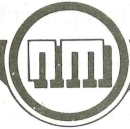


NAVORSINGE VAN DIE NASIONALE MUSEUM  
BLOEMFONTEIN



NATURAL SCIENCES

VOLUME 6, PART 1

SEPTEMBER 1988

**SYNONYMIC NOTES ON AFRICAN CETONIINAE  
(COLEOPTERA: SCARABAEIDAE) 1: Genus *Xeloma* Kraatz, including  
*Sisyraphora* Kraatz and *Pseudoprottaetia* Kraatz).**

by

**E. HOLM**

*Department of Entomology, University of Pretoria, Pretoria*  
(With 78 figures)

(Manuscript received 2 November 1987)

**ABSTRACT**

Holm, E. 1988. Synonymic notes on African Cetoniinae (Coleoptera: Scarabaeidae) 1: Genus *Xeloma* Kraatz, (including *Sisyraphora* Kraatz and *Pseudoprottaetia* Kraatz) 6(1): 1-18. The specific and generic synonymy of the former genera *Xeloma*, *Sisyraphora* and *Pseudoprottaetia* are revised. It is indicated that the eleven species in this group should be regarded as a single genus, *Xeloma*. One species formerly assigned to *Sisyraphora*, *S. carinicollis* Moser, is excluded from *Xeloma* (*sensu lato*). *Anoplocheilus mashunus* Péringuey is included in the new subgenus *X. Paraxeloma*. Four new synonymies on species level are pointed out: *Pseudoprottaetia puncticollis* Kraatz = *P. stictica* Kraatz = *X. leprosa* (Burmeister); *Sisyraphora angolensis* Valck Lucassen subsp. = *X. tomentosa* (Gory & Percheron), and ten new combinations are proposed: (*Xeloma* (*Xeloma*) *seticollis* Kraatz comb. nov.; *X. (X.) aspersa* (Péringuey) comb. nov.; *X. (X.) burmeisteri* (Arrow) comb. nov.; *X. (X.) pilicollis* (Kraatz) comb. nov.; *X. (X.) leprosa* (Burmeister) comb. nov.; *X. (X.) tomentosa* (Gory & Percheron) comb. nov. *X. (X.) cicatricosa* (Burmeister) comb. nov.; *X. (X.) vuilleiti* (Bourgoin) comb. nov.). Keys to subgenera and species are provided. (Taxonomy, Cetoniinae, African, Synonymy).

ISBN 0 947014 35 7

## CONTENTS

INTRODUCTION .....	2
GENUS <i>XELOMA</i> KRAATZ .....	3
KEY TO THE SUBGENERA OF <i>XELOMA</i> KRAATZ .....	4
SUBGENUS <i>XELOMA</i> ( <i>XELOMA</i> ) KRAATZ .....	4
SUBGENUS <i>XELOMA</i> ( <i>PARAXELOMA</i> ) SUBGEN. NOV. ....	9
MISPLACED SPECIES .....	10
OPSOMMING .....	10
ACKNOWLEDGEMENTS .....	10
REFERENCES .....	11

## INTRODUCTION

The systematics of the Cetoniinae, especially the African fauna, is in a sorry state. After a rash of descriptions in the second half of the nineteenth century, mostly by amateurs or notorious splitters, few serious workers were attracted to this group. Péringuey described a number of southern African species and genera at the South African Museum in Cape Town around the turn of the century (e.g. Péringuey 1907), but, as he lacked a proper reference collection, many of these turned out to be misplaced or synonymous — and many of them not corrected to this day. Distant (1911) proposed some amendments and corrections, which were, however, omitted by Schenkling (1921) in his catalogue. In this century there were some contributions to the South African fauna, e.g. by Schein, Valck Lucassen, Burgeon and Ruter, and more substantial contributions (mainly on *Cremastocheilini*) by Krikken. The most ambitious of these works was the suprageneric system proposed by Krikken (1984), which, however, did not necessarily resolve problems at species and genus level, and therefore dealt with often meaningless generic units.

The existing generic system in cetoniines is traditionally based on a selection of characters such as colour, toment, degree of development of meso-metasternal protrusion, and of clypeal and tibial armature. It is quite obvious that this system is inadequate in many cases, as all these features vary within groups which are obviously closely related in the majority of their features, and form coherent transformation series. My experience is that in the cetoniines (as indeed in most beetles) the male genitalia, the nature (not degree) of sexual dimorphism, and the positions and structure of armature on appendages are characters which lead to a much better grouping.

I therefore propose to resolve some of the synonymies of the African cetoniine fauna (with emphasis on southern African species and genera) in a series of papers, of which this is the first delivery. Genera and groups requiring new descriptions will be treated separately in a series of revisions.

Abbreviations of institutions are given in the acknowledgements, other abbreviations used are the following:

HT	—	Holotype
LT	—	Lectotype
PLT(S)	—	Paralectotypes(s)
PT(S)	—	Paratype(s)

### Genus *Xeloma* Kraatz

*Xeloma* Kraatz, 1881:264; Schoch, 1897:44; Péringuey, 1907:351; Schenkling, 1921:317; Krikken, 1984:59.  
*Sisyraphora* Kraatz, 1881:264; 1886:20; Schoch, 1894:214; 1895:99; 106; 1897:47; Péringuey, 1907:351; Schenkling, 1921:317; Krikken, 1984:58. *syn. nov.*  
*Pseudoprotactia* Kraatz, 1882: 70; Schoch 1894:214; 1895:99; 1897:45; Péringuey, 1907:459, 465; Schenkling, 1921: 308; Krikken 1984: 58. *syn. nov.*

Type species: *Cetonia odiosa* Gory & Percheron, 1833 (= *Cetonia atra* Thunberg, 1818) — by original monotypy.

The genus *Xeloma*, as here defined, is an exceptionally coherent and distinct one within the Cetoniinae. Characters that do vary (density of setation, convexity of dorsum, basal tarsomere of hindleg, sculpture), vary in virtually complete transformation series. The most distinctive characters are the following:

1. Male abdominal sternites without a median depression.
2. Aedeagus with parameres narrower at base than pars basalis; with semi-detached anterodistal plates; with pubescence on insides of parameres apically (Figures 1, 7, 13, 19, 19, 25, 36, 42, 48, 54, 60).
3. Scutellum elongate, rounded at apex; with complete lateral grooves which may be exposed or covered (Figures 4, 10, 16, 22, 28, 33, 39, 45, 51, 57, 63).
4. Elytra with deep subhumeral emargination (Figures 2, 8, 14, 20, 26, 31, 37, 43, 49, 55, 61); with second costa depressed in apical half of length.
5. Clypeus with anterior margin laminately upturned, mildly bilobate to bidentate near middle (Figures 67-72).
6. Protibia tridentate in both sexes, denticles more or less equidistant (Figures 5, 11, 17, 23, 29, 34, 40, 46, 52, 58, 64); mesotibia with bidentate median transverse blade on outside; metatibia with entire median transverse blade on outside (Figures 6, 12, 18, 24, 30, 35, 41, 47, 53, 59, 66).
7. Tarsomeres unmodified (Figures 47, 53, 59), or with only basal tarsomere of hindleg with a spinose extension distally (Figures 6, 12, 18, 24, 30, 35, 41, 66).
8. Metatibial spurs simple, wider in female (Figures 6, 12, 18, 24, 30, 41, 47, 53, 59, 66).
9. Post-mesocoxal sulci meeting on middle line posteriad of middle of mesocoxa (Figures 3, 9, 15, 21, 27, 32, 38, 44, 50, 56, 62).

