

## Revision of the genus *Nothomorpha* Thomson (Coleoptera, Buprestidae)

by

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The species of the South African genus *Nothomorpha* Thomson are revised. One new species, *N. latifrons*, and one new subspecies, *N. rugosa carinifrons*, are added to the five known species in this group. Two new synonymies are recorded. The six valid species and one subspecies are keyed, described and illustrated, while the known and new distribution records are mapped.

### INTRODUCTION

The genus *Nothomorpha* Thomson is a small genus endemic to the southern and south-western regions of South Africa and South West Africa. Since the appearance of Kerremans' monograph of Buprestidae of the world in 1906 this group has not been revised. Théry (1926) described one new species, *N. zigzag*, and Cobos (1955) created the separate tribe *Nothomorphini* for this genus.

The biology of the genus is completely unknown. The distribution is clearly limited to the winter rainfall region of South Africa. The adults are collected on various flowering shrubs and composite flowers, often together with *Acmaeodera* and *Anthaxia* species.

The following abbreviations are used in the text: descr. – description, redescription or copy of description; cat. – catalogue; HT – holotype; ment. – mention is made of the taxon without a description; PT – paratype. The institutes from which material was received for study are abbreviated as follows: ALB. – Albany Museum, Grahamstown, South Africa; B.M. – British Museum (Natural History), London, England; HUMBOLDT – Museum für Naturkunde der Humboldt Universität, Berlin, D.D.R.; N.C.I. – National Collection of Insects, Pretoria, South Africa; PARIS – Museum National d'Histoire Naturelle, Paris, France; S.A.M. – South African Museum, Cape Town, South Africa; T.M. – Transvaal Museum, Pretoria, South Africa; UPSALA – University of Upsala, Sweden; WINDH. – State Museum, Windhoek, South West Africa.

### *NOTHOMORPHA* Thomson

*Nothomorpha* Thomson 1878: 57; Kerremans 1893: 113; Kerremans (in Wytzman) 1903: 41; Kerremans 1906: 571; Théry 1926: 55; Cobos 1955: 17-19.

Type species: *Nothomorpha verrucosa* Thomson.

The most striking feature of the genus is the formation of the elytra, which bear sharp ridges. These ridges vary from species to species, but three carinae may

always be distinguished: firstly a sutural carina which runs very near the suture on each elytron; secondly a median carina which runs more or less down the middle of each elytron; thirdly a lateral carina which runs parallel to and near the lateral edge of each elytron. Apart from the apical denticulation, there is also a marked denticulation of the elytra along the suture, mostly clearly visible near the apex. These denticulae of the two elytra are interlocking.

The pronotal sculpture also shows common features in all the species. While some species have extremely rugose pronota and others have depressions on pronotum only mildly indicated, the pattern of these depressions remains the same. Three depressions occur along the base, around the median and lateral fossae of the pronotum. Interlocking with these, four depressions are situated in line in the anterior half of the pronotum, so that the pronotum is fairly evenly covered by seven large depressions.

The characters mentioned by Thomson in his original description (Thomson 1878) are all valid, except that he states that the head is convex and the scutellum triangular, which only holds true for some of the species. Cobos (1955) mentions sixteen characters of his new tribe *Nothomorphiini*, which are not repeated here.

In none of the species is sexual dimorphism marked, except that antennae tend to be longer in the males. Three of the species, namely *rugosa*, *verrucosa* and *minima*, show a remarkable degree of variation in the rugosity of the sculpture, while the remaining three species are much more constant.

