÖDY-YOUNGA (HNHM); Axim, 7, BESNARD (MRAC); Takoradi, 15, IV-XI 1967, 2, BESNARD (MRAC); Volta Reg., Amedzofe, 31 VIII 1967, 1, S. ENDRÖDY-YOUNGA (HNHM).

GUINEA: Macenta, 8-16 VIII 1965, 1, K. FERENCZ (HNHM).

IVORY COAST: Adzopé, IX 1948, 1 (MHNG); forêt de Banco, 16 VIII 1966, 2, D. THYS and W. VERHEYEN (MRAC); XI 1990, 1, W.D. GANSER (SMNS); Dimbroko, 3 (IRSN); Man, VIII 1948, 1 (MHNG).

LIBERIA: Nimba, 12 IV 1964, 1, E. BINDER (MHNG); Saclepea, 16 III 1988, 1, F.-T. KRELL (SMNS); St. John River, 1 (MM); 3 mls NW Zorzor, 12 VIII 1966, 2, E. S. ROSS and K. LORENZEN (CAS).

NIGERIA: 5 mls W Algora, 50 m, 7 IX 1966, 1, E. S. ROSS and K. LORENZEN (CAS); Ogoja County, 12 XI 1961, 1, 6 III 1962, 1, 14 IV 1963, 1, R. MEYER (ZSM).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 15 (IRSN); Fort Sibut, 4 (IRSN), 1968, 7 (MRAC); Fort Sibut, Oubangi-Chari, 20 (NMP).

REPUBLIC OF CONGO: Kindamba, Méya, Louolo Riv., 12 XI 1963, 1, S. ENDRÖDY-YOUNGA (HNHM); Lefinie Res., Mbéokala forest, 10 I 1964, 3, 13 I 1964, 1, BALOGH and ZICSI (HNHM); Mt. Fouari Res. near Gabon, 13 XII 1963, 1, BALOGH and ZICSI (HNHM); Nola, 1 (IRSN).

SIERRA LEONE: Mayamba, 3 (IRSN), 1 (NMP); Sierra Leona, 1 (coll. DEJEAN, BOHEMAN vidit, SAHLBERG det. - ?type, ZMUH).

TOGO: Avétonou, 130-150 m, 21 VI 1988, 1, F.-T. KRELL (SMNS); Missahoué, 650 m, VI 1963, 14, Y. SCHACH (MRAC); Yob, V 1963, 2, Y. SCHACH (MRAC).

UGANDA: between Seziwa R. and Kampala, 3500-3750 ft., 27-31 VIII 1911, 2, S. A. NEAVE (BMNH).

ZAIRE: Albert Nat. Park, E Bukuku, reg. Kasindi, 1100 m, 12 IX 1948, 1, J. DE WILDE (MRAC); Albert Nat. Park, Ldule, 1100 m, 14 V 1949, 1, J. DE WILDE (MRAC); Albert Nat. Park, Massif Ruwenzori, riv. Bombi, affl. Butahu, 1820 m, 15 IX 1956, 2, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mutsora, 1939, 2, HACKARS (MRAC), 1200 m, 29 V 1948, 1, J. DE WILDE (MRAC); Albert Nat. Park, Secteur Nord, riv. Molidi, affl. Byangolo, 1140 m, 29 I 1957, 4, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Molidi, Watalinga, 1210 m, 18 IX 1956, 2, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Musinini, affl.

Byangolo, 1225, 14 V 1958, 2, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Ngoki, affl. Talya, 1080 m, 29 XI 1956, 2, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Ruwenzori, riv. Bombi, affl. Butahu, 1820 m, 15 IX 1956, 2, P. VANSCHUYTBROECK (MRAC); Bambesa, 28 V 1937, 1, 1-2 VI 1937, 1, 7 VI 1937, 2, 17 VI 1937, 1, 28 VI 1937, 1, 2 X 1937, 2, 5 XI 1937, 1, 6 VII 1938, 1, J.M. VRIJDAGH (IRSN); Bas Congo, Lukamba (Banga), XII 1945, 1, V. DRACHOUSOFF (MRAC); Binga, 5-12 III 1932, 2, H. J. BRÉDO (MRAC); Biruwe n. Okondo, 18 IX 1939, 3, A. COLLART (IRSN); Boma, 1, M. TSCHOFFEN (lectotype of *L. modesta*, present designation, MM), 1, M. TSCHOFFEN (paralectotype of *L. modesta*, MM); Botuna-Bokungu, 12, M. BOEL (IRSN); Buhunde-Matenda, 15 IX 1929, 2, 22 IX 1929, 1 (IRSN); Buhunde-Okondo, 18 IX 1929, 1, A. COLLART (IRSN); Elisabethville, 2 XI 1955, 1 (MRAC); Ituri, Mt Hoyo, 1250 m, 5 X 1957, 3, E. S. ROSS and R. E. LEECH (CAS); Kasai, 1913, 2, A. CRIDA (MZSNG); Kasai, Gandajika, IV 1959, 1, J. DUBOIS (MRAC); Kasai, Luebo, XII 1958, 1, F. FRANÇOIS (MRAC); Katanga, Kafakumba, 1 (IRSN); Katanga, Kamina, II-III 1960, 1, A. FROIDEBISE (MRAC); Katanga, Kaniama, 2 II 1939, 1, H.J. BRÉDO (IRSN); Kimbenze, 17 IV 1924, 1, A. COLLART (IRSN); Kivu, Beni, 18 VI 1953, 1, J. VERBEKE (IRSN); Kivu, Irangi, 4 I 1967, 1, Dr. JILY (SMNS); Kivu, vall. de la Ruzizi, III 1959, 1, P. BENOIT (MRAC); Libenge, 14 X 1947, 1, 28 XI 1947, 7, R. CREMER and M. NEUMAN (IRSN); Libenge-Isako, 13 XI 1947, 1, R. CREMER and M. NEUMAN (IRSN); Libenge, Mawuya, 23 X 1947, 1, 28 XI 1947, 1, 1 XII 1947, 1, 3 XII 1947, 6, 22 I 1948, 2, R. CREMER and M. NEUMAN (IRSN); Likimi, 23-25 VII 1927, 2, A. COLLART (IRSN); Likimi-Bosanga, 21 XI 1927, 4, A. COLLART (IRSN); Likimi-Mongili, 6 XI 1927, 1, A. COLLART (IRSN); Likimi-Mundjungani, 3 X 1927, 3, A. COLLART (IRSN); Lisala, 28 VIII 1947, 2, 29 VIII 1947, 20, R. CREMER and M. NEUMANN (IRSN); Lubutu, 14 X 1929, 1, 16 X 1929, 1 (IRSN); Lubutu-Masua, 10 IX 1929, 1, A. COLLART (IRSN); Lubutu-Obongena, 7 IX 1929, 1, A. COLLART (IRSN); Lukolela, 1938, 1, R. MASSART (IRSN); Lulua, Katakumba, IV 1934, 1, F. OVERLAET (MRAC); Luluabourg (Kasai), 30 I 1963, 1, J. DEHEEGHER (MRAC); Mambasa, 25 XII 1946, 2, Mus. Copenh. Exp. (ZMC); Mandimba-Masna, 26 IX 1929, 2 (IRSN); Motenge Boma, 2 XII 1947, 1, R. CREMER and M. NEUMAN (IRSN); Mpese, 26 VI 1937, 1, J. COOREMAN (IRSN); Ngowa, 13 VI 1939, 1, J. MERTENS (IRSN); Orientale Prov., Bas-Uele Distr., Bambesa, 31 III 1957, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Beo, 20 III 1958, 2 (FMNH); Orientale Prov., Bas-Uele Distr., Bongide, 22 VIII 1957, 1 (FMNH); Plaine Semliki, 900-1100 m, III 1937, 2, HACKARS (MRAC); W Ruwenzori, 3000-4000 m, III 1937, 1, HACKARS (MRAC); Ruwenzori, Mutawanga, 1000-1300 m, X 1936-III 1937, 5, HACKARS (MRAC); Salonga Riv., Bomputu, XII 1935, 2, J. GHESQUIÈRE (MRAC); Stanleyfalls, 3, R.P. KOHL (NNML); Stanleyville, Likundu, 1954, 1, P. SAUSSUS (MRAC); Stanleyville, Lokilo, 18 XI 1954, 1, P. SAUSSUS (MRAC); Stanleyville, Ongoka (riv. Lova), IV-IX 1952, 1, J. PANTOS (MRAC); Tsela, 15 III 1924, 1, IV 1924, 1, A. COLLART (IRSN); Tshuapa, Bamanya, 1-15 IX 1951, 1, VIII 1964, 1, XII 1964, 1, P. HULSTAERT (MRAC); Tshuapa, Bokuma, XII 1951, 11, I-II 1952, 7, III 1952, 2, VI 1952, 1, VII 1952, 18, 1953, 3, R. LOOTENS (MRAC); Tshuapa, Etata, VII-VIII 1969, 14, IX-X 1969, 7, V 1970, 1, J. HAUWAERTS (MRAC); Tshuapa, Ikela, 1955, 79, X-XI 1956, 66, R. LOOTENS (MRAC), 1955-56,

25, III-VI 1956, 12, R. DEGUIDE (MRAC); Ubangi, Binga, 12 III 1932, 29, H. BRÉDO (MRAC); Uele, Dingila, 7 III 1933, 1, H. J. BRÉDO (MRAC); Yangambi (Stan.), X-XII 1958, 3, IV 1959, 1, J. DUBOIS (MRAC), V 1959, 1, P. DESSART (MRAC), XI 1959, 2, J. DECELLE (MRAC).

***Laccoptera (Orphonodella) deremensis* WEISE, 1899 n. comb.**

(figs. 339-344)

Laccoptera deremensis WEISE, 1899: 252 (lectotype and 2 paralectotypes in ZMHU); BOROWIEC, 1987: 414.

Laccoptera (Laccoptera) deremensis: SPAETH, 1914: 83.

Laccoptera (Eulaccoptera) deremensis: SHAW, 1960: 370.

Laccoptera laeta WEISE, 1899: 252 (lectotype and paralectotype in ZMHU); BOROWIEC, 1987: 415, n. syn.

Laccoptera (Laccoptera) laeta: SPAETH, 1914: 84.

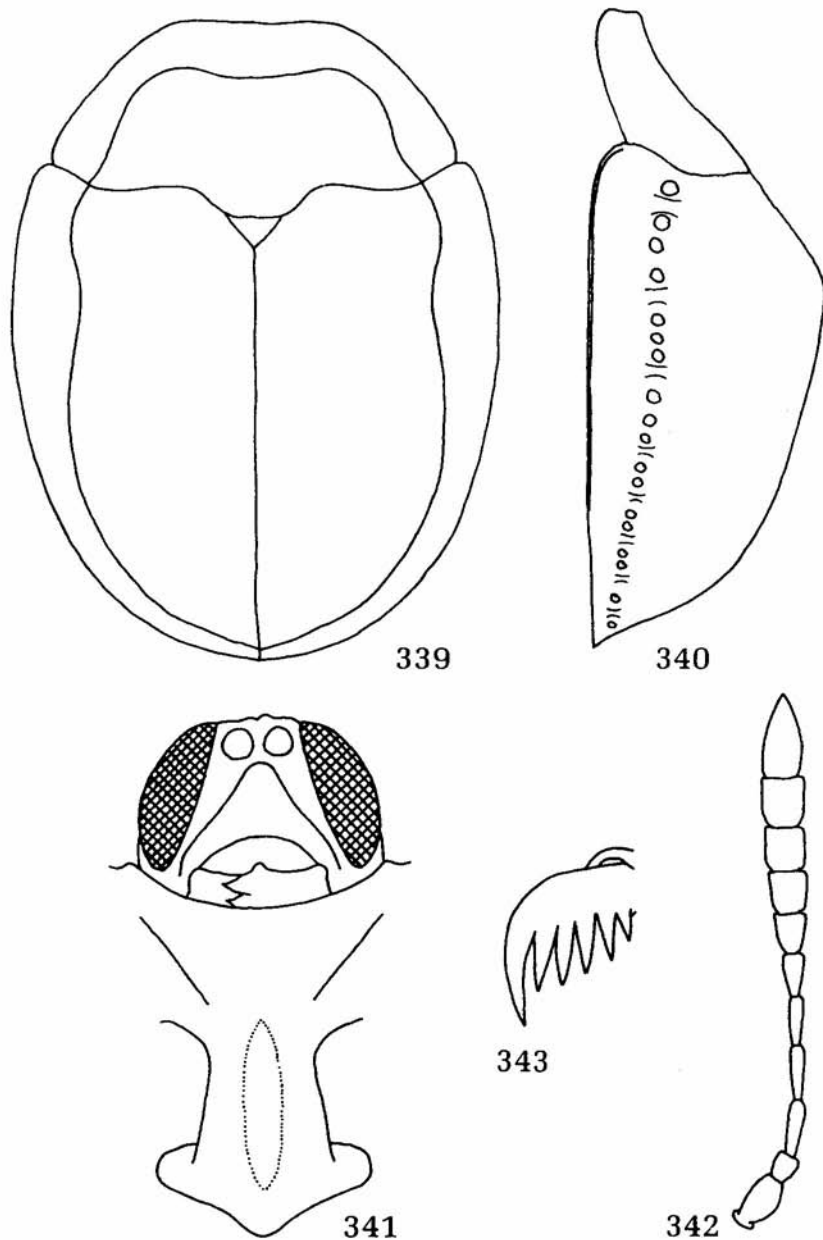
DESCRIPTION

Length: 7.4-9.3 mm, width: 5.4-6.9 mm, pronotum length: 2.5-3.1 mm, pronotum width: 4.5-5.7 mm. Body oval, sides of elytra moderately rounded (fig. 339).

Pronotum and elytra testaceous. Clypeus testaceous, prothorax varies from testaceous to black, meso and metathorax usually partly or wholly brown to black, abdomen varies from testaceous to black. Legs usually black, but in pale specimens femora sometimes brown or occasionally testaceous. Two basal antennal segments testaceous, third and fourth segments testaceous to brown, remainder black.

Pronotum subtrapezoidal, about 1.8 times wider than long, with maximum width at base, sides slightly rounded, anterior margin shallowly emarginate, posterior corners obtuse. Disc moderately convex, with irregular wrinkles and folds, appears rugose, its surface microreticulate, slightly dull to glabrous. Area above head also with rugosities. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular wrinkles, appears more or less rugose.

Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra only slightly wider than base of pronotum, sides moderately rounded, moderately converging posterad. Anterior margin moderately crenulate, forms a soft angle, humeral angles rounded, slightly protruding anterad. Disc strongly convex, with low postscutellar gibbosity (fig. 340), forms rather H-shaped elevation than distinct tubercle. Postscutellar impressions deep, margined by distinct elevation. Whole surface of disc with large, elevated reticulation, third interval forms regular longitudinal costa, often also fifth interval tends to form a costa. Punctuation of disc large, completely disordered by elytral sculpture, also on sides of disc. Sometimes two sutural rows almost regular, and on sides of disc several punctures arranged in rows, but regular rows never occupy more than 1/4 length of disc. Marginal row distinct, with several transverse folds, posthumeral cavity moderately deep. Explanate margin moderately declivous, strongly, coarsely punctate, and with irregular wrinkles, appears rugose. Lateral margination simple. Surface of both disc and explanate



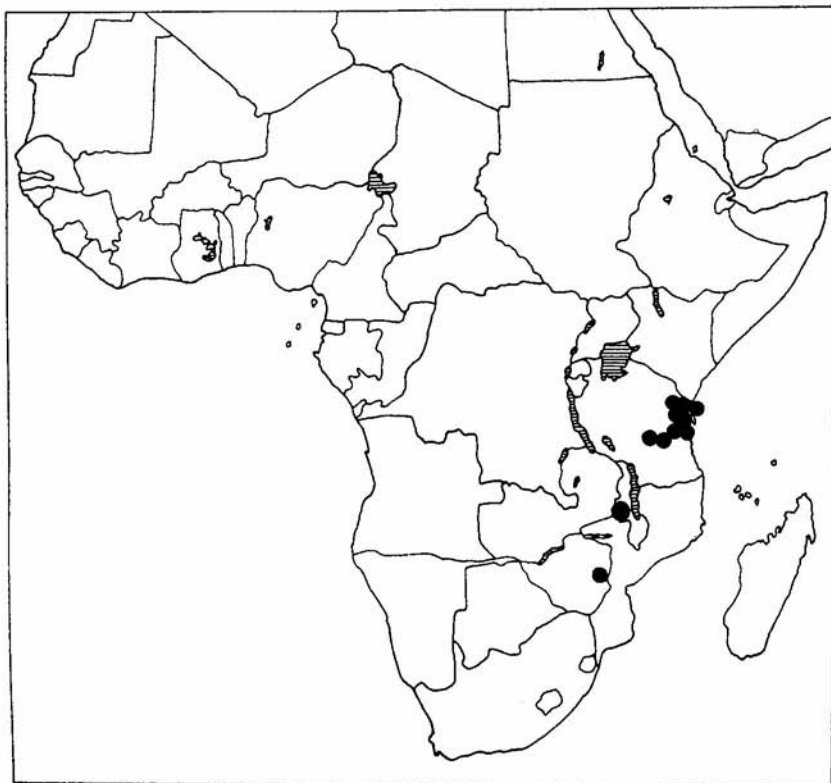
339-343. *Laccoptera (Orphonodella) deremensis*: 338 - body in dorsal view, 340 - body in lateral view, 341 - head and prosternum, 342 - antenna, 343 - tarsal claw

margin microreticulate, elytral sculpture glabrous, bottom of impressions usually dull. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 341), strongly elevated, its surface flat, with few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/4 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:80:80:73:60:60:63:63:66:130. Segment 3 about 1.6 times longer than 2 (fig. 342). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 341), with deep sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 343), outer margin micropectinate.

Host plant and bionomics unknown.



344. Distribution of *Laccoptera (Orphonodella) deremensis*

DISTRIBUTION

Tanzania, Malawi, and Zimbabwe (fig. 344).

REMARKS

With *L. ruginosa* it forms a group of testaceous to brown species intermediate between distinctly subtriangular species of the *corrugata* group and parallelsided species of the *abyssinica* group. *L. ruginosa* differs in pronotal disc with more regular wrinkles which tend to form regular longitudinal or/and oblique striation. It is also similar to *L. corrugata* and *L. montivaga*, but they differ in base of elytra distinctly wider than base of pronotum, and usually higher postscutellar gibbosity.

MATERIAL EXAMINED

MALAWI: Chintheche, 1 XII 1977, 1, R. JOCQUÉ (MRAC).

TANZANIA: Amani, 1, A. BORGER, 2, VOSSELER, 20 III 1907, 1, VOSSELER (ZMHU); Boma, Gombe, 1903, 1, KATONA (HNHM); Bondei-Lewa, 30 V 1910, 1 (ZMHU); Dar-es-Salaam, 2 (ZMHU), 1, Dr. SCHOLZ (LB); Derema, 1, KOLBE (lectotype of *L. deremensis*, ZMHU); Mziha, 70 km S Handeni, 400 m, 27 IV 1957, 2, P. BASILEWSKY and N. LELEUP (MRAC); Nguelo, 1 (FMNH); Pangani, 2 (paralectotypes of *L. deremensis*, ZMHU); Pemba Is., Chake Chake, 15 IV 1903, 1, VOELTZKOW (ZMHU); Tanga, 2, VOSSELER (ZMHU), 2 (IRSN), 20 XI 1952, 1, LINDEMANN and PAVLITZKI (ZSM), 25-26 III 1960, 1, SZUNYOGHY (HNHM); Ukami, 1, STAUD. (lectotype of *L. laeta*, ZMHU), Ukami, 2, BENNIGS. (ZMHU); Uluguru Mts., Kimboza Forest, 18 VII 1981, 3, H. GONGET (ZMC); Usagara SO. XI 1882, 1 (ZMHU); Usambara, Amani, 1000 m, 21 I 1977, 1, O. LOMHOLDT and O. MARTIN, 20 VII 1980, 2, M. STOLTZE and N. SCHARFF (ZMC); Usambara, Derema, 4, CONRADT (ZMHU); W Usambara, Lutindi, 3 (NMP), 1, K. AHLWARTH (ZMHU); Usambara, Nguelo, 1, HEINSEN (ZMHU), 1, H. ROLLE (ZMHU).

ZIMBABWE: Vumba, 10-15 XII 1937, 6, G. V. SON (TM, 2 LB).