While it is impossible at this stage to state which of these individual characters are apomorphic or unique for the genus, it can be stated with certainty that the combination is exclusive of all other African genera.

The closest genus to *Xeloma* seems to be *Anoplocheilus* MacLeay, to which it was regarded synonymous *i.a.* by Burmeister (1842), Péringuey (1907) and Distant (1911). *Anoplocheilus*,

however, differs markedly in the form of male genitalia and scutellum, has a shallow subhumeral emargination and spinose armature on the outside of the meso and metatibia.

On the other hand *Xeloma* has close affinities with *Elaphinis*, (tomentose ventral spots, scutellar shape, subhumeral elytral emargination, lack of elytral striae, occasionally spinose basal tarsomere of hindleg) from which it, however, differs in the lack of protibial sexual dimorphism, clypeal shape, absence of anteromedian pronotal tubercle, shape of second elytral costa, aedeagal type and mesometasternal projection.

#### Key to the subgenera of *Xeloma* Kraatz

- Posterior pronotal margin roundedly incised anteriorly of scutellum (Figures 67, 68, 70, 71, 72); profemur unarmed posteroventrally ..... *Xeloma* (*Xeloma*)
- Posterior pronotal margin straight (Figure 69); profemur with a median denticle posteroventrally (Figure 65) ..... *Xeloma* (*Paraxeloma*) **subgen. nov.**

#### Subgenus *Xeloma* (*Xeloma*) Kraatz

The characters of the nominate subgenus, above and beyond the generic characters, are the following:

1. Anterodistal lobes of aedeagal parameres rounded (Figures 1, 7, 13, 19, 25, 36, 42, 48, 54).
2. Posterior pronotal margin roundedly incised anteriorly of scutellum (Figures 67, 68, 70, 71, 72).
3. Profemur unarmed.
4. Meso-metasternal process rounded, setose at least on anterior declivity (Figures 3, 9, 15, 21, 27, 32, 38, 44, 50, 56).
5. Metatibia distally normal, trispinose (Figures 6, 12, 18, 24, 30, 35, 41, 47, 53, 59).

#### Key to the species of *Xeloma* (*Xeloma*) Kraatz

1. Scutellum bulbous, glabrous, rounded posteriorly (Figure 51) ..... *X. cicatricosa* (Burmeister)
- Scutellum otherwise ..... 2
2. Scutellum densely and evenly punctured, (Figure 57), pronotum with transverse grooves on anterior and lateral sides ..... *X. vuilleti* (Bourgoïn)
- Scutellar and pronotal sculpture otherwise ..... 3
3. Meso-metasternal process disc-like, glabrous ventrally (Figures 27, 32, 38) ..... 4
- Meso-metasternal process densely setose (Figures 3, 9, 15, 21, 44) ..... 5
4. Frons and clypeus evenly densely setose ..... 9
- Frons and clypeus aetose except for a dense setal brush between eyes ..... *X. leprosa* Burmeister
5. Basal tarsomere of hindleg extended into a long spine posterodistally (Figures 6, 12, 18) ..... 6
- Basal tarsomere of hindleg simple (Figures 24, 47) ..... 8
6. Setae on dorsum short, on average less than one quarter of eye-diameter ..... *X. maura* (Boheman)
- Setae on dorsum long, at least one half of eye-diameter ..... 7

7. Pronotum with a distinctly elevated ridge along middle; setae thin, yellow ..... *X. seticollis* (Kraatz)  
 — Pronotum without distinct carina; setae thick, brown to black .. *X. atra* (Thunberg)
8. Dorsum with very dense, long golden setae (about 50 across width of elytron — Figure 67) ..... *X. tomentosa* (Gory & Pécheron)  
 — Dorsum with much sparser pale brown setae (about 12 across width of one elytron — Figure 68) ..... *X. aspersa* (Péringuey)
9. Posterior quarter of pronotal disc shiny, unsculptured, asetose ..... *X. burmeisteri* (Arrow)  
 — Posterior quarter of pronotal disc with punctures and setae ..... *X. pilicollis* (Kraatz)

### *Xeloma (Xeloma) atra* (Thunberg)

(Figures 1-6; 71; 73)

*Cetonia atra* Thunberg, 1818:412; Burmeister, 1842:772.

*Leucoscelis atra* (Thunberg) Schenkling, 1921:329.

*Xeloma atra* (Thunberg) Schein, 1951:103.

*Cetonia odiosa* Gory & Pécheron, 1833:62, 263.

*Anoplochilus odiosus* (Gory & Pécheron) Burmeister, 1842:508; Péringuey, 1907:352, 355.

*Xeloma odiosa* (Gory & Pécheron) Kraatz, 1881:264; Schoch, 1897:54; Schenkling, 1921:317; Schein, 1951:103 (= *X. atra* Thunberg).

*Anoplochilus setosus* MacLeay, 1838:21.

*Anoplochilus setosus* (MacLeay) Burmeister, 1842:508 (= *X. odiosus*) Péringuey, 1907:355 (= *A. odiosus*).

*Xeloma setosa* (MacLeay) Schenkling, 1921:317 (= *X. odiosa*); Schein, 1951:103 (= *X. atra*).

The two species originally described under *Xeloma* have consistently been lumped, even by Schein (1951), who correctly noted the synonymy of *X. odiosa* and *X. setosa* with *X. atra*.

I could not procure the type of *X. atra* (which is housed in Uppsala), but the description and, more definitely, the type locality (Swartkopsrivier) indicate that, of the two original *Xeloma* species, the one from the Cape must be involved. The lectotype of *X. odiosa* (LT here designated 'Cape P.' — MHNG) and 2 types of *X. setosa* ('Cape, Smith' — MAMU) agree completely. Another type of *X. odiosa* (PLT here designated: "No. 730" : HECO) belongs to *X. maura* Boheman, and may have contributed to the confusion between the two species. I hereby designate the male specimen in Sydney as LT, and the female as PLT of *A. setosus* MacLeay. The distribution of the species is limited to the Cape Namaqualand region of the Cape Province (Figure 73).

### *Xeloma (Xeloma) maura* (Boheman)

(Figures 7-12, 72, 74)

*Anoplocheilus maurus* Boheman, 1860:117; Péringuey, 1907:355 (= *A. odiosus*); Distant, 1911:270 (= *A. odiosus*).

*Xeloma maura* (Boheman) Schenkling, 1921:317 (= *X. odiosa*); Schein, 1951:103 (= *X. atra*).

This common species has been persistently synonymized with *X. odiosa*, but only bears a superficial resemblance to the Cape species. The easiest distinction is in the dorsal setation (see key).

