

## NOTES ON SOME *NOTOXUS* WITH A LECTOTYPE DESIGNATION (INSECTA, COLEOPTERA: ANTHICIDAE)

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**ABSTRACT** *Notoxus brachycerus* ab. *sesinoi* Luigioni, 1920 from Latium (Central Italy) is confirmed to be an unavailable name, and its "syntypes" were found to belong to *N. brachycerus* (Faldermann, 1837). *Notoxus brinckianus* Bonadona, 1986, alternative original spelling, is here selected as the correct original spelling over *N. brincki* Bonadona, 1986 (nec *N. brincki* Hille, 1961), alternative original spelling, which is here rejected and thus becomes unavailable. *Notoxus freyi* van Hille, 1972 is recorded for the first time as a canthariphilous species; furthermore, a specimen from the Democratic Republic of Congo bearing a paratype label, and the features of the last visible sternite of the male, both unnoticed in the original description, are discussed. A lectotype of *Notoxus ater* Pic, 1914 from Shirati (Tanzania) is here designated. *Notoxus ater* Pic, 1914 is a junior primary homonym of both *N. ater* Thunberg, 1787 and *N. ater* Panzer, 1796, so *N. shiratensis* **nom. nov.** is here created as a replacement name for *N. ater* Pic, 1914. *Notoxus ater* var. *rubricollis* Pic, 1929 from Shirati (Tanzania) is recognized to be an unavailable name, and a "syntype" of this variety was found to belong to *N. shiratensis*. It is shown that *Notoxus simulans coffini* Bonadona, 1988 was unnecessarily described twice in subsequent years (1988, 1989), so the name must be dated from the first description.

**KEY WORDS** Anthicidae, *Notoxus*, lectotype, nomenclature, Africa, Europe, Sri Lanka, Meloidae, canthariphily

### INTRODUCTION

*Notoxus* Geoffroy, 1762 is a large genus of Anthicidae, comprising about 300 species worldwide (Kejval, 1999). The goal of this paper is to provide new information on some species of this genus, chiefly in view of the ongoing preparation of a catalogue of the Afrotropical taxa.

### MATERIAL AND METHODS

The labels borne by each specimen are cited in quotes and separated by a comma; a slash indicates a change in lines on one label; comments in square brackets are those of the present author.

The genitalia of the specimens of *Notoxus ater* Pic, 1914 are mounted in Euparal® on the cards with the specimens.

The relevant articles from the International Code of Zoological Nomenclature (ICZN, 1999) are cited with the article number being simply referenced as "(Article x.xx.x)".

The purpose of the lectotype designation in this paper is to assure correct and consistent application of the names (Article 74.7.3).

Abbreviations are as follows:

CGF = G. Frey collection (Naturhistorisches Museum, Basel);

CLU = P. Luigioni collection (Museo Civico di Zoologia di Roma);

CNA = G. Nardi collection (Cisterna di Latina, Italy);

MNHN = M. Pic collection (Muséum National d'Histoire Naturelle, Paris).

### RESULTS

*Notoxus brachycerus* (Faldermann, 1837)

*Monocerus brachycerus* Faldermann, 1837 (Nouveaux Mémoires de la Société impériale des Naturalistes de Moscou 5: 106)

*Notoxus brachycerus* ab. *sesinoi* Luigioni, 1920 (Atti della Pontificia Accademia Romana dei nuovi Lincei. Memorie e Note 73: 209) [unavailable name]

