

Taxonomic revision of the genus *Andrahomanus* (Coleoptera: Anthicidae)

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Abstract. The genus *Andrahomanus* Pic, 1903 is redescribed along with *Andrahomanus luteipes* Pic, 1903 and *Anthicus particularis* Pic, 1932. Five species of the genus are described as new: *A. crassicornis* sp. nov. (South Africa), *A. opacus* sp. nov. (Namibia), *A. ovaliceps* sp. nov. (South Africa), *A. sabulicola* sp. nov. (South Africa), *A. scholaris* sp. nov. (Namibia, Botswana). A new combination, *Andrahomanus particularis* (Pic, 1932) comb. nov. (transferred from *Anthicus* Paykull, 1798), is proposed. A lectotype is designated for *Anthicus particularis* Pic, 1932. A key to species of *Andrahomanus* is provided.

Key words. Coleoptera, Anthicidae, *Andrahomanus*, taxonomy, redescription, new species, new combination, Afrotropical Region

Introduction

Andrahomanus Pic, 1903 has long been considered a rather enigmatic genus of the subfamily Anthicinae Latreille, 1819 and seen as probably close to the genera of the tribe Formicomini Bonadona, 1974. It was established for *Andrahomanus luteipes* Pic, 1903 from southern Madagascar, and the author mentioned the similarity of his new genus to *Formicomus* LaFerté-Sénéctère, 1849 and *Anthelephilus* LaFerté-Sénéctère, 1849 (Pic 1903).

The identity of *Andrahomanus* has never been resolved, and its single known species was never recorded by subsequent specialists. In his review of Madagascan anthicids, BONADONA (1958) just quoted the original description. Later, BONADONA (1974) listed *Andrahomanus* in the Formicomini but did not provide any explanation for this rather tentative placement. UHMANN (1976, 1978) may have been unaware of the classification proposed by Bonadona as he, without any comments, listed all Formicomini genera in the tribe Anthicini Latreille, 1819. In his key to genera, UHMANN (1976) coupled *Andrahomanus* with *Anthelephilus*, and the characters he used (aptery, differences in form of head) were simply adopted/derived from Pic's original description. Finally, KEJVAL (2003, 2009) modified the original concept of Formicomini, based on the examination of type specimens, and confirmed the relationship of *Andrahomanus* to this group of genera.

In the present paper *Andrahomanus* is redescribed to include six more species distributed in South Africa, Namibia, Botswana and Mozambique; five of them are new to science. The genus is regarded as a primitive member of the Formicomini, showing a close relationship to *Chileanthicus* Werner, 1966, which occurs in Chile, Madagascar and Australia (KEJVAL 2009).

Material and methods

Specimens were examined with a Leica MZ 9.5 stereomicroscope; morphological measurements were taken with an ocular graticule. Illustrations were made using a drawing tube, with some details added from examination using a compound microscope. Male and female genitalia were illustrated after being cleared in a hot 10% KOH solution.

Data from locality labels are cited verbatim only for the type specimens, and comments are placed in square brackets. Separate labels are indicated by double slashes (/). The terminology of body setation follows WERNER & CHANDLER (1995).

The following acronyms of depositories are used:

HNHM	Hungarian Natural History Museum, Budapest, Hungary;
MNHN	Museum National d'Histoire Naturelle, Paris, France;
NMNW	National Museum of Namibia, Windhoek;
NMPC	National Museum, Praha, Czech Republic;
SANC	South Africa National Collection of Insects, ARC – Plant Protection Research Institute, Pretoria, South Africa;
TMSA	Transvaal Museum Pretoria, South Africa;
ZKDC	Zbyněk Kejval collection, Domažlice, Czech Republic;
ZMHB	Museum für Naturkunde der Humboldt Universität, Berlin, Germany.

Results

A key to species of *Andrahomanus* Pic, 1903

- 1(2) Head nearly evenly rounded posteriorly (Fig. 47); dorso-lateral sides with distinct paired protuberance in posterior half, bearing single erect seta apically (Fig. 47, marked by arrow); surface of head and pronotum finely reticulate and punctate.
..... ***A. ovaliceps* sp. nov.**
- 2(1) Head widely rounded posteriorly; dorso-lateral sides of pronotum rather even, their outlines straight to moderately arcuate posteriorly in dorsal view; surface of head and pronotum with no traces of reticulation, more or less densely punctate.
- 3(6) Pronotal disc strongly convex/bulging posteriorly, antebasal sulcus thus not clearly visible in dorsal view; setation of elytra bicoloured, pale to brownish, with silvery/whitish setae forming two sparse transverse bands (Figs. 41, 43).
- 4(5) Paired prongs of male sternite VIII nearly evenly narrow, at most finely setose apically (Figs. 24, 28, 29); male tergite VIII nearly evenly rounded posteriorly (Fig. 25).
..... ***A. sabulicola* sp. nov.**
- 5(4) Paired prongs of male sternite VIII abruptly dilated apically, with scattered short and stiff setae (Fig. 13); male tergite VIII angulate posteriorly (Fig. 14).
..... ***A. opacus* sp. nov.**

- 6(3) Pronotal disc at most moderately convex/bulging posteriorly, antebasal sulcus clearly visible in dorsal view; setation of elytra pale to silvery.
- 7(10) Dorsal surface of pronotum matt; punctures large and contiguous.
- 8(9) Pronotum narrower, widely rounded anteriorly (Fig. 37); antennae shorter and more robust, conspicuously enlarged in terminal third (Fig. 1); male sternum VII with small subapical protuberance (Fig. 2), paired prongs of male sternite VIII wide and lobed (Fig. 3); paired apical sclerites of male segment IX of more complex morphology, variously lobed, densely setose/spinulose medially (Fig. 5).
..... *A. crassicornis* sp. nov.
- 9(8) Pronotum wider, angulate anteriorly (Figs. 39, 46); antennae longer and more slender, at most moderately enlarged in terminal third (Fig. 19); male sternum VII simple; paired prongs of male sternite VIII narrow, rounded apically (Fig. 20); paired apical sclerites of male segment IX simple, asetose (Fig. 22).
..... *A. particularis* (Pic, 1932)
- 10(7) Dorsal surface of pronotum comparatively glossy, punctures smaller and sparser, distinctly separated.
- 11(12) Elytra dark brown to brown black; pronotum trapezoidal, nearly angulate anteriorly and with rather straight sides narrowing toward base in dorsal view (Fig. 38); antennae rather strongly enlarged in terminal third (Fig. 31); male metatibiae simple; male sternum VII with small, pit-like median impression shortly before posterior margin (Fig. 32); paired prongs of male sternite VIII wide and lobed (Fig. 33); paired apical sclerites of male segment IX of more complex morphology, variously lobed, densely setose/spinulose medially (Fig. 35). *A. scholaris* sp. nov.
- 12(11) Elytra reddish brown with paler suture and indication of paler transverse band in posterior half; pronotum widely rounded anteriorly, its lateral sides somewhat arcuately narrowed toward base in dorsal view (Fig. 42); antennae at most moderately enlarged in terminal third; male metatibiae modified, with small projection on inner side apically (Fig. 7); male sternum VII with a pair of bulges (Fig. 8); paired prongs of male sternite VIII simple, narrow and pointed apically (Fig. 9); paired apical sclerites of male segment IX simple, with some longer setae apically (Fig. 11).
..... *A. luteipes* Pic, 1903

Systematics

Andrahomanus Pic, 1903

Andrahomanus Pic, 1903: 98. Type species: *Andrahomanus luteipes* Pic, 1903; fixed by monotypy.

Redescription. Body small to medium size (2.6–4.3 mm). Head with frontoclypeal sulcus fine but distinct; antennal insertion exposed and clearly visible; neck short and thick, always well differentiated from head; eyes small to medium-sized; last maxillary palpomere small, subtriangular.

Pronotum with distinct apical flanged rim (collar) and basal margin distinctly bordered by a thin, well-defined sulcus originating at lateral foveae. Prosternal area beneath coxae well sclerotized and extended posteriorly as a distinct sclerite; posterior margin of this sclerite moderately emarginate and distinctly angulately produced medially (Fig. 50). Mesosternum

triangular, with lateral margins nearly straight, its anterior angle separated from anterior margin of mesothorax by very narrowly joined mesepimera (Fig. 48); intercoxal process of mesosternum fully separating mesocoxae. Lateral margins of mesepisterna simply connected (not raised) with mesepimera, bare, without distinct fringe of setae. Mesoscutellum triangular, bluntly pointed posteriorly. Metendosternite with short stalk, arms narrow and obsolete ventro-lateral projections/lamina. Elytra rather convex, mostly strongly declivous at scutellar area towards base, postscutellar impression and elytral humeri indistinct; apical notches in males absent; sutural striae absent. Posterior wings strongly reduced to absent (all known species are flightless and probably apterous).

Penultimate tarsomere rather simply cylindrical (not flattened/bilobed) in metatarsi, with terminal tarsomere articulated apically; paired terminal spurs well developed.

Abdominal sternum III without foveae immediately behind metacoxae, its intercoxal process truncate apically, bordered only laterally in ventral view (Fig. 49). Male sternite VIII modified, with a pair of posteriorly projecting prongs (Figs. 3, 9, 13, 20, 24 and 33); paired prongs more or less tightly joined medially, latero-basal plates small and less conspicuous. Male tergite VIII forming single sclerite (Figs. 4, 10, 14, 21, 25 and 34). Male segment IX (spiculum) rather robust, clearly bifurcate apically, with a pair of apical sclerites (Figs. 5, 11, 15, 22, 26 and 35).

