ISRAEL JOURNAL OF ENTOMOLOGY, Vol. 48 (1), pp. 99–104 (18 December 2018)

Description of a new species of *Zonitodema* Péringuey (Coleoptera: Meloidae), with synonymic notes on the genus

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ABSTRACT

A new species *Zonitodema friedmani* n. sp. (Coleoptera: Meloidae: Nemognathinae) from Tanzania (Tanga) is described, illustrated and distinguished from its congeners. *Nemognatha francoisi* Pic, 1909 is transferred to the genus *Zonitodema*, and *Zonitodema brittoni* Kaszab, 1954 is considered its junior synonym.

KEYWORDS: Meloidae, *Zonitodema*, *Nemognatha*, blister beetles, Afrotropical, Tanzania, new species, new combination, new synonymy.

RÉSUMÉ

Une nouvelle espèce *Zonitodema friedmani* n. sp. (Coleoptera: Meloidae: Nemognathinae) de Tanzanie (Tanga) est décrite, illustrée et distinguée de ses congénères. *Nemognatha francoisi* Pic, 1909, est transféré au genre *Zonitodema*, et *Zonitodema brittoni* Kaszab, 1954 est considéré comme son synonyme junior.

MOTS CLÉS: Coléoptères meloïdes, *Zonitodema*, *Nemognatha*, region afrotropicale, espèce nouvelle, nouvelle combinaison, nouveau synonyme.

INTRODUCTION

Some time ago I received the Afrotropical Meloidae material from the Steinhardt Museum of Natural History, Tel Aviv, for identification. Six specimens turned to represent a new species of *Zonitodema*, which is described below.

The genus *Zonitodema* was erected by Peringuey in 1909, with *Zonitis viridipennis* Fabricius, 1794 as the type species and with four other species *Z. fahraei* Peringuey, 1909 (replacement name for *Zonitis collaris* Fahraeus, 1870), *Z. parentalis* Peringuey, 1909, *Z. proxima* (Peringuey, 1892) and *Z. ruficeps* (Peringuey, 1888). Then Pic (1912) described a sixth species, *Z. notatithorax*. Borchmann (1917) in his *Coleopterorum Catalogus* added yet another species to the genus, previously described as *Nemognatha caerulans* Fairmaire, 1887. Several years later, Pic (1929) described *Z. nigrithorax* Pic, 1929 and stated that *Nemognatha collaris* Laporte de Castelnau, 1840 and its variety *nigricollis* Beauregard, 1890 might belong to *Zonitodema*. Subsequently, Pic (1939) described one more species in the genus, *Z. rufipennis*. Kaszab (1954) reviewed the genus and transferred to it three previously described species, i.e. *Nemognatha erythraea* Pic, 1909, *Nemognatha nigricollis* Beauregard, 1890 and *Nemognatha collaris* Laporte de Castelnau, 1840 (with two new synonyms: *Z. caerulans* and *Z. fahraei*). In the same work, he described three new species, viz. *Z. bimaculithorax* Kaszab, 1954, *Z.*

DOI: 10.5281/zenodo.2388809; ISSN (online) 2224-6304
urn:lsid:zoobank.org:pub:E91E4C79-9ABF-4456-9B7C-49AC60C1987A

brittoni Kaszab, 1954 and *Z. hayekae* Kaszab, 1954, to raise the total to 13 species. Bologna and Pinto (2002) tentatively questioned the status of the genus and listed *Zonitis posoka* Wellman, 1908 in *Zonitodema* (also in Bologna *et al*. (2018)).

The present study also prompted the transfer of *Nemognatha francoisi* Pic, 1909 to the genus *Zonitodema*, and a further synonymy.

MATERIALS AND METHODS

The studied specimens are housed in the following collections: MFC – Mickaël François Collection, Bar-sur-Aube (France); MNHN – Muséum National d'Histoire Naturelle, Paris (France); MRAC – Musée Royal d'Afrique Centrale, Tervuren (Belgium); SMNHTAU – Steinhardt Museum of Natural History, Tel Aviv University (Israel).

The specimens were studied under a Novex Stereo Zoom RZ dissecting microscope, the pictures were taken with a Canon Eos 77D camera equipped with a MP-E 65 mm objective, and the map was drawn with QGis software.

TAXONOMY

Genus *Zonitodema* Peringuey, 1909

Zonitodema friedmani n. sp.