#### Key to the species of *Nothomorpha* Thomson

- 1 (2) Pronotum matt black, evenly and densely punctured, head completely black. Underside without hair. Median carina on elytra does not diminish towards the rear, meets lateral carina roundedly at apex ..... **minima**
- 2 (1) Pronotum more or less shiny, or not completely black. Head usually with yellow spots. Underside with short hair.
- 3 (4) Profile flat on dorsal side, median carina on elytra completely straight and diminishing in height towards the apex where it fades out. Length greater than 5.4 mm ..... **maior**
- 4 (3) Profile not flat on dorsal side, median carina on elytra not straight and not fading out before joining with the lateral carina.
- 5 (12) Pronotum with large cavities, rugose, covered with very shallow craters with or without central punctures.
- 6 (7) Median carina on elytra with an angular bend in the apical third. Head always with a triangle of 3 yellow spots, with the topmost spot just under rim of pronotum. Underside black, abdominal sternites with punctures and sparse, very short hair ..... **rugosa**
- 7 (6) Median carina on elytra without angular bend in the apical third.
- 8 (9) Head virtually flat, very broad. Median carina flattened towards the apex, nowhere higher than diameter of one stria puncture. Pronotal depressions moderate and rounded ..... **latifrons**
- 9 (8) Head very uneven, depressed, with a median tubercle or ridge. Median carina on elytra higher than the width of one stria puncture. Pronotum very rugose.
- 10 (11) Two rows of stria punctures between lateral carina and side of elytron. Underside with umbilicate sculpture. Lateral and median carinae meet roundedly at the apex ..... **verrucosa**
- 11 (10) One row of stria punctures between lateral carina and side of elytron. Underside with coarse punctures. Lateral and median carinae meet roundedly at the apex, but are also joined by a transverse carina just pre-apically ..... **rugosa carinifrons**

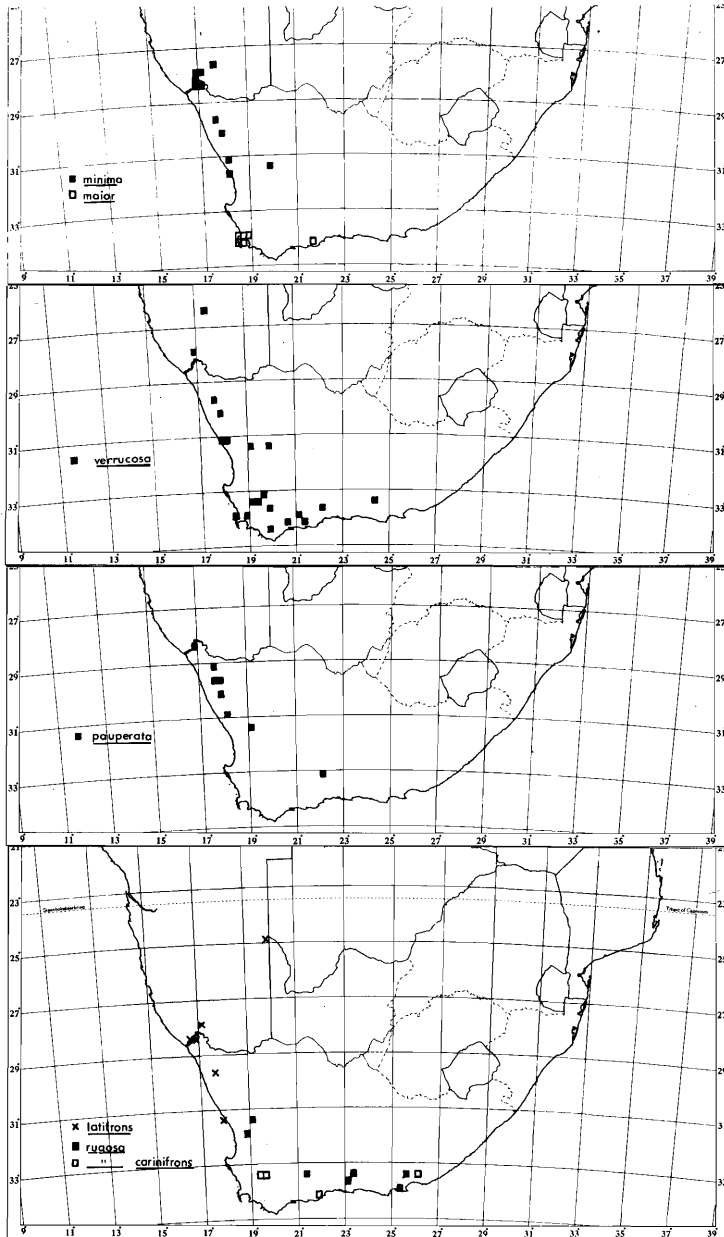


Fig. 1. Distribution maps of *Nothomorpha minima* Kerremans, *N. maior* Kerremans, *N. verrucosa* (Castelnau & Gory), *N. pauperata* Thomson, *N. latifrons* spec. nov., *N. rugosa* (Thunberg) and *N. rugosa carinifrons* subsp. nov.