Aedeagus with tegmen clearly divided into apical portion (formed by fused parameres) and basal piece; median lobe strengthened by simple, rod-like, sclerotized apodeme, gonopore situated rather in basal piece of aedeagus, near apodeme. Female ovipositor without apparent styli, conspicuously setose (Fig. 18).

Sexual dimorphism. Males rarely with modified metatibiae and/or abdominal sternum VII (Figs. 2, 7, 8 and 32). Females of the presently known species do not display any unique sexual characters.

Immature stages. Unknown.

Biology. The life history of *Andrahomanus* is essentially unknown. Based on the label data, specimens have been collected by sifting reeds, grass, leaf litter and flood debris at a river bank, by shore washing, by using pitfall traps (with faeces, banana or meat bait), by sweeping in grasslands, and a single specimen was taken from old baboon dung.

Distribution. Madagascar, Namibia, South Africa, Botswana and Mozambique (Fig. 51).

Relationships. *Andrahomanus* belongs in the tribe Formicomini Bonadona, 1974, as suggested by the combination of three major characters: i) mesepisterna simply connected with mesepimera, their bare margins not raised; ii) intercoxal process of abdominal sternum III truncate and incompletely bordered in ventral view (Fig. 49); iii) male abdominal sternite III modified, with distinct posteriorly projecting prongs. Other important characters of *Andrahomanus* are as follows: iv) basal sulcus of pronotum distinct both dorsally and laterally, reaching as far as lateral foveae; v) anterior angle of mesosternum separated from anterior margin of mesothorax by narrowly touching mesepisterna; vi) posterior wings reduced (all known species are flightless and probably apterous); vii) metafemora simple, lacking subapical protrusion on inner side; viii) male abdominal sternite VIII modified, paired prongs of sternite VIII more or less tightly joined medially, paired latero-basal plates rather small; ix) male tergite VIII forming single sclerite; x) male segment IX (spiculum) with a pair of distinct apical sclerites;

xi) gonopore situated in basal portion of aedeagus (phallobase) near basal apodeme; xii) ovipositor rather short and wide, without apparent styli and conspicuously setose.

Andrahomanus shares most of the above mentioned characters with *Chileanthicus*, which is known to occur in Chile, Madagascar and Australia (KEJVAL 2009). At least four of the characters (v, viii–x) appear to be primitive and suggest, along with the Gondwanian distribution, the rather basal position of these two genera within the Formicomini. The shared unique morphology of the ovipositor (xii) can be regarded as a synapomorphy supporting their close phylogenetic relationship (monophyly). *Andrahomanus* differs from *Chileanthicus* by the simple metafemora (lacking distal dent-like protrusions on the inner side) and the position of the primary gonopore in the basal portion of the aedeagus (mostly near the apex of the median lobe in *Chileanthicus*).

As for the other genera of the Formicomini, *Stenidius* LaFerté-Sénéctère, 1847 displays the primitive characters of *Andrahomanus* (v, viii–x) and a similar body form (in apterous species), but it differs mainly by a reduced basal sulcus of the pronotum (slightly indicated dorso-medially to absent) and a slender ovipositor with well-developed styli (see KEJVAL 2002, 2006). *Anthelephila* Hope, 1833, the most derived member of the tribe, differs from *Andrahomanus* in many respects, mainly by medially widely-joined mesepimera and a slender ovipositor with well developed styli (see KEJVAL 2003). It also displays a reduced, laterally indistinct basal sulcus of the pronotum and more conspicuous sexual dimorphism. Males of most species can be easily recognized by modified fore legs and abdominal sternum VII, and the structure of male abdominal segment VIII is typically more complex (the sternite is differentiated into five discrete parts, the tergite is composed of two sclerites). However, these male characters are not stable and in some species may resemble those found in *Andrahomanus* (see KEJVAL 2007).

Andrahomanus crassicornis sp. nov.

(Figs. 1–6, 37)

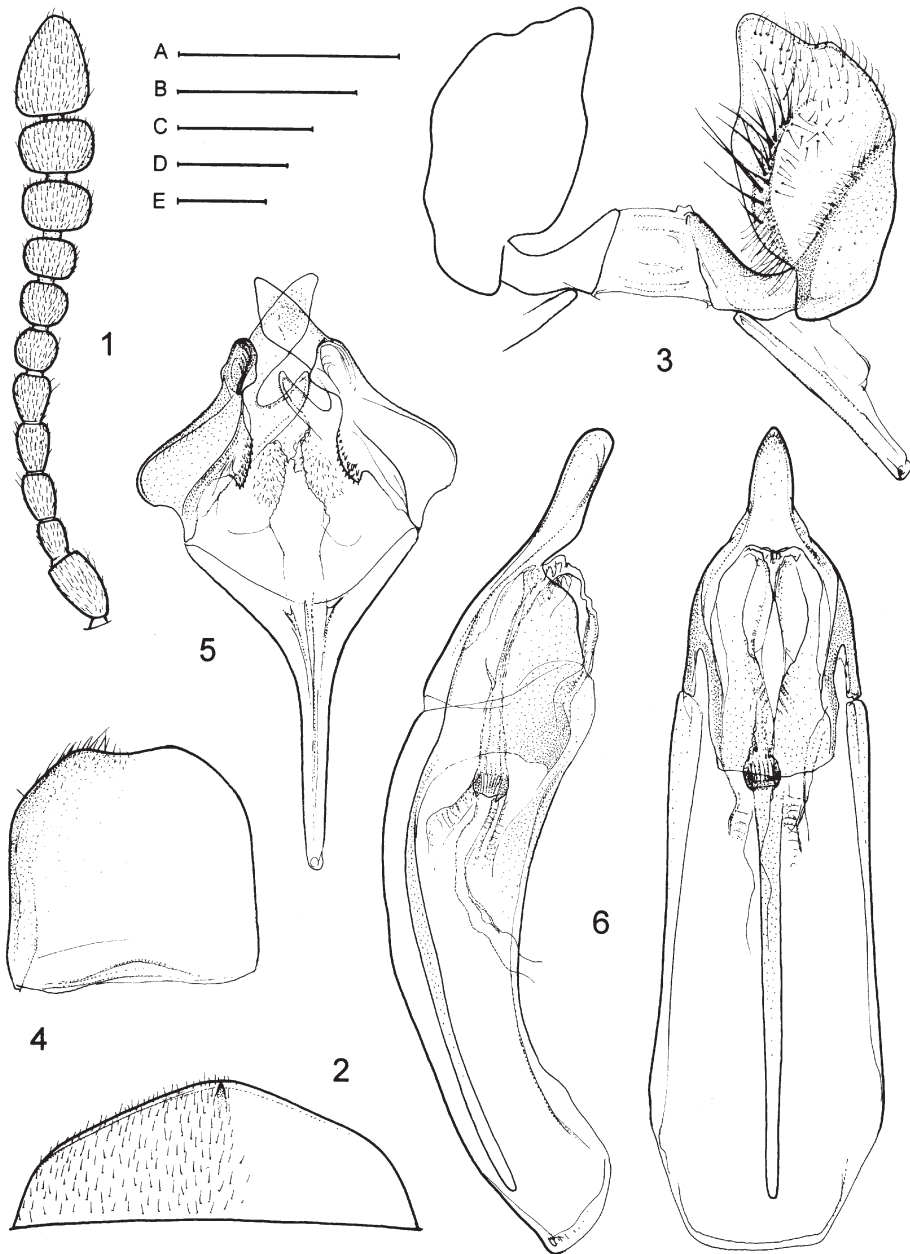
Type locality. South Africa, North-West Province, Pilanesberg National Park.

Type material. HOLOTYPE: ♂, 'SOUTH AFRICA, Tr., North-West Province Pilanesberg Nat. Park, // Sept on grasslands, 10.XII.2003, I. Mikó & G. Melika [leg.]' (HNHM). PARATYPES: 2 ♂♂, same data as holotype (HNHM, ZKDC).

Description (male, holotype). Body length 3.2 mm. Head and pronotum reddish brown, head slightly darker; elytra dark brown to brown black; legs reddish brown, antennae and palpi reddish.

Head nearly as long as wide, widely rounded posteriorly; posterior temporal angles rounded, at most slightly indicated. Eyes medium-sized, moderately convex. Dorsal surface less glossy, densely punctate; punctuation simple, somewhat sparser and finer medially at base. Setation short, appressed, with a few short and inconspicuous erect setae. Antennae rather robust, conspicuously enlarged and flattened in terminal third (Fig. 1); antennomere X transverse, quadrangular, 0.8 times as long as wide, antennomere XI 1.4 times as long as wide.

Pronotum 1.1 times as long as wide, slightly wider than head including eyes, widely rounded anteriorly; pronotal disc convex, dorso-lateral sides rather rounded, their outlines nearly straight and narrowing towards base in dorsal view. Dorsal surface nearly matt, very densely



Figs. 1–6. *Andrahomanus crassicornis* sp. nov., holotype (male): 1 – antenna; 2 – sternum VII; 3 – sternite VIII in dorsal view; 4 – tergite VIII; 5 – segment IX; 6 – aedeagus in ventral (right) and lateral (left) view. Scale = 0.2 mm: A – Fig. 6; B – Fig. 3; C – Fig. 5; D – Figs. 2, 4; E – Fig. 1.

punctate; punctuation denser than that on head, punctures larger, shallower and contiguous. Setation as that on head.