The types of *X. maura* are as follows: (Lectotype and paralectotypes here designated as follows: LT, 2 PLT: 'N'Gami, J. Wahlberg' — NHRS; 1 PLT 'Svakop' — NHRS; 1 PLT 'N'Gami' — BMNH; 2 PLT: — BMNH).

A type of *Anoplochilus coenosus* Westwood, 1849 in MNHN, here designated PLT, and wrongly labelled "East Indies" also belongs to *X. maura* Boheman. The LT of the species, however, is in HECO, and is a *Protaetia* sp. from India.

The species is a common savanna species restricted to southern Africa (Figure 74)

***Xeloma (Xeloma) seticollis* (Kraatz) comb. nov.**  
(Figures 13-18)

*Anoplochilus seticollis* Kraatz, 1880:154.

*Sisyraphora seticollis* (Kraatz) Schenkling, 1921:317.

This species properly belongs nearest to *X. maura*, as it has the basal tarsomere of the hindleg distinctly spinose (Figure 18). The setation is intermediate between *X. burmeisteri* and *X. tomentosa* in density.

I have seen identified specimens from Mamboya and Kibwezi in East Africa, from where this species was described, and where it can hardly be confused with any other species occurring in the region.

***Xeloma (Xeloma) aspersa* (Péringuey) comb. nov.**  
(Figures 19-24, 68, 75)

*Protaetia aspersa* Péringuey, 1896:163.

*Pseudoproteaetia aspersa* (Péringuey) Péringuey, 1907:466 (= *P. leprosa*); Distant, 1911:268 (= *P. leprosa*); Schenkling, 1921:309 (= *P. leprosa*); Schein, 1951:101 (= *P. leprosa*).

This species has usually been identified as *P. leprosa*, which, however, belongs to another southern African species of this group (see below).

The species takes an intermediate position between the original genera *Xeloma* and *Pseudoproteaetia*. With the former it agrees in the dense dorsal setation, carinate pronotum (Figure 68), and setose mesometasternal process (Figure 21). With the latter it agrees in the less globose elytra, more raised posterior half of sutural elytral costa, and spinose elytral apices (Figure 68). It also takes an intermediate position between *Xeloma* and *Sisyraphora* with regard to the development of the basal tarsomere of hindleg (Figure 24) and density of setation (the only characters separating those two 'genera'). In spite of its rather common occurrence in collections, the species has persistently been misidentified, and *X. aspersa* (HT: Mashunaland, Mazoe distr. 1894/Marley — SAMC) is the only valid name.

The species occurs in the savanna of Zimbabwe and Transvaal, but does not extend beyond the highveld or across the Botswana corridor to South West Africa (Figure 75).

***Xeloma (Xeloma) burmeisteri* (Arrow) comb. nov.**

(Figures 25-30)

*Cetonia estolee* var. Olivier, 1789:43.*Protaetia stolata* (Olivier) Burmeister, 1842:484.*Pseudoprottaetia stolata* (Olivier) Kraatz, 1882:701 Schoch, 1895:107; Schenkling, 1921:309.*Pseudoprottaetia burmeisteri* Arrow, 1941: 77 (*nom. nov.* *P. stolata* Burmeister *nec* Olivier); Bacchus 1974:113-114 (*nom. nov.* *P. stolata* Olivier *nec.* Burmeister)

The confusion about the identity of this species was finally resolved by Bacchus in 1974 and will not be repeated here. I might add that a second specimen in the BMNH Banks Collection (in the drawer following the *Glyciphana* specimens, and unnamed) may be the type of *X. burmeisteri*, as the specimen belongs to this species. The distribution is restricted to West Africa, and identifications from southern African material are mostly specimens of *X. aspersa*. This species is extremely close to *X. pilicollis* (see below).

***Xeloma (Xeloma) pilicollis* (Kraatz) comb. nov.**

(Figures 31-35).

*Pseudoprottaetia pilicollis* Kraatz, 1892:406; Schenkling, 1921:309.

This species was described from East Africa, and differs little from *X. burmeisteri* except for a much denser setation. It is somewhat intermediate between *X. aspersa* and *X. leprosa* in dorsal sculpture and setation, but has larger, better defined white tomentose areas on dorsum than both these species. The mesometasternal protrusion and first metatarsomere agree with *X. leprosa*, but the aedeagus is quite distinct. I have not seen the type, but only several identified specimens. A possible synonymy with *X. burmeisteri* can only be decided on when more material and the types of both species can be studied.

***Xeloma (Xeloma) leprosa* (Burmeister) comb. nov.**

(Figures 36-41, 70, 76)

*Protaetia leprosa* Burmeister, 1842:560.*Pseudoprottaetia leprosa* (Burmeister) Péringuey, 1907:466; Distant, 1911:267; Schenkling, 1921:308; Schein, 1951:101.*Cetonia (Protaetia) amakosa* Boheman, 1857:30.*Pseudoprottaetia amakosa* (Boheman) Péringuey, 1907:466, 467, Distant, 1911:267 (= *P. leprosa*); Schenkling, 1921:308.*Pseudoprottaetia stictica* Kraatz 1882:71; Schenkling, 1921:309. *syn. nov.**Pseudoprottaetia puncticollis* Kraatz, 1899:108; Schenkling, 1921:30. *syn. nov.**Pseudoprottaetia puncticollis* var. *soror* Kraatz, 1899:109; Schenkling 1921:309. *syn. nov.*

This species represents the extreme of the transformation series towards the '*Pseudoprottaetia*' characters. This dorsum is rather flat and shiny and sparsely setose. The sutural elytral costa is strongly elevated and spinose at the apex (Figure 70). The mesometasternal process is shiny, disc-like, aetose (Figure 38).

The general appearance of the species is rather variable. Some specimens (usually the larger ones) may be black, with well defined white maculae on the dorsum. This form was described as *P. stictica* Kraatz (LT: here designated: (no locality) — DEIC; PLT: (no locality) — ZSMC). Other specimens are dark bronze, with finely mottled white tomentose spots on the dorsum, and this form has variously been described as *P. leprosa* Burmeister

(LT, 2 PLT here designated: 'Amaz Dpt' — MLUH); *C. amakosa* Boheman (HT: 'Caffraria, J.A. Wahlberg' — NHRS), and *P. puncticollis* v. *soror* Kraatz (HT: 'Transvaal, Staudinger' — DEIC). The type of *P. puncticollis* Kraatz (LT here designated: 'Angola'—DEIC) is intermediate between these two extremes, and was designated a lectotype because it bore a 'syntype' label. I could, however, not establish the depository of other syntypes, if any.

The species is widely distributed in the southern African savanna regions (Figure 76).

***Xeloma (Xeloma) tomentosa* (Gory & Percheron) comb. nov.**

(Figures 42-47, 67, 77)

*Cetonia tomentosa* Gory & Percheron, 1833:63, 266; Mannerheim, 1837:135.

*Anoplocheilus tomentosus* (Gory & Percheron) MacLeay, 1838:21.

*Anoplochilus tomentosus* (Gory & Percheron) Burmeister, 1842:21; Boheman, 1857:29; Schoch, 1895:106; Distant, 1911:270.