#### Records

1 ♀, Portugal, "Portogallo/ Coimbra/ Flach [legit]" [1]905", "*Notoxus brachycerus*/ determ. Reitter", CLU. 1 ♀, France, "FRANCIA/ Avignon/ Chobaut [legit] 1917", CLU; 1 ♀, "FRANCIA/ Avignon/ Chobaut [legit] 1917", "*brachycerus*/determ. Chobaut", CLU. 1 ♂, Italy, "LAZIO/ Roccagiovane/ Luig. [= P. Luigioni legit] 11.VI.[19]03", "*N. brachycerus*/ a. *Sesinoi* [handwritten] m. [= mihi, handwritten]/ determ. Luigioni [printed]", "*Notoxus brachycerus* (Faldermann)/ G. Nardi det. 1995", CLU; 2 ♂ ♂, "LAZIO/ Roccagiovane/ Luig. [= P. Luigioni legit] 11.VI.[1]903", "*Notoxus brachycerus* (Faldermann)/ G. Nardi det. 1995"; 3 ♂ ♂ 1 ♀, "Roccagiovane/ LAZIO-18.6.[1]911/ P. Luigioni [legit]", CLU; 1 ♀, "Roma/ Raffray [legit]", "*brachycerus* Fald./ det. v. Krekich", "*Notoxus brachycerus* (Faldermann)/ G. Nardi det. 1995", CLU; 1 ♂ 1 ♀, "BASILICATA/ Lavello [(Potenza province)]/ 2.VI.[1]911/ A. Fiori [legit]", "*brachycerus* Fald./ det. v. Krekich", "*Notoxus brachycerus* (Faldermann)/ G. Nardi det. 1995", CLU.

The above cited specimens from "Roccagiovane" [= Roccagiovine (Central Italy, Latium, Rome province)] were collected "on willow trees on the bank of the Licenza stream" (Luigioni, 1920: 209 [translation from Italian]) and are the "types" of *Notoxus brachycerus* ab. *sesinoi* Luigioni, 1920 which is an unavailable name (Articles 45.5.1, 45.6.2). Study of these specimens, male genitalia included, confirms that they fall within the range of variation exhibited by the species. The description of this aberration is as follows: "These specimens have a bigger and more

robust size than the type, a darker coloration, with the head and thorax largely blackish and, moreover, they have very big elytral black spots" (Luigioni, 1920: 209 [translation from Italian]). However, these specimens are not any bigger than the others from the same collection (see above); the black spots are truly a little bigger but the colouration (head and thorax included) is substantially normal, except for that of the first specimen which is darker with the black postmedian band finely protruding anteriorly along the elytral suture, and reaching the black band of the scutellum.

Luigioni (1929: 669, as "*N. brachycerus* a. *Sesinoi* Luig.") listed this aberration without giving further information. Pic (1934: 20, as "*N. brachycerus* a. *Sesinoi* Luigioni") correctly reported the details of its description, whereas these were misrepresented by subsequent authors. Heberdey (1936: 134) wrote: "die dunkle Zeichnung ist sehr ausgedehnt und auch der Spitzenrand etwas angedunkelt: ab. *Sesinoi* Luig.". Bonadona (1971: 145, as *N. brachycerus* var. *sesinoi*), obviously following Heberdey, wrote: "coloration noire très développée, toutes les taches confluentes et l'apex des élytres assombri", and, not knowing the original description, assigned the authorship to "(Luigioni *in litt.* ?) Heberdey, 1936, *Kol. Rundsch.*, 22, p. 134" and later to "Heberdey, 1916 [sic!]: 134" (Bonadona, 1991a, 1991b, in both occasions as *N. brachycerus* var. *sesinoi* [sic!]). Uhmman (1992: 93, as *N. brachycerus* var. *sesinoi*) attributed the authorship to Heberdey (1936: 134) and illustrated the colour pattern of the elytra (Uhmman, 1992: 94, fig. 44), but only on the basis of the description of Heberdey (1936) (G. Uhmman, pers. comm.).

*Notoxus brachycerus* ab. *sesinoi* does not have dark elytral apices as stated by Heberdey (1936) and subsequent authors, so their records probably concern *N. lonai* Bucciarelli, 1973, which generally has dark elytral apices, whereas those of *N. brachycerus* are light (cf. Bucciarelli, 1973, 1980; Bonadona, 1989, 1991a, 1991b; Ponel & Moragues, 1991). *Notoxus lonai* is known from Italy and southern France (cf. Bonadona, 1991), and was for a long time confused with *N. brachycerus* (cf. Bucciarelli, 1973, 1980).