Elytra 1.7 times as long as wide, subtruncate apically. Surface less glossy, distinctly punctate; punctuation in basal third similar to that on head, becoming finer and sparser towards elytral apices. Setation longer than that on head, mostly appressed to subdecumbent and pale, with very slight indication of silvery setose, transverse band dorso-laterally at about mid-length; erect setae short but rather numerous and more distinct than those on head.

Legs simple; setation short and fine, except apical fringe of stiff setae in meso- and meta-tibiae.

Abdominal sternum VII slightly angulately produced postero-medially, with small and sharp median protuberance close before posterior margin (Fig. 2). Tergum VII simple, nearly evenly rounded posteriorly. Sternite VIII as in Fig. 3; paired prongs wide, simply shaped, rounded apically, bulging and with long setae dorsally along median side and with oblique, densely setose edge ventrally. Tergum VIII rounded and moderately emarginate postero-medially (Fig. 4). Segment IX as in Fig. 5; paired apical sclerites of rather complex morphology, well sclerotized, variously lobed, a pair of small median lobes with fringe of short and stiff setae/spines.

Aedeagus as in Fig. 6; apical portion of tegmen 0.5 times as long as basal piece, abruptly, strongly narrowed behind mid-length, with rather narrow pointed apex in ventral view.

Variation. Body length (♂) 3.1–3.2 mm.

Differential diagnosis. *Andrahomanius crassicornis* sp. nov. is very closely related to *A. scholaris* sp. nov. as suggested by nearly the same body form and similarity of all male characters. It differs from the latter species by the nearly matt, very densely punctate dorsal surface of head and pronotum (punctures of pronotum larger, shallower and nearly contiguous), more robust and shorter antennae (cf. Figs. 1 and 31) and numerous details in the morphology of abdominal sternum VII, sternite VIII, segment IX and aedeagus (cf. Figs. 2–6 and 32–36).

Etymology. Composed from the Latin words *crassus* (robust) and *cornu* (horn, antenna); named in reference to the conspicuously robust antennae.

Distribution. South Africa.

Andrahomanius luteipes Pic, 1903

(Figs. 7–12, 42, 44)

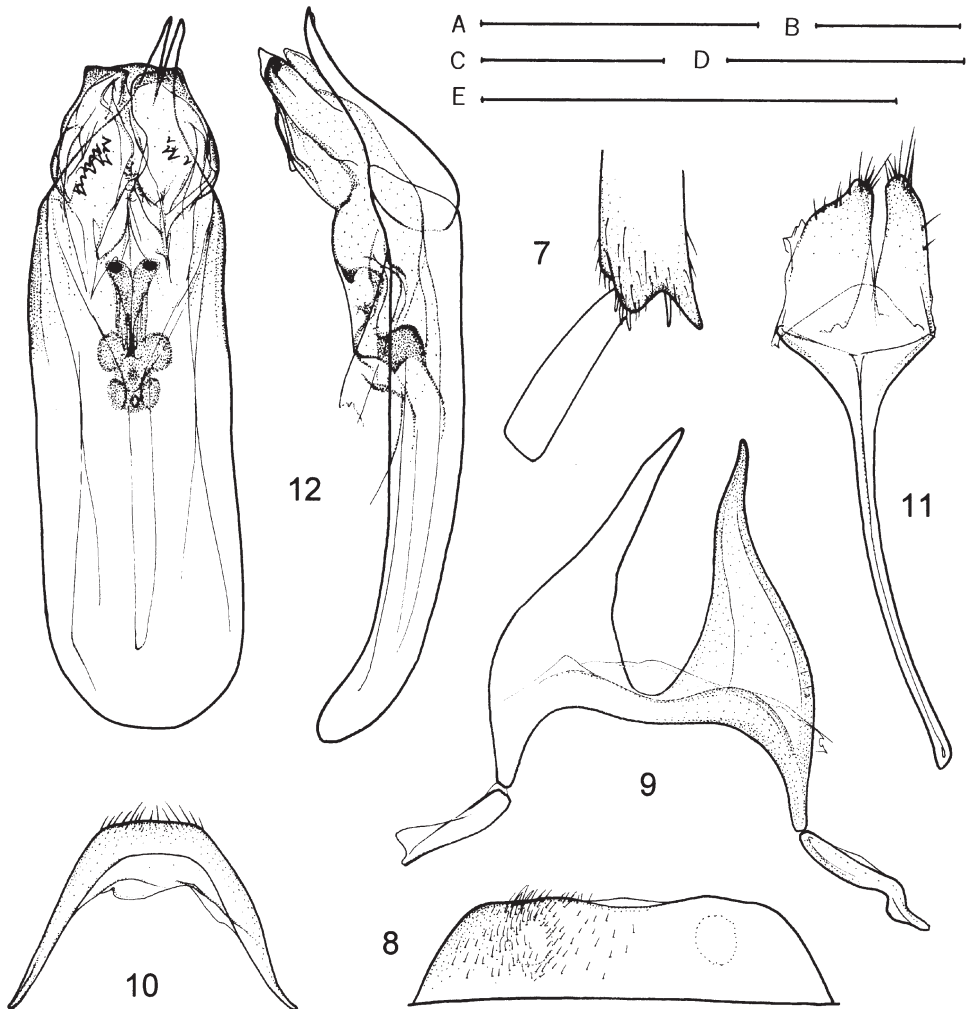
Andrahomanius luteipes Pic, 1903: 98.

Type locality. Madagascar, Andrahomana.

Type material. HOLOTYPE, ♂ (Figs. 42, 44): ‘Madagascar (Sud) Andrahomana Alluaud 1900 39 [printed, only 39 handwritten in small frame in the right bottom corner] // MUSÉUM PARIS COLL. CH. ALLUAUD [printed] // TYPE [printed; red label] // *Andrahomanius luteipes* Pic [handwritten]’ (MNHN).

Redescription (male, holotype). Body length 2.6 mm. Body brown with slight reddish tinge, elytra with paler suture and slight indication of paler transverse band in posterior half; antennae pale reddish; legs and palpi yellowish.

Head 1.2 times as long as wide, widely rounded posteriorly; posterior temporal angles rounded but distinct. Eyes small, moderately convex. Dorsal surface rather glossy, distinctly punctate, punctuation simple, rather coarse, finer near basal margin. Setation short, subdecum-



Figs. 7–12. *Andrahomanus luteipes* Pic, 1903, holotype (male): 7 – apex of metatibia; 8 – sternum VII; 9 – sternite VIII in dorsal view; 10 – tergite VIII; 11 – segment IX; 12 – aedeagus in ventral (left) and lateral (right) view. Scale = 0.2 mm: A – Fig. 12; B – Figs. 8, 10; C – Fig. 11; D – Fig. 7; E – Fig. 9.

bent; erect setae absent or at least indistinct. Antennae rather long, moderately enlarged in terminal third; antennomere X 1.14 times as long as wide, antennomere XI 1.7 times as long as wide.

Pronotum about as wide as long, distinctly wider than head including eyes; widely rounded anteriorly, lateral sides moderately arcuate and narrowing towards base in dorsal view. Dorsal surface glossy, rather finely punctate; punctation finer than that on head, especially near base. Setation as that on head.

Elytra 1.6 times as long as wide, rather convex, conjointly rounded apically. Surface glossy, finely but distinctly punctate, basal punctation similar to that on head, only sparser, becoming finer towards elytral apices. Setation as that on head.

Metatibiae with inner apical margin produced into small, bluntly pointed projection (Fig. 7); setation short and fine.

Abdominal sternum VII modified, with a pair of setose bulges, shallowly impressed between them medially, its posterior margin slightly sinuous (Fig. 8). Tergum VII simple, with posterior margin slightly emarginate medially. Sternite VIII as in Fig. 9; paired prongs simple, moderately sinuous, narrowing towards pointed apex. Tergite VIII forming a narrow, arched sclerite, its posterior margin unevenly rounded in dorsal view (Fig. 10). Segment IX as in Fig. 11; paired sclerites simple, with some longer setae apically.

Aedeagus as in Fig. 12; apical portion of tegmen 0.4 times as long as basal piece, with narrow, deeply incised and bifurcate apex; median lobe with membranous lobed apex, numerous mediad-pointing spinules and somewhat unclear sclerotized inner structure.

Differential diagnosis. *Andrahomanus luteipes* can be easily recognized by the paler and generally rather glossy body, unique modifications of sternum VII and the metatibiae in males and the deeply incised apex of the tegmen.

Distribution. Madagascar.

Andrahomanus opacus sp. nov.

(Figs. 13–18, 41)

Type locality. Namibia, 9 km W of Ruacana, Kunene riverside, 17°26'S 14°09'E.