- 12 (5) Pronotum more or less even, with small craters. The background colour of pronotum is not completely black, and every crater has a characteristic small black spot in the middle. Head with one to six spots, hair on underside extremely reduced, no punctures on abdominal sternites. Background colour of elytra and mostly of pronotum pale ochre, underside black ..... **pauperata**

*Nothomorpha latifrons* spec. nov., figs 1, 6, 7, 16

Length 4.0–6.6 mm; width 1.8–2.3 mm.

HEAD. Broad, slightly rounded and a little depressed in the middle, with relatively large eyes. Sides of frons parallel to slightly attenuating to the front. Epistome rather long, roundedly and not very steeply incised below. Sculpture large adjoining umbilici, of which about twelve fit across the frons. Hair thin, very short. Black with various yellow markings. PRONOTUM. The seven depressions on the pronotum are shallow and rounded as in *pauperata*. Colour light brown, with the elevated parts showing more or less ochre-yellow. Fossae at base small but deep. Sculpture as on head, with about 13 umbilicate craters fitting into the length of disc. Pronotum slightly wider than elytra at humeri. Hair absent. Anterior margin with a groove and collar, but the groove is not very deep or sharply outlined. Anterior rim nearly straight, slightly drawn forward in the middle. ELYTRA. Sides parallel or attenuating from behind the humeri to past the middle, from there rounded in to the apex which is rather finely but markedly serrate. The sutural carina starts rising behind the humeri, reaching its greatest height just behind the middle where the two carinae separate and slope gently to the apex. Median carina not very highly elevated, about as high as diameter of one stria puncture or even less. Near the apex the median carina links up shallowly and irregularly with both the lateral carina and a fourth, very short apical carina which is situated between the sutural and median carinae. Lateral carina very shallow, only elevated from about one third of elytral length up to the apex. Strial punctures coarse, in four rows between sutural and median carinae, in three rows between median and lateral carinae. Scutellum more or less round, scutellar area slightly depressed. Hair extremely short and thin, hardly visible. VENTRAL SURFACE. Black with yellow spots to completely yellow. Finely chiselled all over, with shallow umbilici on thoracic sternites and metacoxa, which become very indistinct on the abdominal sternites. Prosternum with a very thin rim and groove in front, on a level with the rim of the pronotum. There is no antennal incision in the anterior margin of prosternum, but a mild depression on its surface for the antenna in folded position. Metacoxa sharply angular distally. Suture between first two abdominal sternites very vague. Hair very thin, sparse, flat on body, short. APPENDAGES. Legs dark brown with black joints, antennae black. Tibiae normal, protibiae very slightly widened. Hair as on ventral surface but better developed and denser. Antenna long, slightly shorter than pronotal side and eye combined in the male, shorter than pronotal side in the female, in both cases with the last seven segments dilated.

MATERIAL EXAMINED. HT: 13 km N. Anniesfontein, 11.x.1972, Brown, Koster & Prinsloo (N.C.I.); 29 PTS: ditto; 1 PT: Spektakel Pass, 4.x.1972, Brown, Koster & Prinsloo; 1 PT: 16 km W of Kuboos, Richtersveld, 21.xi.1949, C. Koch; 1 PT: Karoevlei, 12.x.1948, Andrea (on *Senecio*); 1 PT: Mata-Mata, S. Kalahari, ix.1957, C. Koch; 2 PTS: McMillans Pass, NE Rosh Pinah, S.W.A., 16.x.1972, A. Prinsloo. (2 PTS: T.M., 1 PT: S.A.M.; 1 PT: ALB.; 1 PT: HUMBOLDT; 1 PT: PARIS; 1 PT:

UPSALA; 1 PT: B.M.; 25 PTS: N.C.I.; 1 PT: BUDAPEST; 1 PT: WINDH.; 1 PT: BELG.)

This species, which is restricted to the northern parts of Namaqualand, is close to *pauperata* Thomson but is readily distinguished by the pronotal sculpture and colour of underside. It has the elytral carina least developed of all the species in the genus, and is thus closest to the tribe Acmaeoderini.