*Sisyraphora tomentosa* (Gory & Percheron) Péringuey, 1907:252, 357; Heyne-Taschenberg, 1908:118; Schenkling, 1921:317; Schein, 1951:103.

This species is easily recognized by its extremely dense covering of golden setae (Figure 67). It also represents an extreme reduction of the spine on the basal tarsomere of the hindleg (Figure 47), which is completely lacking (HT: 'Afrique int. Sud, Dunke I Derby' — MHNG).

The species has a predominantly montane distribution on the highveld and escarpment of Transvaal, and along the Waterberg, Soutpansberg and Drakensberg (Figure 77). I have seen the types of *S. angolensis* Valck Lucassen.

***Xeloma (Xeloma) tomentosa angolensis* (Valck Lucassen) comb. et stat. nov.**

*Sisyraphora angolensis* Valck Lucassen, 1936:405.

The specimen on which Valck Lucassen based his species are from Angola and the Congo (LT, 2 PLT here designated: 'Luluabourg. P. Callewaert' — MRAC; PLT: 'Nova Lisboa, II, Angola' — MRAC; 2 PLT: 'Bihe, Angola' — BMNH; PLT: 'Sangeve, II, — MNCF), and I have seen further specimens from 'Ganga', 'Sankuru', 'Gandajika', 'Chianga' and 'S of Lake Rudolf' in East Africa.

The specimens from East Africa show a reduction of white tomentose spots, which reaches an extreme in Angola. The aedcagus (one male from Angola) is very similar to that of *X. tomentosa* s. str., with only the basal parts of parameres very slightly wider. All specimens here allocated to *X. tomentosa angolensis* have the white tomentose spots on elytra much smaller and evenly scattered than in the typical form. In view of the scanty material from East and Central Africa I consider it safest to regard this form as a subspecies for the time being, although it may turn out to be one end of a continuous gradient.

***Xeloma (Xeloma) cicatricosa* (Burmeister) comb. nov.**

(Figures 48-53)

*Sisyraphora cicatricosa* Burmeister, 1842:510; Arrow, 1906:135; Schenkling, 1921:317.



This species is readily recognised by its bulbous and rounded scutellum (Figure 51), and very uneven elytral surface. The clypeus is extremely short and blunt, sides of venter extensively covered with white toment and basal tarsomere of hindleg aspinose (Figure 53).

While I have not been able to trace the type, several specimens of this very distinctive species from Senegal agree in all details with Burmeisters' description, and the identity of the species can be established with certainty. I have, however, also seen several obviously misidentified specimens bearing this name. The species was also recorded from Cote d'Ivoire and Ht. Volta.

***Xeloma (Xeloma) vuilleti* (Bourgoin) comb. nov.**

(Figures 54-59)

*Anoplocheilus vuilleti* Bourgoin, 1914:567; Schenkling, 1921: 316.

Superficially this species resembles *X. seticollis* Kraatz, but differs markedly in dorsal sculpture. *X. vuilleti* has the most dense dorsal sculptue of all *Xeloma* species, and the scutellum is evenly and densely punctured all over (Figure 57), while the dense and fine pronotal punctures become confluent in transverse lines on the anterior and lateral parts of the disc. The basal tarsomere of the hindleg is aspinose (Figure 59).

The types of the species are as follows: "Type" (HT) "HT Senegal. Koulikoro J. Vuillet" — BMNH; 1 "Cotype" (PT) "Fouta Djalou" — BMNH; 1 "Cotype" (PT) "Haut Niger" — BMNH; 1 "Type" (PLT. here designated) "Haut Niger" — RMNH.

I have also seen specimens from "Koulikoro" and Aledjo, Togo, "Kouribu" and Ifan (MNHN).

**Subgenus *Xeloma (Paraxeloma)* subgen. nov.**

Type-species: *Anoplochilus mashunus* Péringuey, 1907.

The subgenus is erected for a single species that conforms with the nine generic characters of *Xeloma* stated above, but differs from the remainder of *Xeloma* species in the following characters:

1. Distal lobes of aedeagal parameres elongated, strongly angular in outer posterior corners (Figure 60).
2. Posterior pronotal margin straight anteriorly of scutellum, pronotal base extremely attenuated (*Goliathus* — type) (Figure 69).
3. Profemur with a median denticle posteroventrally (Figure 65).
4. Mesometasternal process blade-like, produced anteroventrally (Figure 62).
5. Metatibia ventrodistally extended (Figure 66).

***Xeloma (Paraxeloma) mashuna* (Péringuey) comb. nov.**

(Figures 60-66; 69; 78)

*Anoplochilus mashunus* Péringuey, 1907:352, 355; Schenkling, 1921:316.

This unique species is easily recognized by the modified profemur and metatibia alone. It is closest to *X. atra*, having the spine on basal tarsomere of hindleg and a very globose body shape. The type (HT: 'Up. Manyani r., Mashonaland, Nov. 1897, G.A.K.M.' — SAMC) is a female.

The species is widespread in the drier southern African savanna regions (Figure 78), but rather scarce in collections.

### MISPLACED SPECIES

One species has been wrongly associated with the *Xeloma* group, under *Sisyraphora*:

*Sisyraphora carinicornis* Moser, 1918:180; Schenkling, 1921:317.

The type series of *S. carinicornis* (LT, 3 PLT here designated: 'Luluabourg, P. Callewaert' — MRAC) decidedly does not belong to *Xeloma*: The abdominal sternites of the male are concave; elytral costae interruptedly and strongly raised; aedeagus of a different type; and scutellum pointed at the apex. I have not revised the generic group around *Tropinota* this species belongs to, and provisionally leave it *incertae sedis*.

### OPSOMMING

Die spesie- en genus-sinonimieë van die voormalige genera *Xeloma*, *Sisyraphora* en *Pseudoprotactia* word hersien. Daar word aangetoon dat die elf spesies in hierdie groep as 'n enkele genus, *Xeloma*, beskou moet word. Een spesie wat as *Sisyraphora carinicornis* Moser beskryf is, word uit hierdie nuwe genusdefinisie van *Xeloma* uitgesluit. *Anoplocheilus mashunus* Péringuey, daarenteen, word by die genus *Xeloma* ingesluit onder die nuwe subgeneriese naam *Xeloma (Paraxeloma)*. Vier nuwe spesie-sinonimieë, en tien nuwe kombinasies word voorgestel. Sleutels tot subgenera en spesies, en sketse van morfologiese detail van al die spesies word gegee. Die Suider-Afrikaanse spesies word ook in kleur geïllustreer, en hulle verspreidingspatrone word op kwartgraad-rooster kaarte weergegee.

### ACKNOWLEDGEMENTS

I wish to thank the many colleagues and institutions who made their collections available for study. Private collectors include Messrs. P. Stobia, I. Coetzer, J. Ball, I. Willem and N. Duke. Institutions which lent material are abbreviated as follows in the text, with the abbreviations as used in Arnett *et al.* 1986.