***Laccoptera (Orphonodella) kapiriana* SPAETH, 1932**

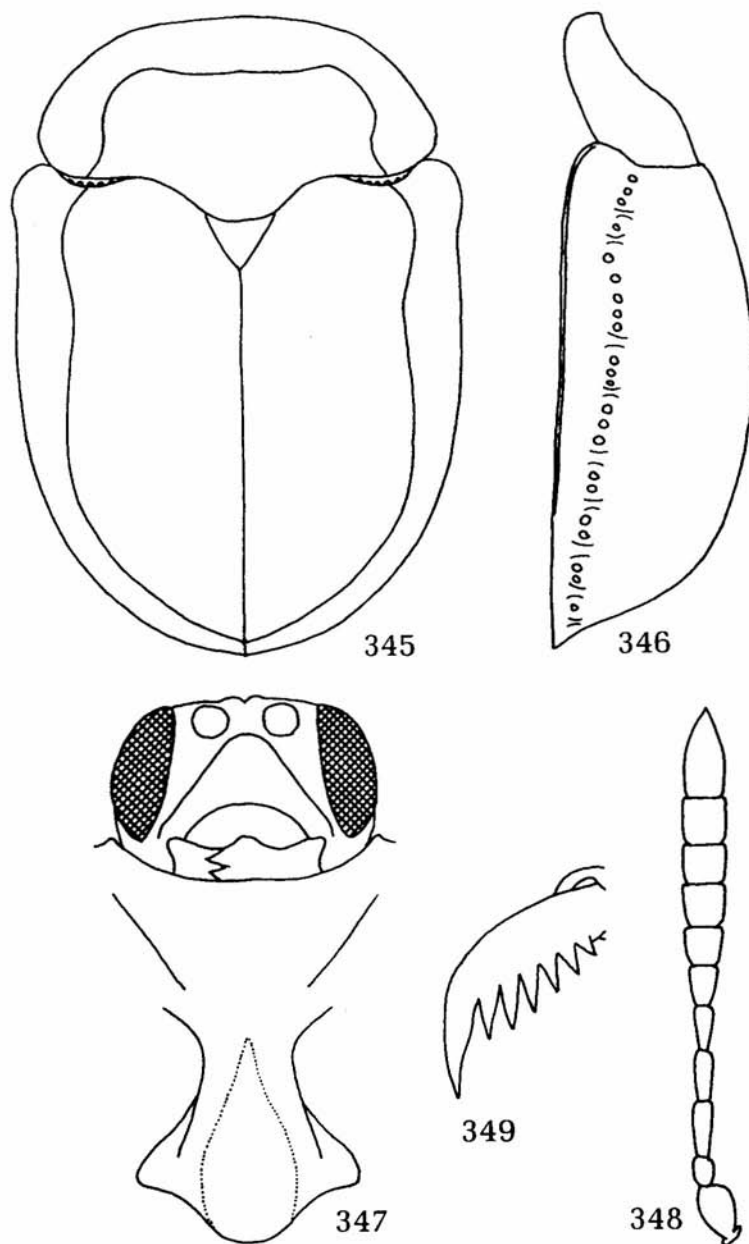
(figs. 345-349)

Laccoptera (Orphonodella) kapiriana SPAETH, 1932: 229 (syntypes in MRAC, MM).

DESCRIPTION

Length: 9.3-10.2 mm, width: 6.5-6.9 mm, pronotum length: 3.2-3.4 mm, pronotum width: 5.9-6.2 mm. Body almost parallelsided (fig. 345).

Pronotum and elytra varying from testaceous to dark brown. In dark brown specimens transverse folds often paler brown. Clypeus brown. Ventrites dark brown.



345-349. *Laccoptera (Orphonodella) kapiriana*: 345 - body in dorsal view, 346 - body in lateral view, 347 - head and prosternum, 348 - antenna, 349 - tarsal claw

to black, sides of abdomen sometimes with paler, testaceous to brown spots. Legs black. Basal three to four antennal segments testaceous, remainder black, segments 3 and/or 4 often infusate.

Pronotum almost semicircular, more than 1.8 times wider than long, with maximum width in front of the base. Sides regularly rounded, posterior corners subangulate. Anterior margin often slightly impressed. Disc moderately convex, whole surface with irregular wrinkles, rugose. Basal part of disc without median, longitudinal sulcus. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in pale specimens. Surface indistinctly microreticulate, glabrous.

Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, slightly emarginate. Maximum width of elytra in 1/3 length, then elytra slightly rounded and converging posterad. Disc regularly convex, with no postscutellar elevation (fig. 346), but with postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Punctuation of disc moderately large, mostly irregular, vanishes between elytral sculpture, only on sides of disc punctures tend to form regular rows, interrupted and disordered by elytral sculpture. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large punctures and numerous irregular wrinkles, rugose, honeycomb structure visible only in pale specimens. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus triangular (fig. 347), strongly elevated, about twice wider than long, surface flat or only shallowly impressed in the middle, usually with a few punctures. Labrum emarginate to 1/4 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:42:94:82:68:57:57:63:65:71:126. Segment 3 about 2.2 times longer than 2 (fig. 348). Distal segment in male, with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically (fig. 347), deeply canaliculate on almost whole length. apex with large, punctate impression. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 349), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Zaire (Kapiri, Katanga).

REMARKS

It belongs to the species group with almost paralleled body. It differs from all species of the group in large body, with length above 9.3 mm (only the largest specimen of *L. abyssinica* exceed this size). It has also very broad pronotum, at least 1.8 times wider than long (usually less than 1.8 times in other species). See also remarks under *L. abyssinica*.

MATERIAL EXAMINED

ZAIRE: Kapiri, IX 1912, 2, Miss. Agric. (holotype and paratype, MRAC), 2 (paratypes, MM), XI 1912, 1, Miss. Agric. (paratype, MM); Katanga, Kakanda (Mutaka), 15 XII 1953-4 I 1954, 1 (LB).

***Lacoptera (Orphonodella) montivaga* SPAETH, 1909 n. comb.**

(figs. 350-355)

Lacoptera montivaga SPAETH, 1909: 284 (syntypes in MM); 1912b: 508; 1922: 1000; 1924: 304.

Lacoptera (Lacoptera) montivaga: SPAETH, 1914: 84.

Lacoptera (Eulacoptera) montivaga: SHAW, 1961: 24.

Lacoptera Gyldenstolpei SPAETH, 1925: 4 (syntypes in MM); 1929: 160; BOROWIEC, 1985a: 238; 1986: 803, n. syn.

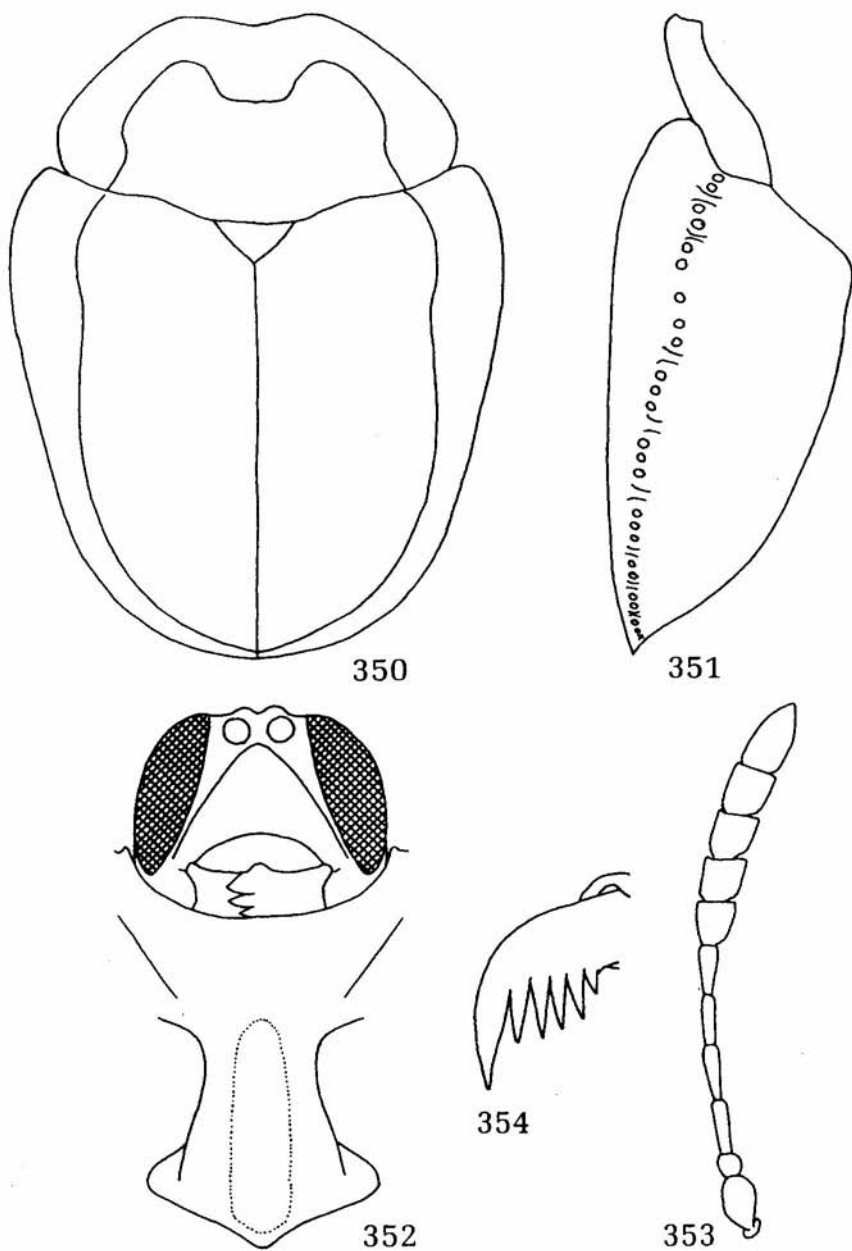
Lacoptera (Lacoptera) gyldenstolpei: SPAETH, 1943: 55.

Lacoptera (Eulacoptera) gyldenstolpei: SHAW, 1955: 236; 1972: 72.

DESCRIPTION

Length: 6.5-9.3 mm, width: 5.3-7.0 mm, pronotum length: 2.3-3.1 mm, pronotum width: 4.1-5.2 mm. Body subtriangular (fig. 350). Specimens from northern and eastern part of distribution area are usually smaller and stouter (= *montivaga*) than specimens from the western part, especially small specimens occur in Uganda, Rwanda and Kilimandjaro region, the largest and slimmer specimens were found in the forest region of Zaire (= *gyldenstolpei*).

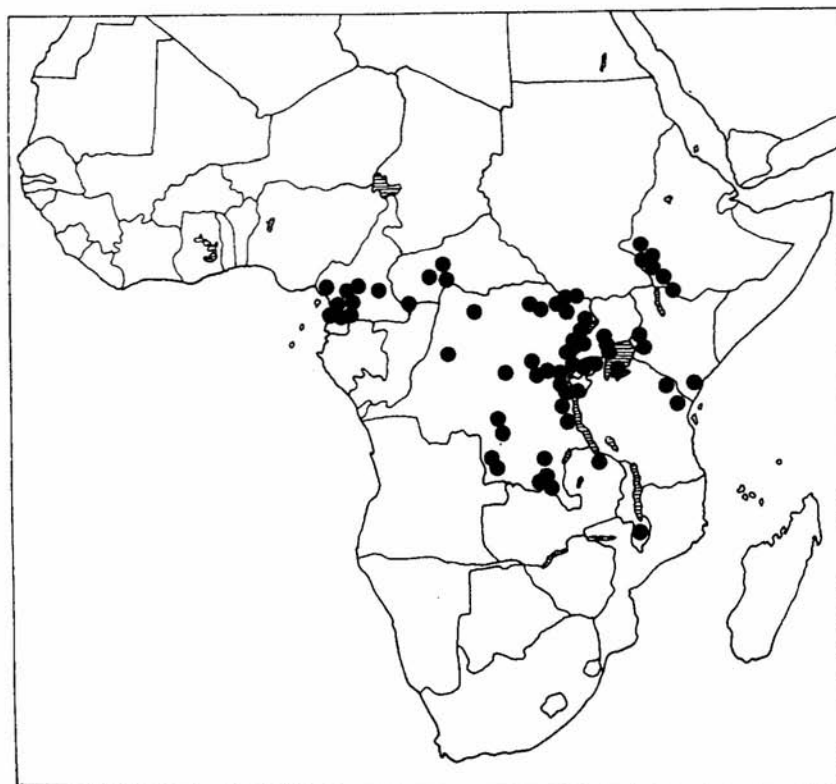
Pronotum and elytra pale to dark brown, pronotum often slightly paler than elytra. Sometimes elytra dark brown and pronotum pale brown, occasionally elytra black and pronotum reddish-brown to brown. Clypeus brown, ventrites and legs black, sides of abdomen often brown. Four basal antennal segments testaceous, remainder black, fourth segment often darker, brown with apex often black, also third segment often infuscate at apex, but never black.



350-354. *Laccoptera (Orphonodella) montivaga*: 350 - body in dorsal view, 351 - body in lateral view, 352 - head and prosternum, 353 - antenna, 354 - tarsal claw

Pronotum trapezial, 1.6-1.7 times wider than long, with maximum width at base, anterior margin shallowly emarginate, posterior corners obtuse. Disc moderately convex, with irregular wrinkles and folds, appears rugose, its surface microreticulate, slightly dull to glabrous. The rugosities differ between and within population, in some specimens wrinkles high and sharp, in others low and obtuse, generally in specimens from the mountains surface of disc appears more rugose than in specimens from lowlands. Area above head often without rugosities. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular wrinkles, appears more or less rugose. In specimens from Ethiopia and western part of distribution range rugosities of explanate margin are lower and more obtuse than in specimens from its central and eastern part. Honeycomb structure always visible.

Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin moderately crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc strongly convex, with distinct postscutellar gibbosity (fig. 351), but this character varies; specimens from the mountains of E



355. Distribution of *Laccoptera (Orphonodella) montivaga*

Zaire, Uganda and Tanzania have usually higher postscutellar gibbosity than specimens from lowlands, but especially specimens from mountains and highlands of Ethiopia have this gibbosity low. Postscutellar impressions deep, margined by distinct elevation. Whole surface of disc with large, elevated reticulation, third interval forms irregular longitudinal costa, often also fifth interval tends to form a costa. Puncturation of disc large, completely disordered by elytral sculpture, also on sides of disc. Sometimes two sutural rows almost regular, and on sides of disc several punctures arranged in row, but regular rows never occupy more than 1/4 length of disc. Marginal row distinct, with several transverse folds, posthumeral cavity moderately deep. Explanate margin moderately declivous, strongly, coarsely punctate, and with irregular wrinkles, appears rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, bottom of impressions usually dull. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 352), strongly elevated, its surface flat, with few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/5 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:41:83:77:63:61:58:58:58:61:111. Segment 3 about twice longer than 2 (fig. 353). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 352), with deep sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 354), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Central Africa, especially mountain regions, also mountains of eastern Africa (fig. 355).

REMARKS

It belongs to a group of brown, subtriangular species, which are very similar and often difficult to distinguish. *L. triangula* and *L. nunbergi* differ in the third antennal segment black, and sides of elytral disc without distinct rugosities. *L. corrugata* is very similar and probably forms hybrids with *L. montivaga*. It differs in usually slightly larger body, base of elytra much wider than base of pronotum, and especially in sides of elytral disc without or with indistinct rugosities, so rows of punctures are more regular and often visible on more than 1/3 length of disc. *L. caduca* is the most similar, especially to small specimens of *L. montivaga* from Kilimandjaro region or Rwanda, but differs in very high postscutellar gibbosity (specimens of *L. montivaga* from

lowlands of Republic of Central Africa have usually moderately high postscutellar gibbosity). *L. caduca* has distribution restricted only to a small area in Republic of Congo, while *L. montivaga* is widespread in Central and East Africa.

MATERIAL EXAMINED

BURUNDI: Bururi, 2, R. P. GIRAUDIN (MRAC); Plaine de la Ruzizi, IV 1966, 1 (MRAC).

CAMEROON: Babua-Godsa, Aba, 10 II 1914, 1, TESSMANN (ZMHU); Batanga, II 1914, 4, III 1914, 6, IV 1914, 5, IV 1920, 1, F.H. HOPE (CMNH); Efulen, X 1912, 1, J.A. REIS (CMNH); Elat, XII 1926, 1, A.I. GOOD (CMNH); Jaunde, 1, v. CARNAP, 1, ZENKER (ZMHU), 31 III 1923, 2, 27 III 1923, 1 (CMNH); Joko, 2 (HNHM); Lolodorf, V 1925, 1, VI 1925, 2, IX 1925, 1, X 1925, 1, A.I. GOOD (CMNH), 28 III 1919, 1, J.A. REIS (CMNH); Mt. Balmayo, 1, J. CANTATOUBE (MRAC); Nanga Eboko, III-IV 1959, 2, VII-X 1959, 1, LENCZY (HNHM); Nkolbison, 15 X 1963, L. SEGERS (ZSM).

ETHIOPIA: Dorsey, Rift Valley, 2 III 1975, 1, H. RUPP and M. NEBEL (SMNS); Gemu-Gofa Prov., Arba-Minch, 1972, 1, H. RUPP (MRAC); 7 km E Jimma, 1600-1700 m, VII-XI 1971, 1, R. CLARKE (MRAC); 80 km SW Jimma, Gojeb Riv., 1650 m, 24 VII 1971, R. CLARKE (MRAC); Ilubabor Prov., 15 km NW Chora, 1600 m, VI 1973, 3, G. DE ROUGEMONT (MRAC); Ilubabor, Gore, 2007 m, 8-18 XII 1959, 1, RICHTER and SCHÄUFFELE (SMNS); Kaffa Prov., Gojeb vall., VIII 1971, 1, G. DE ROUGEMONT (MRAC).

KENYA: Malindi, Gedi Forest, IV 1973, 3, V 1973, 4, H. GØNGET (ZMC); M'laba For., 2 II 1979, 3, T. PALM (LU); Mt. Elgon, 2050 m, 31 I 1979, 3, T. PALM (LU); Mumias, Kisumu Rd., 3800-4800 ft., 25-26 VI 1911, 3, S. A. NEAVE (BMNH); Shimba Hills, 27 V 1973, 1, 3 VI 1973, 1, H. GØNGET (ZMC).

MALAWI: Mlanje, 1 XI 1913, 1, S. A. NEAVE (BMNH).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 13 (IRSN); Fort Sibut, 2 (IRSN), 2 (NMP); Nola, 1 (IRSN); Oubangi-Chari, 6, SKULINA (NMP).

RWANDA: Rubona, 5 IV 1963, 2, G. PIERRARD (MRAC).

TANZANIA: Kibonoto, 1000-1300 m, 1, 27 IV, 1, SJØSTEDT (syntypes of *L. montivaga*); Kilimandjaro, 11 V 1905, 1, SJØSTEDT (syntype of *L. montivaga*, MM); Mabira, 3, R. A. DUMMER (NMP); Usambara, 1 (NMP); Ukerewe, 2 (HNHM).

UGANDA: Budongo Forest, 27-28 VIII 1971, 3, H. GØNGET (ZMC); Entebbe, IX 1912, 1, X 1912, 1, C. C. GOWDEY (BMNH), I 1973, 2, H. FALKE (1 ER, 1 MCSNV); Ile Buruma (L. Victoria), Gaya Bay, III 1968, 1, E. VERTRIST (MRAC); Kagora, 19 XII 1971, 2, H. GØNGET (ZMC); Kampala, 1-10 II 1915, 2, C. C. GOWDEY (BMNH); Kibale Forest, XII 1972, 1, 17-29 III 1973, 6, 4 III 1973, 2, 6 III 1973, 1, H. GØNGET (ZMC), 14 II 1985, 4, 23 III 1985, 2, 14 V 1985, 1, M. NUMMELIN (ZMUH); Mulange, XI 1922, 1, R. DUMMER (CTM).