One specimen from Mata-mata differs in some details from the other series, but these differences are minor and, in view of the incomplete distribution record, do not warrant a subspecies recognition.

*Nothomorpha maior* Kerremans, figs 1, 10, 11, 19.

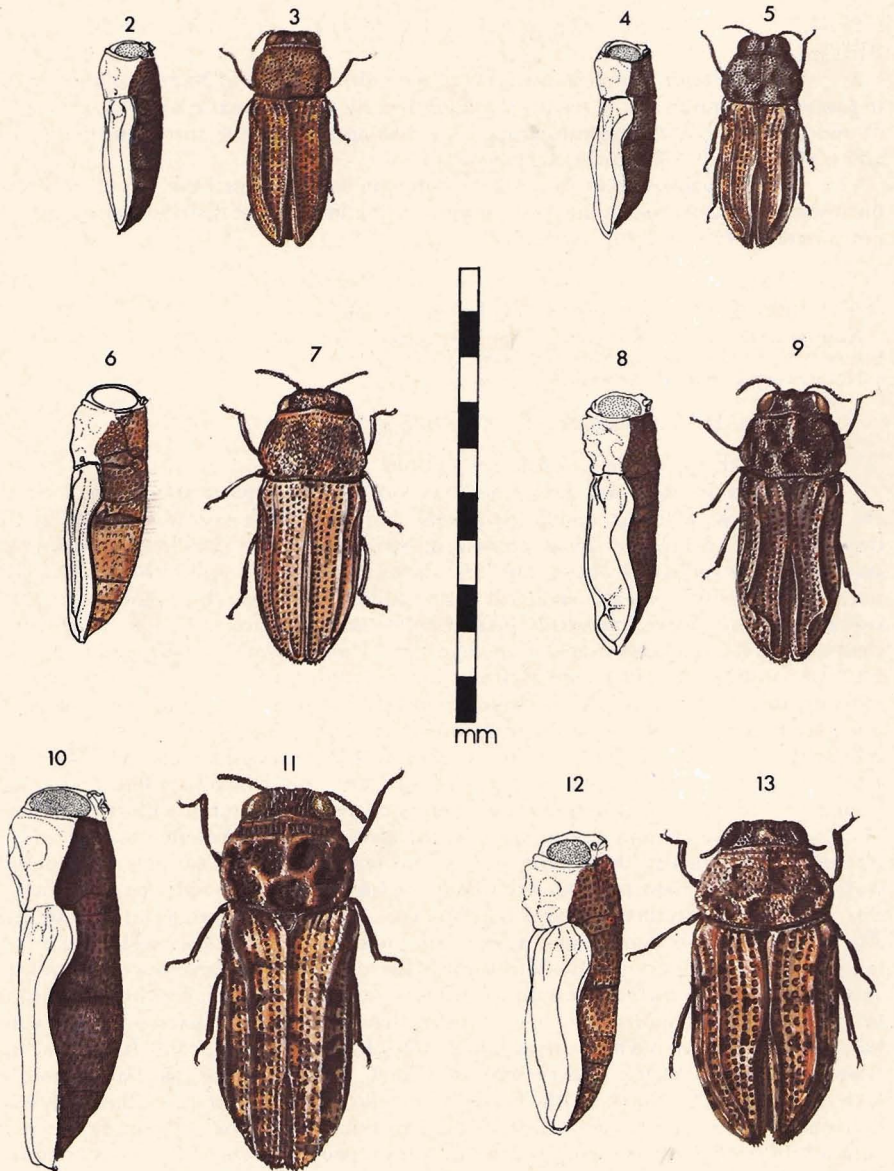
**Nothomorpha maior** Kerremans 1899: 269 (descr.); Kerremans 1906: 573 (descr.); Obenberger 1926: 50 (cat.); Théry 1926: 57 (ment.).

**Nothomorpha major** Kerremans 1903: 41 (cat.)

TYPES: HT: HUMBOLDT: "Cap b. Spei"

Length 5.4–7.2 mm; width 2.0–2.7 mm.