(Figs 1–5)

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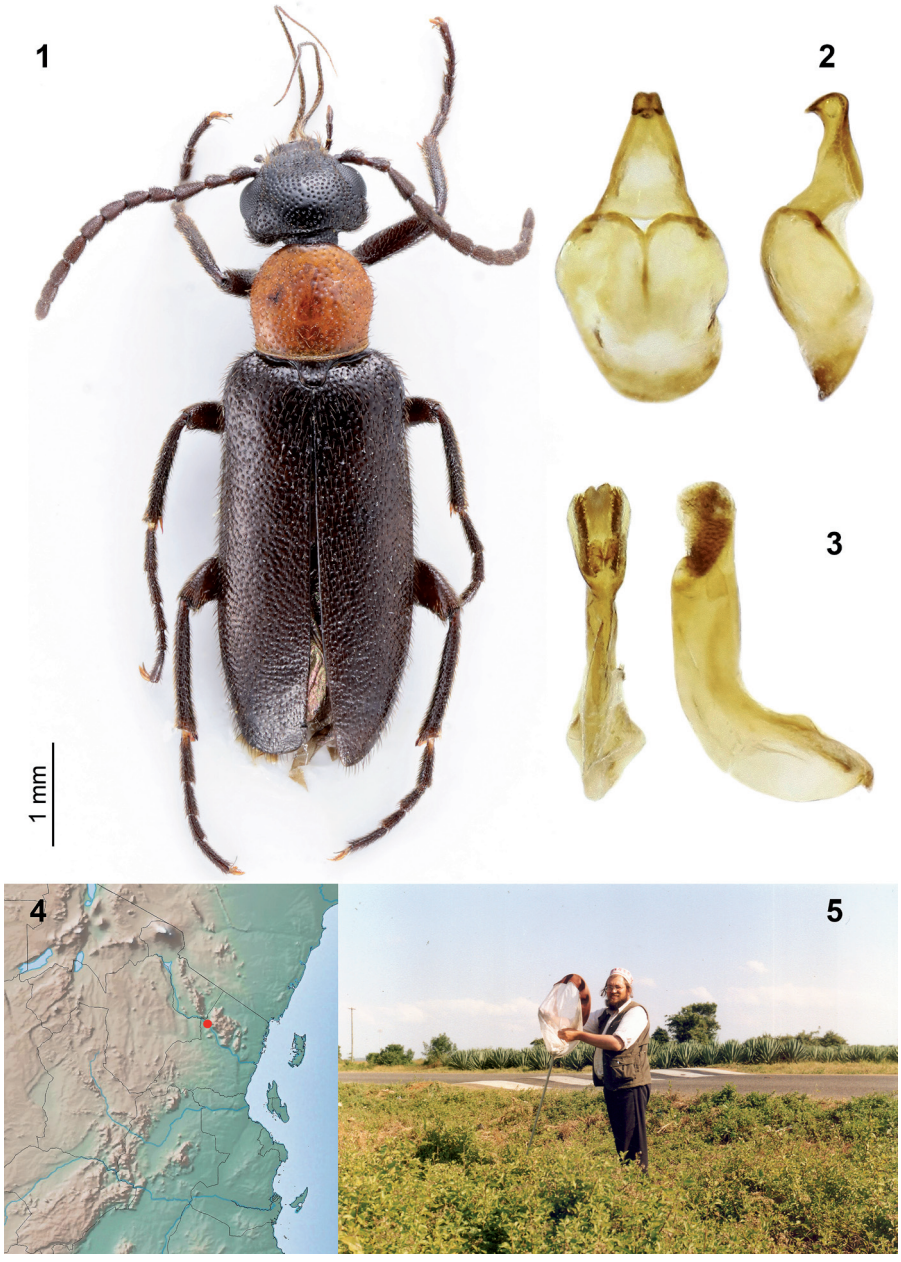
Etymology: The new species is named after Laibale Friedman, the Coleoptera collection manager at the SMNHTAU, who collected all the specimens and sent the African Meloidae material on loan to me.

Description: Length: 5–6.5 mm (males) and 5.5–7 mm (females).

Body (Fig. 1) dark brown, head black, pronotum and end of abdomen orange (with no sign of variation among all six type specimens), completely covered with dense, short and erected pubescence consisting of brown hairs.

Head transverse (breadth/length ratio, 1.4) and rectangular (without mouthparts and clypeus). Head surface scarcely convex, shining, with dense and strong punctuation, with more or less distinct median longitudinal area devoid of punctuation. Anterior part of head with shallow but wide depression in middle. Temples almost parallel, half as long as eye, rounded. Occiput slightly rounded, not prominent. Eyes small and ovate. Clypeus trapezoid, weakly transverse, anterior third smooth and lightened. Labrum wide, distinctly bordered anteriorly with median longitudinal smooth line. Mandibles quite short and distinctly widened.

Maxillary palpi quite short, first segment evenly widened till apex, second palpomere one-third shorter than first one, subtriangular, last palpomere twice as long as second one, widest at midlength with its apex as wide as its base. Labial palpi thin, first segment very narrow, second segment faintly broadened at middle. Maxillary galeae very long, at least as long as antennae.



Figs 1–5: *Zonitodema friedmani* n. sp.: (1–3) male holotype: (1) dorsal view; (2) tegmen, ventral and lateral views; (3) aedeagus, ventral and lateral views; (4) type locality in North-Eastern Tanzania; (5) biotope with the collector, Laibale Friedman, picture taken by Sergey Kleinberg.

Antennae quite long, reaching first quarter of elytrae, with antennomeres rather flattened and broadened. First antennomere quite short and fairly widened at apex, second antennomere as long as first one and quite widened at apex too, third antennomere longer and slightly wider than II, antennomeres IV–X similar in size and shape, smaller than first one, last antennomere as long as III but thiner and greatly tapered.