ZAIRE: Albert Nat. Park, Kabambewa, 1100 m, forêt O'Mwenda, 10 VI 1949, 1, J. DE WILDE (MRAC); Albert Nat. Park, Kalonge Ruwenzori, 1800 m, 31 VII 1948, 2, J. DE WILDE (MRAC); Albert Nat. Park, Kasinga, 912 m, 11 VI 1935, 1, H. DAMAS

(MRAC); Albert Nat. Park, Mont Hoyo, riv. Issehe, affl. Bombuo, 1200 m, 18 VII 1955, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mont Hoyo, riv. Kofuhola, affl. Kalakala, 1285 m, 25 VII-10 VIII 1955, 3, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mont Hoyo, grotte Saga-Saga, 1160 m, 3 VIII 1955, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mont Hoyo, grotte Yolohafiri, 1030 m, 12-17 VII 1955, 1, 19-20 VII 1955, 4, 8-9 VIII 1955, 2, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Mutsora, 1939, 241, HACKARS (MRAC), 1200 m, 23 VII 1948, 1, J. DE WILDE (MRAC); Albert Nat. Park, Nyanza n. Mitisiti, 25 I 1949, 1, J. DE WILDE (MRAC); Albert Nat. Park, Rég. Oycha, 1100 m, IV-V 1950, 3, J. DE WILDE (MRAC); Albert Nat. Park, Plaine Semliki, 900-1100, IV-X 1937, 15, HACKARS (MRAC); Albert Nat. Park, Ruwenzori, riv. Kakalari, aff. Bombi, 1725 m, 10 VI 1954, 1, P. VANSCHUYTBROECK and H. SYNAVE (MRAC), 1740 m, 23 X 1956, 1, P. VANSCHUYTBROECK (MRAC), 1800 m, 28 XI 1957, 3, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Kalonge, r. Babalwakitaka, aff. Butahu, 1800 m, 11 VIII 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Kalonge, r. Kamusonge, aff. Butahu, 1900 m, 8 I 1954, 1, H. SYNAVE (MRAC); Albert Nat. Park, Ruwenzori, Kyandolire, Bwisonge, aff. Butahu, 1780 m, 22 X 1952, 1, J. DE WILDE and J. KEKENBOSCH (MRAC); Albert Nat. Park, Ruwenzori, Mutawanga, 1000-1300 m, II-III 1937, 158, HACKARS (MRAC); Albert Nat. Park, Secteur Nord, riv. Bongeya, affl. Talya, 1310 m, 9 IV 1958, 1, 12 IV 1958, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Bumali n. Mutawanga, 1300 m, 7 IX 1951, 2, R. CHRISTIAENS (MRAC); Albert Nat. Park, Secteur Nord, Butahu, affl. Semliki, 1325 m, 25 VI 1957, 2, 1360 m, 20 VIII 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Byangolo, affl. g. Djilube, 1320 m, 19 IX 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, conf. Ihumbia, Semliki, 900 m, 7 IX 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, étang Kananva, Mukandwe, 1280 m, 7 VIII 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Kasalala, aff. Mbongia, 1200 m, 11 IX 1951, 1, R. CHRISTIAENS (MRAC); Albert Nat. Park, Kitulu, marais pres riv. Rugetsi, 1150 m, 5 X 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. Lume (moyenne), 1420 m, 10 IX 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, riv. May ya Moto, affl. Talya, 1180 m, 9 V 1957, 1, 1180 m, 17 V 1957, 1, 1200 m, 14 VII 1957, 1, 1120 m, 21 IX 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Mbungwe n. Rumangabo, 1500 m, 5 IV-13 VIII 1957, 1, L. DONIS (MRAC); Albert Nat. Park, Secteur Nord, riv. Molidi, piste Watalinga, 1210 m, 18 IX 1956, 4, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Mulingo, sec. Kikura, Reg. Baniangala, 1350 m, 16 VII 1954, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Muntiba, Moyenne-Lume, 1260 m, 12 XII 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, env. Mutsora, 1200 m, 19 V 1951, 2, R. CHRISTIAENS (MRAC); Albert Nat. Park, Secteur Nord, riv. Ngokoi, affl. Talya, 1480 m, 8 II 1957, 1, 1100 m, 27 V 1957, 4, 1180 m, 11 IX 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Nyalcahera, affl. g. Mukandwe, 1220 m, 4 IV 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park,

Secteur Nord, vill. Nzega pres Mutawanga, 1200 m, 14 VIII 1957, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Nord, Sao, marais confl. Rugetsi-Semliki, 990 m, 16 X 1956, 1, P. VANSCHUYTBROECK (MRAC); Albert Nat. Park, Secteur Tshiaberimu, riv. Kasinga, 6 VI 1955, 1 (MRAC); 48 mls N Albertville, 12 I 1958, 2, E. S. ROSS and R. E. LEECH (CAS); Bafwabaka, V 1951-V 1952, 1, L. JENKENS (NNML); Bambesa, 31 V 1937, 1, 1-2 VI 1937, 17, 3 VI 1937, 1, 5 VI 1937, 1, 7 VI 1937, 3, 10 VI 1937, 6, 17 VI 1937, 1, 24 VI 1937, 3, 28 VI 1937, 6, 29 VI 1937, 4, 3 VII 1937, 2, 26 VII 1937, 1, 29 VII 1937, 1, 31 VII 1937, 1, 11 VIII 1937, 2, 1 IX 1937, 1, 11 IX 1937, 4, 13 IX 1937, 2, 2 X 1937, 1, 9 X 1937, 1, 20 X 1937, 1, 30 X 1937, 3, 6 XI 1937, 1, 6 VII 1938, 1, 3 VI 1939, 1, 18 XII 1939, 1, 20 XII 1939, 2, 26 XII 1939, 2, 27 XII 1939, 1, 4 I 1940, 3, 8 I 1940, 1, J. VRIJDAGH (IRSN); Biruwe à Matenda, 16 IX 1929, 23 (IRSN); Biruwe à Okondo, 18 IX 1929, 19, A. COLLART (IRSN); Buhunde-Matenda, 15 IX 1929, 25, 22 IX 1929, 11 (IRSN); Busu-Melo, 14 I 1928, 4 (IRSN); Butembo, Mt Hoyo, 1400 m, 23-24 II 1981, 1, CALLEGARI (MCSNV); Elisabethville, I 1939, 1, H.J. BRÉDO (IRSN), 2 XI 1955, 1, Ch. SEYDEL (MRAC); Equateur, Bokuma, VII 1952, 2, R. P. LOOTENS (MRAC); Haut Uele, fl. Duru, III 1927, 1, F. S. PATRIZI (MZSNG); Haut Uele, Kapili, V 1927, 2, F. S. PATRIZI (MZSNG); Haut Uele, Yakuluku, IV 1927, 1, F. S. PATRIZI (MZSNG); Ikenge, 18 IX 1912, 2, R. MAYNÉ (MRAC); Ituri, 2, Pr. W. Exp. GYLD. (lectotype and paralectotype of *L. gyldenstolpei*, present designation, MM); Ituri, Mt. Hoyo, 8-9 VII 1953, 2, J. VERBEKE (IRSN); Kamango, 8 V 1947, 1, Miss. Tanganika (IRSN); Katanga, Busumba, VIII/IX 1957, 1, P. DE CATER (MRAC); Katanga, Kipopo (E'ville), 20 VIII 1961, 1, R. MARÉCHAL (MRAC); Katanga, Nyonga, V 1925, 1, G. F. DE WITTE (MRAC); Katanga, Sandoa, X 1931, 1, F.G. OVERLAET (IRSN); Kibali-Ituri, Kilomines, V 1957, 1, C. SMOOR (MRAC); Kimbenze, 17 IV 1924, 1, A. COLLART (IRSN); Kivu, Beni, 8 XII 1953, 1, J. VERBEKE (IRSN); Kivu, Ibanda, 1951-52, 1, M. VANDELANNOITE (MRAC); Kivu, Irangi, 4 I 1967, 1, 26 I 1967, 1, Dr. JILLY (SMNS), 10 IX 1984, 1-2 II 1986, 4, 1, H. MÜHLE (MD); Kivu, Lviro, 6 XII 1966, 1, 3 II 1967, 1, Dr. JILLY (SMNS), III 1985, 1, W. BANYW'NE (SMNS); Kivu, Kabare, Mushuere, 2 XI 1954, 1, N. LELEUP (MRAC); Kivu, Lukando (Bunyakiri), 1959-60, 1, J. HECQ (MRAC); Kivu, Mulungu, V 1956, 1, J. HECQ (MRAC); Kivu, Ndani, V-VII 1968, 1 (MRAC); Kivu, Rutshuru, 7 III 1953, 1, J. VERBEKE (IRSN); Kivu, Vall. de la Ruzizi, V-VII 1968, 3 (MRAC); Kivu, terr. Uvira, rives du Tanganika, VI 1958, 1, N. LELEUP (MRAC); Kuleponge, 8 V 1958, 2 (FMNH); Lualaba, Kakanda, Mutaka, XII 1953, 1, R. DE CATER (MRAC); Lubutu, 1-5 X 1929, 4 (IRSN); Lubutu-Kakolo, 3 X 1929, 3 (IRSN); Lubutu-Masua, 10 IX 1929, 2, 12 IX 1929, 1, 27 IX 1929, 2 (IRSN); Lubutu-Obongena, 7 IX 1929, 10 (IRSN); Lubutu-Pene-Sungi, 5 IX 1925, 1 (IRSN); Lubutu-Utike, 30 IX 1929, 1 (IRSN); Lulua, Kapanga, IX 1932, 2, I 1933, 1, F. G. OVERLAET (MRAC); Lusambo, 1950, 1, P. HOSTIE (MRAC); Mambasa (K.I.), XI 1970, 2, J. TAVERNIERS (MRAC); Mandimba-Musua, 26 IX 1929, 4 (IRSN); Mandimba-Uluku, 14 IX 1929, 2 (IRSN); Maniema, Kisamba, IX 1954, 1, J. CLASSENS (MRAC); Maniema, Terr. Kasongo, Mufala, 1960, 1, P. BENOIT (MRAC); Mont Hoyo, Ituri, 1250 m, 5 X 1957, 3, E. S. ROSS and R. E. LEECH (CAS); Mt Kahuzi, 1700 m, 4 IX 1957, 1, E. S. ROSS and R. E. LEECH

(CAS); Ngowa, 2 XI 1938, 2, J. MERTENS (IRSN); Nizi-Blukwa, 1 XII 1928, 1 (IRSN); N. Lac Kivu, Rwankwi, XI 1951, 4, J. V. LEROY (MRAC); Orientale Prov., Bas-Uele Distr., Alipago, 8 V 1957, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Bambesa, 3 IV 1957, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Batite, XI 1954, 2, IV 1958, 1, 28 VIII 1958, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Beo, IX 1958, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Bongide, 20 VIII 1957, 2, 22 VIII 1957, 1 (FMNH); Orientale Prov., Haut-Uele Distr., Bunie, 29 X 1956, 2, 1 XI 1956, 1, 4 XI 1956, 1 (FMNH); Orientale Prov., Haut-Uele Distr., Mandi, Rte. to Wamba, 7 XI 1956, 1, 20 XI 1956, 1 (FMNH); Orientale Prov., Haut-Uele Distr., Neisu, Paulis terr., 18 X 1956, 1 (FMNH); Stanleyville, 1 (IRSN), 5 II 1928, 2, 18 II 1928, 7, 28 II 1928, 3, 2 III 1928, 1, 3 III 1928, 1, 4 III 1928, 2, 9 IV 1928, 2, 20 VII 1928, 1, 5 VIII 1928, 1, 11 VIII 1928, 3, 15 VIII 1928, 2, 28 VIII 1928, 1, VI 1929, 1, 11 I 1930, A. COLLART (IRSN); Stanleyville, Ongoka (riv. Lowa), IV-IX 1952, 1, J. PANTOS (MRAC); Station de Gandajika, 1957, 1, P. DE FRANQUEN (MRAC); Thysville Rég., 1959\1963, 1, R. MICHAUX (MRAC); Tsela, VI 1924, 1, A. COLLART (IRSN); Tshuapa, Bokuma, XII 1951, 1, III 1952, 2, III 1954, 2, IV 1952, 2, R. P. LOOTENS (MRAC); Tshuapa, Etata, VII-VIII 1969, 1, J. HAUWAERTS (MRAC); Tshuapa, Ikela, 1955, 10, VIII 1956, 4, 1956, 18, IX 1956, 3, X 1956, 34, XI 1956, 7, R. P. LOOTENS (MRAC); Ubangi, Binga, 12 III 1932, 2, H. J. BRÉDO (MRAC); Uele, Bambesa, 1937-38, 8, J. VRYDAGH (MRAC); Uele, Gangala-na-Bodio, X 1956, 1, M. POLL (MRAC); Yangambi (Stan.), XII 1958, 6, P. DESSART (MRAC); 39 km S Warikale, 700 m, 25 XII 1957, 1, E. S. ROSS and R. E. LEECH (CAS).

***Laccoptera (Orphonodella) nigricornis* WAGENER, 1877 n. comb.**

(figs. 356-361)

Laccoptera nigricornis WAGENER, 1877: 65 (type in MM); WEISE, 1899: 249.

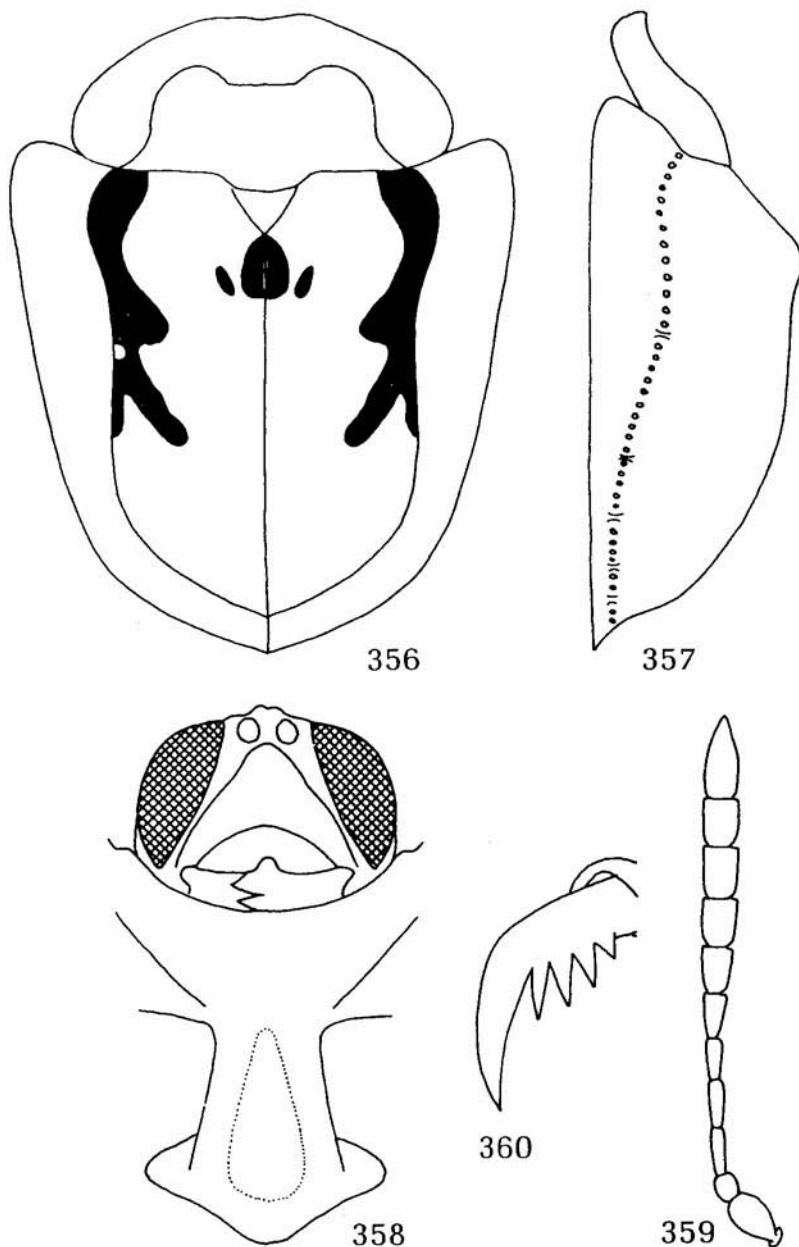
Laccoptera (Laccoptera) nigricornis: SPAETH, 1914: 84.

DESCRIPTION

Length: 8.8 mm, width: 7.1 mm, pronotum length: 2.8 mm, pronotum width: 5.1 mm. Body subtriangular, distinctly converging posterad (fig. 356).

Pronotum and elytra testaceous, sides of elytral disc from humerus to 1/2-2/3 length of elytra with black band, also postscutellar gibbosity black (fig. 356). Clypeus testaceous. Ventrites vary from mostly testaceous to mostly black, in pale specimens prosternum and metathorax testaceous with partly infuscate to brown thoracic plates, but abdomen wholly testaceous, in dark specimens metasternum and abdomen black, but prosternum brown. Legs black. Two basal antennal segments partly testaceous, remainder black, or whole antennae black.

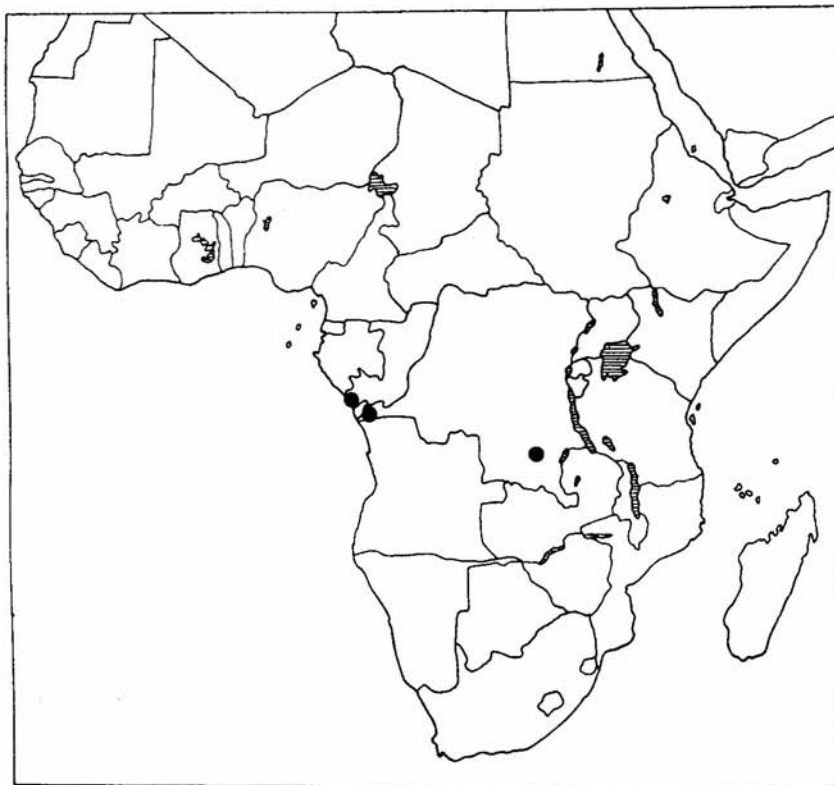
Pronotum subtrapezoidal, very broad, about 1.8 times wider than long, with maximum width at base, sides regularly rounded to subangulate, anterior margin not or only slightly emarginate, posterior corners obtuse. Disc moderately convex, with



356-360. *Laccoptera (Orphonodella) nigricornis*: 356 - body in dorsal view, 357 - body in lateral view, 358 - head and prosternum, 359 - antenna, 360 - tarsal claw

fine regular wrinkles, appears irregularly longitudinally striate, its surface microreticulate but glabrous. Explanate margin distinctly bordered from disc, subhorizontal, without rugosities or with only very low and broad transverse folds, but never appears rugose, at most slightly irregular. Honeycomb structure visible.

Scutellum triangular, with or without transverse sulcus. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a very soft angle, humeral angles moderately protruding anterad, subangulate to rounded. Disc strongly convex, with distinct but moderately high postscutellar gibbosity (fig. 357). Postscutellar impressions deep, margined by distinct elevation. Third interval forms regular longitudinal costa, often fifth interval tends to form a costa. Between suture and fifth interval only a few transverse folds. Sides of disc without distinct sculpture. Punctuation of disc large, partly disordered by elytral sculpture, but in sutural part punctures tend to form regular rows which occupy more than 1/3 of length of disc. On sides of disc punctures mostly irregular, only rows 5-7 tend to form regular rows. Marginal row distinct, with several transverse folds, posthumeral cavity shallow. Explanate margin moderately



361. Distribution of *Laccoptera* (*Orphonodella*) *nigricornis*

declivous, strongly, coarsely punctate, space between punctures convex, and surface appears slightly rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 358), strongly elevated, its surface flat or impressed in the middle, with a few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/4 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:83:76:66:63:76:73:76:80:140. Segment 3 about 1.7 times longer than 2 (fig. 359). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 358), with shallow sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws with large pecten on inner margin, extending to 1/3 length of claw (fig. 360), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Gabon, Republic of Congo and Zaire, record from Uganda needs confirmation (fig. 361).

REMARKS

Beside *L. basalis* it is the only subtriangular species with bicoloured elytra. *L. basalis* differs in smaller body, and black pattern occupies whole basal half of elytra. *L. nunbergi* and *L. triangula* are also similar to *L. nigricornis*, especially in dorsal sculpture and short pecten of claws, but they differ in unicoloured elytra.

MATERIAL EXAMINED

GABON: Lac Zonanghé, 1, LEMARIE (LB).

REPUBLIC OF CONGO: Loango Küste, 1, STEPHENS and BADEN (holotype, MM).

UGANDA: Br. Uganda, 1, ex coll. KRAATZ (MRAC).

ZAIRE: Kinitati-Zobe, XII 1915, 1, R. MAYNÉ (MRAC); Upemba Nat. Park, Mabwe, 585, 1-12 VIII 1947, 1, Miss. DE WITTE (MRAC).

***Laccoptera (Orphonodella) nunbergi* n. sp.**
(figs. 362-367)

ETYMOLOGY

Dedicated to Prof. M. NUNBERG (1896-1986), an excellent Polish coleopterist.