AMGS	—	Albany Museum, Grahamstown
BMNH	—	British Museum (Natural History), London
BMSA	—	National Museum, Bloemfontein
CNCI	—	Canadian National Collection of Insects, Ottawa
DEIC	—	Abteilung Taxonomie der Insekten, Eberswalde, DDR
DMSA	—	Durban Museum
ETHZ	—	Entomologisches Institute ETH, Zürich
HECO	—	Hope Entomological Collection, Oxford
HNHM	—	Hungarian Natural History Museum, Budapest
ISNB	—	Institute Royal des Sciences Naturelle de Belgique, Bruxelles
MAMU	—	McLeay Museum, Sydney, N.S.W.
MHNG	—	Muséum d'Histoire Naturelle, Geneva

MLUH	—	Martin Luther Universität, Halle DDR
MNCF	—	Musé d'Histoire Naturelle, La Chau-de-Fonds
MNHN	—	Muséum National d'Histoire Naturelle, Paris
MRAC	—	Musée Royal de l'Afrique Centrale, Tervuren
NHMB	—	Naturhistorisches Museum, Basel
NHMV	—	Naturhistorisches Museum, Wien
NHRS	—	Naturhistoriska Riksmuseet, Stockholm
RMNH	—	Rijksmuseum van Natuurlijke Historie, Leiden
SAMC	—	South African Museum, Cape Town
SANC	—	South African National Collection of Insects, Pretoria
SMTD	—	Staatliches Museum für Tierkunde, Dresden, DDR
SMWH	—	State Museum, Windhoek
TMSA	—	Transvaal Museum, Pretoria
ZMHB	—	Museum für Naturkunde der Humboldt Universität, Berlin
ZSMC	—	Zoologische Staatssammlung, München

Grants of the CSIR and University of Pretoria are acknowledged as are the comments of Dr S. Endrödy-Younga (Transvaal Museum, Pretoria) and an anonymous referee on the manuscript.

## REFERENCES

- ARNETT, R.H., G.A. SAMUELSON, J.B. HEPPNER, G.M. NISHIDA, J.C. WATT & R.E. WOODRUFF. 1986. *The Insect and Spider Collections of the World*. E.J. Brill/Flora & Fauna Publications.
- ARROW, G.J. 1906. On Lamellicorn Coleoptera from Portuguese West Africa, with descriptions of new species. *Annals and Magazine of Natural History* (7) **18**: 127-137.
- ARROW, G.J. 1941. Systematic notes on the Cetoniid Coleoptera and descriptions of a few new species. *Annals and Magazine of Natural History* (II) **8**: 273-283.
- BACCHUS, M.E. 1974. A revision of the Australian species of the genus *Glycyphana* Burmeister (Coleoptera: Scarabaeidae). *Journal of the Australian Entomological Society* **13**: 111-128.
- BOHEMAN, C.H. 1857. *Insecta Caffrariae Annis 1838 - 1845a J.A. Wahlberg Collecta*. Pars I. Holmiae: 8-61.
- BOHEMAN, C.H. 1860. Coleoptera samlade af J.A. Wahlberg I sydvestra Afrika. *Öfversigt k. Vetenskapsakademiens förhandlingar* **3**: 107-120.
- BOURGOIN, A. 1914. Cetonides Recueillis Par M.J. Vuillet dans le Haut-Senegal-Niger et descriptions de trois especes nouvelles (Coleoptera, Scarabaeidae). *Annales de la Société Entomologique de France LXXXIII*: 563-567.
- BURMEISTER, H. 1842. *Handbuch der Entomologie*. Vol. 3. T.E.F. Berlin: Enslin.
- DISTANT, W.L. 1911. *Insecta Transvaaliensa - A contribution to the knowledge of the entomology of South Africa*. vol. 1. London: W.L. Distant.
- GORY H. & PERCHERON, A. 1833. *Monographie des Cétoines et genres voisins, formant dans les familles naturelles de Latreilla la division des Scarabées méliophiles*. Paris: J.B. Baillière.
- HEYNE-TASCHENBERG, A. 1908. *Die exotischen Käfer in Wort und Bild*. Leipzig: G. Reusche.
- KRAATZ, G. 1880. Käfer aus dem Asschanti-Gebiete nach Familien aufgezählt und beschrieben. *Deutsche Entomologische Zeitschrift* **24**(1): 143-159.

- KRAATZ, G. 1881. Ueber die Gruppe der Anoplochiliden. *Deutsche Entomologische Zeitschrift* **25** (2): 264.
- KRAATZ, G. 1882. Die afrikanischen Leucoceliden und die ihnen zunächst verwandten Gattungen der Cetoniden. *Deutsche Entomologische Zeitschrift* **26**(1): 65-78.
- KRAATZ, G. 1886. Ueber einige Oxythyreiden (Cetoniden) Arten. *Deutsche Entomologische Zeitschrift* **30**(1): 20.
- KRAATZ, G. 1899. *Pseudoprotactia puncticollis* n. sp. *Deutsche Entomologische Zeitschrift* **43**(1): 108-109.
- KRIKKEN, J. 1984. A new key to the suprageneric taxa in the beetle family Cetoniidae, with annotated lists of the known genera. *Zoologische Verhandlungen* **210**: 3-75.
- MACLEAY, W.S. 1838. On the Cetoniidae of South Africa, pp. 1-52. In: Smith, A. (Ed.). *Illustrations of the Zoology of South Africa Vol. 4: Invertebrate*. London: Smith, Elder & Co.
- MANNERHEIM, C.G.V. 1837. Observations critiques sur quelques ouvrages entomologiques. *Bulletin Societas imperiale Naturalistes Moscau* **10**(8): 127-163.
- MOSER, J. 1918. Beitrag zur Kenntnis der Cetoniden (Col.) *Stettiner Entomologische Zeitung* **79**: 168-190.
- OLIVIER, M. 1789. *Entomologie ou Histoire Naturelle de Insectes*. **1**(6): 1-92. Paris: Boudouin.
- PÉRINGUEY, L. 1896. Descriptions of new genera and species of Coleoptera from South Africa, chiefly from Zambezia. *Transactions of the Royal Entomological Society of London* 149-189.
- PÉRINGUEY, L. 1907. Descriptive Catalogue of the Coleoptera of South Africa. (Lucanidae and Scarabaeidae). *Transactions of the South African Philosophical Society* **13**: 1-752.
- SCHEIN, H. 1951. Coleoptera (Scarabaeidae): Cetoniinae and Trichiinae, pp. 83-112. In: Hanström, Brinck & Rudebeck (Eds). *South African Animal Life VII*.
- SCHENKLING, S. 1921. Scarabaeidae: Cetoninae, pp. 1-431. In: Junk, W. & Schenkling, S. (Eds). *Coleopterorum Catalogus Pars. 72*. Berlin: W. Junk.
- SCHOCH, G. 1894. Ueber die Systematik der Cetoniden. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* **9**(4): 164-225.
- SCHOCH, G. 1895. *Die Genera und Species meiner Cetoniden-Sammlung*. Zürich: E. Zwingli.
- SCHOCH, G. 1897. Nachtrag V zu Schoch: Genera und Species meiner Cetoniden Sammlung. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* **10**(1): 37-60.
- THUNBERG, C.P. 1818. Coleoptera Capensia, antennis lamellatis, sine clava fissili, instructa. *Memoire de l'Academie des Sciences de St. Petersburg* **6**: 395-450.
- VALCK LUCASSEN, F.T. 1936. Description d'une nouvelle espèce de Sisyraphora Kraatz (Col., Ceton.). *Revue de zoologie et de botanique africaines*. **28**(3): 405.
- WESTWOOD, J.O. 1849. Descriptions of several new species of Cetoniinae collected in India by Col. Hearsey, Capt. Boys and W. Benson Esq. *Transactions of the Royal Entomological Society of London* **5**: 144-150.