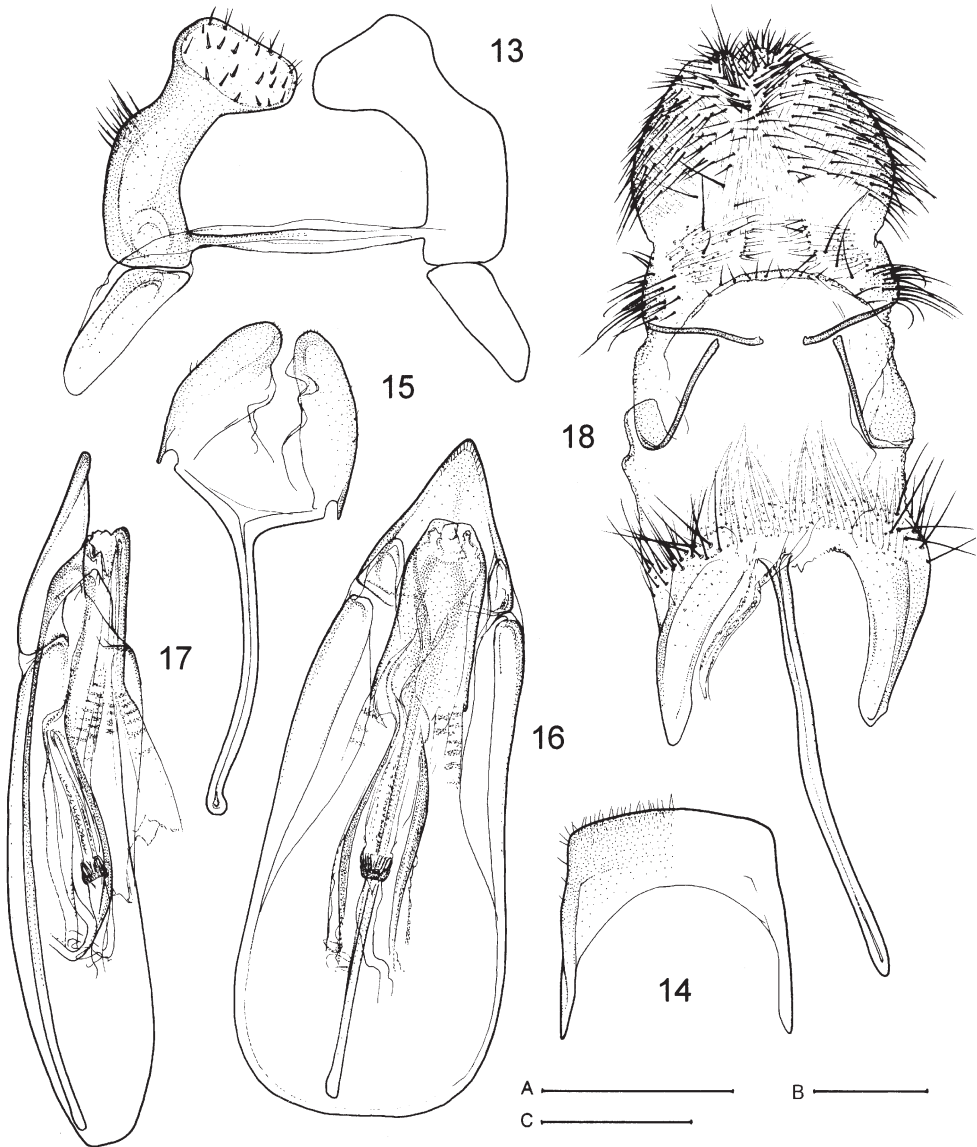
Type material. HOLOTYPE: ♂, 'NAMIBIA, 24.–26.ii.1994, 17°26'S/14°09'E, Kunene, 9km W Ruacana, lux, leg. M. Uhlig // *Stenidius namibianus* Uhmann det. G.Uhmann 1997' (NMNW). PARATYPES (sex not recognized): 7 specimens, same data as holotype (1 NMNW, 3 ZKDC, 3 ZMHB); 4 specimens, same data as holotype, without 'lux' in the 1st label (1 ZKDC, 3 ZMHB); 5 specimens, 'NAMIBIA: Kunene, 9km W Ruacana, 17°26'S/14°09'E, 24.–26.ii.1994, leg. U. Göllner // *Stenidius namibianus* Uhmann det. G.Uhmann 1997' (1 NMNW, 1 ZKDC, 3 ZMHB); 1 specimen, 'NAMIBIA Kunene, 9 km W Ruacana 17°26'S/ 14°09'E 24.–25.ii.1994 Kunene banks, sievings: reed+grass+leaf litter+flood refuse, leg. M. Uhlig.' (ZMHB); 1 ♂ 2 ♀♀, 'S.W.Afr., Kaokoveld Swartbooisdrif 17.19S – 13.49E // 10.2.1975; E-Y: 645 shore washing leg. Endrödy, Penrith' (TMSA).

Additional material. 1 ♂, NAMIBIA: Eastern Caprivi, Sangwali, 18°14'S 23°36'E, pitfall traps, 25.xi.–5.xii.1991, E. Marais leg. (ZKDC).

Description (male, holotype). Body length 4 mm. Head and pronotum dark brown with slight reddish tinge; elytra largely reddish brown, with darker, brown-black apical third behind posterior setose band; legs, antennae and palpi reddish brown, distal portion of femora moderately darker.

Head 1.2 times as long as wide, unevenly rounded posteriorly; posterior temporal angles rounded, at most slightly indicated. Eyes small, moderately convex. Dorsal surface matt, very densely punctate; punctation simple, punctures rather large but shallow, contiguous, evenly spaced. Setation short, appressed, with a few short erect setae. Antennae moderately enlarged in terminal third; antennomere X 1.2 times as long as wide, antennomere XI 1.9 times as long as wide.

Pronotum robust, about as wide as long, distinctly wider than head including eyes, widely rounded anteriorly; pronotal disc rather convex, its basal portion somewhat bulging over antebasal sulcus; dorso-lateral sides of pronotum forming rounded edge, their outlines



Figs. 13–18. *Andrahomanus opacus* sp. nov. 13–17 – holotype (male): 13 – sternite VIII in dorsal view; 14 – tergite VIII; 15 – segment IX; 16 – aedeagus in ventral view; 17 – aedeagus in lateral view. 18 – paratype (female), ovipositor. Scale = 0.2 mm: A – Fig. 13, 16, 17; B – Fig. 14, 15; C – Fig. 18.

narrowing and slightly angled posteriorly in dorsal view. Dorsal surface matt, densely punctate; punctuation and setation as those on head.

Elytra 1.9 times as long as wide, conjointly rounded apically, rather convex, strongly declivous basally. Surface less glossy, densely punctate; punctuation in basal third similar to that on head, becoming finer and sparser towards elytral apices. Setation longer than that on head, mostly pale to brownish, with silvery setae forming two sparse and rather vague transverse/oblique bands; erect setae short and scattered, more distinct than those on head.

Legs simple; setation short and fine, apical margin of meso- and metatibiae with a fringe of stiff setae.

Abdominal sternum and tergum VII simple. Sternite VIII as in Fig. 13; paired prongs narrow, moderately curved ventrad, abruptly dilated and flattened apically, with numerous short and stiff setae on dorsal side of dilated apical portion, and with longer, fine, somewhat clustered setae laterally. Tergite VIII angulate posteriorly (Fig. 14). Segment IX as in Fig. 15.

Aedeagus as in Figs. 16 and 17; apical portion of tegmen 0.4 times as long as basal piece, triangular, nearly evenly narrowing towards bluntly pointed apex in ventral view.

Female. Externally identical with male.

Variation (see also Remarks). Body length (♂♀) 3.2–4.3 mm. Moderately variable in body colouration; some specimens nearly unicolourous red-brown, another with elytra largely brown-black. Specimens from Swartbooisdrift have rather long and conspicuous erect setae on the body surface.

Differential diagnosis. *Andrahomanus opacus* sp. nov. is externally very similar to *A. sabulicola* sp. nov. Some of the specimens are conspicuous in having rather long, erect setae on the body surface (generally the setae are very short and inconspicuous in the latter species). However, this character is variable and the erect setae may be easily removed by abrasion. On the other hand, *A. opacus* sp. nov. differs clearly from the latter species in the following male characters: paired prongs of sternite VIII dilated apically and bearing short stiff setae, tergite VIII with posterior margin distinctly angulate.

Etymology. From the Latin adjective *opacus* (matt, less glossy); named in reference to the matt, densely punctate body surface.

Distribution. Namibia.

Remarks. The male specimen from Sangwali differs from the holotype as follows: head less widely rounded posteriorly; eyes somewhat larger, medium-sized; pronotum nearly angulate anteriorly in dorsal view; body setation with rather long and conspicuous erect setae (as in the paratypes from Swartbooisdrift); paired prongs of sternite VIII identical in general form and setation but strongly narrowed behind mid-length and only moderately dilated and rounded, spoon-shaped apically; apical portion of tegmen more distinctly impressed and sinuous laterally in ventral view. Considering the rather distant location of Sangwali (Eastern Caprivi region), this specimen may well represent a geographical subspecies of *A. opacus* sp. nov. but additional specimens are needed to confirm this speculation.

Most of the type specimens were previously misidentified as *Stenidius namibianus* Uhmann, 1994 by Gerhard Uhmann. This is a valid species occurring in Namibia and Botswana; for description of its male characters see KEJVAL (2004).

***Andrahomanus ovaliceps* sp. nov.**

(Figs. 40, 47)

Type locality. South Africa, Limpopo Province, Messina Nature Reserve, 22°21'S 30°03'E.**Type material.** HOLOTYPE: ♀, 'S.Afr.: Limpopo Prov. Messina Nat. Res. 22.21 S – 30.03 E // 12.12.2000; E-Y: 3401 old baboon dung, leg. M. Burger, R. Müller' (TMSA).**Description** (female, holotype). Body length 3.9 mm. Head and pronotum reddish; elytra black, at places (suture, base) with brownish tinge; legs reddish, distal portion of femora rather brownish, antennae reddish.