Pronotum only slightly transverse (breadth/length ratio, 1.1), as wide as head, broadest before its midlength. Its anterior half widely rounded on each side, then converging till posterior margin, except sinuosity just before rounded posterior angles. Punctuation deep and large, but sparser than on the head, with a smooth poorly defined longitudinal median area; intermediate surface shining, dorsally weakly convex.

Scutellum rather large, weakly rounded at apex with same coloration and punctures as elytrae.

Elytra a little longer than twice their combined breadth, 1.5× as wide as pronotum, parallel-sided from their base till posterior third, then narrowing. Punctuation denser than on head, sometimes coalescent. Humeri distinct but not prominent.

Ventrum with punctuation sparser than dorsally. Mesosternum fairly wide with short apex. Metasternum with median longitudinal smooth line without hairs and punctuation, with acute apex.

Legs quite robust, femora thick, tibiae as long as femora of corresponding legs, tarsi longer. Penultimate segments of fore and mid legs very small. Hind protarsi distinctly shorter than 3 following segments together. Hind tibial spurs widened, external one strongly widened and spoon-like. Spurs of other legs very thin and acute. Dorsal blade of hind tarsal claws with very few teeth (around 5), claws not darkened.

Male genitalia (Figs 2, 3) peculiar, with phallobase very wide in ventral view, as wide as long, heart-shaped. Gonoforceps in ventral view distinctly subtriangular, not very long, apex bilobed, in lateral view thickened and recurved perpendicularly to main axis of gonoforceps. Aedeagus compressed, recurved, without hook and with well marked ventral lobes.

Sexual dimorphism: The last two male sternites are orange, other sternites are completely brown. The last two female sternites are orange too, but the antepenultimate sternite is brown at base to orange at apex, distinct from the sharp difference of coloration in males. The posterior half of the last sternite of male has a cleft.

Differential diagnosis: Out of 14 known *Zonitodema* species, 12 possess green or blue metallic elytras. Only two other species have non-metallic yellow-orange (as pronotum) elytrae, i.e. *Z. hayekae* Kaszab, 1954 and *Z. rufipennis* Pic, 1939. The former species has testaceous legs, head not shiny and wrinkled, antennae slender and long (reaching body midlength) and hind protarsi as long as three fol-

lowing tarsomeres together. *Zonitodema rufipennis* has maxillary palps slender and longer, pronotum irregularly and sparser punctate and abdomen completely light brown. I could not compare the male genitalia of these two species, but most of the *Zonitodema* species have a phallobase quite wide, twice long as wide, and the apex of the gonoforceps slightly bilobed, more acute and not or just a little bent backwards. Thus the new species differs significatively from other species of the genus.

Holotype: ♂ **Tanzania:** Tanga province, Buiko [04°42'S 38°07'E], 400 m, 19.viii.2003, L. Friedman (SMNHTAU).

Paratypes: 2♂ 3 ♀, same data as holotype (4 specimens in SMNHTAU and 1 in MFC).

Biology: The species was collected in *Acacia* savanna probably on flowers.

SYNONYMIC NOTES ABOUT *ZONITODEMA*

The study of the holotype of *Nemognatha francoisi* Pic, 1909 from western Africa (Nigeria) in the collection of the MNHN shows that this species undoubtedly belongs to the genus *Zonitodema* (shape of head and pronotum not very transverse, second antennomere not short, spurs of hind tibiae widened) and not to *Nemognatha*. The genus *Zonitodema* was described by Péringuey in 1909, but at the same time Pic described new species in *Nemognatha*. Their tentative assignment to the *Nemognatha peringueyi* species group was done by Bologna *et al*. (2018).

Zonitodema francoisi belongs to the phenetic group with totally black pronotum and metallic elytra, which includes *Zonitodema brittoni* Kaszab, 1954, *Zonitodema nigricollis* (Beauregard, 1890) and *Zonitodema nigrithorax* Pic, 1929. After comparing the holotype of *Nemognatha francoisi* to the paratype of *Zonitodema brittoni* from the MRAC, I can conclude that they belong to the very same species on the basis of their deep similarity. Thus, the following new combination and synonymy are proposed:

Zonitodema francoisi (Pic, 1909), **n. comb.**

Nemognatha francoisi Pic, 1909: 125.
Zonitodema brittoni Kaszab, 1954, **n. syn.**

Material examined: Nigeria: "Oyo-Joruba" (holotype, MNHN). **D.R. Congo:** 18 miles SW Elisabethville [=Lubumbashi] (holotype and paratypes of *Z. brittoni*, MRAC); Lualaba (paratype of *Z. brittoni*). **Zambia:** 110 km W Solwezi, 11.xii.2007, A. Kudrna (2 specimens, MFC).

ACKNOWLEDGEMENTS

I thank Laibale Friedman (SMNHTAU) for sending me the specimens, Antoine Mantilleri and Olivier Montreuil (MNHN) and Marc DeMeyer (MRAC) for letting me study collections in their care, Cédric Alonso for taking pictures of the genitalia, and Philippe Garnier (Dijon, France) for correcting the English.

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