## LEGENDS TO FIGURES

**Figures 1-66:** Details of *Xeloma* spp. (aedeagi: left in dorsal, right in left lateral view. Lateral details with E: mesepisternum; MX: metacoxa; EM: elytral margin at sub-humeral immargination. Mesometasternal process in 45° left lateral view, with MS: mesosternum; MT: metasternum; MC: mesocoxa. Right protibiae and tarsi in dorsal view: left male, right female. Left metatibiae and tarsi, in left lateral view: left male, right female. Scale bar with arrow refers to genitalia, other scale bar to remainder of figures).

**Figures 1-6:** *X. (X.) atra* (Thunberg). 1: aedeagus; 2: lateral details; 3: mesometasternal process; 4: scutellum; 5: protibiae and tarsi; 6: metatibiae and tarsi.

**Figures 7-12:** *X. (X.) maura* (Boheman). 7: aedeagus; 8: lateral details; 9: mesometasternal process; 10: scutellum; 11: protibiae and tarsi; 12: metatibiae and tarsi.

**Figures 13-18:** *X. (X.) seticollis* (Kraatz). 13: aedeagus; 14: lateral details; 15: mesometasternal process; 16: scutellum; 17: protibiae and tarsi; 18: metatibiae and tarsi.

**Figures 19-24:** *X. (X.) aspersa* (Péringuey). 19: aedeagus; 20: lateral details; 21: mesometasternal process; 22: scutellum; 23: protibiae and tarsi; 24: metatibiae and tarsi.

**Figures 25-30:** *X. (X.) burmeisteri* (Arrow). 25: aedeagus; 26: lateral details; 27: mesometasternal process; 28: scutellum; 29: protibiae and tarsi; 30: metatibiae and tarsi.

**Figures 31-35:** *X. (X.) pilicollis* (Kraatz). 31: lateral details; 32: mesometasternal process; 33: scutellum; 34: protibia and tarsus of female; 35: metatibia and tarsus of female.

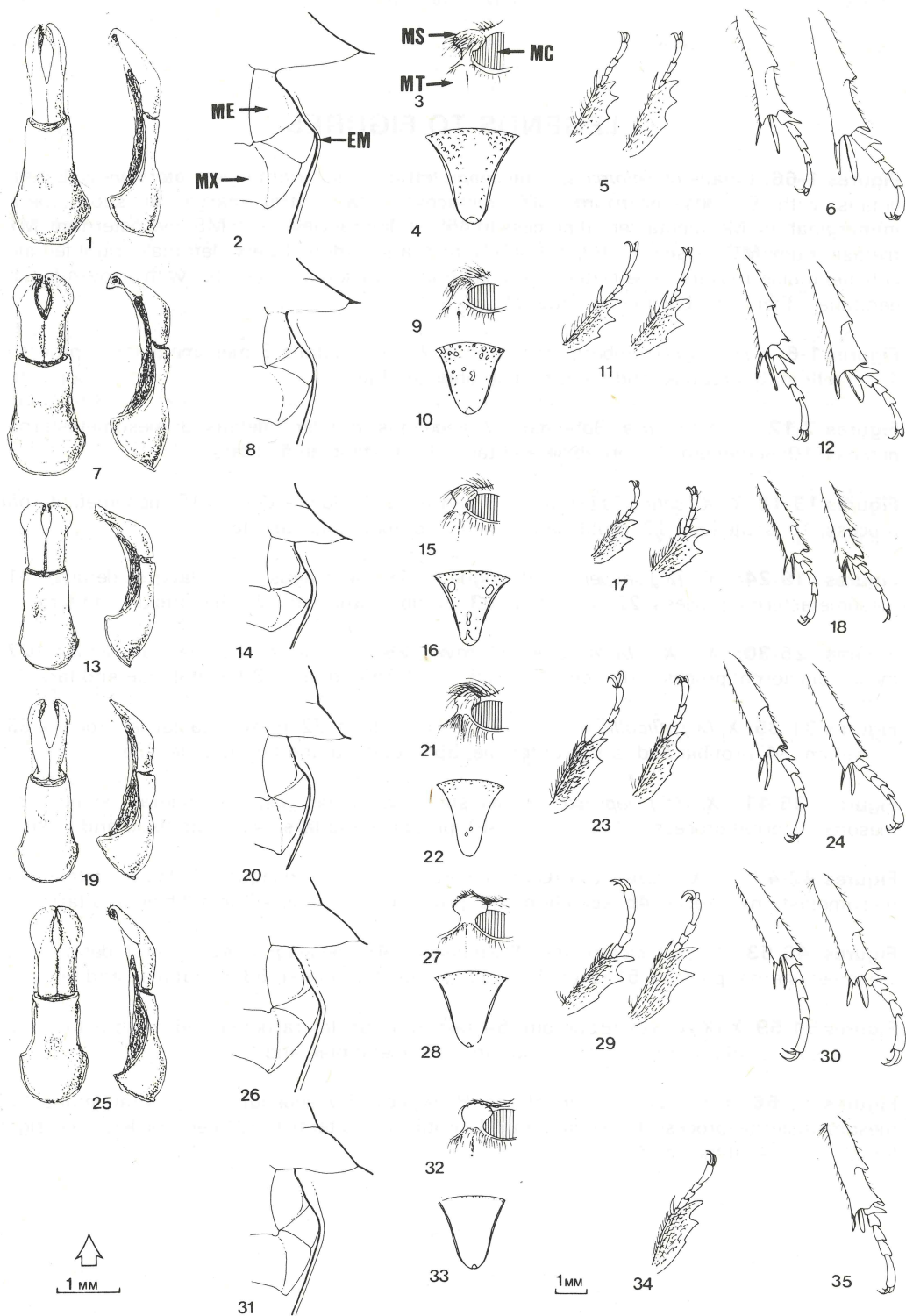
**Figures 36-41:** *X. (X.) leprosa* (Burmeister). 36: aedeagus; 37: lateral details; 38: mesometasternal process; 39: scutellum; 40: protibiae and tarsi; 41: metatibiae and tarsi.