#### ***Notoxus brinckianus* Bonadona, 1986**

*Notoxus brinckianus* Bonadona, 1986 (*Entomologica scandinavica*, Suppl. 30: 58)

The name of this species from Sri Lanka was spelled *Notoxus brinckianus* in the summary and description (Bonadona, 1986: 55, 58), and as *Notoxus brincki* in the illustrations and diagnosis (Bonadona, 1986: 56, 58). The very same name of *N. brincki* had been previously proposed by Hille (1961: 228) for a South

African species. Thus, *Notoxus brinckianus* Bonadona, 1986 is here fixed (Article 24.2.3) as the correct original spelling. *Notoxus brincki* Bonadona, 1986, alternative original spelling, is here rejected and therefore becomes an unavailable name.

#### ***Notoxus freyi* Hille, 1972**

*Notoxus freyi* Hille, 1972 (*Entomologische Arbeiten aus dem Museum G. Frey* 23: 271)

#### **Records**

1 ♀, Democratic Republic of Congo [formerly Zaire], "Leopoldville [= Kinshasa]/ Belg.Kongo/ G. Frey I.1952", "Museum Frey/ Tutzing", "Para/ Type", "Notoxus/ freyi v. H./ det. J.C. van Hille 1972", CGF; 1 ♂ 1 ♀, South Africa "Sabie/ N.O. Trans.S.A./ Leg. Frey I.1952", "Museum Frey/ Tutzing", "Para/ Type", "Notoxus/ freyi v. H./ det. J.C. van Hille 1971", CGF; 2 ♀ ♀, "Sabie/ N.O. Trans.S.A./ Leg.Frey I.1952", "Museum Frey/ Tutzing", "Para/ Type", "Notoxus/ freyi v. H./ det. J.C. van Hille 1972", CGF; 1 ♀, "Umg.Pretoria/ Transvaal S.Afr./ Leg.Frey I.1952", "Para/ Type", "Notoxus/ freyi v. H./ det. J.C. van Hille 1972", CGF; 6 ♂ ♂, "South Africa, Eastern Transvaal/ 33 Km E Ermelo (R 65) 1700 m/ 26°34'S,30°17'E road side/ 13.XII.1995, M. Zapparoli leg.", "su cadavere di [= on a dead specimen of] *Meloe/ (Afromeloe) caffer* Péringuey, 1886", CNA.

This species was only known from the following localities of South Africa: Sabie, Pretoria environs, and Argent Tvl. [Transvaal] (Hille, 1972). Moreover, on a copy of Hille's (1972) reprint there is a his handwritten additional record: "Bethlehem OFS2828AB 7.12.1965 H.O. Brown". The specimen from the Democratic Republic of Congo labeled as a "paratype" (see above) was not listed in the original description (Hille, 1972). However, it was labeled by Hille in the same way as the South African paratypes. This specimen and the type series were collected during the same expedition (Frey, 1952); probably Hille overlooked or deemed it as mislabelled and did not mention it in the original description (Hille, 1972).

All the examined males have the last visible sternite slightly truncate at apex with a circular depressed area anterior to the margin. This feature was overlooked in the original description. Moreover, the recently collected specimens have darker antennae than the examined paratypes, and one specimen has smaller, light maculae on the elytra.

The recently collected specimens were found under the elytra of a dead specimen of *Meloe (Afromeloe) caffer* Péringuey, 1886 (Coleoptera, Meloidae) being dragged by ants (Bologna & Pinto, 1998: 36, as *Notoxus* sp. *cucullatus* group) in a large pasture land with cattle and some small ponds (M. Zapparoli, pers. comm.). There are no other data available on the biology of this species, which, as for other congenics (Schütz & Dettner, 1992), seems to be canthariphilous. The first account of an anthicid-meloid association was that of La Ferté-Sénectère (1849a, [1849]b) who

recorded some *N. monoceros* (Linné, 1758) on a dead *Lytta vesicatoria* (Linné, 1758). This record was overlooked in the reviews on canthariphily (Young, 1984; Bologna & Havelka, 1985; Schütz & Dettner, 1992; Hemp & Dettner, 2001).

