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TEN AFRICAN SPECIES OF NOTOXUS (COL.ANTHICIDAE)

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In the collection of H. von Krekich-Strassoldo in the Natural History Museum in Vienna are a number of named species of *Anthicidae* of which the descriptions have never been published. Specimens of some of these species also occur in other collections for example in the collection of the Royal Museum of Central Africa, Tervuren, Belgium.

The present article gives descriptions of a number of these species of the genus *Notoxus* from Central and East Africa. In addition a few species of *Notoxus* from this area are discussed to clear up confusing reports about their identity.

Holotypes and paratypes of the new species will be deposited in the Natural History Museum in Vienna. I am grateful to the authorities of this museum for the opportunity to work on this material and also to the musea of Paris and Tervuren for the loan of material.

The following species of *Notoxus* are discussed:

1) *Notoxus schoutedeni* KREK.

with remarks on *Notoxus crenatus* PIC

Notoxus crenatus var. *subinnotatus* PIC

Notoxus crenatus var. *latefasciatus* PIC

2) *Notoxus griseofasciatus* PIC

(syn. *Notoxus manselli* v.H.)

3) *Notoxus hirtipennis* PIC

(=*Notoxus elegans* KREK.i.1.)

4) *Notoxus ater* PIC

5) *Notoxus pretiosus* n.sp. (KREK.i.1.)

6) *Notoxus rufiventris* n.sp. (KREK.i.1.)

7) *Notoxus manderanus* n.sp. (KREK.i.1.)

8) *Notoxus recticornis* n.sp. (KREK.i.1.)

9) *Notoxus vulcanicus* n.sp. (KREK.i.1.)

with remark on *N. sectator* QUED.

10) *Notoxus posthumus* n.sp. (KREK.i.1.)

Notoxus schoutedeni KREK.

This species was described by von Krekich-Strassoldo (1922), from Mpi-ka, Fort Jameson, Northern Rhodesia (now Zambia); coll. Dr. Naeve in the Royal Museum of Central Africa, Tervuren, Belgium. In Krekich's figures 3a, b and c the outer and median lobe of the aedeagus have not been separated so that the apophyses of the median lobe are not figured (cf. fig. 1B).

Other specimens of this species in my collection are from Rhodesia (formerly Southern Rhodesia) collected by N.J. Myers, Umtali, January 1952; Trelawney, December 1952; Mutambara, December 1952.

In addition to the specimens mentioned above specimens of *Notoxus schoutedeni* KREK. from the Museum national d'Histoire naturelle, Paris, have been examined. These were labelled *Notoxus crenatus* v. *subinnotatus* PIC (1915) and were collected in Mozambique. This is probably a wrong identification and not a synonym for the following reasons: the variety is described from the Orange Free State, South Africa, and I have no evidence that *N. schoutedeni* occurs here. I have not been able to locate the type of *N. crenatus* v. *subinnotatus* PIC. The species *N. crenatus* PIC (1914b) was described from Tanzania, but again I have not found the type. Another variety, *N. crenatus* v. *latefasciatus* PIC (1914 b) is present in the collection of von Krekich-Strassoldo. It is labelled: "Tana, Br. Ost Afrika, Krekich vidit". A slide (No 222) in the same collection shows the genitalia which are clearly different from those of *N. schoutedeni* KREK. There is thus no reason to assume that *N. schoutedeni* KREK. is related to *N. crenatus* PIC or to its varieties. The species *N. crenatus* PIC and its varieties should be revised when material becomes available.

Notoxus griseofasciatus PIC

This species was described by Pic (1913) from Bagamoyo, Deutsch Ost Afrika (Tanzania). It was also described by van Hille (1971) from Kosi Bay, Northern Zululand, and named *Notoxus manselli*. This latter name, being a synonym falls away. The aedeagus is figured in fig. 2A and B.