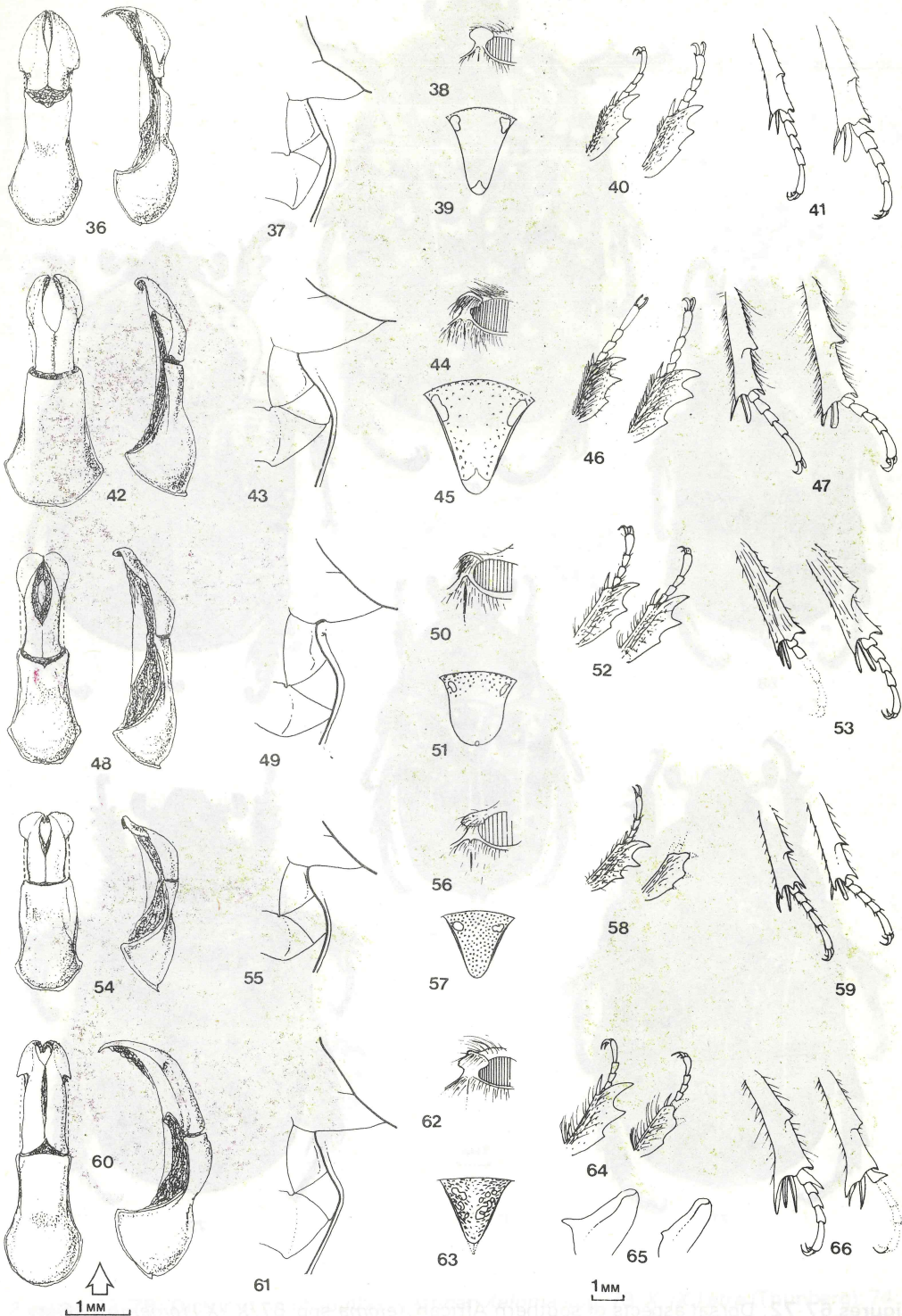
**Figures 42-47:** *X. (X.) tomentosa* (Gory & Percheron). 42: aedeagus; 43: lateral details; 44: mesometasternal process; 45: scutellum; 46: protibiae and tarsi; 47: metatibiae and tarsi.

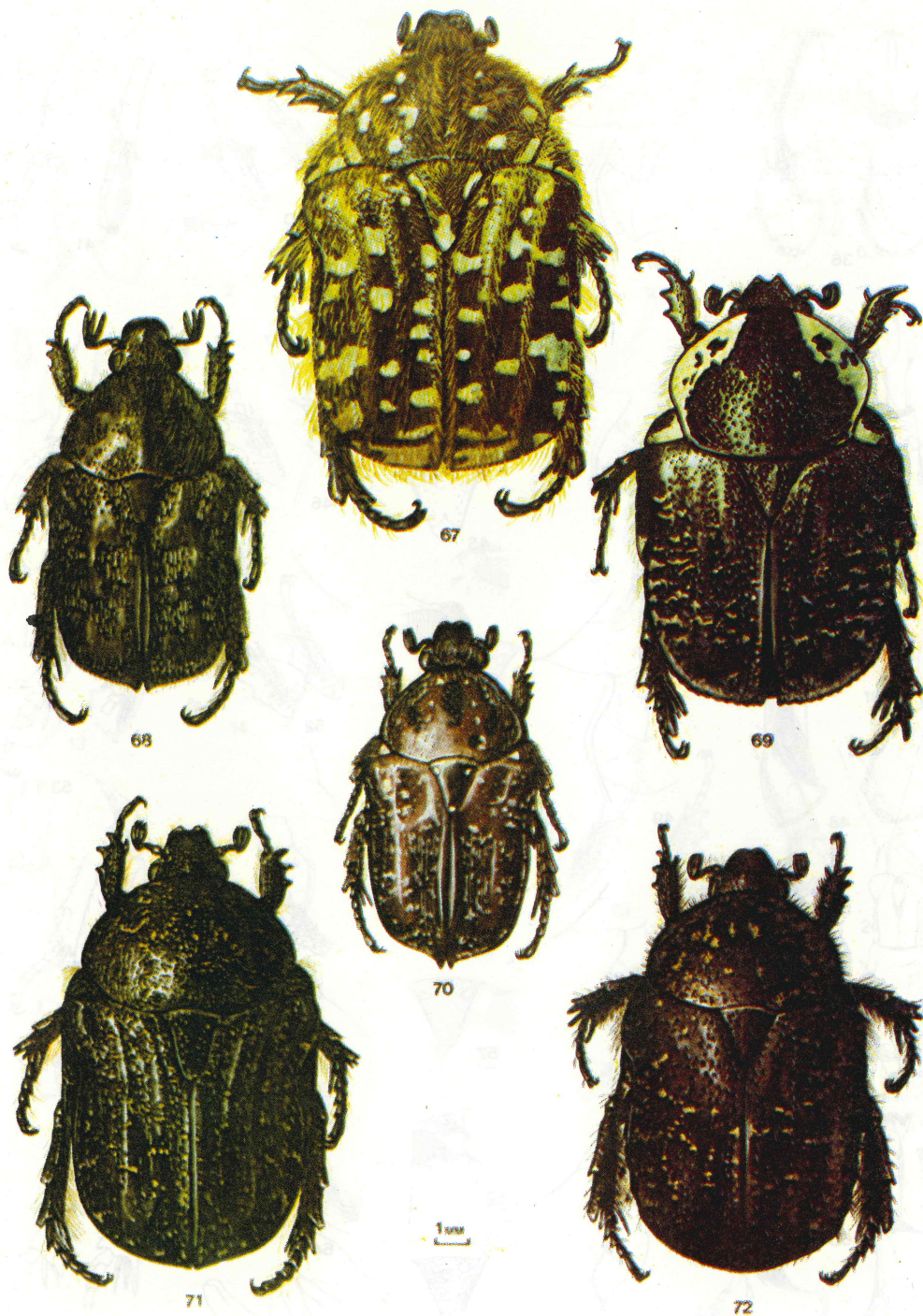
**Figures 48-53:** *X. (X.) cicatricosa* (Burmeister). 48: aedeagus; 49: lateral details; 50: mesometasternal process; 51: scutellum; 52: protibial and tarsi; 53: metatibiae and tarsi.