### *Notoxus shiratsensis* nom. nov.

*Notoxus ater* Pic, 1914 (Bulletin de la Société zoologique de France 39: 182)

*Notoxus ater* var. *rubricollis* Pic, 1929 (Bulletin de la Société zoologique de France 54: 43) [unavailable name]

### Records

1 ♂, Tanzania, "Africa or./ Katona" [printed], "Shirati/ 1909. V." [printed, except the handwritten number of month], "Type" [handwritten, old], "TYPE" [red, printed, recent], "Museum Paris/ Coll. M. Pic" [light-blue, printed, recent], "N. ater Pic [handwritten, old] N. antinorii V. ater Pic" [underside of the same label, handwritten, old], "Notoxus ater Pic" [handwritten, old], "LECTOTYPUS/ Notoxus ater Pic, 1914/ G. Nardi des. 2004" [red, printed], "Notoxus shiratsensis Nardi/ G. Nardi det. 2004" [printed], MNHN; 1 ♂, "Africa or./ Katona" [printed], "Shirati/ 1909. IV." [printed, except the handwritten number of month], "Museum Paris/ Coll. M. Pic" [light-blue, printed, recent], "TYPE" [red, printed, recent], "N. ater Pic" [handwritten, old], "Krekich vidit (1925)" [handwritten], "V. rubricollis mihi" [handwritten, old], "Notoxus shiratsensis Nardi / G. Nardi det. 2004" [printed], MNHN.

*Notoxus ater* was described by Pic (1914) based on an unstated number of specimens from "Afrique Or.: Shirati". This locality is found in Tanzania on the eastern shore of the Lake Victoria near the Kenyan border. Later Pic (1929) briefly added some details to the original description and also described *Notoxus ater* var. *rubricollis* from the same locality. This name is unavailable because the content of the work reveals that it was unambiguously proposed for an infrasubspecific entity (Article 45.6.4). More recently, Hille (1975) studied several specimens, also topotypical, of this species from the Krekich-Strassoldo collection in Vienna, and illustrated the male sexual characters of a specimen from Kisuku (Democratic Republic of Congo). Hille (1975: 6) also treated two unpublished "varieties" named by Krekich-Strassoldo: *Notoxus ater* var. *tibialis* and *Notoxus ater* var. *impressipennis*. He was clearly treating ("It seems unnecessary to erect varieties for colour variations") these names as manuscript names that were never described. In any case they must not be confused with *N. tibialis* Uhmman, 1985 from Namibia (Uhmman, 1985: 180) and *N. impressipennis* Pic, 1952 from Democratic Republic of Congo (Pic, 1952: 66).

The study of the examined specimens allowed me to confirm that Hille's (1975) species concept corresponds to that of Pic (1914), and that *N. ater* var. *rubricollis* is devoid of systematic value.

*Notoxus ater* Pic, 1914 is a junior primary homonym of *Notoxus ater* Thunberg, 1787 from Sweden

(Thunberg, 1787: 45 [misprinted as 55]), and *Notoxus ater* Panzer, 1796 from Germany (Panzer, 1796: 15). *Notoxus ater* Thunberg, 1787 has been overlooked for a long time since its description (cf. Schönherr, 1808; Gemminger & Harold, 1870; Pic, 1911), and only recently Burakowski et al. (1987: 128) synonymized it by implication with *Notoxus ater* Panzer, 1796, which is considered to represent a valid species in the genus *Anthicus* Paykull, 1798, at least since Schönherr (1808). The opinion of Burakowski et al. (1987) has been followed only by a few authors (Mroczkowski & Stefanska, 1991; Kubisz & Szwalko, 1998), but it has been confirmed by the study of two syntypes of *N. ater* Thunberg (B. Ehnstöm, pers. comm.).

Since *Notoxus ater* Panzer, 1796 is a junior primary homonym and junior subjective synonym of *Notoxus ater* Thunberg, 1787, a replacement name is not required. *Notoxus ater* Panzer, 1796 was placed in a separate genus at least since 1808, before that *Notoxus ater* Pic, 1914 was described, so no immediate nomenclatorial action is required (Article 23.9.5). *Notoxus ater* Thunberg, 1787 and *Notoxus ater* Pic, 1914 do not meet the necessary conditions to maintain prevailing usage (Article 23.9.1), neither name has been used enough to threaten stability or cause confusion (Article 23.9.3), and these names have been congeneric after 1899 (Article 23.9.5), so a replacement name must be designated for the junior homonym. The replacement name *Notoxus shiratsensis* nom. nov. is here created (Article 60.3) for *Notoxus ater* Pic, 1914. The new name is based on the type locality for this species.