**HEAD.** Roughly flat. Frons about as wide as long, slightly attenuating towards the front. Black, with the middle depressed, but with three yellow tubercles in the depression, one below the rim of pronotum, two about in the middle of frons side by side. Sculpture indistinct above, but just above the epistome well developed shallow umbilici, of which about eight fit into width of frons. Epistome without a supra-epistomal groove, roundedly incised below and with two sharp carinulae which separate the lateral lobes from the median part. Hair brownish, short, rather sparse. **PRONOTUM.** Slightly wider than elytra at humeri, with seven large black depressions, of which three are in a row at the base around the fossae of which the lateral ones are quite large, the median one hardly discernible. The remaining four depressions are in a transverse row to the front of and interlocking with the three depressions at the base. In the depressions the sculpture consists of very large and shallow umbilici, while the remaining yellow parts of pronotum are rather rugosely sculptured with deep craters. Hair very thin, short and sparse, only on the elevated parts. Anterior margin with a marked collar, slightly drawn forward in the middle. Lateral carina on pronotum reaching from the base to about the middle of length. **ELYTRA.** Sides parallel for the first two-thirds, from there rounded in to the apex which is moderately strongly serrate. The lateral carina is double, and at the very apex also serrate. The median carina is not very high, and gradually flattens towards the apex, where it becomes even with the surrounding elytral surface. Suture carina very poorly developed, for the last third of length only. Strial punctures coarse, wider than intermittent spaces, in four rows between suture and median carina, three rows between median and lateral carina. Scutellum rather large, transversely oval and concave. Hair as on pronotum. **VENTRAL SURFACE.** Black, with a slight metallic sheen. Sculpture chiselled with indistinct punctures on abdominal sternites, hair thin, sparse, flat on body. Prosternum with a thin rim on anterior end, which has a depression near the side to accommodate the folded antenna. There is, however, no incision in the anterior rim. Prosternum chiselled and with indistinct umbilici. Pro-episternum and other lateral thoracic plates with large umbilici, which extend onto the first abdominal sternite. Metacoxa with a sharp angular distal corner. **APPENDAGES.** Brownish-black with hair slightly longer than on underside. Tibiae have a fine villosity on the insides, protibia moderately



Figs 2-13. *Nothomorpha* species. 2-3. *N. pauperata* Thompson. 2. Lateral 3. Dorsal. 4-5. *N. minima* Kerremans. 4. Lateral 5. Dorsal. 6-7. *N. latifrons* spec. nov. 6. Lateral 7. Dorsal. 8-9. *N. rugosa* (Thunberg). 8. Lateral 9. Dorsal. 10-11. *N. maior* Kerremans. 10. Lateral 11. Dorsal. 12-13. *N. verrucosa* (Castelnau & Gory) 12. Lateral 13. Dorsal.

Scale: in mm.

spatulate. Antenna as long as side of pronotum, from the fifth segment onwards equally dilated and with short white pubescens on the underside.

**MATERIAL EXAMINED.** (8 Specimens) Rondebosch, Cape Town (N.C.I.); Parow, 25.x.1946, Andrea (S.A.M.); Cape Town, 1896, F. Purcell (S.A.M.); False Bay, 1.xi.1960, Andrea (S.A.M.); Stellenbosch 2.xii.1964, J. G. Theron (N.C.I.); 27 km NW Stilbaai, 17.xi.1973, Holm & Prinsloo (N.C.I.).

This is by far the largest of the species in this group, and easily recognized by the sculpture of the elytra. There is very little variation within the species, which seems to be limited to the Cape coastal region. It is well separated from all other species in the group. One specimen from Parow has a hostplant label, but this is unfortunately illegible, the discernible parts reading: "on *Mesemby* . . . . *gioniforme*"

*Nothomorpha minima* Kerremans, figs 1, 4, 5, 14.

**Nothomorpha minima** Kerremans 1899: 269 (descr.); Kerremans 1903: 41 (cat.); Kerremans 1906: 576 (descr.); Obenberger 1926: 50 (cat.); Théry 1926: 57 (ment.)

**TYPES:** LT, PLT: B.M.: "Cap b. Esp."

Length 4.5-5.2 mm; width 1.2-2.0 mm.