**Figures 54-59:** *X. (X.) vuilleti* (Bourgoin). 54: aedeagus; 55: lateral details; 56: mesometasternal process; 57: scutellum; 58: protibiae and tarsi; 59: metatibiae and tarsi.

**Figures 60-66:** *X. (Paraxeloma) mashuna* (Péringuey). 60: aedeagus; 61: lateral details; 62: mesometasternal process; 63: scutellum; 64: protibiae and tarsi; 65: profemora, left male, right female; 66: metatibiae and tarsi.

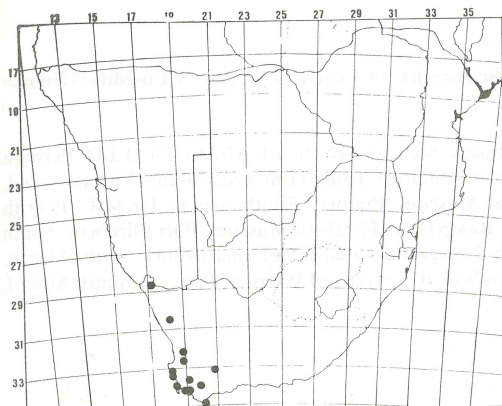




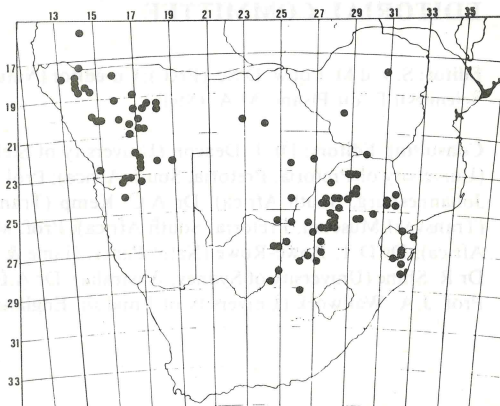


Figures 67-72: Dorsal aspects of southern African *Xeloma* spp. 67: *X. (X.) tomentosa* (Gory & Percheron); 68: *X. (X.) aspersa* (Péringuey); 69: *X. (Paraxeloma) mashuna* (Péringuey); 70: *X. (X.) ieprosa* (Burmeister); 71. *X. (X.) atra* (Thunberg); 72. *X. (X.) maura* (Boheman).

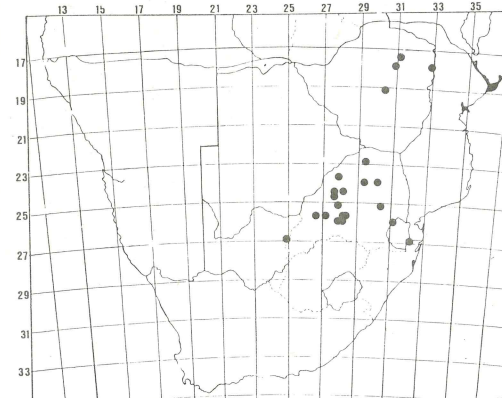




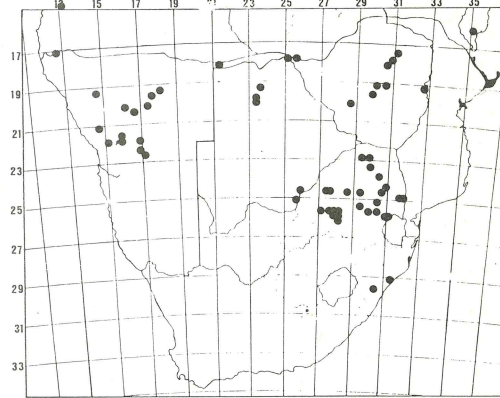
73



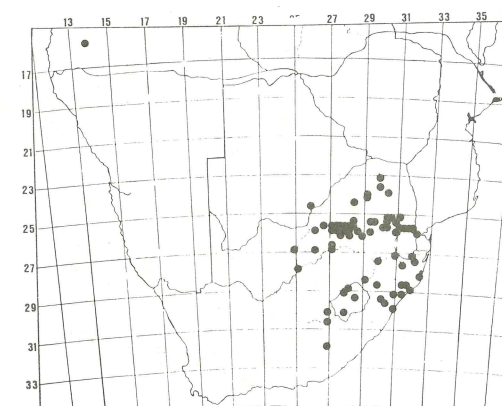
74



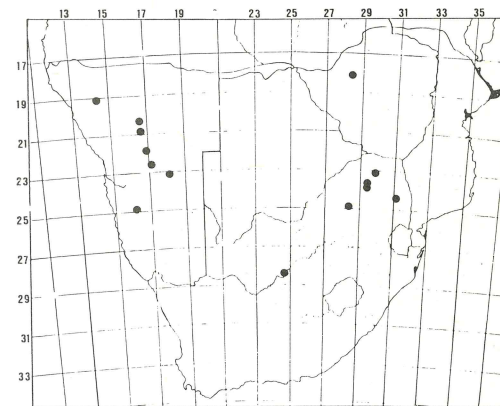
75



76



77



78

Figures 73-78: Distribution of southern African *Xeloma* spp. 73: *X. (X.) atra* (Thunberg); 74: *X. (X.) maura* (Boheman); 75: *X. (X.) aspersa* (Péringuey); 76: *X. (X.) leprosa* (Burmeister); 77: *X. (X.) tomentosa* (Gory & Percheron); 78: *X. (Paraxeloma) mashuna* (Péringuey).

**EDITORIAL COMMITTEE**

**Editor:** S. v/d M. Louw. D.Sc. (Pret.); **Co-editor (Natural Sciences):** C.D. Lynch. D.Sc. (Pret.); **Co-editor (Human Sciences):** E. du Pisani. M.A. (Stell.).

**Consulting Editors:** Dr J. Deacon (University of Stellenbosch, Stellenbosch, South Africa); Dr O.J.O. Ferreira (University of Pretoria, Pretoria, South Africa); Prof. W.D. Hammond-Tooke (University of the Witwatersrand, Johannesburg, South Africa); Dr A.C. Kemp (Transvaal Museum, Pretoria, South Africa); Dr M-L. Penrith (Transvaal Museum, Pretoria, South Africa); Prof. M.A. Raath (Port Elizabeth Museum, Port Elizabeth, South Africa); Dr D.T. Rowe-Rowe (Natal Parks, Game & Fish Preservation Board, Pietermaritzburg, South Africa); Dr R. Shine (University of Sydney, Australia); Dr A.E. van Wyk (University of Pretoria, Pretoria, South Africa); Prof. J.A. Wallwork (University of London, England).

*Orders to: National Museum, P.O. Box 266, Bloemfontein 9300, Republic of South Africa.*