DESCRIPTION

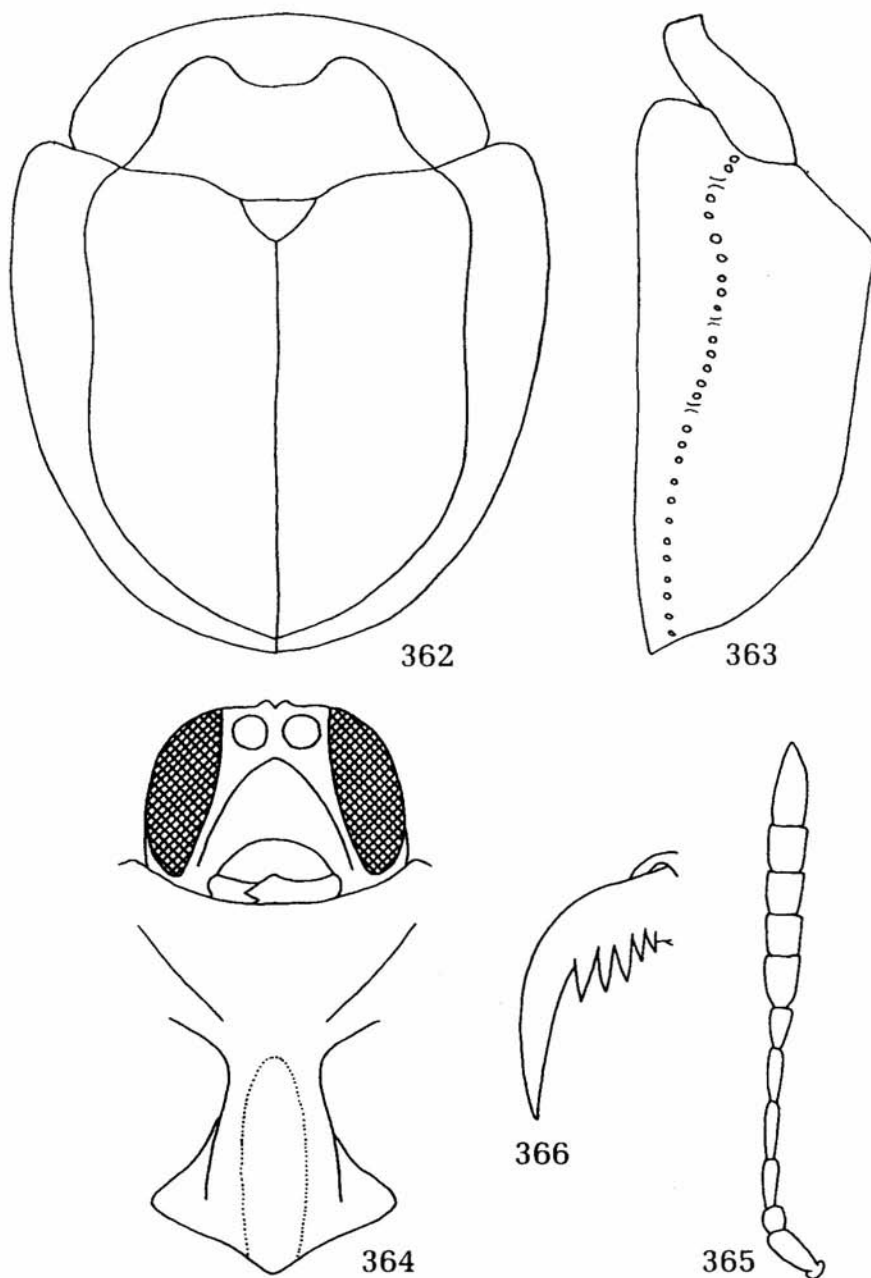
Length: 7.8-10.2 mm, width: 6.4-8.1 mm, pronotum length: 2.5-3.2 mm, pronotum width: 4.9-6.0. Body subtriangular, sides slightly rounded, strongly converging posterad (fig. 362).

Pronotum and elytra testaceous. Clypeus testaceous. Ventrites mostly black, prosternum and sides of abdomen often paler, brown to blackish. Two basal antennal segments testaceous, remainder black, third segment always black.

Pronotum subtrapezoidal, very broad, about 1.8-1.9 times wider than long, with maximum width at base, sides regularly rounded, anterior margin not or only slightly emarginate, posterior corners obtuse. Disc moderately convex, with fine irregular wrinkles, appears irregularly striate, its surface microreticulate but glabrous. Explanate margin distinctly bordered from disc, subhorizontal, without rugosities or with only very low and broad transverse folds, but never appears rugose or irregular. Honeycomb structure visible.

Scutellum triangular, with or without transverse sulcus. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a soft angle, humeral angles moderately protruding anterad, broadly rounded. Disc strongly convex, with distinct but moderately high postscutellar gibbosity (fig. 363). Postscutellar impressions deep, margined by distinct elevation. Third interval forms irregular longitudinal costa, often fifth interval tends to form a costa. Between suture and fifth interval transverse folds form a large reticulation. Sides of disc without distinct sculpture. Punctuation of disc large, partly disordered by elytral sculpture, but in sutural part and on sides of disc punctures tend to form regular rows which occupy more than 1/3 length of disc. Marginal row distinct, with several transverse folds, posthumeral cavity shallow. Explanate margin moderately declivous, strongly, coarsely punctate, space between punctures convex, and surface appears slightly rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, bottom of impressions dull. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 364), strongly elevated, its surface flat or impressed in the middle, with a few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/6 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:43:85:74:71:60:60:62:62:68:108. Segment 3 about 1.9 times longer than 2 (fig. 365). In male antennae slightly longer than in female, especially the last segment.



362-366. *Laccoptera (Orphonodella) nunbergi*: 362 - body in dorsal view, 363 - body in lateral view, 364 - head and prosternum, 365 - antenna, 366 - tarsal claw

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically, with shallow sulcus on whole length (fig. 364). Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with short pecten, extending to 1/4 length of claw (fig. 366), outer margin micropectinate.

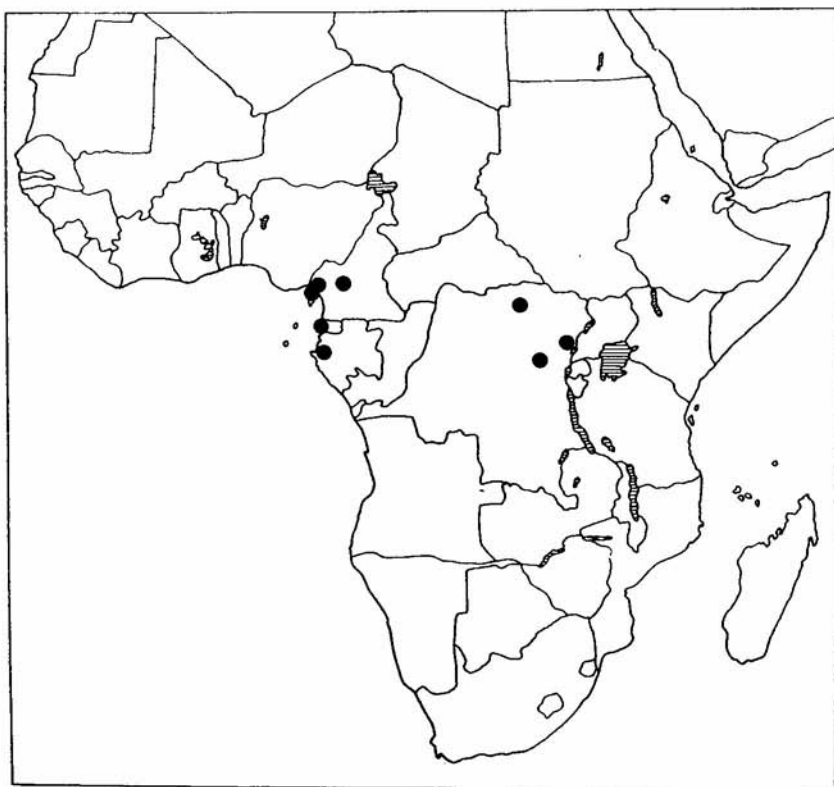
Host plant and bionomics unknown.

DISTRIBUTION

Cameroon, Equatorial Guinea, Gabon and Zaire (fig. 367).

REMARKS

It belongs to the group of species with subtriangular body, base of elytra distinctly wider than base of pronotum, elytra and pronotum uniformly testaceous to brown. The



367. Distribution of *Laccoptera (Orphonodella) nunbergi*

group comprises also *L. corrugata*, *L. triangula*, *L. montivaga*, and *L. caduca*. The last two species differ in strong elytral sculpture, with large reticulation also on sides of disc, while in *L. nunbergi*, *L. triangula* and *L. corrugata* side of disc has no distinct sculpture. *L. corrugata* differs in the third antennal segment partly pale, testaceous to brown (always black in *L. nunbergi*), and pecten of tarsal claws larger, extending to half length of claw (to 1/4 length of claw in *L. nunbergi*). *L. triangula* is the most similar, it also has the third antennal segment usually black and short pecten of claw, but differs in humeral angles strongly protruding anterad, subangulate to acute (broadly rounded in *L. nunbergi*).

MATERIAL EXAMINED

CAMEROON: holotype and paratype, Barombi, CONRADT (MM); paratypes, Camerun, 2, F. MONROS collection 1959 (USNM); paratype, Joko, 1 (LB); 3 paratypes, Kamerun, SCHRÖDER (ex coll. WEISE, no. 102655, 1 ZMHU, 2 LB); 13 paratypes, Kamerunberg (2 ZMHU, 2 LB, 9 FMNH); paratype, Tome n. Victoria, 22-31 I 1980, 1, wypr. SKNB UŁ (LB).

EQUATORIAL GUINEA: paratype, "Benito, Congo Franc." (MM).

GABON: paratype, Bas-Ogooue, Lambaréné, 1917, 1, FAUVEL (NMP); 3 paratypes, Gabon (LB); paratype, Lambaréné, 1, FAVAREL (LB).

ZAIRE: paratype, Béni, 24 XI 1946, 1, A. COMELLINI (MHNG); paratype, Lubutu-Utike, 30 IX 1929, 1, A. COLLART (IRSN); paratype, Oriente Prov., Bas-Uele Distr., Bambesá, 14 III 1957, 1 (LB).

Laccoptera (Orphonodella) rubricollis SPAETH, 1932 n. comb.

(figs. 368-373)

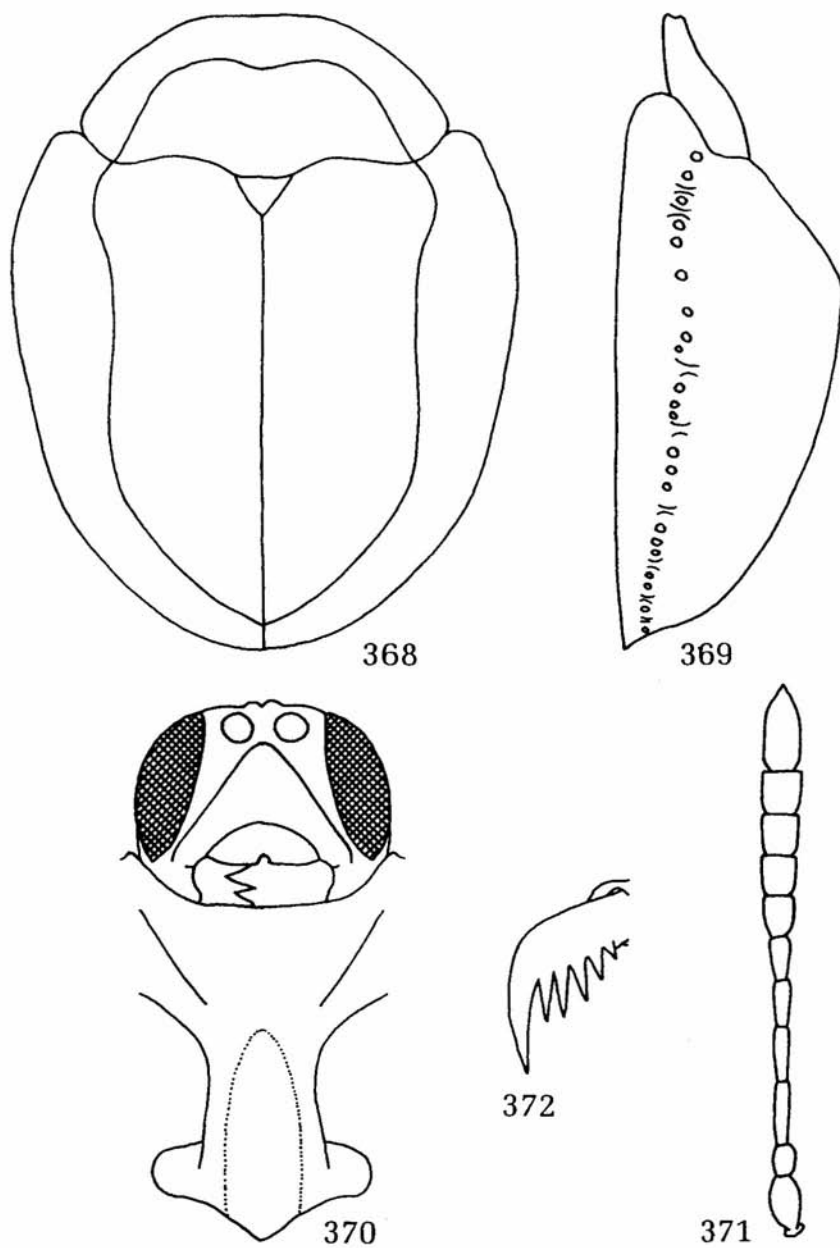
Laccoptera (s. str.) *rubricollis* SPAETH, 1932: 231 (syntypes in MRAC, MM).

DESCRIPTION

Length: 8.8-9.2 mm, width: 7.1-7.3 mm, pronotum length: 2.9-3.0 mm, pronotum width: 5.3-5.7 mm. Body stout, subtriangular, sides moderately rounded, moderately converging posterad (fig. 368).

Pronotum and scutellum reddish. Elytra deep black. Clypeus reddish-brown. Ventrites mostly black, prosternal collar partly testaceous to brown, prosternal process often brown, sides of abdomen sometimes with small, paler, reddish to brown spots. Legs black. Basal three antennal segments partly testaceous to brown, remainder black, segment 3 often infuscate.

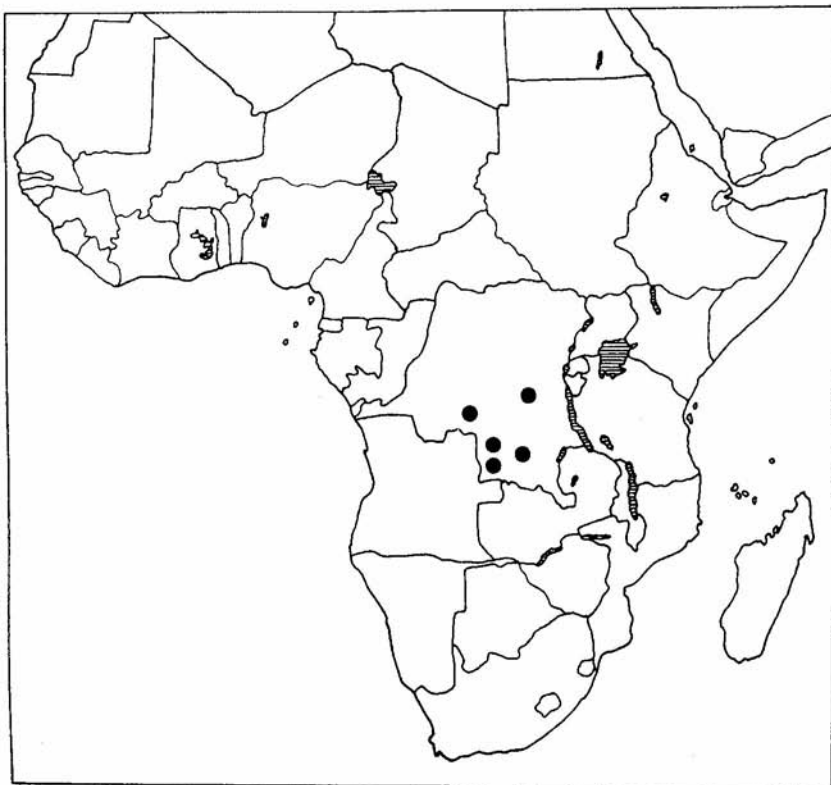
Pronotum subtrapezoidal, about 1.8-1.9 times wider than long, with maximum width at base. Sides moderately rounded to almost straight, posterior corners subangulate. Anterior margin slightly impressed. Disc moderately convex, sides with irregular, obtuse wrinkles, appear rugose. Area above head and basal, central part of



368-372. *Laccoptera (Orphonodella) rubricollis*: 368 - body in dorsal view, 369 - body in lateral view, 370 - head and prosternum, 371 - antenna, 372 - tarsal claw

disc without wrinkles, punctate, or with indistinct wrinkles, does not appear rugose. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular folds. Honeycomb structure almost invisible. Surface distinctly microreticulate, dull.

Scutellum triangular, usually shallowly impressed in the middle, or with transverse sulcus. Base of elytra distinctly wider than pronotum. Anterior margin moderately crenulate, forms a soft angle, humeral angles moderately protruding anterad, rounded. Sides of elytra, behind humeral angle, straight, not emarginate. Maximum width of elytra in subhumeral part, then elytra moderately converging posterad, so sides appear moderately rounded. Disc regularly convex, with moderately high postscutellar elevation (fig. 369). Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval distinct on whole length, forms a sharp irregular costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Punctuation of disc moderately large, mostly irregular, vanishes between



373. Distribution of *Laccoptera (Orphonodella) rubricollis*

elytral sculpture, never arranged in interrupted rows. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large punctures and numerous irregular wrinkles, and transverse folds, rugose, honeycomb structure invisible. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, elytral sculpture glabrous, bottom of cells dull. Apex of elytral epipleura bare.

Clypeus triangular, strongly elevated, about twice wider than long (fig. 370), surface flat or only shallowly impressed in the middle, with several punctures. Labrum very shallowly emarginate to 1/6 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:53:100-:100:96:83:96:90:90:96:160. Segment 3 about 1.9 times longer than 2 (fig. 371). Distal segment in male, on ventral side, with short erected hair.

Prosternal collar large, on sides with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically, deeply canaliculate on almost whole length (fig. 370). apex with large, punctate impression. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 372), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

S Zaire (fig. 373).

REMARKS

It is a very distinct species. *L. bicolor* and *L. rugicollis* have also red pronotum and deep black elytra but differ in slimmer body, in *L. bicolor* parallelsided, in *L. rugicollis* subtriangular but less rounded on sides than in *L. rubricollis*. Bicoloured specimens of *L. montivaga* are usually smaller, slimmer, with elytra never as deep black as in *L. rubricollis*.

MATERIAL EXAMINED

ZAIRE: Katanga, Kamina, II-III 1960 (LB); Kibombe, 1 (paratype, MM); Luebo, II 1923, 1, L. ACHTEN (holotype, MRAC); Lulua, Kapanga, III 1933, 1, XI 1933, 1, G. F. OVERLAET (MRAC), XI 1932, 2, G. F. OVERLAET (MM), V 1933, 3 (MM); Sandoa, 5 III 1919, 1, F. G. OVERLAET (paratype, MRAC), 26 X 1920, 1, G. OVERLAET (paratype, MM), X 1931, 1, F. G. OVERLAET (LB).

***Laccoptera (Orphonodella) rugicollis* THOMSON, 1858 n. comb.**
(figs. 374-379)

Laccoptera rugicollis THOMSON, 1858: 233 (type in ?); WEISE, 1899: 249.

Laccoptera (Laccoptera) rugicollis: SPAETH, 1914: 84.

Laccoptera (Eulaccoptera) rugicollis: SHAW, 1955: 237; 1961: 24.

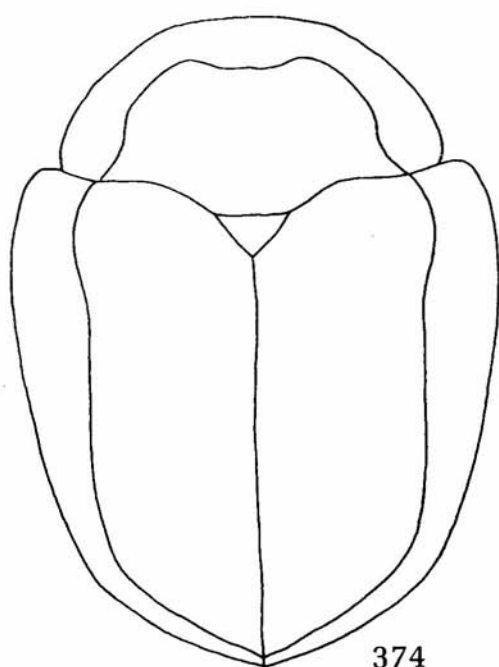
DESCRIPTION

Length: 8.2-9.1 mm, width: 6.0-6.5 mm, pronotum length: 2.8-3.0 mm, pronotum width: 4.7-5.2 mm. Body subtriangular, moderately converging posterad (fig. 374).

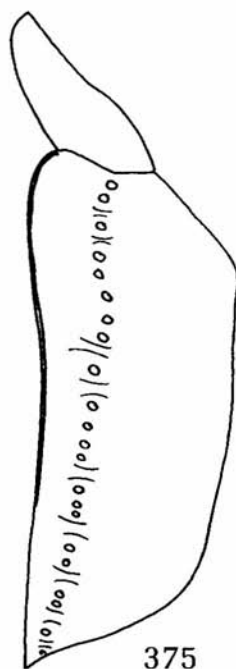
Pronotum red. In some specimens pronotum is mostly infusate, but explanate margin always paler, reddish, without pale spots in front of head. Elytra deep black. Clypeus reddish-brown. Ventrites brown to black, sides of abdomen sometimes with small, paler, reddish to brown spots. Legs black. Basal three to four antennal segments partly testaceous to brown, remainder black, segments 3 and/or 4 often infusate, occasionally segment 5 partly testaceous.

Pronotum subtrapezoid, about 1.7 times wider than long, with maximum width at base. Sides moderately rounded to almost straight, posterior corners subangulate. Anterior margin slightly impressed. Disc moderately convex, whole surface with irregular wrinkles, rugose. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in specimens with pale red explanate margin. Surface indistinctly microreticulate, glabrous.