Head 1.3 times as long as wide, slightly unevenly rounded posteriorly; posterior temporal angles absent. Eyes small, moderately convex. Dorsal surface at most moderately glossy, finely reticulated and distinctly punctate; punctuation simple, evenly developed. Setation very short, inconspicuous, appressed, with a few longer erect setae. Antennae moderately enlarged in terminal third; antennomere X 1.1 times as long as wide, antennomere XI 1.8 times as long as wide.

Pronotum 1.2 times as long as wide, at most slightly narrower than head including eyes, rounded anteriorly; pronotal disc convex; dorso-lateral sides uneven, moderately angulately protruding in posterior half in dorsal view (Fig. 47, marked by arrow). Surface nearly matt, finely reticulated including lateral sides and distinctly punctate dorsally; dorsal reticulation somewhat coarser and punctuation denser than that on head. Setation as that on head; posterior dorso-lateral protuberances bearing a single erect seta each.

Elytra 1.8 times as long as wide, conjointly rounded apically. Surface smooth and comparatively glossy, rather densely and distinctly punctate; punctuation similar to that on head, becoming finer and sparser towards elytral apices. Setation as that on head, very short, appressed; erect setae somewhat longer, more numerous and distinct, especially in apical third.

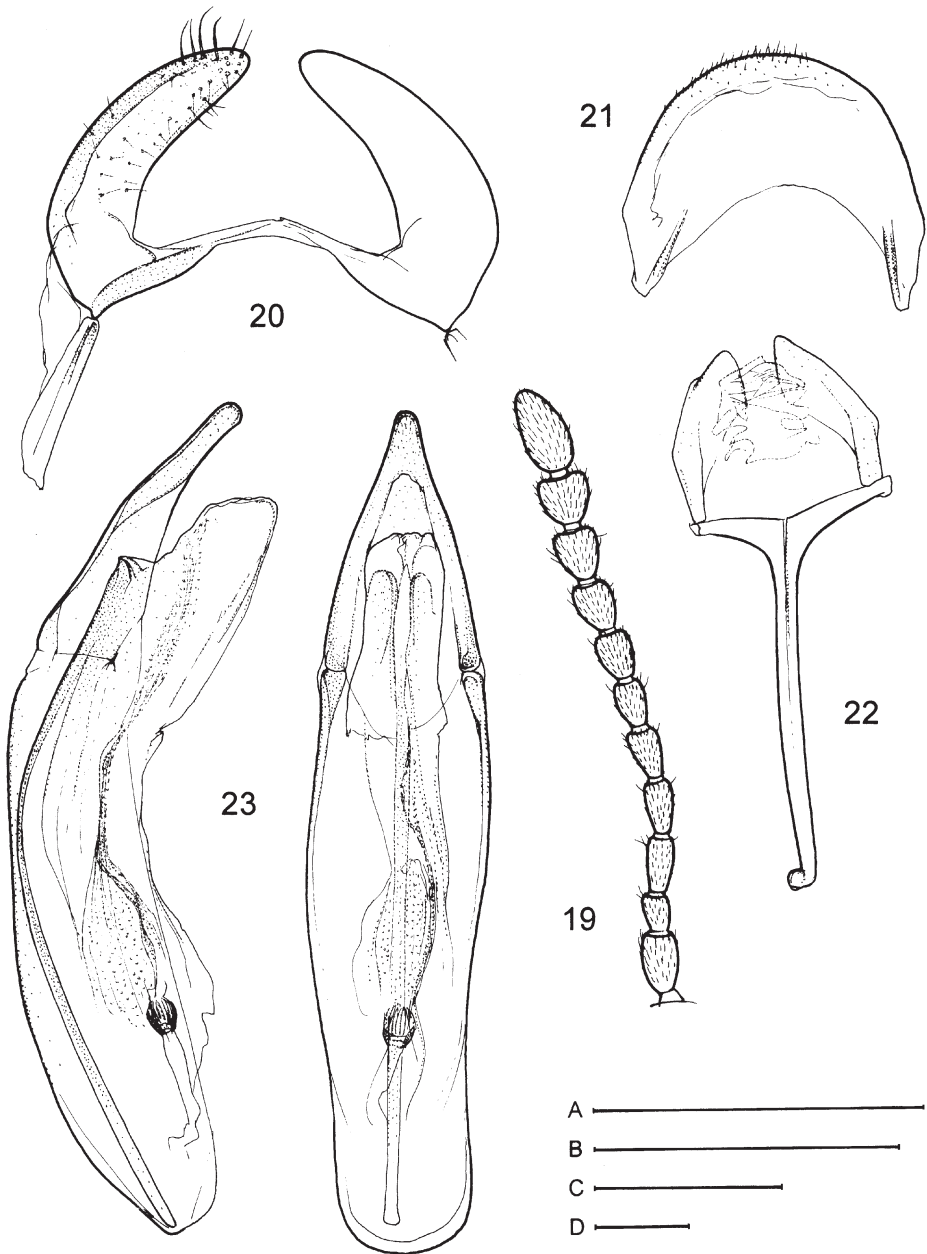
Legs simple; setation normally developed, short and fine, apical margin of meso- and metatibiae with some stiff setae.

Sternum VII simple; tergum VII simple, evenly rounded apically.

Differential diagnosis. *Andrahomanus ovaliceps* sp. nov. can be easily recognized by the oval head base, presence of paired dorso-lateral protuberances in the posterior half of the pronotum and the moderately glossy, finely reticulated surface of the head and pronotum combined with the rather sparsely punctate, glossy elytra.**Etymology.** Composed from the Latin adjective *ovalis* (oval) and suffix *-iceps* (capped, headed), referring to the oval form of the head.**Distribution.** South Africa.***Andrahomanus particularis* (Pic, 1932) comb. nov.**

(Figs. 19–23, 39, 45, 46)

Anthicus particularis Pic, 1932: 22.**Type locality.** Mozambique, Nova-Choupanga, near Chemba.**Type material.** LECTOTYPE: 1 ♂ (Fig. 45), 'MUSÉUM PARIS ZAMBÈZE NOVA CHOUPANGA PRÈS CHEMBA P. LESNE 1929 [printed; bluish label] // 1^{er} JANVIER [printed] // *Anthicus particularis* n sp M. Pic det [both printed and handwritten]' (MNHN). PARALECTOTYPES: 2 ♂♂ 3 ♀♀, same data, but lacking the last label (MNHN); 1 ♀, same data, except the last label: '*Anthicus particularis* Pic [handwritten]' (MNHN).



Figs. 19–23. *Andrahomanus particularis* (Pic, 1932), lectotype (male): 19 – antenna; 20 – sternite VIII in dorsal view; 21 – tergite VIII; 22 – segment IX; 23 – aedeagus in ventral (right) and lateral (left) view. Scale = 0.2 mm: A – Fig. 20; B – Fig. 23; C – Figs. 21, 22; D – Fig. 19.

Redescription (male, lectotype). Body length 3.5 mm. Head and pronotum dark brown; elytra brown black, nearly unicolour; antennae reddish, legs reddish brown.

Head 1.2 times as long as wide, widely rounded posteriorly; posterior temporal angles rounded but distinct. Eyes small, moderately convex. Dorsal surface largely slightly glossy, densely and simply punctate; punctures large, shallow, mostly very densely spaced, nearly contiguous postero-medially, distinctly sparser anteriorly on frons. Setation short, appressed, with a few short and erect setae. Antennae rather robust, distinctly enlarged in terminal third (Fig. 19); antennomere X as long as wide, antennomere XI 1.9 times as long as wide.

Pronotum robust, slightly transverse, 0.9 times as long as wide, distinctly wider than head including eyes, widely rounded to angulate anteriorly (Fig. 46); pronotal disc rather convex; dorso-lateral sides of pronotum forming rounded edge, their outlines sinuous and narrowing posteriorly in dorsal view. Dorsal surface matt, very densely punctate; punctuation evenly developed, punctures contiguous, similar to those on head. Setation as that on head.

Elytra 1.6 times as long as wide, conjointly rounded apically, rather convex. Surface moderately glossy, distinctly punctate; punctuation in basal third distinctly finer than that on head, punctures distinctly separated. Setation pale to whitish, longer than that on head; erect setae rather distinct and numerous.

Legs simple; setation uniformly short and fine, stiff apical setae of meso- and metatibiae less conspicuous.

Abdominal sternum and tergum VII simple. Sternite VIII as in Fig. 20; paired prongs simple, narrow, moderately curved ventrad, rounded apically, with some longer setae subapically. Tergite VIII evenly rounded posteriorly (Fig. 21). Segment IX as in Fig. 22.

Aedeagus as in Fig. 23; apical portion of tegmen 0.5 times as long as basal piece, nearly evenly narrowing towards rounded apex in ventral view.

Female. Externally identical with male.

Variation. Body length (♂♀) 3.0–3.5 mm.

Differential diagnosis. *Andrahomanus particularis* is close to *A. sabulicola* sp. nov. and *A. opacus* sp. nov., as suggested by the similarity of the male characters. It can be distinguished from both species by unicolourous setation of elytra (not forming transverse bands), trapezoidal pronotum in dorsal view (angulate anteriorly, lateral sides less vaulted, cf. Figs. 39, 41 and 43) and posteriorly somewhat less bulging pronotal disc.

Distribution. Mozambique.