Notoxus hirtipennis PIC

This species was described by Pic (1914) from Afrique orientale allemande (Tanzania). The type material is in the Museum nationale d'Histoire naturelle, Paris.

In the collection of the Museum Georg Frey, Tutzing b. München are three specimens which I have compared with the type. As the description of PIC is very short and mainly consists of notes comparing it with another species, I have given a full description based on the specimens from the

Museum Georg Frey.

Locality: Motogoro, Tanganyika (Tanzania), Coll.E. Haaf: 3♂.

Length: 2,61 mm (2,52-2,69). Width over widest part of the elytra: 0,94 mm (0,91-0,98).

Head: dark testaceous:dorsally with dark procumbent hairs and few semi-erect hairs which are recumbent in front of the eyes and procumbent behind the eyes; ventrally fine procumbent hairs and a few larger semi-erect procumbent hairs.

Prothorax: dark testaceous, somewhat lighter than the head. Fine hairs are recumbent in a narrow middorsal area and laterally recumbent and pointing to the dorsal midline. Laterally also some larger semi-erect recumbent hairs. The prothoracic horn is about 42% of the length of the whole prothorax and has laterally 3 or 4 crenulations on each side. The horn has a dorsal, broadly raised crest with many pustules and lateral crenulations. The horn has dorsally sparse, short, erect hairs;ventrally sparse procumbent hairs.

Elytra: Testaceous, lighter than the prothorax with three transverse dark bands. The anterior band covers the shoulder area, the second one lies in the middle and the posterior band covers the apical quarter of the elytra. A dark longitudinal narrow band may connect the transverse bands along the lateral margin. The hairs on the elytra are recumbent and a number are semi-erect and somewhat longer than the recumbent hairs, but the difference in length is not very pronounced. In the male the elytra have an apical notch which is almost square in shape.

Wings: fully developed

Antennae: testaceous, the apical half somewhat darker.

Legs: testaceous

Undersurface: testaceous, with fine recumbent hairs.

Last exposed sternite in male: with a median apical non-pubescent area which seems less sclerotised than the surrounding area (Fig. 3C).

Aedeagus: in the median lobe (Fig. 3B) the median structure carrying the genital opening projects strongly to the ventral side. In the preparation this structure is cracked by the pressure of the coverslip and turned to the right. The figure shows the median structure as it appears in the preparation. The lateral apophyses of the median lobe are very flimsy.

In the collection of H. von Kreckich-Strassoldo are three specimens of this species, one of which is labelled " Type *elegans* ", "Dar es Salaam, D.O.Afrika (Tanzania), May 1911". The name *elegans* has never been published. Two more specimens were found amongst the "Types" of *N.mandera-nus* (see below).

Notoxus ater PIC

This species was described from "Afrique orientale, Shirati" (PIC 1914 a). In the collection of H.von Kreckich-Strassoldo there are eleven specimens from the type locality, five of which are labelled " Type " although the label mentions "det.v.Kreckich". Slide 1320 shows dissected

parts of a specimen from Kisuku, April 1936, H.J.A. Turner and is labelled "*ater* PIC,det.R.F.Heberdey" Figures are given of the aedeagus (Fig. 4A and B), the last exposed sternite (4E),the last exposed tergite (4F) and the retracted tergite (4G) all of which are characteristic of the species. The proximal tarsal segment of the first leg is curved (4D).

In the same collection are two undescribed varieties: *N.ater* v. *tibialis*, det.v.Krekich, "Type", Africa or Victoria Nyansa(Sin Mara).I have dissected one male of these specimens and found that they agree in detail with *N.ater* PIC, but they are somewhat lighter in colour.

N.ater v. *impressipennis* det.v.Krekich, "Type",Jonct.Camp-E.Elgon, IV-V 1914, Dr. Bayer.Slide 404B shows the aedeagus and terminal sclerites, mounted by von Krekich-Strassoldo.These agree with those of *N.ater* PIC However the elytra have two pairs of lighter maculae in the position where they are found in most species of *Notoxus*. It seems unnecessary to erect varieties for colour variations.In most species of the *Anthicidae* progression and regression of colour occur.