**HEAD.** Deeply to moderately concave. Frons slightly longer than wide, attenuating towards the front. Completely black, finely chiselled and with dense punctures of which about 12 fit across the frons. In the more rugose specimens the upper half of frons has a median carina, and the punctures become semi-confluent. Epistome roundedly and rather deeply incised below, with broad lateral lobes which have a slightly upturned lower rim. Hair absent. **PRONOTUM.** Wider than elytra at humeri, completely black, with seven large depressions which may vary from very deep to hardly discernible. Sculpture regular and fine all over, consisting of small punctures of which about 15 fit into the length of pronotum. Hair absent. Anterior margin with a marked collar, virtually straight in front. Lateral ridge on pronotum complete, but much more prominent in the basal third. **ELYTRA.** Sides roughly parallel for the basal two thirds, with the apical serration obscured from above. Lateral and median carinae both about half as high as the space between them, meeting roundedly short of the apex. Sutural carinae less elevated, flaring out slightly from the middle to the apex, and continuing right to the very end of elytra. Strial punctures coarse, in four rows between sutural and median carinae, in three rows between median and lateral carinae. Scutellum rather small, slightly wider than long, scutellar area depressed. Rugose specimens have two marked short carinae on the sides of the scutellar depression in addition to the other elytral carinae. Hair absent. **VENTRAL SURFACE.** Completely black. Sculpture dense, fine but deep punctures densely placed all over, but becoming larger and sparse on lower part of pro-episternum and mesepisternum. Hair extremely reduced, hardly discernible. Prosternum projecting in front, with a groove and marked antennal incisions. Metacoxa sharply angular distally. Suture between first two abdominal sternites well marked. **APPENDAGES.** Black, with hair very thin, short and sparse, but more developed than on underside. Protibia moderately spatulate, other tibiae thin. Antenna about as long as side of pronotum, with the last 7 segments equally dilated and with a fine pubescens on the underside.

**MATERIAL EXAMINED.** (45 specimens) Papendorp, Olifantsriv., x.1950 (S.A.M.); Calvinia, xi.1931, Miss. Mackie (PARIS); Grootvadersbos, 1-8.xi.1972,

Brown, Koster & Prinsloo (N.C.I.); 4 km E Kamieskroon, 2.x.1972, Brown, Koster & Prinsloo (N.C.I.); 13 km N Anniesfontein, 11.x.1972, Brown, Koster & Prinsloo (N.C.I.); Spektakel Pass, 29 km W Springbok, 4.x.1972, Brown, Koster & Prinsloo (N.C.I.); Hellskloof Pass, 12.x.1972, A. Prinsloo (N.C.I.); S. W. AFRICA: 3 km NE Rosh Pinah, 16.x.1972, A. Prinsloo (N.C.I.); McMillans Pass, 16.x.1972, A. Prinsloo (N.C.I.); Lorelei, Lüderitz, 15.ix.1973, Penrith (WINDH.); Gaiaus, Karasburg, SE 27, 17, Da, 13-17.x.1974, Penrith.

This is the smallest species in the genus, and is characterized by the completely black and finely punctured pronotum. It is closest to *pauperata*, but differs in many details such as elytral and pronotal sculpture and colour. The distribution covers the whole of Namaqualand, and there is no geographical or sexual correlation with the rugose and less rugose types.

*Nothomorpha pauperata* Thomson, figs 1, 2, 3, 15.

**Nothomorpha pauperata** Thomson 1878: 58 (descr.); Kerremans 1884: 143 (cat.); Kerremans 1892: 165 (cat.); Kerremans 1903: 41 (cat.); Kerremans 1906: 577 (descr.); Obenberger 1926: 50 (cat.); Théry 1926: 57 (ment.); Cobos 1955: 17 (ment.).

TYPES: HT: PARIS: "Cap b. Esp."

Length 3.2-5.4 mm; width 1.1-1.9 mm.