Remarks. PIC (1932) described *Anthicus particularis* from an unstated number of specimens that were deposited in MNHN and his personal collection. Seven syntypes, belonging to the same species, were found in the general collection of MNHN, and one of them is herein designated as lectotype. No attempt was made to find any syntypes in the Pic's collection.

Andrahomanus sabulicola sp. nov.

(Figs. 24–30, 43, 48–50)

Type locality. South Africa, Limpopo Province, Kruger National Park, Nyandu sands, 22°38'S 31°22'E.

Type material. HOLOTYPE: ♂, 'S. Afr; Kruger Nat. Pk Nyandu sands 22.38 S – 31.22 E // 18.11.1994; E-Y: 3055 groundtraps, 60days Endrödy, Bellamy' (TMSA). PARATYPES: 4 ♂♂ 8 ♀♀, same data as holotype (TMSA, ZKDC); 3 ♂♂ 2 ♀♀, 'S. Afr; Kruger Nat. Pk Punda Maria sands 22.38 S – 30.59 E // 19.11.1994; E-Y: 3055 groundtraps, 60days

Endrödy, Bellamy' (TMSA); 4 ♂♂ 12 ♀♀, 'S. Afr; Kruger nat. Pk Pumbe sands 24.12 S – 31.55 E // 22.11.1994; E-Y: 3063 groundtraps, 60days Endrödy, Bellamy // groundtrap with faeces [or meat] bait' (TMSA, ZKDC); 1 ♂, 'S.Afr; Kruger Nat. Pk Satara flood plain 24.11 S – 31.50 E // 22.11.1994; E-Y: 3065 groundtraps, 60days Endrödy, Bellamy // groundtrap with faeces bait' (TMSA); 2 ♂♂ 1 ♀, 'S Afr; LittleKaroo Gamkaberg, 1000m 33.44 S – 21.57 E // 21.12.1993; E-Y: 3069 groundtraps, 24days leg. Endrödy-Younga // groundtrap with banana bait' (TMSA).

Additional material. REPUBLIC OF SOUTH AFRICA: NORTHERN CAPE PROVINCE: 10 ♂♂ 11 ♀♀, Tswalu Nature Reserve, 27°16'S 22°23'E, red dunes, groundtrap with faeces [or meat or banana] bait, 12.ii.2006, R. Müller leg. (TMSA, ZKDC); 1 ♂, 62 km SW of Vanzylsrus, 27°04'S 21°33'E, 23.iii.1983, R. G. Oberprieler leg. (SANC).

Description (male, holotype). Body length 4.2 mm. Head and pronotum reddish brown; elytra brown with reddish brown base, suture and lateral margins, and with slight indication of two transverse paler bands; antennae and legs reddish brown.

Head 1.2 times as long as wide, widely rounded posteriorly; posterior temporal angles rounded but distinct. Eyes small, moderately convex. Dorsal surface matt, very densely punctate; punctation simple, punctures rather large but shallow, contiguous, evenly spaced. Setation short, appressed, with a few very short and inconspicuous erect setae. Antennae moderately enlarged in terminal third; antennomere X 1.1 times as long as wide, antennomere XI 1.8 times as long as wide.

Pronotum robust, nearly as wide as long, much wider than head including eyes, widely rounded to angulate anteriorly; pronotal disc rather convex, its basal portion somewhat bulging over antebasal sulcus; dorso-lateral sides of pronotum forming rounded edge, their outlines narrowing and slightly angled posteriorly in dorsal view. Dorsal surface matt, densely punctate; punctation and setation as those on head.

Elytra 1.7 times as long as wide, conjointly rounded apically, rather convex, strongly declivous basally. Surface slightly glossy, densely punctate; punctation in basal third moderately finer and sparser than that on head, punctures narrowly separated. Setation longer than that on head, appressed, mostly pale to brownish, with silvery setae forming two rather sparse/vague transverse bands; erect setae more distinct/numerous than those on head.

Legs simple; setation mostly short and fine, metatibiae with longer and more raised setae on inner side subapically, apical margins of tibiae (especially of metatibiae) with fringe of stiff setae.

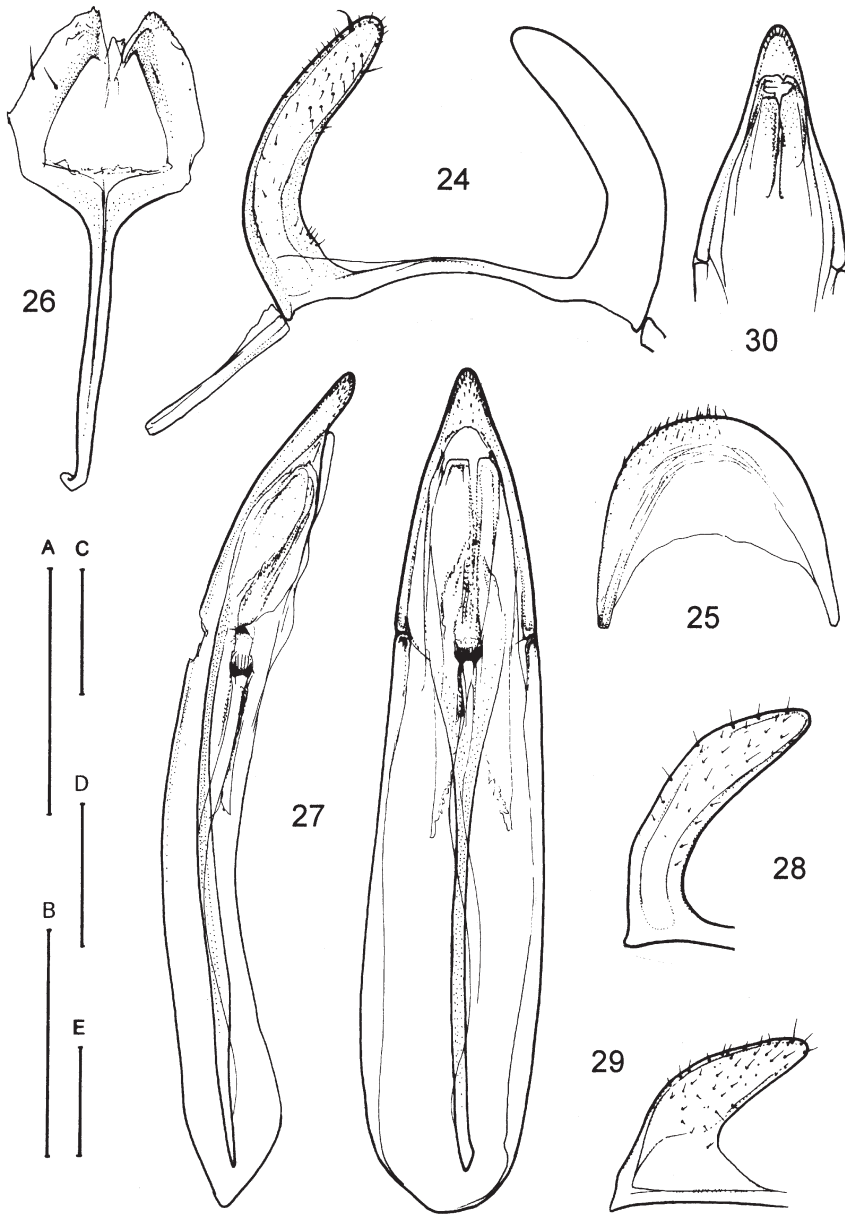
Abdominal sternum and tergum VII simple, evenly rounded posteriorly. Sternite VIII as in Fig. 24; paired prongs simple, narrow, moderately arcuate and convergent, rounded and rather finely setose apically. Tergite VIII nearly evenly rounded posteriorly (Fig. 25). Segment IX as in Fig. 26; paired sclerites narrow, simple, with a few longer setae.

Aedeagus as in Fig. 27; apical portion of tegmen 0.5 times as long as basal piece, slightly sinuously narrowing towards rounded apex in ventral view.

Female. Externally identical with male.

Variation (see also Remarks). Body length (♂♀) 2.5–4.3 mm; longer setation on inner side of metatibiae in males sometimes less distinct, especially in smaller specimens; paired prongs of male sternite VIII may be slightly widened in apical half as in the specimen from Punda Maria sands (Fig. 28).

Differential diagnosis. *Andrahomanus sabulicola* sp. nov. is externally very similar to *A. opacus* sp. nov. They can be barely separated by external characters, but *A. sabulicola* sp.



Figs. 24–30. *Andrahomanus sabulicola* sp. nov. 24–27 – holotype (male): 24 – sternite VIII in dorsal view; 25 – tergite VIII; 26 – segment IX; 27 – aedeagus in ventral (left) and lateral (right) view. 28 – paratype (male, Punda Maria sands), prong of sternite VIII. 29–30 – non-type (male, Tswalu Nature Reserve): 29 – prong of sternite VIII; 30 – apical portion of aedeagus in ventral view. Scale = 0.2 mm: A – Fig. 29; B – Figs. 24, 27, 30; C – Fig. 25; D – Fig. 26; E – Fig. 28.

nov. differs clearly by the morphology of male abdominal sternite VIII (paired prongs narrow and finely setose apically) and tergite VIII (evenly rounded posteriorly).

Etymology. From the Latin nouns *sabulum* (sand) and *incola* (inhabitant); named in reference to the collecting circumstances (the specimens have been collected almost exclusively in sandy places); noun in apposition.