Notoxus pretiosus n.sp.

In the collection of H.von Krekich-Strassoldo are the following specimens:Victoria See,S.W.Ufer, D.O.A. (Tanzania): 2♂♂. Kirumbu bei Muansa, D. O. A. (Tanzania) 7.4.1915, leg. Holtz: 1♂, 1♀ . Muansa,D.O.A. (Tanzania) 1.4.1915, leg.Holtz: 1♂, 1♀ . Bussu, Uganda, 1909,Dr.E. Bayon: 3♂♂. Entebbe, Uganda, June 1933, H.Hargreaves, on lake shore: 1♂. Afr.orientalis, Kantona, Shirati 1909: 1♂, 1♀.

Length: 2,7 mm (2,35-3,26). Width over widest part of the elytra: 0,94 mm (0,78-1,11).

Head: light to dark testaceous. Dorsally anterior recumbent hairs and posterior procumbent hairs; ventrally short procumbent hairs.

Prothorax: lighter than head. Hairs semi-erect recumbent in the median line, laterally pointing to the median line and recumbent. The prothoracic horn is about 37 % of the length of the whole prothorax.The horn has 0 to 3 basal crenulations on each side. The central crest of the horn has lateral crenulations and median pustules,not sharply outlined. The hairs on the horn are dorsally short and erect, ventrally procumbent.

Elytra: dark testaceous with two pairs of strongly contrasting light testaceous maculae. The anterior pair of maculae reach neither the lateral margin nor the median line and the posterior pair in a few cases reach the lateral margin but do not extend to the median line in most cases.In some cases the posterior macula however covers the whole apical area. In the males the elytra have an elongated apical notch (Fig. 5C).

Wings: fully developed in both sexes.

Antennae: testaceous, in some cases slightly darkening to the apex.

Legs: testaceous, tibia and tarsus slightly darker.

Undersurface: testaceous, with fine recumbent hairs.

Aedeagus as figured (Fig. 5A and B).

This species belongs to a group of closely related East African species. They all have the elongated apical elytral notch in the male. Other species in this group are *N. guttulatus* BUCK (1958), *N. longisulcus* v.H. (1972), *N. decorus* v.H. (1972) and *N. rufiventris* n.sp. (see below). These species resemble each other not only in external features, but also in the form of the aedeagus. The outer lobes of the aedeagi are however clearly different and the median lobes differ in minor details. *N. pretiosus* has the median lobe with long slender apophyses and small lateral teeth on the median structure, distal to the genital opening.

Notoxus rufiventris n.sp.

Vulkangebiet am Kiwu, D.O.A. (Tanzania), S.G.Schlohbach: 6♂♂.

Length: 2,83 mm (2,78-3,02). Width over widest part of the elytra: 1,02 mm (0,98-1,04 mm).

Head: dark testaceous. Dorsally a few anterior semi-erect recumbent hairs at the level of the antennae and a few posterior semi-erect procumbent hairs.

Prothorax: light to dark testaceous with some semi-erect recumbent hairs. The prothoracic horn is about 38 % of the whole prothorax. The horn has 2 basal crenulations on each side and the anterior half is surrounded by an upstanding margin. The median raised crest of the horn is covered by not more than three longitudinal rows of pustules.

Elytra: dark testaceous to black with two pairs of lighter maculae, variable in colour and size. The anterior pair reaches neither the lateral margin nor the median line; the posterior pair in most cases reaches the lateral margin and in some cases the median line as well or it may extend over the whole apical area of the elytra. Hairs on the elytra are recumbent. In the males the elytra have an elongated apical notch (Fig. 6C).

Wings: fully developed in male.

Antennae: testaceous, in some specimens slightly darkening towards the apex.

Legs: testaceous; the distal half of the femora somewhat darker.