**HEAD.** Rather broad, slightly concave. Frons about as wide as long, attenuating towards the front. Colour variable from completely black to yellow with only a few dark mottles. Sculpture small craters, of which about 12 fit across the frons, and which have characteristic small black dots in their centres. Epistome protruding, but the lateral lobes immediately receding again. Lower margin of epistome deeply incised in the shape of an inverted "V". Hair extremely short and reduced, hardly discernible. **PRONOTUM.** Colour variable as on head, the sculpture also with characteristic black dots on the light coloured parts. Pronotum about as wide as elytra at humeri. The seven depressions on the disc are very mild and rounded, densely and evenly sculptured with small craters of which about 15 to 18 fit into the length of disc. Hair absent. Anterior margin with a groove and collar, slightly protracted in the middle. Sides with a curved carina in the posterior half only. **ELYTRA.** Sides roughly parallel in the basal two-thirds, from there rounded in to the apex which is moderately strongly serrate. The sutural carina is elevated from just behind the level of the humeral calli up to the apex, with the two carinae parallel all the way. The median and lateral carinae are not very high, slightly higher than the diameter of one stria puncture, and meet roundedly just pre-apically. Strial punctures coarse, in four rows between the sutural and median carina and again in four rows between the median and lateral carina. Scutellum more or less round, scutellar area slightly depressed. Hair absent. Elytral colour invariably light ochre, with or without single darker patches and spots. **VENTRAL SURFACE.** Dark brown, often with lighter patches. Sculpture finely chiselled surface pitted with small, densely placed craters, becoming finer on the last abdominal sternites. Pro-episternum sculpted as the pronotum. Prosternum on a level with pronotum in front, with a thin rim and groove. Behind the groove the prosternum bulges slightly. Antennal groove near anterior margin of prosternum marked, but not forming an incision in the rim in front. Metacoxa with an angular distal corner. Hair very reduced. **APPENDAGES.** Brown as on underside, often slightly lighter. Femora rather sturdy, tibiae normal, the protibia very slightly dilated. Hair on appendages

relatively well developed, rather dense. Antenna short, slightly longer than width of frons, the last seven segments dilated.

**MATERIAL EXAMINED.** (48 specimens) 13 km N Anniesfontein, 11.x.1972, Brown, Koster & Prinsloo (N.C.I.); Spektakel Pass, 4.x.1972, Brown, Koster & Prinsloo (N.C.I.); Lammerskraal, ix.1974 (S.A.M.); Niewoudtville, xi.1920, A.M. (PARIS); Anenous Pass, 8.x.1972, A. Prinsloo (N.C.I.); 6 km N Kamieskroon, 2.x.1972, A. Prinsloo (N.C.I.); Sandkopdrif, 32 km S Garies, 30.ix.1972, Brown, Koster & Prinsloo (N.C.I.); Wolfberg, 55 km W Springbok, 4.x.1972, Brown, Koster & Prinsloo (N.C.I.); 2 km NE O'Kiep, 7.x.1972, Brown, Koster & Prinsloo (N.C.I.).

The characteristics of this species are the highly contrasting elytral and abdominal colours, as well as the pronotal sculpture and elytral carinae. The species occurs in Namaqualand, but seems to extend further south too. The type is a rather poorly preserved specimen, and the species could not be identified without some doubt.

*Nothomorpha rugosa* (Thunberg), figs 1, 8, 9, 18, 20-23.

**Buprestis rugosa** Thunberg 1787b: 99 (descr.); Thunberg 1787a: 52 (descr.); Herbst 1801: 312 (descr.); Schönherr 1817: 246 (cat.); Thunberg 1827: 43 (descr.)

**Amorphosoma rugosa** Castelnau & Gory 1839: 11 (descr.);

**Nothomorpha rugosa** Saunders 1871: 78 (cat.); Kerremans 1892: 165 (cat.); Kerremans 1903: 41 (cat.); Kerremans 1906: 573 (descr.); Obenberger 1926: 50 (cat.); Théry 1926: 57 (ment.)

TYPES: HT: UPSALA: "C. b. Spei"

**Nothomorpha plicatipennis** Thomson 1878: 58 (descr.); Kerremans 1884: 143 (cat.); Kerremans 1892: 165 (cat.); Kerremans 1903: 41 (cat.); Kerremans 1906: 578 (descr.); Obenberger 1926: 50 (cat.); Théry 1926: 57 (ment.).