Distribution. South Africa.

Remarks. Based on the label data, *A. sabulicola* sp. nov. appears to be a rather widespread species confined to sandy habitats. It is presently known from three different regions in Limpopo, Northern Cape and Western Cape Provinces (Fig. 51). The specimens from the Northern Cape Province are not included in the type series since they have distinctly shorter/wider prongs of male sternite VIII and a slightly different form of the tegmen (Figs. 29 and 30). They are moreover smaller in size (2.4–3.1 mm) and may represent a geographical subspecies. However, this should be confirmed by examination of males from more localities. Surprisingly, the paratypes from the distant Little Karroo Region in Western Cape Province fit all the male characters, including the morphology of sternite VIII.

***Andrahomanus scholaris* sp. nov.**

(Figs. 31–36, 38)

Type locality. NW Namibia, 50 km NW of Oshakati, Ogongo Agriculture College Campus.

Type material. HOLOTYPE: ♂, 'NAMIBIA NW, 16-30 April 2005 Ogongo Agric. Coll. campus 50 km NW of Oshakati Zd. Jindra lgt.' (NMPC). PARATYPES: 1 ♂ 1 ♀, same data as holotype (ZKDC).

Additional material. NAMIBIA: 1 ♀, SE of Tsumeb, Onguma, 17.–18.ii.1972 [no collector] (ZKDC). BOTSWANA: 1 ♀, Okavango, Makwee lagoon, groundtraps, 12.xii.1975, Russell-Smith leg. (TMSA).

Description (male, holotype). Body length 2.9 mm. Head and pronotum black, elytra slightly paler, femora largely brown black, paler near base, tibiae brownish, tarsi reddish brown, antennae reddish brown in basal and darkened, brown black in terminal half.

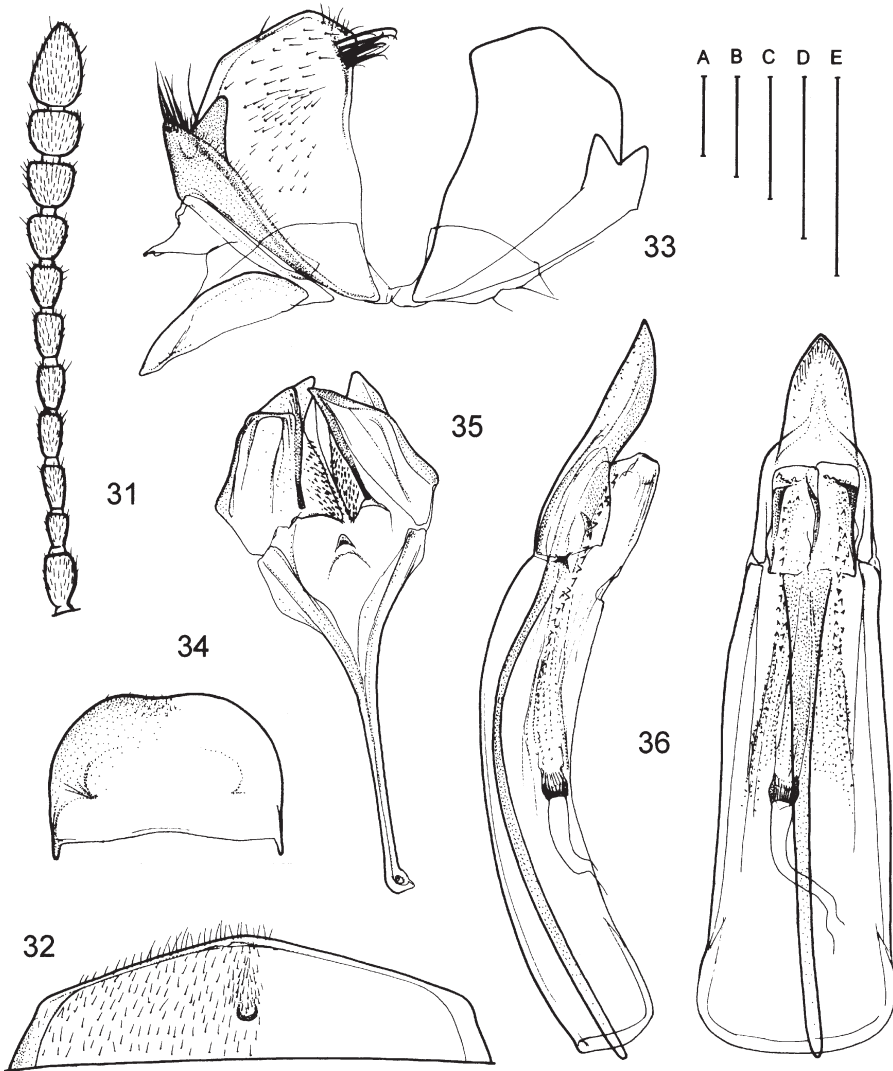
Head 1.1 times as long as wide, widely rounded posteriorly; posterior temporal angles rounded, at most slightly indicated. Eyes small to medium-sized, moderately convex. Dorsal surface rather glossy, distinctly punctate; punctuation simple, evenly developed, punctures distinctly separated. Setation short, appressed, with a few short and inconspicuous erect setae. Antennae distinctly enlarged and somewhat flattened in terminal third (Fig. 31); antennomere X about as long as wide, antennomere XI 1.5 times as long as wide.

Pronotum 1.1 times as long as wide, slightly narrower than head including eyes, widely rounded to angulate anteriorly; pronotal disc convex; dorso-lateral sides rather rounded (not carinate), their outlines straight to slightly concave and narrowing towards base in dorsal view. Dorsal surface rather glossy, distinctly punctate; punctuation similar, only slightly denser than that on head. Setation as that on head.

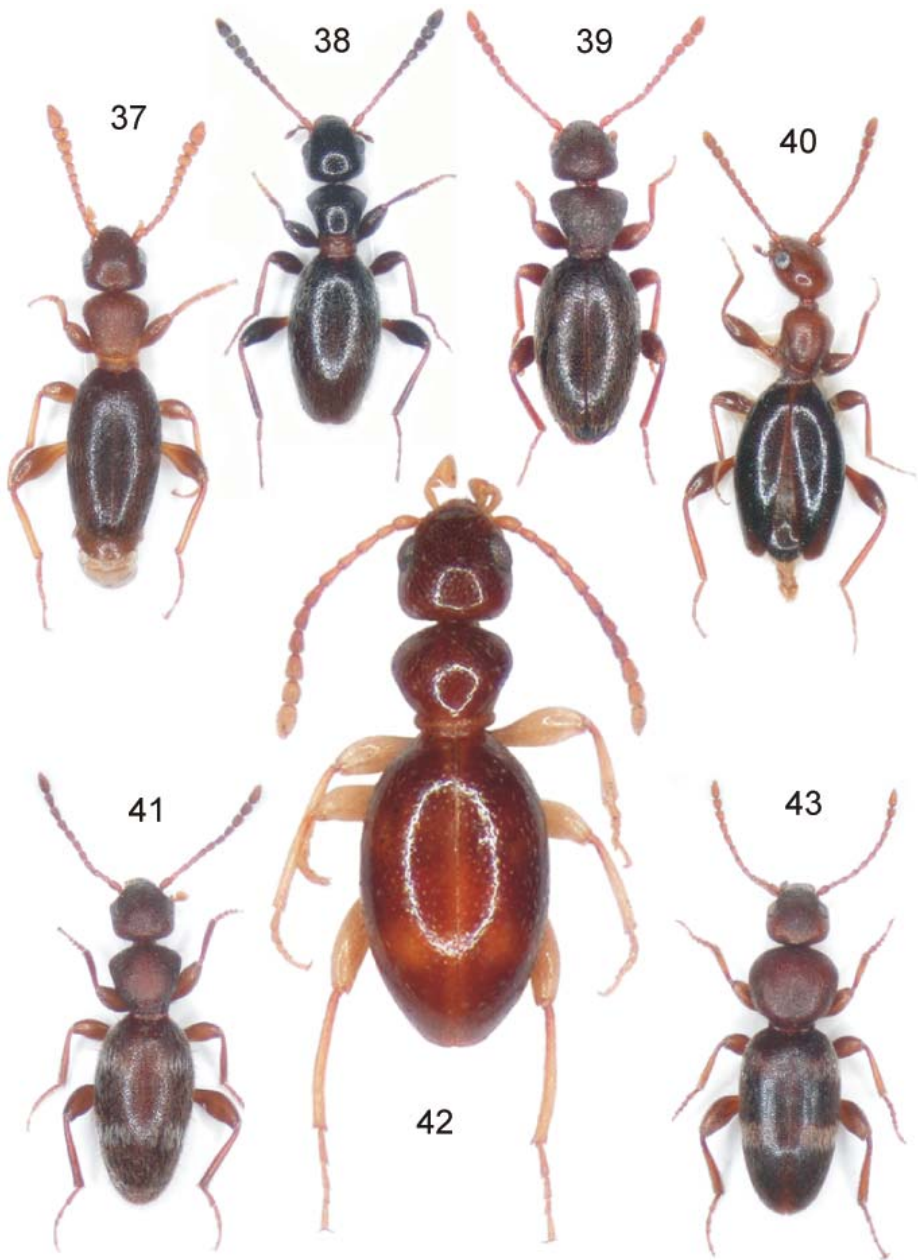
Elytra 1.7 times as long as wide, nearly conjointly rounded apically. Surface moderately glossy, distinctly punctate; basal third punctuation similar to that on head, becoming finer and sparser towards elytral apices. Setation longer than that on head, mostly subdecumbent, pale to silvery; erect setae more numerous and distinct than those on head.