Undersurface: testaceous, with fine recumbent hairs.

Aedeagus as figured in Fig. 6A and B.

All the specimens in the collection of H. von Kreckich - Strassoldo are labelled "Type, *N. rufiventris* det. Kreckich".

This species comes very close to *N. pretiosus* n.sp. and to the other members of the group with the elongated apical elytral notch in the male. The outer lobe of the aedeagus of *N. rufiventris* n.sp. is similar to the one of *N. pretiosus* n.sp. but the median lobe is less elongated, its apophyses are shorter and the median structure, carrying the genital opening, is quite different.

Notoxus manderanus n.sp.

Mandera, D.O.Afr. (Tanzania); 3♂♂. Mandera, D.O.Afr. (Tanzania), coll. Dr. Staudel: 1♂.

Length: 2,54 mm (2,41-2,74). Width over widest part of elytra: 0,95 mm (0,91-1,00).

Head: nearly circular in outline. Testaceous to dark testaceous, with about six ventral pustules on the anterior half. With fine procumbent hairs and several large erect to semi-erect hairs which are somewhat recumbent, but procumbent at the level of the antennae.

Prothorax: testaceous and lighter than head. Hairs are fine and upwards pointing gradually becoming recumbent in the middorsal area and all implanted in small simple punctures. The prothoracic horn is about 39 % of the length of the whole prothorax: its sides in dorsal view diverge towards the base. The horn has 2 or 3 basal crenulations on each side and the apical area is surrounded by a margin. There is no prominent dorsal crest but the median area of the horn is covered by about 20 pustules of different size. The horn has fine procumbent hairs at the apex.

Elytra: testaceous to dark testaceous with two pairs of light testaceous maculae. The anterior pair reaches the lateral margin and the median line, thus forming a continuous light band over the elytra. The posterior pair of maculae does not reach either the median line nor the lateral margin nor the apex. The elytra have fine recumbent hairs, implanted in margined punctures. In the males the elytra have a short and square apical notch.

Wings: fully developed in male.

Antennae and legs: testaceous.

Undersurface: dark testaceous, with fine recumbent hairs.

Aedeagus as figured in Fig. 7A and B. The median lobe (7B) has slender apophyses which lie medial to the lateral margins of the unusually large and broad median structure which carries the genital opening.

Among the specimens labelled "Types" were two specimens of *N. hirtipennis* PIC (1914 b) (see above). This species looks rather similar to *N. manderanus* but can externally be recognized by its more hairy prothorax and different prothoracic horn.

Notoxus recticornis n.sp.

D.O.Afr. (Tanzania) Vulkangebiet am Kiwu; coll. S.G. Schlobach: 6 specimens one of which is without a head, another without an abdomen.

Length: 2,91 mm (2,74-3,41). Width over widest part of elytra: 1,00 mm (0,91-1,09).

Head: slender and glossy, black to dark testaceous. Hairs are sparse, fine and procumbent with a few larger erect hairs.

Prothorax: glossy and as dark as the head or slightly lighter. Hairs

are sparse and recumbent; laterally are some larger semi-erect recumbent hairs. The punctures are minute. The prothoracic horn is about 22 % of the length of the whole prothorax. In dorsal view the basal 2/3 of the sides of the horn are parallel and carry 4 - 6 crenulations on each side. The dorsal crest of the horn is laterally crenulated and is dorsally covered with pustules. The horn has dorsally short erect hairs, ventrally fine procumbent hairs.

Elytra: the colour pattern varies: some specimens have plain dark testaceous elytra, others have an anterior pair of lighter maculae not reaching the median line; the maculae vary in size. One specimen with narrow anterior maculae has in addition the apical quarter of the elytra lighter. Hairs on the elytra are fine and recumbent, implanted in margined punctures. In the males the elytra have a short apical notch.

Wings: fully developed in male.

Antennae: testaceous, the distal half darker.

Legs: testaceous to dark testaceous, the femora somewhat darker.