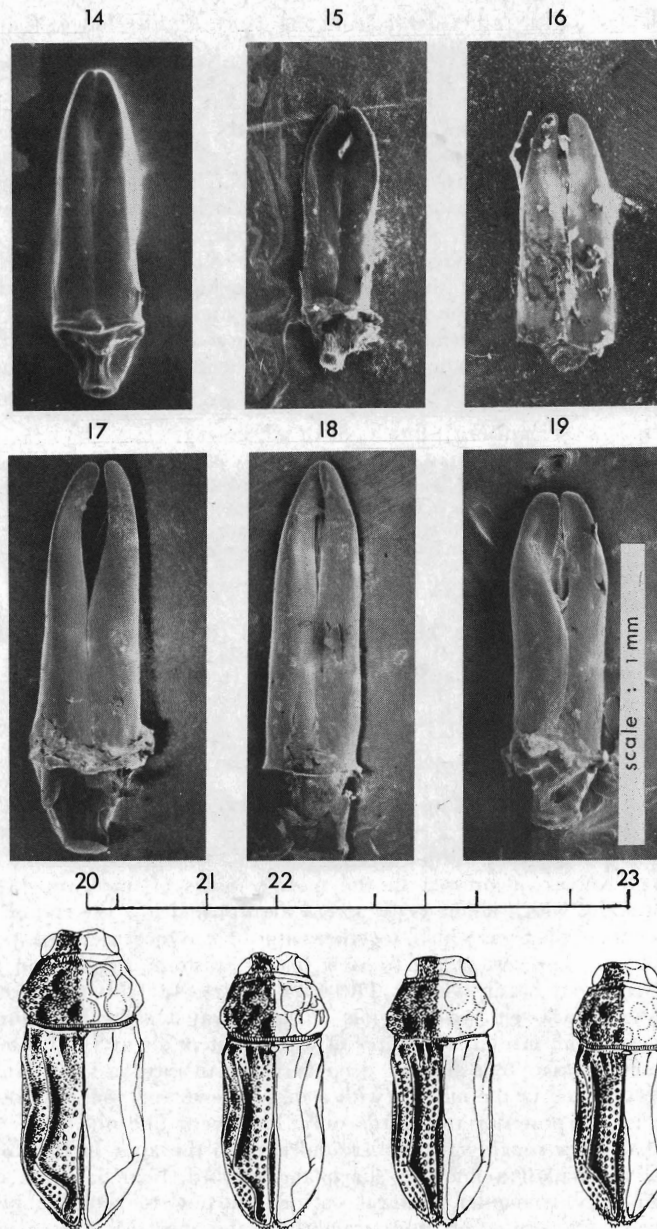
TYPES: HT: PARIS: "C. b. Esp." **syn. nov.**

**Nothomorpha zigzag** Théry 1926: 55-7, fig. 2 (descr.)

TYPES: HT: PARIS: "Cap b. Esp." **syn. nov.**

Length 4.2-6.7 mm; width 1.6-2.7.

**HEAD.** Rugose, depressed in the middle. Sides of frons roughly parallel. Sculpture, craters of which about 12 fit across the frons. Below the rim of pronotum there is a tubercle on the frons which, together with the two most elevated spots next to the eyes, is yellow. The rest of the frons is black. Epistome deeply and roundedly incised. Hair reduced, hardly visible. **PRNOTUM.** Rugose, with the seven cavities deeply depressed, black with yellow spots on the elevated parts. Sculpture cellular craters with very small median punctures of which craters about 15 fit into length of pronotum. Lateral fossae very distinct, deep, larger than median fossa. Anterior rim very slightly protracted in the middle, with a deep groove and well developed collar. Lateral ridge in the posterior two-thirds only. Hair very fine and reduced, hardly visible. **ELYTRA.** Sides roughly parallel, rounded in to the apex in the last third of length. Apical denticulation fine but sharp and marked. Scutellar area depressed, scutellum roundedly triangular. Sutural carinae starting to separate just behind scutellum, flaring out very evenly and straightly to the apex. Median carina slightly convex towards the suture up to about three quarters of length where it suddenly turns inward and meets the lateral carina near the apex. In extremely rugose specimens this



Figs 14-23. *Nothomorpha* species. 14-19. Acedeagus, dorsal. 14. *N. minima* Kerremans. 15. *N. pauperata* Thompson. 16. *N. latifrons* spec. nov. 17. *N. verrucosa* (Castlenau & Gory). 18. *N. rugosa* (Thunberg). 19. *N. maior* Kerremans. 20-23. Variation in *N. rugosa* (Thunberg). 20. *N. zigzag* Théry: type. 21. *N. rugosa* (Thunberg): type. 22. *N. plicatipennis* Thompson: type. 23. Extreme of variation.