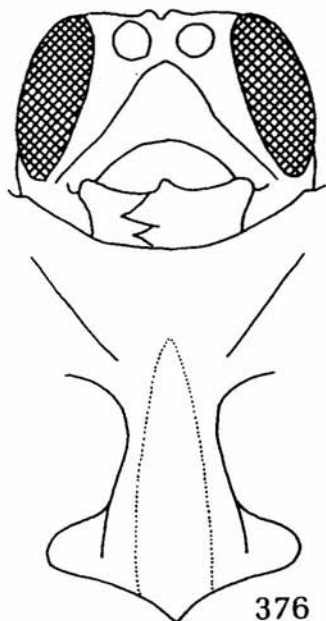
Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles, or with transverse sulcus. Base of elytra distinctly wider than pronotum. Anterior margin moderately crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight, not emarginate. Maximum width of elytra in subhumeral part, then elytra moderately converging posterad, so sides appear slightly rounded. Disc regularly convex, with low postscutellar elevation (fig. 375), forms large H-shaped folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Puncturation of disc moderately large, mostly irregular, vanishes between elytral sculpture, never arranged in interrupted rows. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large punctures and numerous irregular wrinkles, and transverse folds, rugose, honeycomb structure invisible. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, strongly glabrous. Apex of elytral epipleura bare.



374



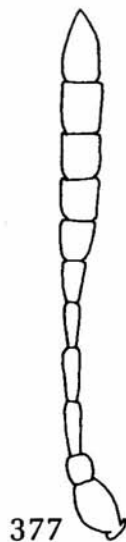
375



376



377



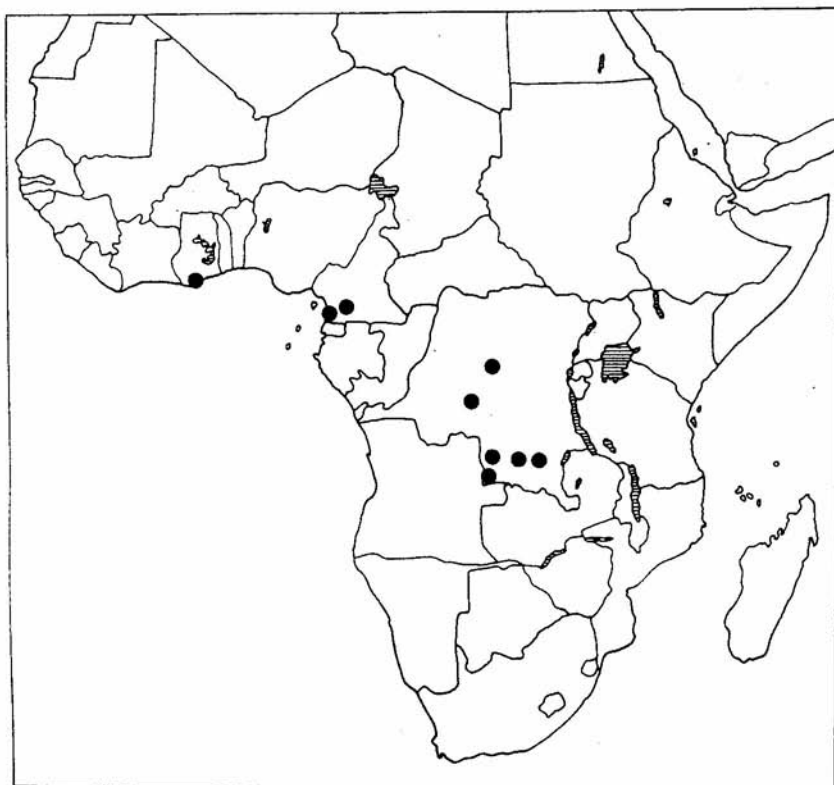
378

374-378. *Laccoptera (Orphonodella) rugicollis*: 374 - body in dorsal view, 375 - body in lateral view, 376 - head and prosternum, 377 - antenna, 378 - tarsal claw

Clypeus triangular, strongly elevated, about twice wider than long (fig. 376), surface flat or only shallowly impressed in the middle, with several punctures. Labrum very shallowly emarginate to 1/6 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:46:110:93:90:80:83:73:80:83:136. Segment 3 about 2.4 times longer than 2 (fig. 377). Distal segment in male, with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically, deeply canaliculate on almost whole length (fig. 376), apex with large, punctate impression. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 378), outer margin micropectinate.

Host plant and bionomics unknown.



379. Distribution of *Laccoptera (Orphonodella) rugicollis*

DISTRIBUTION

Cameroon, Ghana and Zaire (fig. 379).

REMARKS

I have identified this species based on specimens determined as *L. rugicollis* by F. SPAETH. The type probably lost. In various old collections there are bicoloured specimens of *L. montivaga* determined as *L. rugicollis*, and separation of *L. montivaga* and *L. rugicollis* is unclear. I have identified as *L. rugicollis* specimens with deep black elytra and red to brown pronotum, which are slightly larger than specimens of *L. montivaga*, less triangular, and have less trapezoidal pronotum, but these characters are well visible only in comparison with series of properly identified specimens. It is not unlikely that *L. rugicollis* is only an extreme form of *L. montivaga*, but the correct identification of *L. rugicollis* requires examination of the type material. *L. bicolor* at first glance is very similar to *L. rugicollis* but has almost parallelsided body and almost semicircular pronotum.

MATERIAL EXAMINED

CAMEROON: Jaunde, 1 (MM); Nkolbisson, Dept. Nyong-Sanaga, X 1963, 2, L.G. SEGERS (MRAC); Wemba, VIII 1911, 1, L. KOLIN (MM).

GHANA: Takoradi, 40, BESNARD (33 MRAC, 1 ER, 6 LB).

ZAIRE: Dilolo, IX-X 1933, 1, H. DE SAEGER (MRAC); Katanga, Kinda, 1 (MM); Kivu, Irangi, 26 I 1967, 1, Dr. JILLY (SMNS); Kivu, Lwiro, 30 I 1967, 1, Dr. JILLY (SMNS); Lulua, Sandoa, X-XII 1932, 1, F.G. OVERLAET (MRAC); Sankuru, Komi, 31 I 1930, 1, J. GHESQUIÈRE (MRAC); Tshuapa, Ikela, XI 1956, 2, R.P. LOOTENS (MRAC); Upemba Nat. Park, Kaziba affl. g. Senze S., affl. dr. Lufira (1140 m), 4-12 II 1948, 1, G. F. DE WITTE (MRAC).

***Laccoptera (Orphonodella) ruginosa* BOHEMAN, 1855 n. comb.**

(figs. 380-387)

Laccoptera ruginosa BOHEMAN, 1855: 61 (type in NRS); SPAETH, 1909: 286.

Orphonoda ruginosa: WEISE, 1899: 253.

Laccoptera (Laccoptera) ruginosa: SPAETH, 1914: 84.

Laccoptera (Eulaccoptera) ruginosa: SHAW, 1956b: 266.

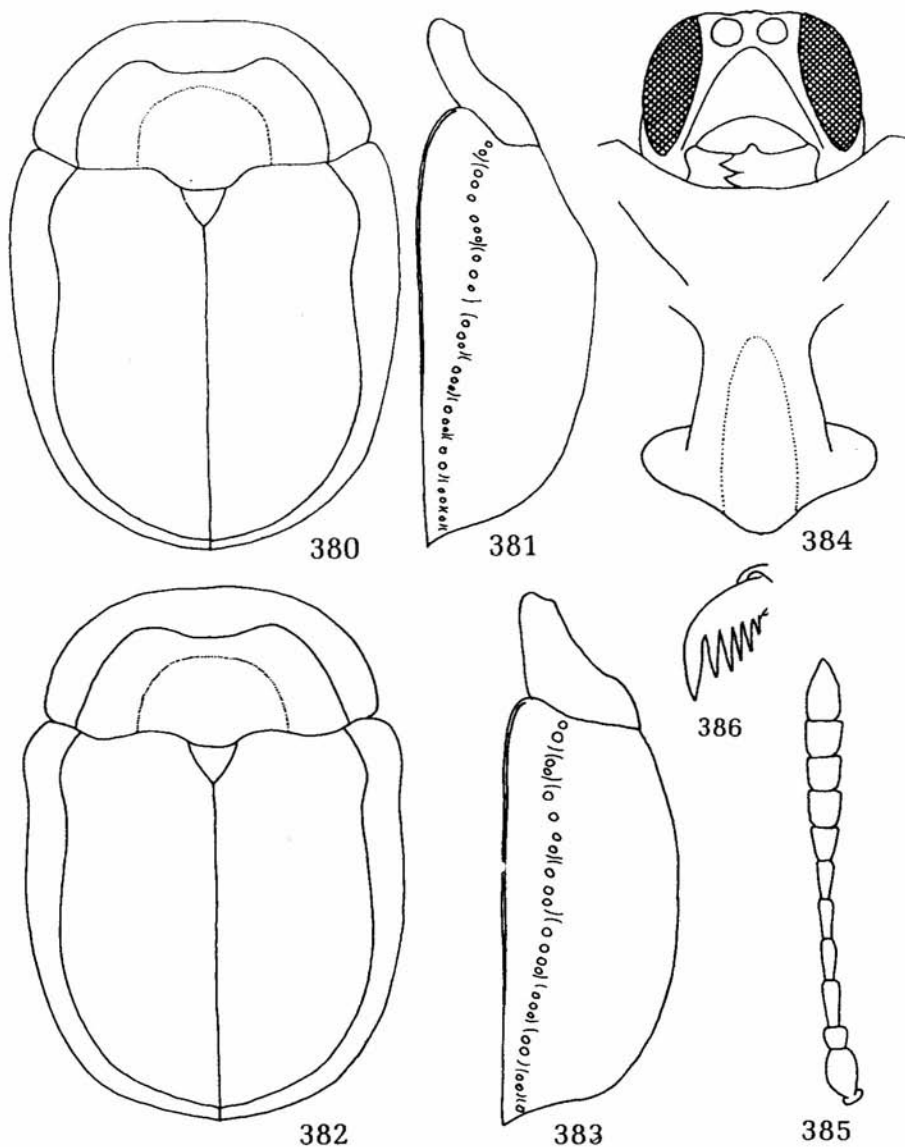
Laccoptera marcida WEISE, 1899: 251 (type in ZMHU); SPAETH, 1909: 286 (as syn. of *ruginosa*).

Laccoptera famula SPAETH, 1924: 305 (syntypes in MM), n. syn.

Laccoptera (Orphonodella) famula: SPAETH, 1932: 229; SHAW, 1956b: 266.

DESCRIPTION

Length: 8.0-9.4 mm, width: 5.8-7.1 mm, pronotum length: 2.8-3.2 mm, pronotum width: 4.9-5.8 mm. Body oval, in populations from northern part of

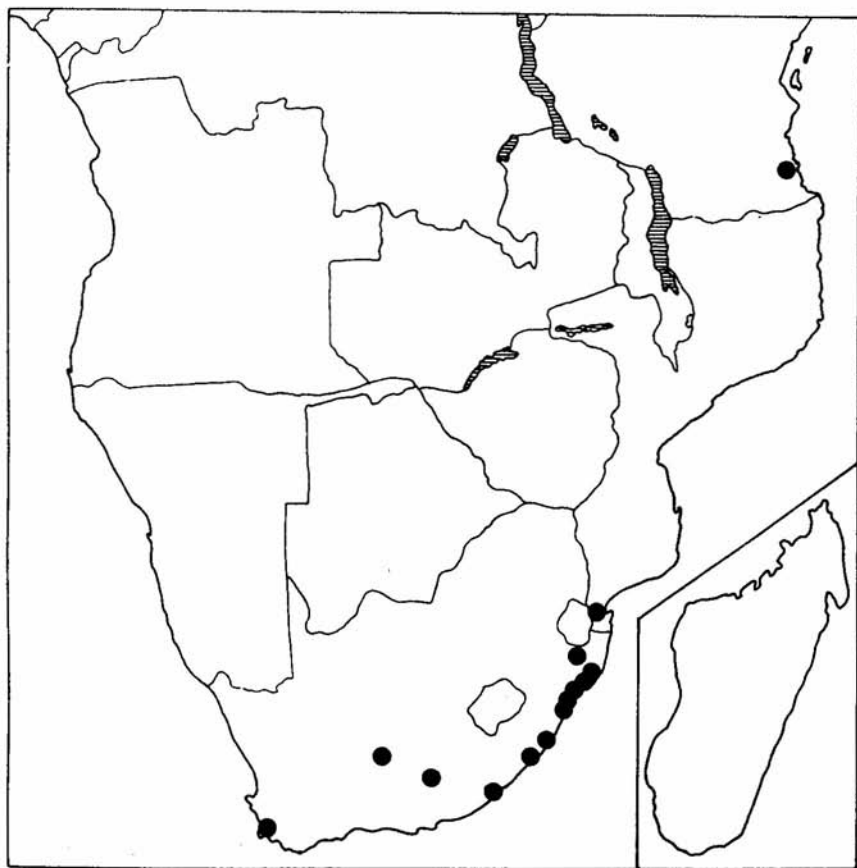


380-386. *Laccoptera (Orphonodella) ruginosa*: 380, 382 - body in dorsal view, 381, 383 - body in lateral view (382, 383 - "famula" form), 384 - head and prothorax, 385 - antenna, 386 - tarsal claw

distribution area slimmer and less converging posterad (fig. 382), than in populations from the southern part (fig. 380).

Pronotum and elytra testaceous to brown. Clypeus testaceous, prothorax varies from testaceous to black, meso and metathorax usually partly or whole brown to black, abdomen varies from mostly brown to wholly black. Legs usually black, but in pale specimens femora sometimes brown. Two basal antennal segments testaceous, third and fourth segments testaceous to brown, remainder black. In some specimens also fifth segment partly or completely testaceous to brown.

Pronotum subtrapezoidal, about 1.8 times wider than long, with maximum width at base, sides slightly rounded, anterior margin not or shallowly emarginate, posterior corners obtuse. Disc moderately convex, with irregular wrinkles which tend to form longitudinal or/and oblique striation, its surface microreticulate, slightly dull to



387. Distribution of *Laccoptera* (*Orphonodella*) *ruginosa*

glabrous. In specimens from southern part of distribution range basal part of disc is strongly elevated and regularly longitudinally striate, in specimens from the northern part (= *famula*), basal part of disc is moderately elevated and striation is less regular, partly longitudinal, partly oblique. Area above head in northern populations with rugosities, in southern populations usually without rugosities. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular wrinkles, appears strongly rugose.

Scutellum triangular, usually with transverse sulcus, or fold. Base of elytra only slightly wider than base of pronotum, sides moderately rounded, moderately converging posterad. Anterior margin moderately crenulate, forms a soft angle, humeral angles rounded, slightly protruding anterad. Disc strongly convex, with low postscutellar gibbosity, forms rather H-shaped elevation than distinct tubercle, in southern populations the elevation is more distinct (fig. 381) than in northern populations (fig. 383). Postscutellar impressions deep, margined by distinct elevation. Whole surface of disc with large, elevated reticulation, third interval forms regular longitudinal costa, often also fifth interval tends to form a costa. Punctuation of disc large, completely disordered by elytral sculpture, also on sides of disc. Sometimes two sutural rows almost regular, and on sides of disc several punctures arranged in rows, but regular rows never occupy more than 1/4 length of disc. Marginal row distinct, with several transverse folds, posthumeral cavity moderately deep. Explanate margin moderately declivous, strongly, coarsely punctate, and with irregular wrinkles, appears rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous, bottom of impressions usually dull. Apex of elytral epipleura bare.

Clypeus about twice wider than long, triangular (fig. 384), strongly elevated, its surface flat, with few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/4 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:106:80:80:66:63:70:70:83:146. Segment 3 about 2.1 times longer than 2 (fig. 385). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 384), with deep sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with large pecten, extending to half length of claw (fig. 386), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Tanzania, Mozambique and South Africa (fig. 387).

REMARKS

It is intermediate species between testaceous to brown subtriangular species of *L. corrugata* group and parallelsided species of *L. abyssinica* group. Only *L. deremensis* is similarly shaped, but differs in generally smaller body, more irregular pronotal sculpture, never forming a regular longitudinal or oblique striation.

MATERIAL EXAMINED

MOZAMBIQUE: Delagoa, XII 1913, 2 (MHNG); Tenains, 1, G. AUDEAUD (MHNG).

SOUTH AFRICA: Cambridge, 17 I 1976, 1, R. E. PARROT (MCSNV); Cape Province, 2 X 1922, 1, H. K. MUNRO (TM); Cambridge, East London, 18 I 1976, 1, R. E. PARROT (ER); Cap. b. sp., 1 (NMP); Gonubie, East London, 9 I 1976, 1, R. E. PARROT (ER); Natal, Glins Forest, near Eshowe, 7 IV 1976, 1, P. E. REAVEL (TM); Natal, Indaleni, Distr. Richmond, 1 (MRAC); Natal, Mkuze, I 1976, 1, P. E. REAVEL (TM); Natal, Southbroom, 1 (MRAC); Natal, Umtenweni, VII 1953, 1, A. L. CAPENER (MM); Tongaat, 1909, 1, H. C. BURNUP (TM); Transkei, Port St. Jones, Silaka, grassnetting, 29 XI 1987, 1, S. ENDRÖDY-YOUNGA (TM); Zululand, Empangeni, XII 1975, 1, 20 XII 1975, 1, 6 I 1976, 1, 20 VIII 1977, 1, P. E. REAVEL (TM); Zululand, Eshowe, 21 I 1953, 2, 29 I 1953, 1, A. L. CAPENER (MM); Zululand, Richardsbay, 3 IV 1977, 1, P. E. REAVEL (TM).

TANZANIA: Dtsch. O. Afrika, 3 (lectotype and 2 paralectotypes of *L. famula*, present designation, MM); Lindi, 1, coll. LE MOULT (MM); Lindi, II 1903, 1 (MM).

VARIA: Africa or., 1, HEYNE (holotype of *L. marcida*, ZMHU).

***Laccoptera (Orphonodella) salebra* SPAETH, 1924**

(figs. 388-391)

Laccoptera salebra SPAETH, 1924: 306 (holotype in MM).

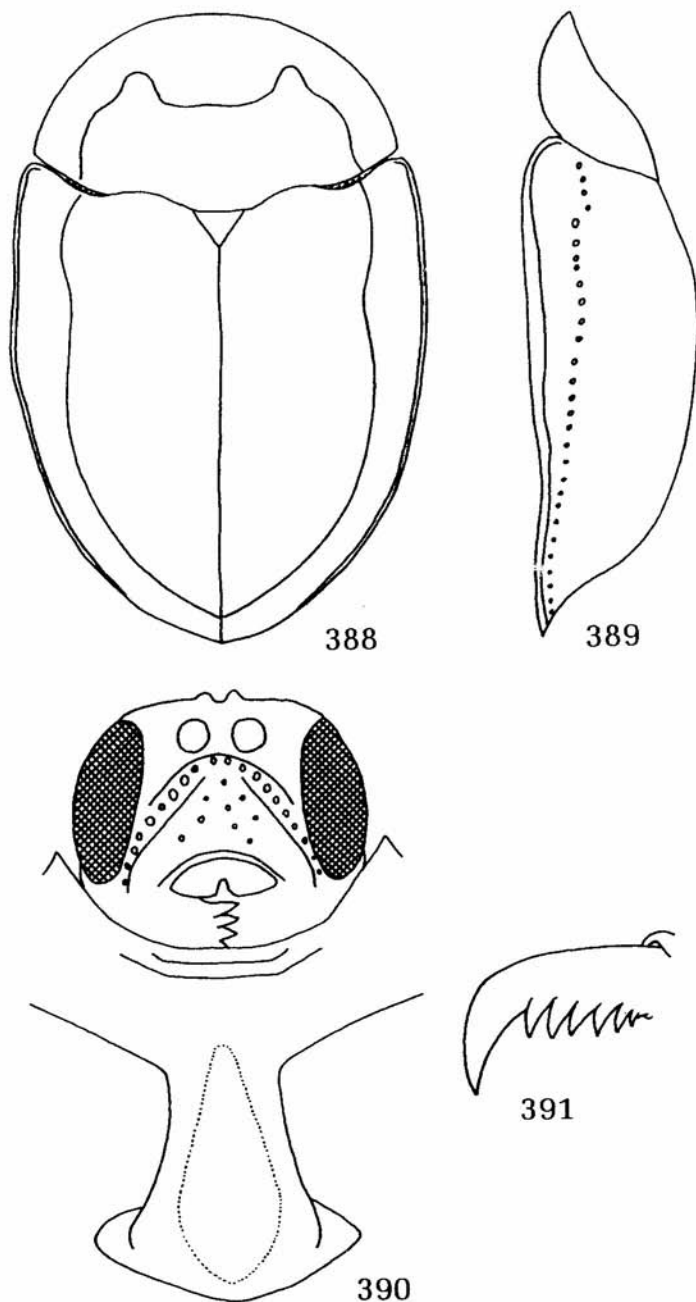
Laccoptera (Orphonodella) salebra: SPAETH, 1932: 229.