Undersurface: dark testaceous to almost black. The last exposed abdominal sternite of the male is indented and less sclerotized at the apex.

Aedeagus as figured in Fig. 8A and B.

In the collection of H. von Kreckich-Strassoldo slide No 3A has a mounted aedeagus and an extra outer lobe. The slide is labelled (*Notoxus* aus D.O.Afr.". The name *reticornis* does not appear on the label.

This species comes close to *N. alternans* BUCK (1958) but *N. alternans* has a less crenulated horn on the prothorax and the median lobe of the aedeagus has a transverse apical point on each side.

Notoxus vulcanicus n.sp.

D.O. Afrika (Tanzania) Vulkangebiet am Kiwu; coll.S.G.Schlohbach: 11 specimens, three without abdomens.

Length: 2,83 mm (2,47-3,17). Width over widest part of elytra: 0,96 mm (0,87-1,08).

Head: testaceous to dark testaceous to almost black. Hairs dorsally fine and procumbent with some semi-erect recumbent hairs at the level of the antennae and some semi-erect procumbent hairs in the posterior half of the head.

Prothorax: testaceous to dark testaceous, same colour as the head or a little lighter. Hairs fine and recumbent, pointing to the dorsal median line. Prothoracic horn about 40 % of the length of the whole prothorax. The horn has a blunt tip and 0 - 1 basal crenulations on each side. The median crest of the horn has pustules. Dorsally the hairs on the horn are short, erect and procumbent, ventrally procumbent.

Elytra: testaceous to dark testaceous. Only two specimens have indications of lighter maculae: one specimen has vague maculae on the posterior quarter of the elytra, another has, in addition, a lighter area

on the shoulders. The other specimens without colour pattern. Hairs on the elytra are rather dense and recumbent. In the males the elytra have a short apical notch.

Wings: fully developed in male.

Antennae and legs: dark testaceous.

Undersurface: dark testaceous. The last exposed sternite of the male is apically flattened.

Aedeagus as figured in Fig. 9A and B.

Slides 1 B and 2B in the collection of von Krekich-Strassoldo have the aedeagus of this species mounted but they are labelled *N. sectator*. Krekich must have been in doubt about *N. sectator* QUED. which was described from Central Africa in 1885, for his slide 218 is labelled *N. sectator* verus. This aedeagus resembles, but is not identical with that of *N. posthumus* n.sp. (see below).

Notoxus posthumus n.sp.

D.O.Afr. (Tanzania) Tabora, I, 16, coll. Holtz: 2♂♂.

Length: 3,40 mm. Width over widest part of the elytra: 0,96 mm.

Head: testaceous. Hairs fine and recumbent and some coarser hairs which are dark and semi-erect recumbent at the level of the antennae, and procumbent in the posterior area.

Prothorax: testaceous. Hairs fine and recumbent, pointing to the dorsal median line; laterally some large erect hairs. Prothoracic horn about 40 % of the length of the whole prothorax, triangular in shape. The horn has three apical crenulations on each side and a crenulated crest with not more than ten pustules. The hairs on the horn are dorsally short, semi-erect and procumbent, ventrally fine and procumbent.

Elytra: testaceous, somewhat darker than the prothorax and without maculae. The hairs are recumbent and implanted in punctures with a narrow margin. In the males the elytra have a short apical notch.

Wings: fully developed in male.

Antennae and legs: testaceous.

Undersurface: testaceous. The last exposed sternite of the male is slightly incised at the apex.

Aedeagus as figured in Fig. 10A and B.

Slide 173 A in the collection of von Krekich-Strassoldo has the genitalia of the male mounted. The label mentions the locality Tabora but not the species name which is attached to the specimens.