Legs simple; setation short and fine, apical margin of meso- and metatibiae with fringe of stiff setae.

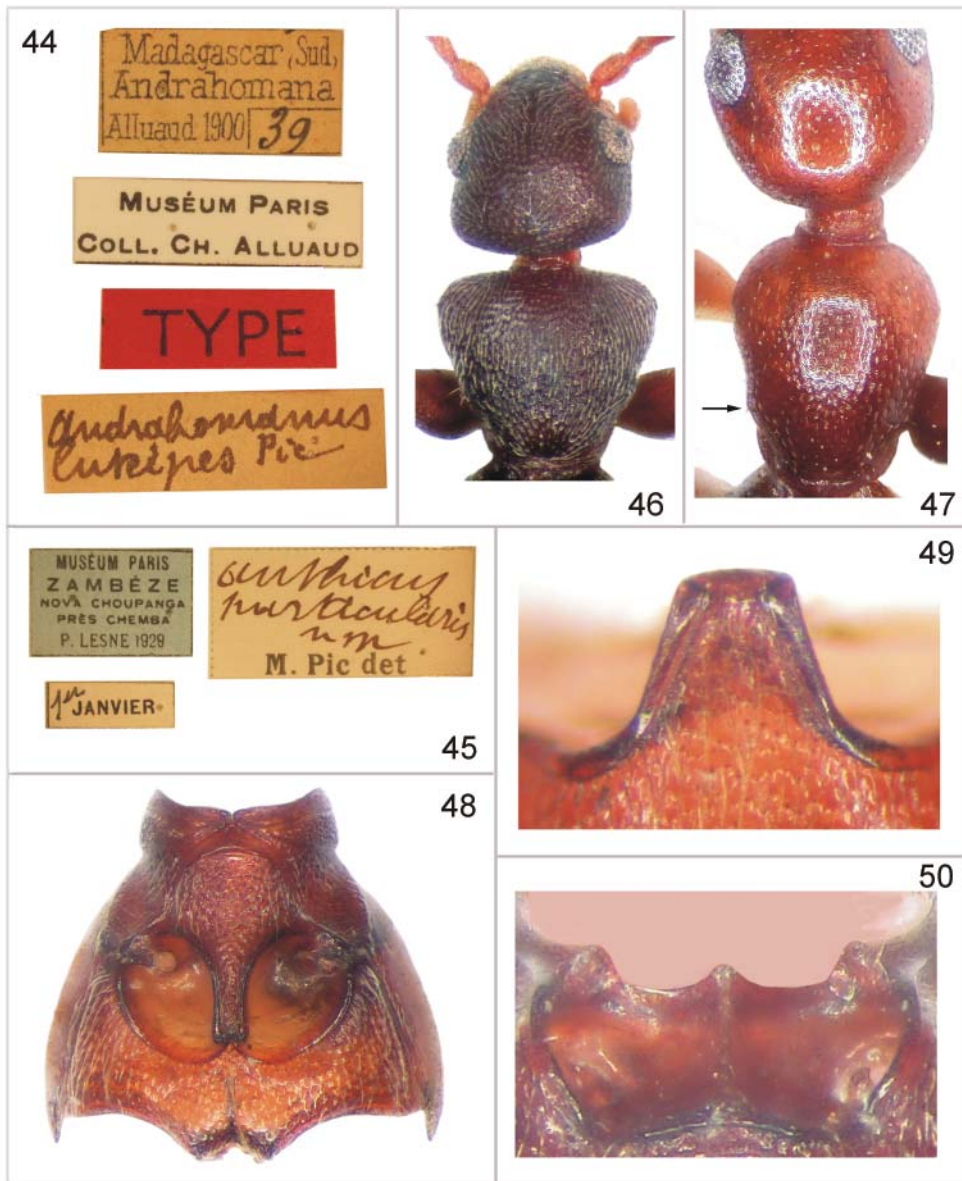
Abdominal sternum VII slightly angulately produced postero-medially, with a distinct pit-like median impression shortly before posterior margin (Fig. 32). Tergum VII simple, nearly evenly rounded posteriorly. Sternite VIII as in Fig. 33; paired prongs wide and short, flattened, subtruncate apically, with two small projections/lobes on each side dorso-laterally; surface of prongs with some longer stiff and clustered setae apically and on apex of lateral projections.



Figs. 31–36. *Andrahomanus scholaris* sp. nov., holotype (male): 31 – antenna; 32 – sternum VII; 33 – sternite VIII in dorsal view; 34 – tergite VIII; 35 – segment IX; 36 – aedeagus in ventral (right) and lateral (left) view. Scale = 0.2 mm: A – Figs. 31, 34; B – Fig. 32; C – Fig. 35; D – Fig. 36; E – Fig. 33.



Figs. 37–43. *Andrahomanus* spp., habitus: 37 – *A. crassicornis* sp. nov. (paratype); 38 – *A. scholaris* sp. nov. (holotype); 39 – *A. particularis* (Pic, 1932) (lectotype); 40 – *A. ovaliceps* sp. nov. (holotype); 41 – *A. opacus* sp. nov. (paratype, Swartbooisdrift); 42 – *A. luteipes* Pic, 1903 (holotype); 43 – *A. sabulicola* sp. nov. (paratype, Nyandu sands).



Figs. 44–50. 44 – *Andrahomanus luteipes* Pic, 1903, holotype, labels. 45–46 – *A. particularis* (Pic, 1932), lectotype (male): 45 – labels; 46 – head and pronotum in dorsal view. 47 – *A. ovaliceps* sp. nov., holotype (female), head base and pronotum in dorsal view. 48–50 – *A. sabulicola* sp. nov., paratype (male): 48 – meso- and metathorax; 49 – intercoxal process of abdomen; 50 – procoxal cavities in cranial view.

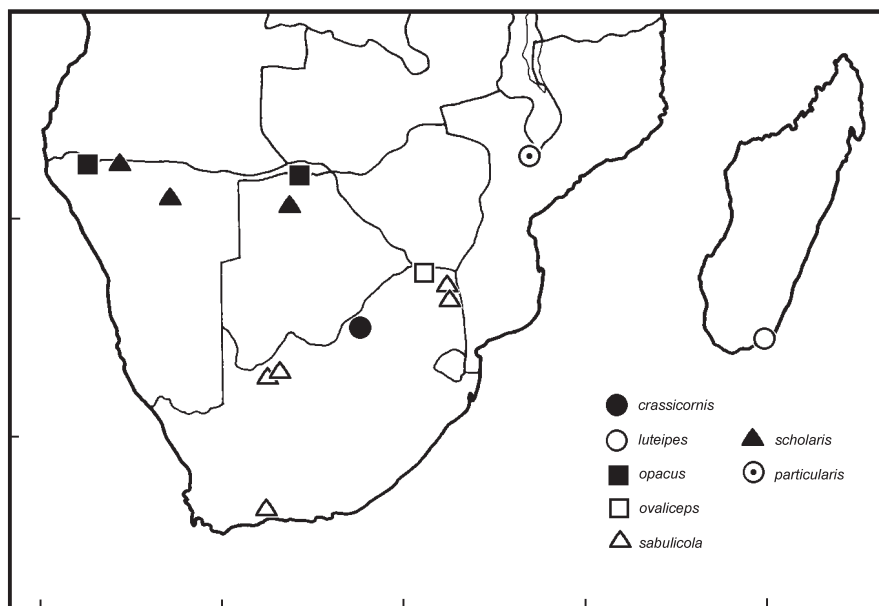


Fig. 51. Distribution of *Andrahomanus* Pic, 1903.

Tergite VIII widely rounded and slightly emarginate postero-medially (Fig. 34). Segment IX as in Fig. 35; paired apical sclerites of rather complex morphology, well sclerotized, densely spinulose on inner side.

Aedeagus as in Fig. 36; apical portion of tegmen 0.45 times as long as basal piece, abruptly narrowed at mid-length, with rather wide, pointed apex; inner structure of median lobe armed with numerous spinules.

Female. In most external characters identical with male; both sternum and tergum VII simple, evenly rounded apically.

Variation. Body length (σ° / ω) 2.9–3.1 mm. Paratypes more or less paler than the holotype (in an extreme case nearly uniformly brown); some of them showing coarser and denser punctation of the head and pronotum (especially in the specimen from Botswana).

Differential diagnosis. *Andrahomanus scholaris* sp. nov. is closely related to *A. crassicornis* sp. nov., as suggested by the nearly same body form and similarity of all male characters. It differs from the latter species by the somewhat glossy, less densely punctate dorsal surface of the head and especially the pronotum (punctures smaller, distinctly separated), comparatively longer and more slender antennae (cf. Figs. 31 and 1), and by numerous details in morphology of abdominal sternum VII, sternite VIII, segment IX and the aedeagus (cf. Figs. 32–36 and 2–6).

Etymology. From the Latin adjective *scholaris* (scholastic); named in reference to the collecting circumstances (all type specimens were captured at a college campus).

Distribution. Namibia, Botswana.

Remarks. The two specimens listed under ‘Additional material’ are somewhat aberrant females. Both are unicolourous brown, with the one from Okavango differing by the denser/coarser punctuation of the head and pronotum. Their identification should be taken as tentative.

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