DESCRIPTION

Length: 8.4 mm, width: 6.1 mm, pronotum length: 2.9 mm, pronotum width: 5.2 mm. Body elongate-oval, almost parallelsided (fig. 388).

Pronotum and elytra brown. Clypeus brown, ventrites brown, thorax slightly infuscate on sides. Legs brown, but probably in fully sclerotized specimens black. Four basal antennal segments testaceous, remainder black.

Pronotum semicircular, about 1.8 times wider than long, posterior corners subangulate. Disc moderately convex, with moderately fine wrinkles forming irregular, longitudinal and oblique striation. Surface microreticulate, dull. Basal part of disc without median sulcus. Explanate margin indistinctly bordered from disc, narrow,



388-391. *Laccoptera (Orphonodella) salebra*: 388 - body in dorsal view, 389 - body in lateral view, 390 - head and prosternum, 391 - tarsal claw

with broad margination, on both sides of head distinctly impressed, surface with folds and wrinkles, irregular. Honeycomb structure invisible.

Scutellum triangular, flat. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight. Maximum width of elytra in the middle, then elytra broadly rounded posterad. Disc regularly convex, at top slightly depressed, with no postscutellar elevation (fig. 389), but with postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa, also seventh interval forms an irregular costa. Between suture and third interval, and between third and fifth, and fifth and seventh intervals several transverse and oblique folds. Sides of disc with numerous transverse folds and irregular wrinkles. Puncturation of disc moderately large, mostly irregular, vanishes between elytral sculpture, only in two sutural and two marginal rows punctures tend to form regular rows. Each puncture surrounded by radial sculpture. Marginal row distinct, interrupted by several transverse folds, no distinct postscutellar cavity. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, subhorizontal, with transverse folds, rugose, honeycomb structure invisible. Lateral margination broad, appears double. Surface of disc and explanate margin microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus triangular, strongly elevated, about twice wider than long (fig. 390), surface flat or only shallowly impressed in the middle, with several punctures. Labrum very shallowly emarginate to 1/6 length. Antennal cavities narrowly separated.

Prosternal collar large, with transverse sulci, sides form a very strong angle. Prosternal process very broad, strongly expanded apically (fig. 390), deeply canaliculate in anterior third, apex with deep pit, sides punctate. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with short pecten, extending to 1/4 length of claw (fig. 391), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

? East Africa.

REMARKS

It is known only from holotype, partly damaged, with missing abdomen, not fully sclerotized, without precise type locality. Broad lateral margination of elytra, and sculpture of pronotum and elytra place this species close only to *L. burorum*, but in *L. burorum* longitudinal striation of pronotal disc is more regular, finer, with longitudinal wrinkles straight. *L. salebra* may be only an immature specimen of *L. burorum* with not fully developed pronotal sculpture before death from collector's hand.

MATERIAL EXAMINED

VARIA: Afr. orient., 1 (holotype, MM).

***Laccoptera (Orphonodella) sassana* SPAETH, 1912**

(figs. 392-397)

Laccoptera (Orphonodella) sassana SPAETH, 1912a: 129 (syntypes in MRAC, MM); 1932: 229.

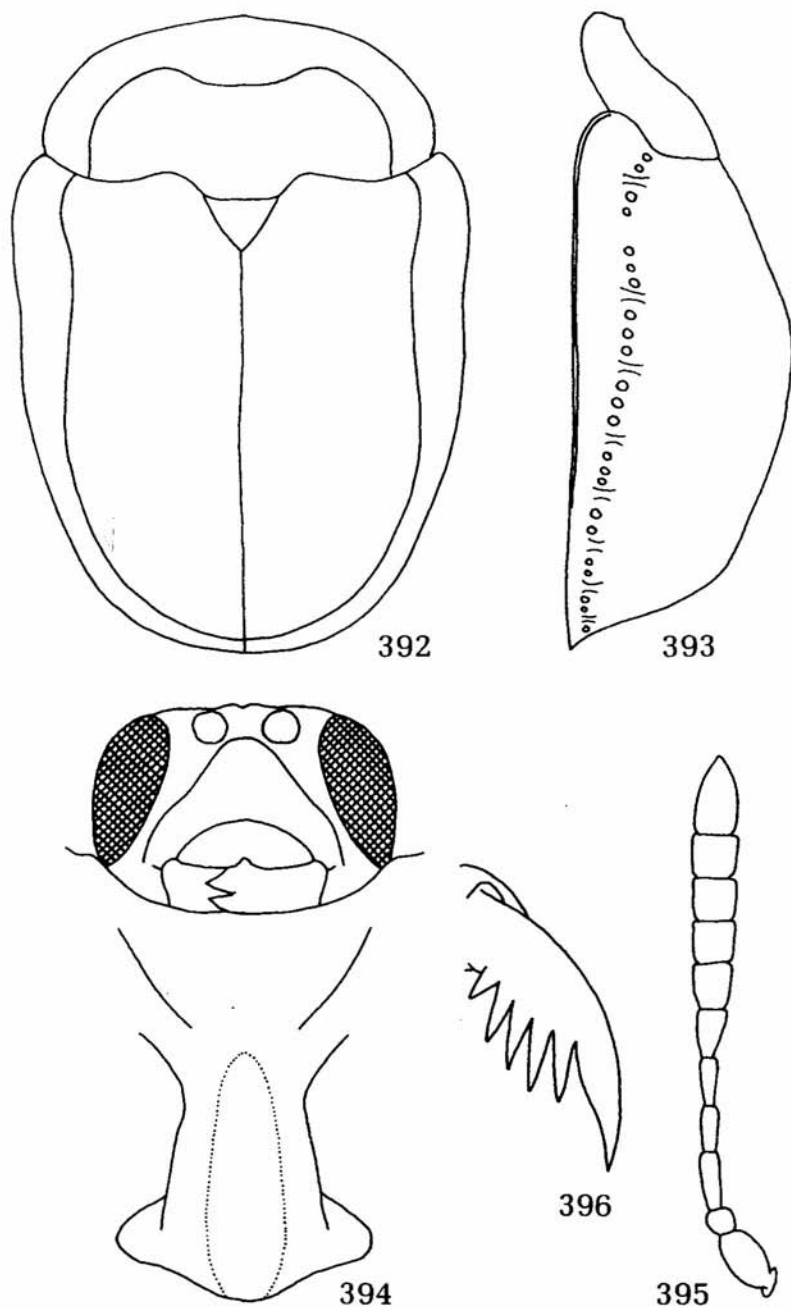
DESCRIPTION

Length: 8.2-9.2 mm, width: 5.8-6.3 mm, pronotum length: 2.8-3.2 mm, pronotum width: 4.7-5.5 mm. Body elongate, almost parallelsided (fig. 392).

Pronotum and elytra vary from brown to black. In dark brown and black specimens anterior margin of pronotum with two yellow, transparent spots. Clypeus brown. Ventrites dark brown to black, sides of abdomen sometimes with paler, testaceous to brown spots. Legs black. Basal three to four antennal segments testaceous, remainder black, segments 3 and/or 4 often infuscate.

Pronotum almost semicircular, about 1.7 times wider than long, with maximum width in front of the base. Sides regularly rounded, posterior corners subangulate. Anterior margin often slightly impressed. Disc moderately convex, whole surface with irregular wrinkles, rugose. Explanate margin indistinctly bordered from disc, subhorizontal, with irregular rugosities. Honeycomb structure visible only in pale specimens. Surface microreticulate, slightly dull to glabrous.

Scutellum triangular, usually shallowly impressed in the middle, often with a few wrinkles. Base of elytra slightly wider than pronotum. Anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Sides of elytra, behind humeral angle, straight or only slightly emarginate. Maximum width of elytra in subhumeral part, then elytra slightly converging posterad. Disc regularly convex, with no postscutellar elevation (fig. 393), but with strong postscutellar oblique folds. Almost whole disc with strong reticulation of longitudinal costae and transverse folds. Third interval slightly irregular but distinct on whole length, forms a sharp costa, fifth interval more irregular, partly interrupted, forms a costa. Between suture and third interval, and between third and fifth interval several transverse and oblique folds, the largest, oblique fold connects third interval with postscutellar point. Sides of disc with numerous transverse folds and irregular wrinkles. Punctuation of disc moderately large, mostly irregular, vanishes between elytral sculpture, only on sides of disc punctures tend to form regular rows, interrupted and disordered by elytral sculpture. Marginal row distinct, interrupted by several transverse folds, posthumeral cavity moderately deep. Explanate margin narrow, as wide as 1/4 width of disc of each elytron, moderately declivous, with large punctures and numerous irregular wrinkles, rugose, honeycomb structure visible only in pale specimens. Lateral margination narrow, simple. Surface of disc and explanate margin microreticulate, slightly dull to



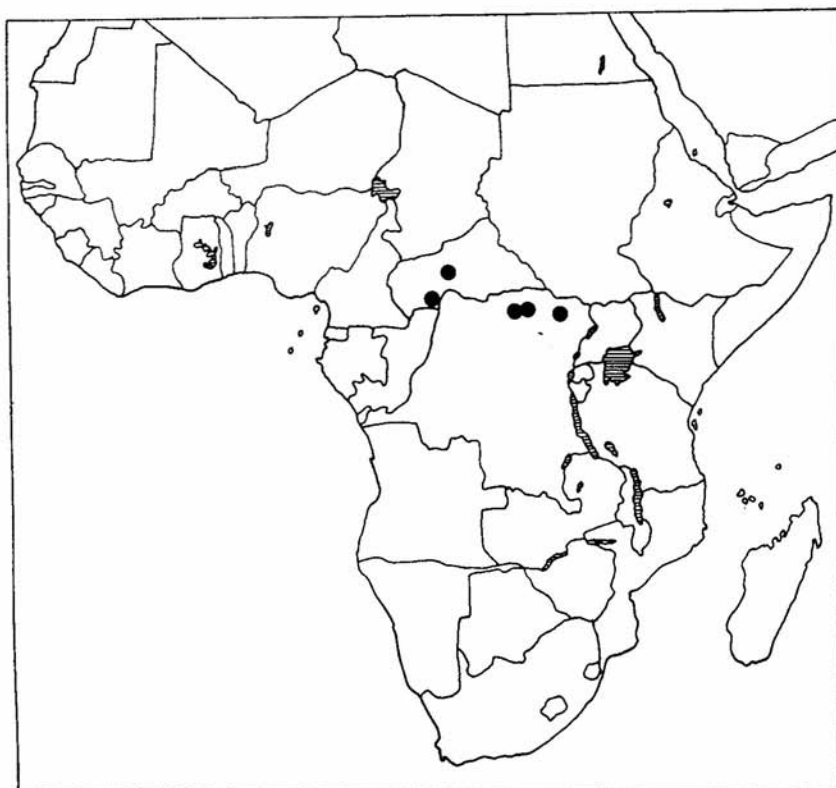
392-396. *Laccoptera (Orphonodella) sassana*: 392 - body in dorsal view, 393 - body in lateral view, 394 - head and prosternum, 395 - antenna, 396 - tarsal claw

glabrous, in immature specimens surface of disc with extremely short, scarce erected setae, invisible in old, dried specimens. Apex of elytral epipleura bare.

Clypeus triangular, strongly elevated, about twice wider than long (fig. 394), surface flat or only shallowly impressed in the middle, usually with a few punctures. Labrum emarginate to 1/5-1/4 length. Antennal cavities narrowly separated. Antennae moderately long, extending to the middle of metasternum, in females slightly shorter than in males. Length ratio of antennal segments: 100:50:96:86:83:80:80:80:80:83:150. Segment 3 about 1.9 times longer than 2 (fig. 395). Distal segment in male with short erected hair on ventral side.

Prosternal collar large, with transverse sulci, sides form a moderate angle. Prosternal process moderately broad, strongly expanded apically, deeply canaliculate on almost whole length (fig. 394), apex with large, punctate impression. Legs moderately slim, tarsi broad, the last segment distinctly longer than the third but not extending behind marginal setae. Claws on inner margin with large pecten, extending to almost half length of claw (fig. 396), outer margin micropectinate.

Host plant and bionomics unknown.



397. Distribution of *Laccoptera (Orphonodella) sassana*

DISTRIBUTION

N Zaire and S Republic of Central Africa (fig. 397).

REMARKS

It belongs to the species group with almost parallelsided body. It is extremely similar to *L. abyssinica* and may represent only its geographical form, restricted to the forest region of N Zaire and S Republic of Central Africa. See also remarks under *L. abyssinica*.

MATERIAL EXAMINED

REPUBLIC OF CENTRAL AFRICA: Bangui, 1 (LB); Fort Crampel, 6 (IRSN, 3 LB).

ZAIRE: Dungu: XI 1919, 2, P. VAN DES PLAS (1 MRAC, 1 LB); Region de Sassa, 1895-96, 2, COLMANT (holotype and paratype, MRAC); Sassa, 1, VELLI (paratype, MM); Uele, Tukpwo, IX 1937, 1, L. LECONTE (MRAC).

***Lacoptera (Orphonodella) triangula* SPAETH, 1912 n. comb.**

(figs. 398-404)

Lacoptera (i. sp.) *triangula* SPAETH, 1912a: 130 (holotype in MRAC).

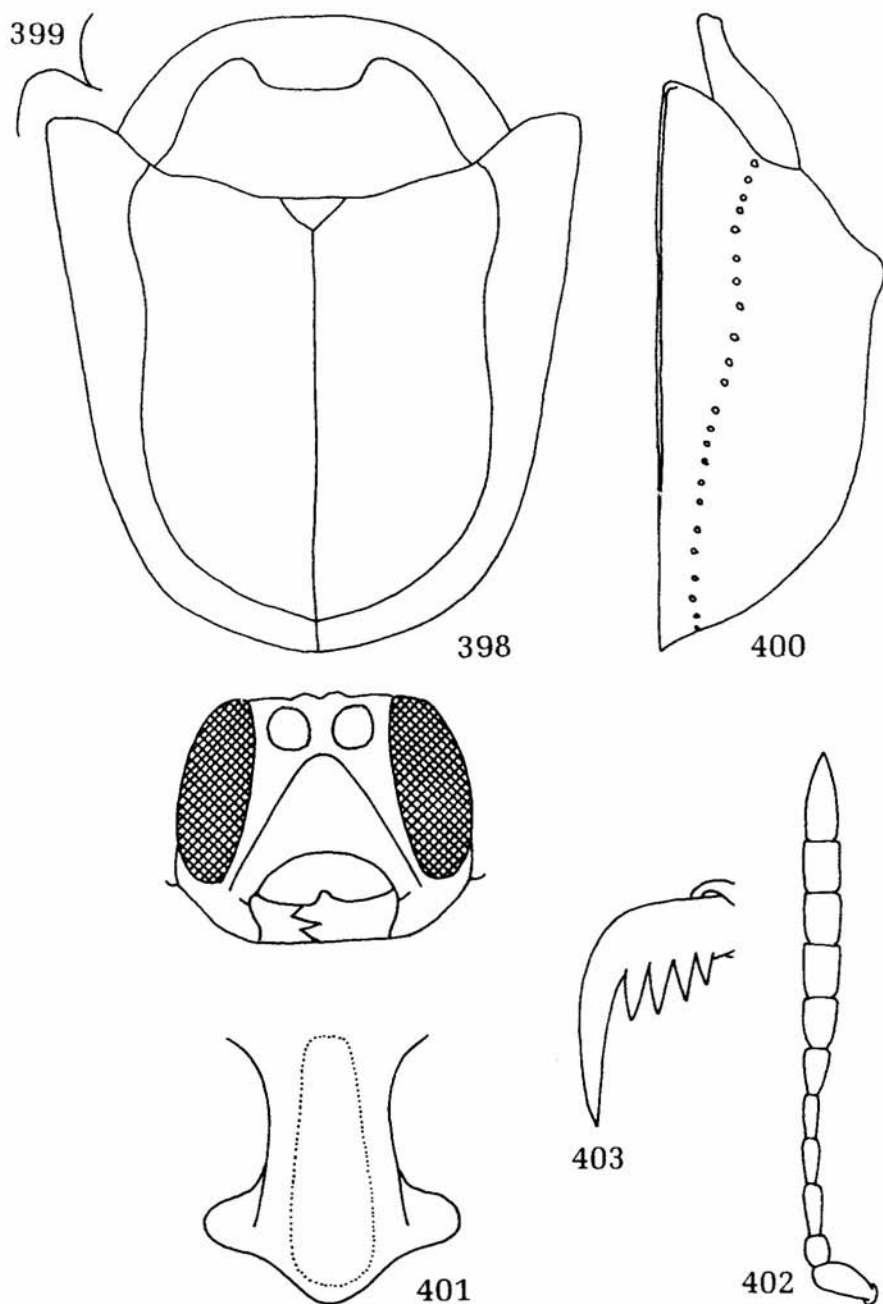
Lacoptera (*Lacoptera*) *triangula*: SPAETH, 1914: 84.

DESCRIPTION

Length: 7.8-10.1 mm, width: 6.4-8.1 mm, pronotum length: 2.5-3.3 mm, pronotum width: 4.5-5.9 mm. Body subtriangular, sides almost straight, strongly converging posterad (fig. 398).

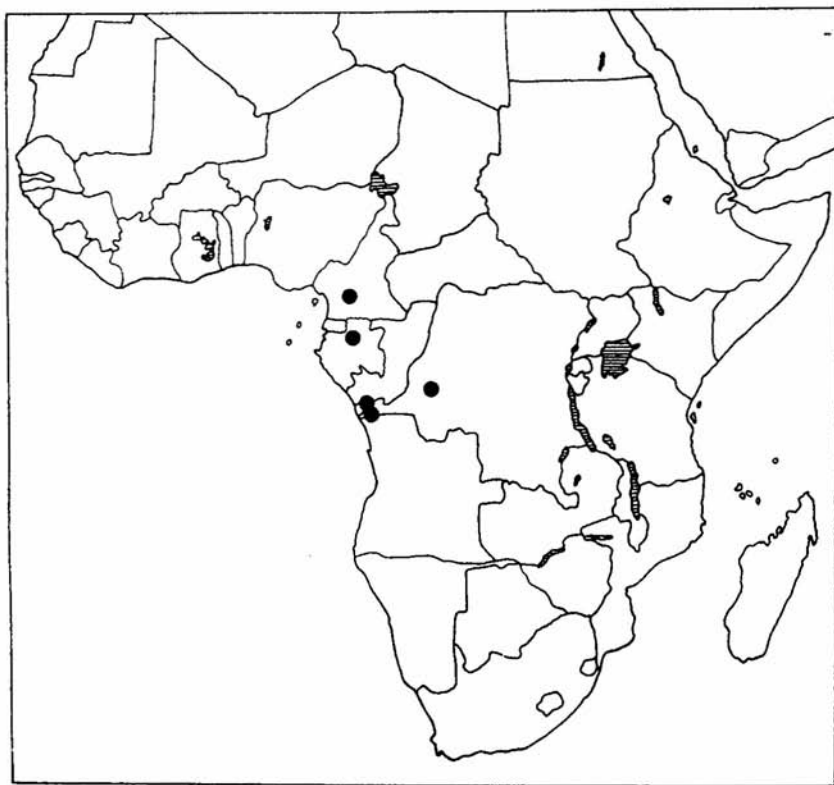
Pronotum and elytra testaceous to brown. Clypeus testaceous. Ventrites vary from mostly testaceous to mostly black, in pale specimens prosternum and metathorax testaceous with partly infuscate to brown thoracic plates, but abdomen wholly testaceous, in dark specimens metasternum and abdomen black, but prosternum brown. Legs black. Two basal antennal segments testaceous, remainder black, third segment black or only on ventral side testaceous to brown.

Pronotum subtrapezial, very broad, about 1.8 times wider than long, with maximum width at base, sides regularly rounded to subangulate, anterior margin not or only slightly emarginate, posterior corners obtuse. Disc moderately convex, with fine irregular wrinkles, appears irregularly striate, its surface microreticulate but glabrous. Explanate margin distinctly bordered from disc, subhorizontal, without rugosities or with only very low and broad transverse folds, but never appears rugose, at most slightly irregular. Honeycomb structure visible.



398-403. *Laccoptera (Orphonodella) triangula*: 398 - body in dorsal view, 399 - variation of shape of humeral angle, 400 - body in lateral view, 401 - head and prosternum, 402 - antenna, 403 - tarsal claw

Scutellum triangular, with or without transverse sulcus. Base of elytra distinctly wider than base of pronotum, sides only slightly rounded, strongly converging posterad. Anterior margin slightly crenulate, forms a soft angle, humeral angles moderately protruding anterad, subangulate to subacute (figs. 398, 399). Disc strongly convex, with distinct but moderately high postscutellar gibbosity (fig. 400). Postscutellar impressions deep, margined by distinct elevation. Third interval forms irregular longitudinal costa, often fifth interval tends to form a costa. Between suture and fifth interval transverse folds form a large reticulation. Sides of disc without distinct sculpture. Punctuation of disc large, partly disordered by elytral sculpture, but in sutural part punctures tend to form regular rows which occupy more than 1/3 length of disc. On sides of disc punctures mostly irregular, only rows 5-7 tend to be regular. Marginal row distinct, with several transverse folds, posthumeral cavity shallow. Explanate margin moderately declivous, strongly, coarsely punctate, space between punctures convex, and surface appears slightly rugose. Lateral margination simple. Surface of both disc and explanate margin microreticulate, elytral sculpture glabrous. Apex of elytral epipleura bare.