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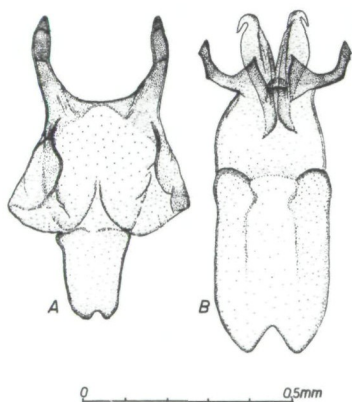


Fig.1

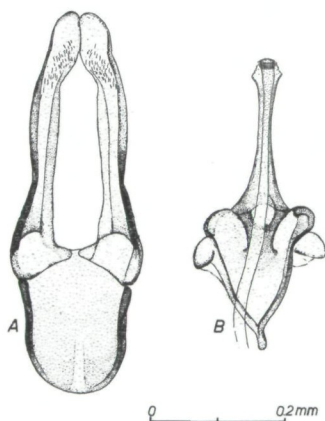


Fig.2

- Fig. 1. *Notoxus schoutedeni* KREK. aedeagus: A: outer lobe.
B: median lobe, dorsal view.
- Fig. 2. *Notoxus griseofasciatus* PIC. aedeagus: A: outer lobe.
B: median lobe, ventral view.