It should be noted that *Anthicus ater* (Thunberg, 1796) must not be confused with *A. ater* Stephens, 1832, which is a synonym of *A. tristis schaumii* Wollaston, 1857 (cf. Krekich-Strassoldo, 1928).

The parameres of *N. shiratsensis* nom. nov. figured by Hille (1975: 12, fig. 4a, as *N. ater* Pic) are improperly mounted. As a matter of fact the parameres are well separated in dorsal view, nearly parallel and barely diverging apically. Moreover the examined specimens have "sur chaque élytre, une impression postérieure discale allongée, pubescente à l'état frais: cette impression, non mentionnée dans la description serait donc un caractère spécifique intéressant" (Pic, 1929: 43). This feature and the paper of Pic (1929) were overlooked by Hille (1975).

*Notoxus shiratsensis* nom. nov. differs from *N. nigricolor* Pic, 1901 (cf. Hille, 1989), the only species to which it was compared in the original description (Pic, 1914). The affinities with *N. antinorii* Pic, 1901 (see the labels of the lectotype of *N. ater* Pic) are unclear because this species is practically known only on the basis of its poor original description (Pic,

1901). Later *N. shiratensis*, as *N. ater*, was compared to *N. niger* Buck, 1958 in the description of this species, but this species has a different form of the male genitalia (Buck, 1958: 13, fig. 8).

At present *N. shiratensis* nom. nov. is known only from few sites in Tanzania, Kenya and Democratic Republic of Congo. Adult phenology seems to be restricted to March, April and May (Pic, 1914, 1929; Hille, 1975; Chandler & Uhmman, 1984, as *N. ater*; Uhmman, 1989, as *N. ater*).

*Notoxus simulans coffini* Bonadona, 1988

*Notoxus simulans coffini* Bonadona, 1988 (Biocosme Mésogéen 5: 40)

*Notoxus simulans coffini* Bonadona, 1989 (L'Entomologiste 45: 11)

This subspecies from French Alps has been described twice (Bonadona, 1988, 1989) and the two descriptions are based on the same type series. Despite the fact that Bonadona (1991a: 100; 1991b: 29) and Kapp (1997: 132-134) erroneously gave priority to the second description, the name must be dated from the first one.

## DISCUSSION

Most *Notoxus* species can be readily separated by examination of the male genitalia. The fauna of this genus is well known for New World (Chandler, 1978, 1982; Chandler & Nardi, 2004), and somewhat less so for Palaearctic region (Heberdey, 1936; Bucciarelli, 1973, 1980; Bonadona, 1989; Kejval, 1999). Other faunas are badly in need of revision; for example, 155 species are recorded from the Afrotropical region, but the male genitalia have been figured for only 111 species (Nardi, unpublished data), and most of the remaining species are known only on the basis of their poor original descriptions.

## ACKNOWLEDGMENTS

I wish to gratefully thank the following persons, who made available material or literature: Nicole Berti (Muséum National d'Histoire Naturelle, Paris, France), Marco A. Bologna (Università degli Studi di Roma "Roma Tre", Italy), Andrea Di Giulio (Università degli Studi di Roma "Roma Tre", Italy), Bengt Ehnstöm (University of Uppsala, Sweden), Maurizio Mei (Università degli Studi di Roma "La Sapienza", Italy), David Mifsud (Ministry for Rural Affairs and the Environment, Ghammieri, Malta), Angelo Nardi (Cisterna di Latina, Italy), Eva Sprecher (Naturhistorisches Museum Basel, Switzerland), Dmitry Telnov (Riga, Lettland), Gerhard Uhmman (Pressath, Germany), Alberto Venchi (Università degli Studi di Roma "Roma Tre", Italy), Augusto Vigna Taglianti (Università degli Studi di Roma "La Sapienza", Italy), and Marzio Zapparoli (Università della Tuscia, Viterbo, Italy). Special thanks go to Donald S. Chandler (University of New Hampshire, Durham,

USA) and to Alberto Zilli (Museo Civico di Zoologia, Roma, Italy) for the revision of the manuscript.

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