404. Distribution of *Lacoptera (Orphonodella) triangula*

Clypeus about twice wider than long, triangular (fig. 401), strongly elevated, its surface flat or impressed in the middle, with a few punctures, microreticulate. Antennal cavities narrowly separated. Labrum emarginate to 1/6 length. Antennae moderately long, extending to the middle of metasternum. Length ratio of antennal segments: 100:50:93:73:83:76:90:90:90:96:150. Segment 3 about 1.9 times longer than 2 (fig. 402). In male antennae slightly longer than in female, especially the last segment.

Prosternal collar large, usually without transverse sulci, or only on sides sulcate, sides form obtuse angle. Prosternal process moderately broad, strongly expanded apically (fig. 401), with shallow to deep sulcus on whole length. Legs moderately slim, tarsi moderately broad, the last segment slightly longer than the third. Claws on inner margin with short pecten, extending to 1/4 length of claw (fig. 403), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Cameroon, Gabon, and Zaire (fig. 404).

REMARKS

It belongs to the group of species with subtriangular body, base of elytra distinctly wider than base of pronotum, and pronotum and elytra uniformly testaceous to brown. The group comprises also *L. nunbergi*, *L. corrugata*, *L. montivaga* and *L. caduca*. The last two species differ in strong elytral sculpture, also on sides of disc, while in *L. triangula*, *L. nunbergi* and *L. corrugata* sides of disc have no distinct sculpture. *L. corrugata* differs in less triangular body, humeral angles broadly rounded, and large pecten of tarsal claws extending to half length of claw (only to 1/4 length of claw in *L. triangula*). *L. nunbergi* is the most similar but differs in less triangular body, and humeral angles broadly rounded, more similar to humeri of *L. corrugata* than *L. triangula*.

MATERIAL EXAMINED

CAMEROON: Nanga Eboko, III-IV 1959, 1, LENCZY (HNHM).

GABON: Ivindo, 2 (LB).

ZAIRE: Boma, 1 (LB); Dima, 18 IX 1908, 1, A. KOLLER (holotype, MRAC); Mayumbe, Madia Ko Ko, III 1964, 1, D. and A. FAIN (LB).

Subgenus *Orphonodina* SPAETH, 1932

Large *Lacoptera*, body length above 10 mm. Body regularly convex, without postscutellar gibbosity or impression. Lateral margination of elytra simple. Clypeus

strongly elevated, without impressions, margins not elevated. Third antennal segment more than thrice longer than 2.

Distribution: South Africa north to Zambia.

KEY TO THE SPECIES

1. Labrum without two median spines (fig. 413). Lateral margin of elytra with irregular elevation:

..... *rustica*

-. Labrum without median emargination, with two small median spines (fig. 407).

Lateral margin of elytra without distinct elevation:

..... *distans*

Laccoptera (Orphonodina) distans (SPAETH, 1902)

(figs. 405-410)

Orphonoda distans SPAETH, 1902b: 23 (syntypes in MM).

Laccoptera (Orphonoda) distans: SPAETH, 1914: 84; SHAW, 1956b: 265.

Laccoptera (Orphonodina) distans: SPAETH, 1932: 229.

Laccoptera distans: BOROWIEC, 1985a: 238.

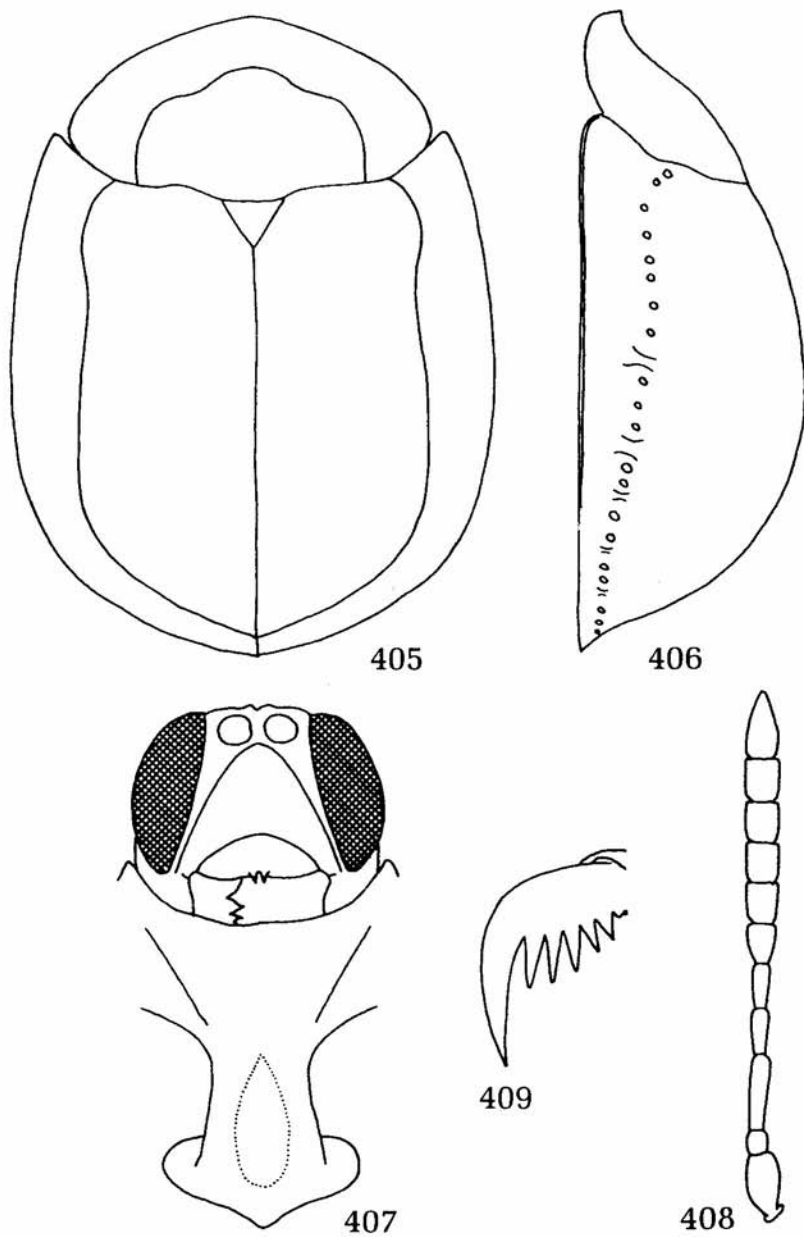
DESCRIPTION

Length: 10.9-12.1 mm, width: 8.3-9.0 mm, pronotum length: 4.0-4.1 mm, pronotum width: 6.5-7.2 mm. Body short-oval, almost paralle-sided (fig. 405).

Pronotum and elytra testaceous to reddish brown, sometimes elytra slightly darker than pronotum. Ventrites yellow to testaceous. Legs yellow, femora in the middle sometimes infuscate. Antennal segments 1-6 yellow, remainder black, segment 6 sometimes infuscate.

Pronotum elliptical, about 1.7 times wider than long, with maximum width in the middle, sides narrowly rounded. Disc moderately convex, with indistinct transverse or arcuate sulcus, base without median longitudinal sulcus. Whole surface with irregular wrinkles, folds smooth, glabrous. Explanate margin distinctly bordered from disc, broad, subhorizontal, with honeycomb structure, whole surface with irregular wrinkles, rugose, folds smooth to indistinctly microreticulate, glabrous.

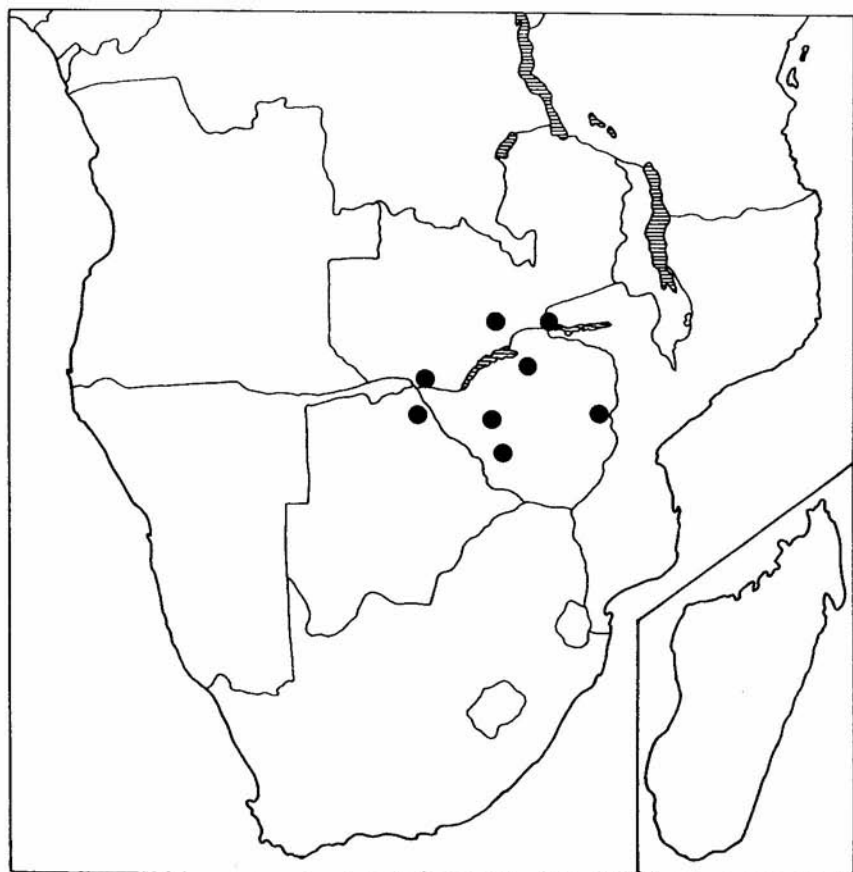
Scutellum triangular, with or without transverse sulcus, often impressed in the middle, or with surface slightly irregular. Base of elytra slightly wider than pronotum, anterior margin moderately crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc regularly convex, without postscutellar elevation (fig. 406), postscutellar impressions very shallow, margined by a distinct fold. Third interval slightly irregular, but distinct on whole length, strongly elevated, forms a longitudinal costa. Fifth interval indistinct, irregular, forms interrupted costa, less elevated than third interval. Between suture and third interval, and between third and fifth intervals



405-409. *Laccoptera (Orphonodina) distans*: 405 - body in dorsal view, 406 - body in lateral view, 407 - head and prosternum, 408 - antenna, 409 - tarsal claw

several transverse or oblique folds. Sides of disc strongly punctate, in some specimens punctures tend to form regular rows, in others puncturation completely irregular. Spaces between punctures elevated, form a distinct reticulation. Marginal row distinct, interrupted by large transverse folds, subhumeral cavity deep. Explanate margin about as wide as 1/3 width of each disc of elytron, declivous, with honeycomb structure, strongly, coarsely punctate, rugose. Lateral margination fine, simple, with no distinct elevation along margin. Surface of both disc and explanate margin indistinctly microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus subtriangular, about 1.5 times wider than long (fig. 407), strongly elevated, without impressions, surface slightly rugose punctate. Labrum in the middle of anterior margin with two small spines, without median emargination. Antennal cavities separated. Antennae moderately long, in both sexes extending to the middle



410. Distribution of *Laccoptera (Orphonodina) distans*

of metathorax. Length ratio of antennal segments: 100:40:140:77:74:60:65:60:62:68:137. Segment 3 about 3.5 times longer than 2 (fig. 408). Distal segments in male with scarce, long hair on ventral side.

Prosternal collar very large, with transverse sulci, sides form almost right angle. Prosternal process broad, strongly expanded apically, canaliculate on almost whole length (fig. 407). Legs moderately slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten, about as long as half length of claw (fig. 409), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Northern part of South Africa (Zambesi Region, south to Botswana, fig. 410).

REMARKS

It differs from *L. rustica* in labrum with two small spines, without median emargination (without spines in *L. rustica*), pronotal sides more narrowly rounded, lateral margin of elytra without fold along margin. Prosternal collar in *L. distans* forms an almost right angle on sides, while in *L. rustica* it forms a soft angle. Both species are separated geographically, *L. distans* occurs in Zambesi region, while *L. rustica* is more southern, occurs in South Africa (Transvaal, Natal, Zululand) and Mozambique.

MATERIAL EXAMINED

BOTSWANA: Pandamatinka [Panda ma Tenga], 1, HOLUB (lectotype, present designation, MM), the same data, 5 (paralectotypes, MM).

MOZAMBIQUE: Belas, 2300', 3 II 1924, 1 (LB); Zumbo, 1 (MM).

ZAMBIA: Boroma [Boruma], 2 (MM), 3, BRANCSIK (HNHM); Chingombe, 1 (LB), I 1929, 1 (LB); Livingstone, 23 I 1947, 1 (LB), I 1942, 1 (LB); Lusaka, XII 1945, 1 (LB).

ZIMBABWE: NMM, 1, J. P. CREGOE (BMNH); NMM R., 1904, 2 (TM); Matopas, 27 II 1921, 1 (NMM); Rhodesia, 1914, 3, PLASON (MM); Sanyati Vall., iX-X 1925, 1, R.H.R. STEVENSON (IRSN); Sawmills, 31 XII 1921, 2, N. JONES (1 CMNH, 1 NMM), 10 II 1923, 1, SWINBURNE and STEVENSON (TM), 12 III 1924, 1, P. H. STEVENSON (TM); Umtali, Vumba Mts., Burma Vall., 2 I 1982, 1, D. K. B. WHEELER (NMM).

VARIA: Zambesi, Bradshaw, 20, v. ULSEN (ITZ), 1878, 1 (MM).

Laccoptera (Orphonodina) rustica (WEISE, 1899)

(figs. 411-416)

Orphonoda rustica WEISE, 1899: 254 (lectotype and paralectotype in ZMHU).

Laccoptera (Orphonoda) rustica: SPAETH, 1914: 84.

Laccoptera (Orphonodina) rustica: SPAETH, 1932: 229; SHAW, 1956b: 266.

Laccoptera rustica: BOROWIEC, 1987: 415.

DESCRIPTION

Length: 10.8-12.1 mm, width: 8.1-9.1 mm, pronotum length: 3.5-3.9 mm, pronotum width: 5.9-6.7 mm. Body short-oval, almost paralleled (fig. 411).

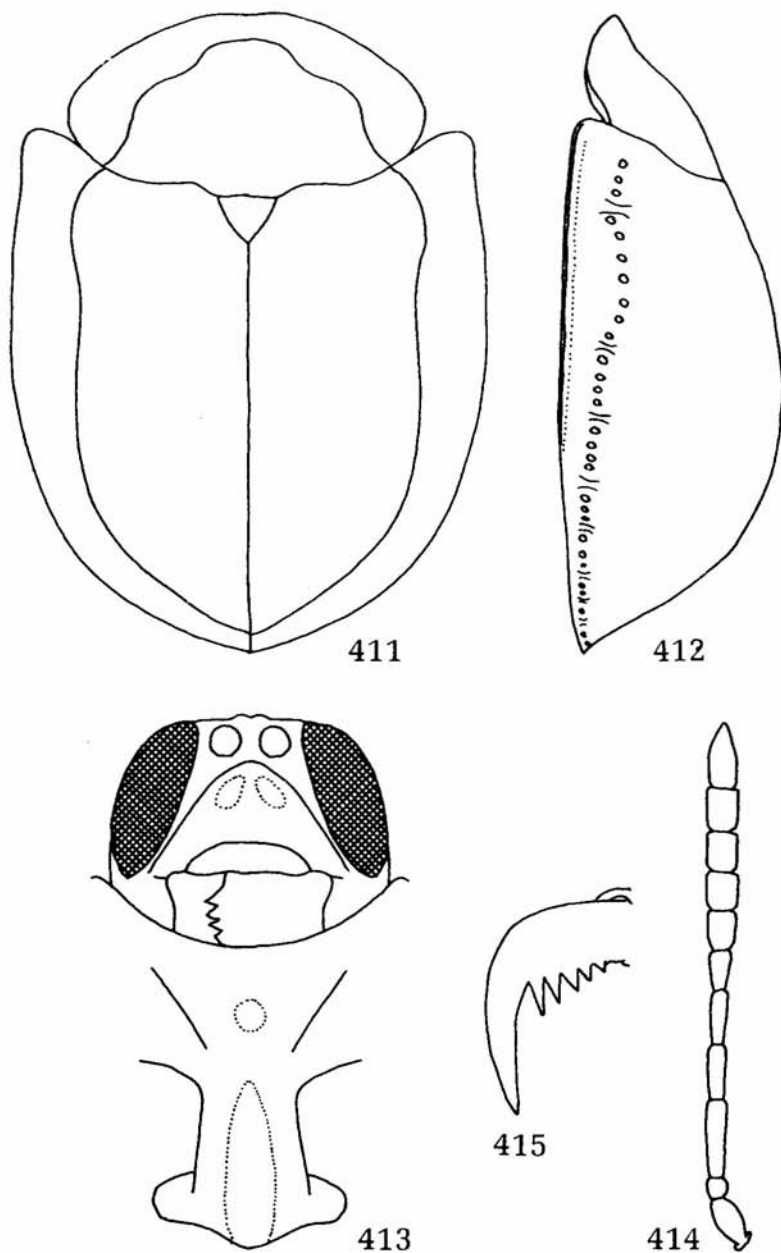
Pronotum and elytra uniformly brown. Ventriles brown to dark brown, clypeus and sides of abdominal sternites often paler brown. Legs testaceous to brown, femora in basal half often infusate. Antennal segments 1-6 yellow, remainder black, segment 6 sometimes infusate.

Pronotum elliptical, about 1.7 times wider than long, with maximum width in the middle, sides moderately rounded. Disc moderately convex, with indistinct transverse or arcuate sulcus, base without median longitudinal sulcus. Whole surface with irregular wrinkles, folds smooth, glabrous. Explanate margin distinctly bordered from disc, broad, subhorizontal, with honeycomb structure, whole surface with irregular wrinkles, rugose, folds smooth to indistinctly microreticulate, glabrous.

Scutellum triangular, with or without transverse sulci, often impressed in the middle, or with surface slightly irregular. Base of elytra slightly wider than pronotum, anterior margin strongly crenulate, forms a soft angle, humeral angles moderately protruding anterad. Disc regularly convex, without postscutellar elevation (fig. 412), postscutellar impressions very shallow, margined by a distinct fold. Third interval slightly irregular, but distinct on whole length, strongly elevated, forms a longitudinal costa. Fifth interval indistinct, irregular, forms interrupted costa, less elevated than third interval. Between suture and third interval, and between third and fifth intervals several transverse or oblique folds. Sides of disc strongly punctate, in some specimens punctures tend to form regular rows, in others puncturation completely irregular. Spaces between punctures elevated, form a distinct reticulation. Marginal row distinct, interrupted by large transverse folds, subhumeral cavity very deep. Explanate margin about as wide as 1/3 width of each disc of elytron, declivous, with honeycomb structure, strongly, coarsely punctate, rugose. Lateral margination fine, simple, but with elevation along margin, appears double marginate. Surface of both disc and explanate margin indistinctly microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus subtriangular, about 1.5 times wider than long (fig. 413), strongly elevated, without impressions, surface slightly rugose punctate. Labrum in the middle with shallow median emargination. Antennal cavities separated. Antennae moderately long, in both sexes extending to the middle of metathorax. Length ratio of antennal segments: 100:42:142:100:88:71:74:77:6271:77:122. Segment 3 about 3.4 times longer than 2 (fig. 414). Distal segments in male with scarce, long hair on ventral side.

Prosternal collar very large, with transverse sulci, sides form rather soft angle. Prosternal process broad, strongly expanded apically, deeply canaliculate on almost



411-415. *Laccoptera (Orphonodina) rustica*: 411 - body in dorsal view, 412 - body in lateral view, 413 - head and prosternum, 414 - antenna, 415 - tarsal claw

whole length (fig. 413). Legs moderately slim, tarsi broad, the last segment longer than the third but not extending behind marginal setae. Inner margin of claws with large pecten, about as long as half length of claw (fig. 415), outer margin micropectinate.