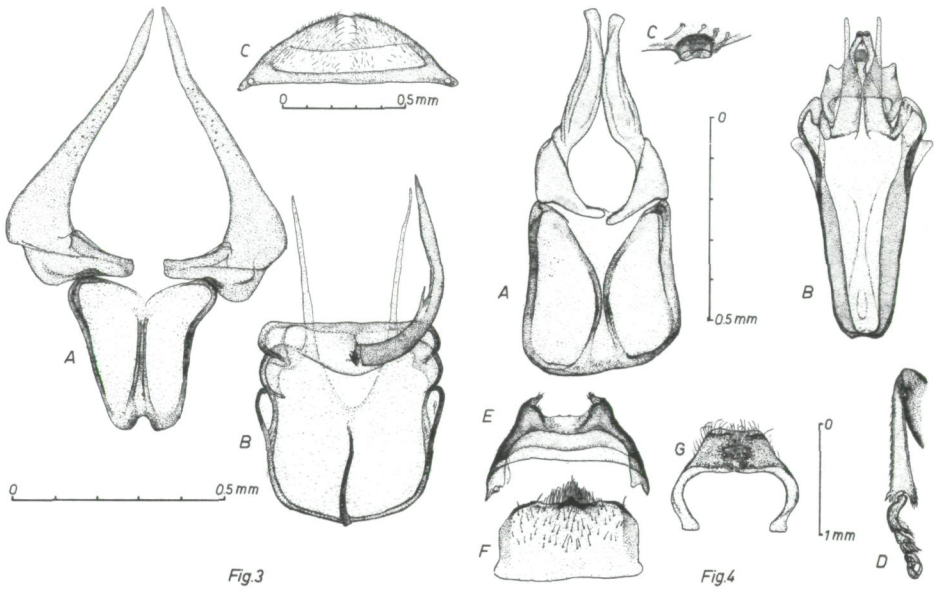


Fig.3

Fig.4

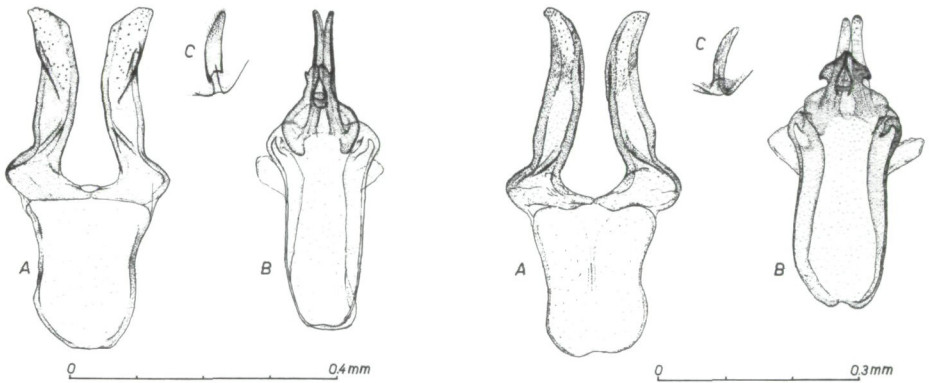


Fig.5

Fig.6

- Fig. 3. *Notoxus hirtipennis* PIC. aedeagus: A: outer lobe. B: median lobe. C: last exposed sternite of male.
- Fig. 4. *Notoxus ater* PIC. aedeagus: A: outer lobe. B: median lobe, ventral view. C: apical elytral notch of male. D: tibia and tarsus of front leg of male. E: last exposed sternite of male. F: last exposed tergite of male. G: retracted tergite of male.
- Fig. 5. *Notoxus pretiosus* n.sp. aedeagus: A: outer lobe. B: median lobe. C: apical elytral notch of male.
- Fig. 6. *Notoxus rufiventris* n.sp. aedeagus: A: outer lobe. B: median lobe, ventral view. C: apical elytral notch of male.

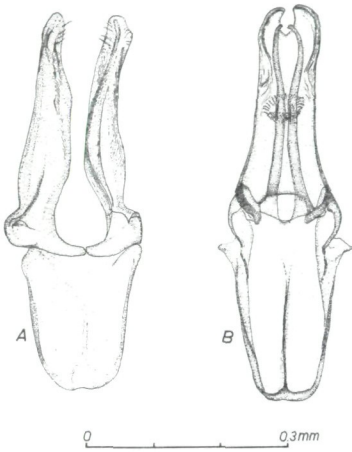


Fig.7

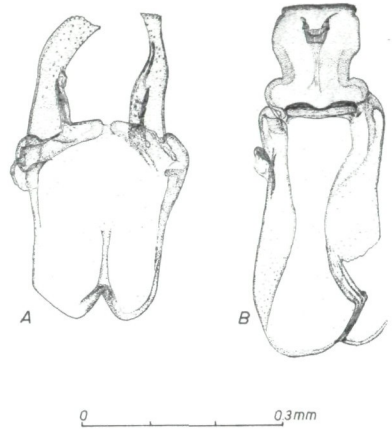


Fig.8

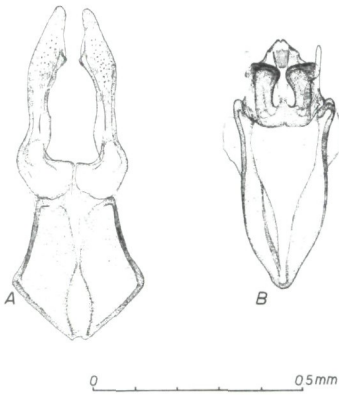


Fig.9

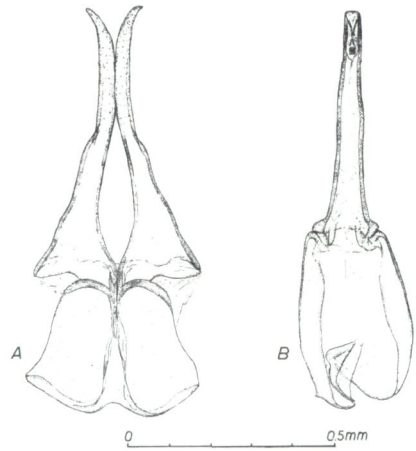


Fig.10

Fig. 7. *Notoxus manderanus* n.sp. aedeagus: A: outer lobe.
B: median lobe, dorsal view.

Fig. 8. *Notoxus recticornis* n.sp. aedeagus: A: outer lobe.
B: median lobe.

Fig. 9. *Notoxus vulcanicus* n.sp. aedeagus: A: outer lobe.
B: median lobe, dorsal view.

Fig.10. *Notoxus posthumus* n.sp. aedeagus: A: outer lobe.
B: median lobe.

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