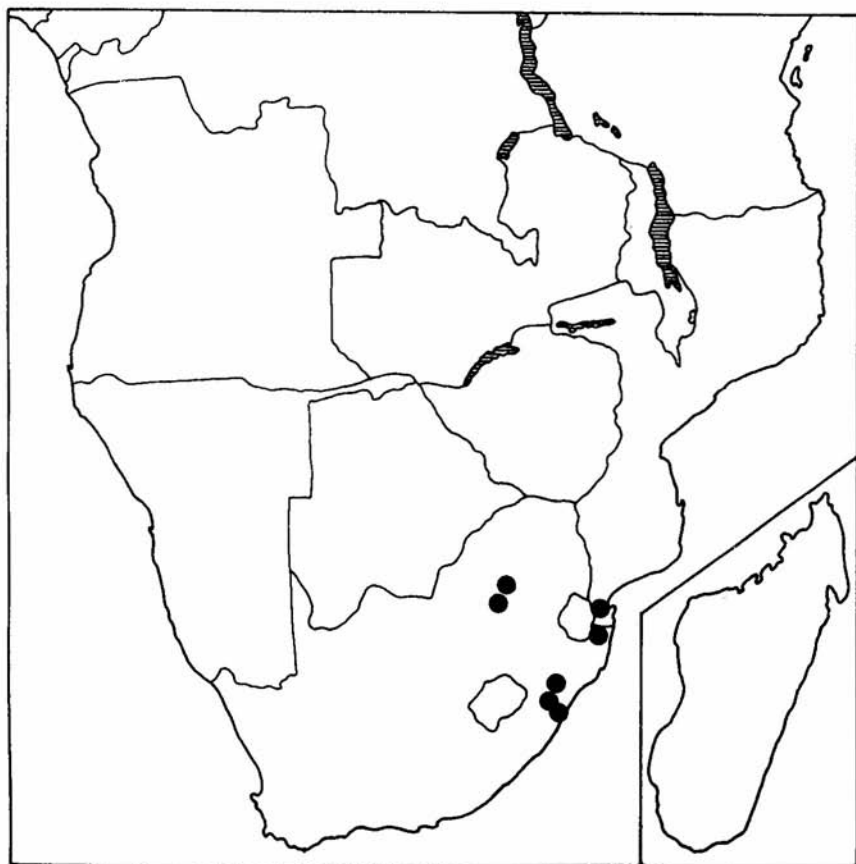
Host plant and bionomics unknown.

DISTRIBUTION

South Africa (Transvaal, Natal, Zululand) and S Mozambique (fig. 416).

REMARKS

It differs from *L. distans* in generally darker body, especially ventrites, pronotal sides more rounded, labrum without median spines (with two spines in *L. distans*),



416. Distribution of *Laccoptera (Orphonodina) rustica*

prosternal collar on sides with soft angle (almost right angle in *L. distans*). Lateral margin of elytra in *L. rustica* is margined by a fold along margin and appears double marginate, like in the subgenus *Orphonoda*. In *Orphonoda* this fold has upper margin distinct on whole length and elytra are distinctly double marginate, while in *L. rustica* the fold has upper margin partly irregular and margination is never completely double.

MATERIAL EXAMINED

MOZAMBIQUE: Lourenco-Marques, Makulane, 1 (LB).

SOUTH AFRICA: Malta, Ptbg., I 1928, 1, G. v. SON (TM); Natal, 2, STAUD. (lectotype and paralectotype, ZMHU); Natal, 1 (MM); Natal, Durban, 3 (ZMHU); Natal, Silouvane, 1, H. JUNOD (MM), II 1899, 1, JUNOD (TM); Natal, Weenen, 1, G. H. BURN (MM), 1 (ZMHU); Transvaal, Johannesburg, I 1934, 1, G. KOBROW (TM); Transvaal, Johannesburg, Bedford ridge, 8 XI 1953, 1, A. L. CAPENER (MM); Transvaal, Marico, I 1921, 2, Dr. BRAUNS (TM); Transvaal, Pretoria, Sunnyside, 7 III 1958, 1, A. C. v. BRUGGEN (NNML); Waterkloof, Pretoria Distr., 1, F. Noome (TM); Zululand, Ndumu, XII 1960, 1, G. v. SON (TM).

Subgenus *Patrisma* FAIRMAIRE, 1891

Large *Lacoptera*, body length above 9.5 mm. Body pentagonal, elytral disc with large conical postscutellar tubercle. Pronotal disc smooth. Sides of prosternal collar form a soft angle. Prosternal process without longitudinal canaliculation.

Distribution: Central Africa.

Lacoptera (Patrisma) murrayi BOHEMAN, 1862

(figs. 417-423)

Lacoptera Murrayi BOHEMAN, 1862: 387 (holotype in BMNH).

Patrisma Murrayi: SPAETH, 1903b: 178; 1912a: 131; 1916: 41; 1925: 4; 1932: 228; BOROWIEC, 1986: 803.

Patrisma (s. str.) *Murrayi*: SPAETH, 1914: 81.

Lacoptera (Patrisma) murrayi: SPAETH, 1943: 55; SHAW, 1955: 236; 1956a: 595; 1972: 71.

Patrisma pyramidalis FAIRMAIRE, 1891: 273 (type in NMHN); WEISE, 1899: 248 (as syn. of *murrayi*).

Lacoptera angulata WEISE, 1896: 21 (lectotype and paralectotype in ZMHU); 1899: 248 (as syn. of *murrayi*);

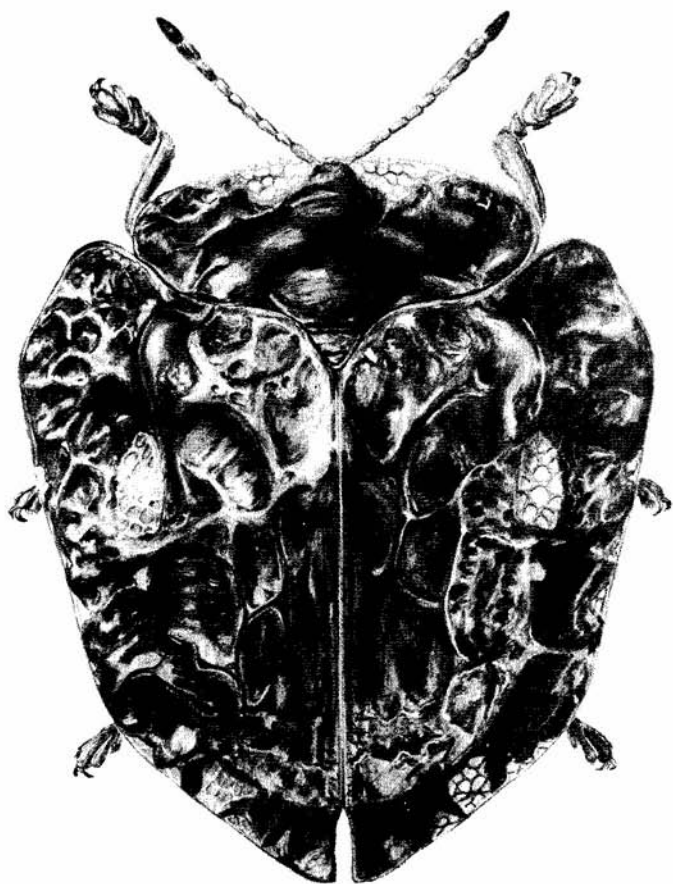
BOROWIEC, 1987: 414.

Patrisma angulata: WEISE, 1899: 248.

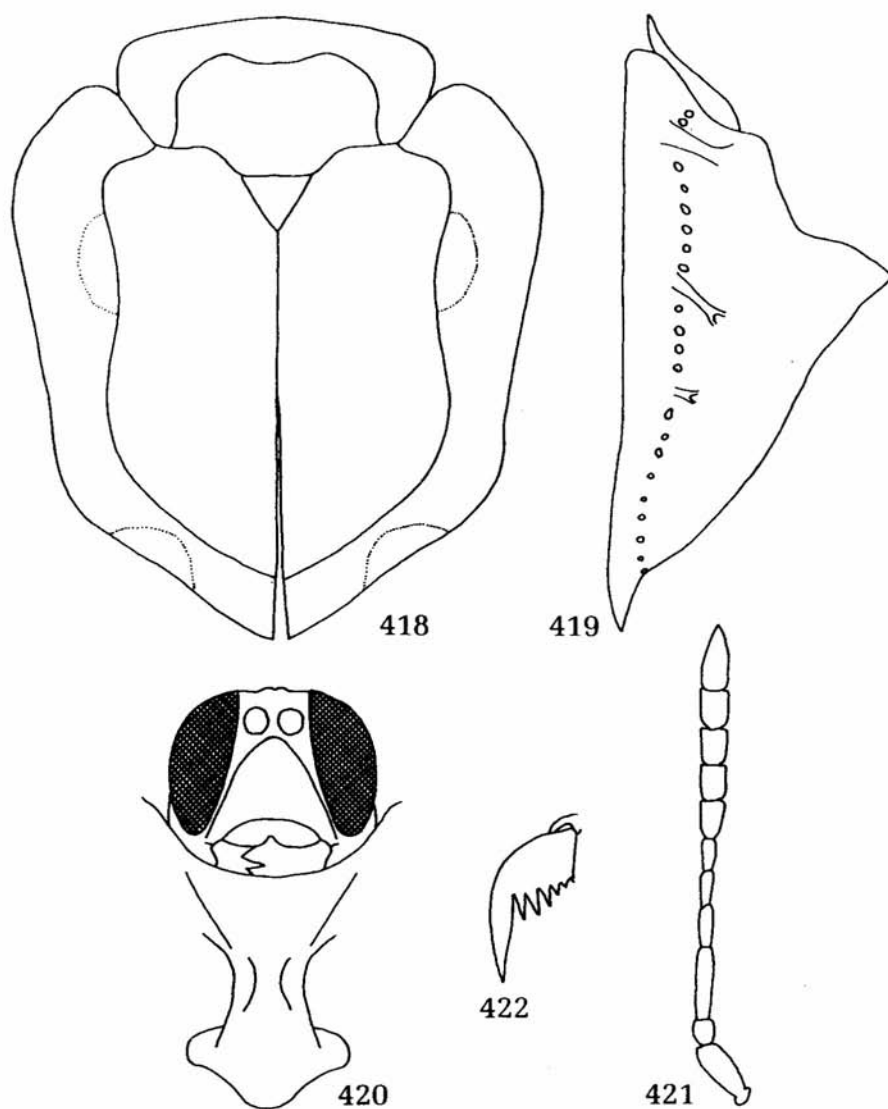
DESCRIPTION

Length: 9.9-12.3 mm, width: 9.0-10.3 mm, pronotum length: 2.7-3.5 mm, pronotum width: 5.5-6.5 mm. Body pentagonal, sides of elytra to 2/3 length slightly concave, in apical 1/3 length strongly converging posterad, apex angulate (fig. 417).

It forms two distinct colour forms, one with black background , another with ground colour reddish. Specimens of intermediate, brownish-red or brownish-black colour are extremely rare. Scutellum in black form is usually paler, yellowish to brown, suture at apex of scutellum usually yellow; in red form scutellum of the same colour as elytra. In both forms two small transparent windows on anterior part of explanate margin of pronotum, large transparent window in subhumeral area of explanate margin of elytra, posterolateral transparent spot on explanate margin of elytra, and median part of lateral margin of elytra are yellow. Sometimes also small spot below humerus, and spot on border of basal part of pronotal disc and explanate margin are yellow. Ventrites and legs always yellow to reddish. Antennae yellow to reddish, the last 1-3 segments often infusate.



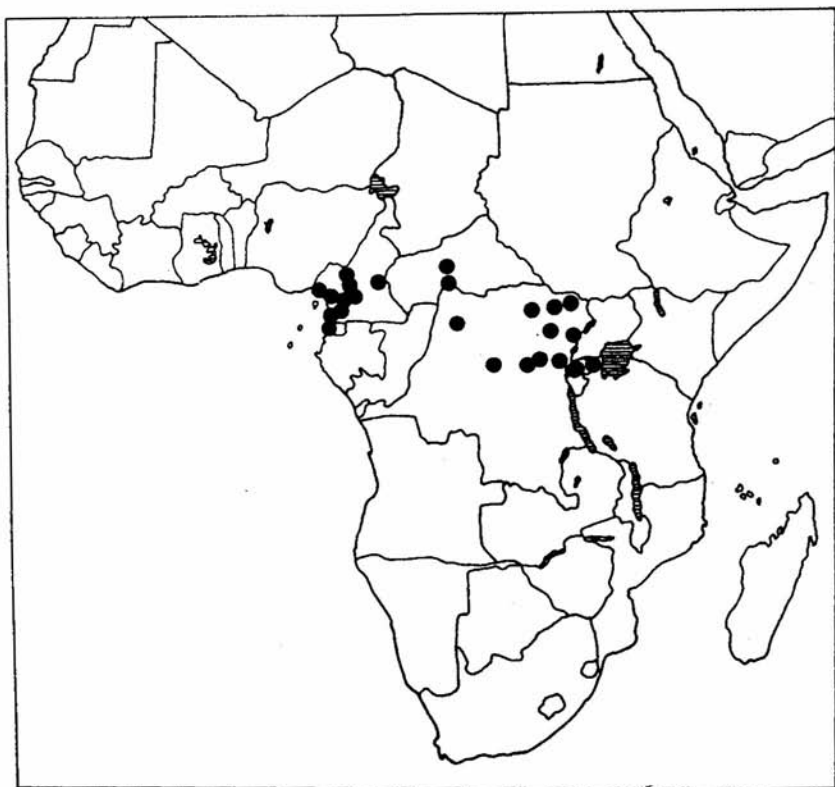
417. *Laccoptera (Patrisma) murrayi*, dorsal view



418-421. *Laccoptera (Patrisma) murrayi*: 418 - body in dorsal view, 419 - body in lateral view, 420 - head and prosternum, 421 - antenna, 422 - tarsal claw

Pronotum very broad, 1.9-2.0 times wider than long, elliptical but with maximum width distinctly in front of the middle, sides broadly rounded, posterior corners obsolete. Anterior margin in the middle often slightly impressed. Disc regularly convex, smooth, with no wrinkles or impressions, finely microreticulate, glabrous. Explanate margin distinctly bordered from disc, with honeycomb structure, subhorizontal, smooth, microreticulate, glabrous. Sides of explanate margin often shallowly impressed.

Scutellum triangular, usually with shallow median impression. Base of elytra distinctly wider than pronotum, anterior margin indistinctly crenulate, forms a soft angle, but humeral angles strongly protruding anterad (fig. 418). Disc strongly convex, with extremely high, conical postscutellar tubercle, outline of disc behind scutellum deeply concave (fig. 419). Disc behind the tubercle and on sides with large reticulation, third interval visible only in posterior half of disc, forms three longitudinal, interrupted folds. Punctuation of disc indistinct, completely vanishes within reticulation, sometimes only on sides of disc, above marginal row, punctures arranged in two or three regular rows interrupted by elytral sculpture. Marginal row



423. Distribution of *Laccoptera (Patrisma) murrayi*

distinct, interrupted by five large transverse folds, subhumeral cavity deep with transparent bottom. Explanate margin in humeral part only slightly narrower than width of disc of each elytron, declivous, with honeycomb structure, strongly punctured and with irregular wrinkles, rugose, lateral margination fine, simple. Surface of disc and explanate margin microreticulate, glabrous. Apex of elytral epipleura bare.

Clypeus subtriangular, about 1.7 times wider than long (fig. 420), strongly elevated, in the middle with shallow impression, margins not elevated. Surface microreticulate, glabrous. Antennal cavities separated. Labrum emarginate to 1/4 length. Antennae moderately long, extending to anterior process of metasternum. Length ratio of antennal segments: 100:40:114:60:57:54:54:51:54:54:100. Segment 3 about 2.8 times longer than 2 (fig. 421). Distal segments in male without long erected hair.

Prosternal collar large, without or with indistinct transverse sulci, sides form very soft angle. Prosternal process very broad, strongly expanded apically, without longitudinal channel (fig. 420), usually in the middle slightly impressed, apex smooth, glabrous. legs moderately slim, tarsi moderately broad, the last segment only slightly longer than the third, inner margin of claws with large pecten about as long as half length of claw (fig. 422), outer margin micropectinate.

Host plant and bionomics unknown.

DISTRIBUTION

Central Africa (fig. 423).

REMARKS

It is a unique species with no close relatives. Only Madagascar species of the subgenus *Asphalesia* have conical postscutellar tubercle but they differ in strongly sculptured pronotal disc, mostly rugose.

MATERIAL EXAMINED

CAMEROON: Batouri Distr., 1-30 III 1935, 1, F. G. MERFIELD (ER), 1 V-6 VI 1935, 1 (MM); Bibundi, 16-30 X 1904, 1, G. TEßMANN (ZMHU); Bipindi, VIII-IX 1898, 1, G. ZENKER (ZMHU); Doumé, II 1961, 1, CHASSOT (MRAC); Ebogo, 6 XI 1963, 1, A. Mbalmayo (ZSM); Ekok, Womba, 3 (ZMHU); Jaunde, 800 m, 1, ZENKER (ZMHU), 4 V 1897, 10, v. CARNAP (ZMHU), X 1923, 2 (IRSN), 20 III 1923, 2, 27 III 1923, 1, 31 III 1923, 2, 9 IV 1923, 1 (CMNH); Joko, 9 (ZMHU), 1 (MM); Lolodorf, 1, HEINE (lectotype of *Lacoptera angulata*, ex coll. J. WEISE, ZMHU), 1 (paralectotype of *L. angulata*, ex coll. J. WEISE, ZMHU), Lolodorf, 8 II-27 III 95, 1, L. CONRADT (ZMHU), V 1925, 1, X 1925, 2, A.I. GOOD (CMNH); Mueli, 580 m, 1 II 1958, 1, H. KNORR (SMNS); Nkolbisson, Dept. Nyong-Sanaga, IX 1963, 1, L. SEGERS (MRAC); Nkolbison, Yaounde-Bi, 19 I 1963, 1, 29 II 1963, 1, 20 V 1963, 1, 20 X 1963, 1, L.

SEGBERS (ZSM); Nsele, XII 1961, 1, CHASSOT (MRAC); Okala, IV-V 1965, 1, J. POUGET (MRAC); Okola, Nkollekie-r. Lékié, 14 VIII 1963, 1, L. SEGBERS (ZSM); Ototomo, I 1963, 1 (ZSM); Saa, Ebebdar. Yaupa, 18 VII 1963, 1, L. SEGBERS (ZSM); Sardi near Dengdeng, 4 III 1914, 1, MILDBREAD (ZMHU).

EQUATORIAL GUINEA: Mongo, 1946-48, 1, J. PALAU (MRAC); Nkolentangan, XI 1907-V 1908, 16, G. TEBMANN (ZMHU).

REPUBLIC OF CENTRAL AFRICA: Fort Crampel, 10 (IRSN), 1 (ER); Fort Sibut, 6 (IRSN), 40 (NMP); Fort Sibut, Oubanghi-Chari, 1968, 1 (MRAC); La Maboké, M'Buki, X 1964, 1, M. PARAN (Verona).

TANZANIA: Mabira, 1 (NMP).

ZAIRE: Albert Nat. Park, Rég. Oycha, 1100 m, IV-V 1950, 2, J. DE WILDE (MRAC); Bambesa, 20 IX 1933, 1, J. V. LEROY (MRAC), 10 VI 1937, 1, 24 VI 1937, 1, 29 VI 1937, 1, J.M. VRIJDAGH (IRSN); Bangala, Kutu, 16 VI 1935, 1, G. SETTEMBRINO (IRSN); Biruwe à Matenda (Okondo), 16 IX 1929, 1, 21 IX 1929, 1, A. COLLART (IRSN); Biruwe-Buhunde, 18 IX 1929, 1, 20 IX 1929, 1, A. COLLART (IRSN); Buhunde-Matenda, 21 IX 1929, 2, 22 IX 1929, 2, A. COLLART (IRSN); Buhunde-Okondo, 13 IX 1929, 1, 20 IX 1929, 2, A. COLLART (IRSN); Dungu, 3 (MM); Gemena, 10 IX 1947, 1, R. CREMER and M. NEUMAN (IRSN); Kakolo-Molinda, 4 X 1929, 1, A. COLLART (IRSN); Kivu, Masisi, 3, A. COLLART (IRSN); Kivu, Terr. Masisi, 800 m, Mutakato, IX 1953, 1, N. LELEUP (MRAC); Lubutu, 1-5 X 1929, 2, A. COLLART (IRSN); Lubutu-Masua, 10 IX 1929, 11 IX 1929, 2, 12 IX 1929, 13, A. COLLART (IRSN); Lubutu-Molinda, 4 X 1929, 2 (IRSN); Lubutu-Obongena, 7 IX 1929, 2 (IRSN); Lubutu-Utike, 30 IX 1929, 1, A. COLLART (IRSN); Mandimba-Masua, 26 IX 1929, 1, A. COLLART (IRSN); Masua a Obongena, 22 IX 1929, 1, A. COLLART (IRSN); Orientale prov., Bas-Uele Distr., Bambesa, 4 III 1957, 2, 30 V 1957, 1 (FMNH); Orientale Prov., Bas-Uele Distr., Matala, 20 V 1950, 1 (FMNH); Orientale prov., Haut-Uele Distr., Rte to Wamba, 28 XI 1956, 1 (FMNH); Pene-Sungi, 5 IX 1929, 5, A. COLLART (IRSN); Tshuapa, Ikela, 1956, 1, III-VI 1956, 1, R. DEGUIDE (MRAC); Uluku-Buhunde, 24 IX 1929, 3, A. COLLART (IRSN).

VARIA: Old Calabar, 1, coll. BALY (holotype of *Laccoptera murrayi*, BMNH).

SPECIES INCERTAE SEDIS

Laccoptera picea BOHEMAN, 1855

Laccoptera picea BOHEMAN, 1855: 58.

Described from South Africa. According to BOHEMAN (1855) the type was placed in Paris Museum, but present it is not preserved in NMHN (Dr. N. BERTI letter information). Judging from the description it is probably only an immature, not fully sclerotized specimen of *L. corrugata* group.

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