

A NEW SUBGENUS AND A NEW SPECIES OF *TRECHUS*
FROM ETHIOPIA
(Coleoptera, Carabidae)

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In 1973 and 1975 two zoological expeditions to Ethiopia were sponsored by the “Accademia Nazionale dei Lincei” in Rome, following a programme prepared by the late prof. Pasquale Pasquini, Director of the Zoological Institute of the University of Rome, involving research on cave, soil, interstitial and mountain faunas of central and southern Ethiopia. One of us (AVT) participated to the first expedition, from October 18, 1973 until November 22, in company of three other members of the staff of the Zoological Institute of Rome University (the late Paolo M. Brignoli, Carlo Consiglio and Vezio Cottarelli) (see Brignoli et al. 1978). The main interest of the young researcher (AVT) was to study the altimontane fauna of Carabidae and Dermaptera, and in one trip to the top of Mt. Encuolò (Enkuolo) in the Arussi region (Arsi) he found a pair of a little Trechini species, belonging to a new taxon of difficult interpretation.

For various reasons, it was possible to study this old material only recently along with other Ethiopian Trechinae, collected in the 1973 expedition, or received later by the second author (PM).

MATERIALS AND METHODS. The specimens hereby studied are deposited in A. Vigna Taglianti collection (CVT) at the Zoological Museum of the Rome University (MZUR).

The acronyms used in the table and in the description are reported as follows.

L: total length, from apex of mandibles to extremity of elytra; HMW:

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Fig. 1 – *Trechus gypaeti* n. sp. (holotype): habitus.

maximal width of head at the temporal convexity; LA: length of antennae; PL: length of pronotum, measured along the median line; PMW: maximal width of pronotum; PB: width of the basis of pronotum; EL: length of elytra, measured from scutellar basis to sutural angle; EW: maximal width of elytra; PMW/PL: maximal width/length ratio of pronotum; EL/EW: length/width ratio of elytra; EW/PMW: elytral width/pronotum width ratio; LE: length of aedeagus; AN: length of antennal articles; H: holotype; P: paratype.

The macrophotographs have been taken by one of us (PM) with a



Figs 2-4 – *Trechus gypaeti* n. sp. (holotype): fore tarsus (2); frontal furrow, eye and gena region of the head (3); pronotum (4).

digital camera Nikon D1 applied on a Nikon Labophot II binocular microscope with diaphragmed objectives.

***Trechus (Minitrechus)* n. subgen.**

DIAGNOSIS. A new subgenus of *Trechus* Clairville, 1806, with a very little, microphthalmous, depigmented type species (fig. 1), easily distinguishable from the other subgenera in the shape of male protarsus, with only one basal article dilated and dentate at the inner apex (fig. 2), not

two as in *Trechus* s. str., *Arabotrechus* Mateu, 1990 and *Atlantotrechus* Lompe, 1999. The only subgenus with one basal dilated article in male protarsus seems to be *Microtrechus* Jeannel, 1927, exclusively Nearctic in distribution, Appalachian endemic. But the new Afrotropical subgenus, presently known only from the Enkuolo Mt in southern Ethiopia, is clearly different from the latter in the shape of paramera (markedly enlarged with setae very distant at the base) (fig. 5).

In a recent paper by Pawloski (2003), some preliminary notes on Ethiopian Trechina are reported, with some undescribed species from three Ethiopian massifs (Choké, Mendebo, May Gudo) characterized by only first male protarsal segment dilated and denticulated. These species seem to belong to a new subgenus (that has never been described), possibly near to *Minitrechus* n. subgen.

TYPE SPECIES. *Trechus (Minitrechus) gypaeti* Vigna Taglianti & Magrini, 2009, n. sp.

DERIVATIO NOMINIS. The name of the new subgenus derives from the very small dimensions of the type species.

***Trechus (Minitrechus) gypaeti* n. sp.**

LOCUS TYPICUS. Ethiopia, Arussi, top of the Enkuolo Mount, m 4000 s.l.m., lat 7.36 long 39.35 (up the village Timbite, near Bekoji, Oromia Region, about 60 km South of Asella, 50 km Est of Lake Langano).

TYPE SERIES. Holotype: ♂, with original label “Etiopia - Arussi - loc. 33 bis / M. Enkuolò, vetta / m 4000 circa - 5.XI.1973 / A. Vigna leg.” (CVT). Paratype: ♀, same data as for the holotype (CVT).

<i>Trechus gypaeti</i> n. sp.	L	LA	L LA	PM W	PL	PB	PMW PL	EL	EW	EL EW	EW PMW	LE	HM W	AN 1°	AN 2°	AN 3°	AN 4°	AN 11°
Holotype ♂	2.73	1.12	2.43	0.70	0.50	0.56	1.40	1.54	1.11	1.38	1.58	0.10	0.53	0.10	0.11	0.11	0.08	0.12
Paratype ♀	2.54	1.02	2.49	0.70	0.48	0.53	1.45	1.37	1.06	1.13	1.51		0.54	0.11	0.11	0.10	0.08	0.12

DESCRIPTION. A microphthalmic *Trechus* of small size, uniform light yellow colour, total length H 2.73 mm, P 2.54 mm (fig. 1).

Head big and stout; frontal furrows complete, regular, well marked and deep; eyes rather flattened, small, of whitish colour; maximal width at temporal convexity H 0.53 mm, P 0.54 mm. Genae elongate and feebly convex, not pubescent. Head chaetotaxy without notable peculiarities

(fig. 3). Antenna short, rather thin (H 1.12 mm, P 1.02 mm), 2.43-2.49 times shorter than total body length. Clypeus with 4 setae, fore and hind edges straight. Labrum bilobate, bearing 6 marginal setae. Deep microsculpture, with polygonal isodiametric meshes.

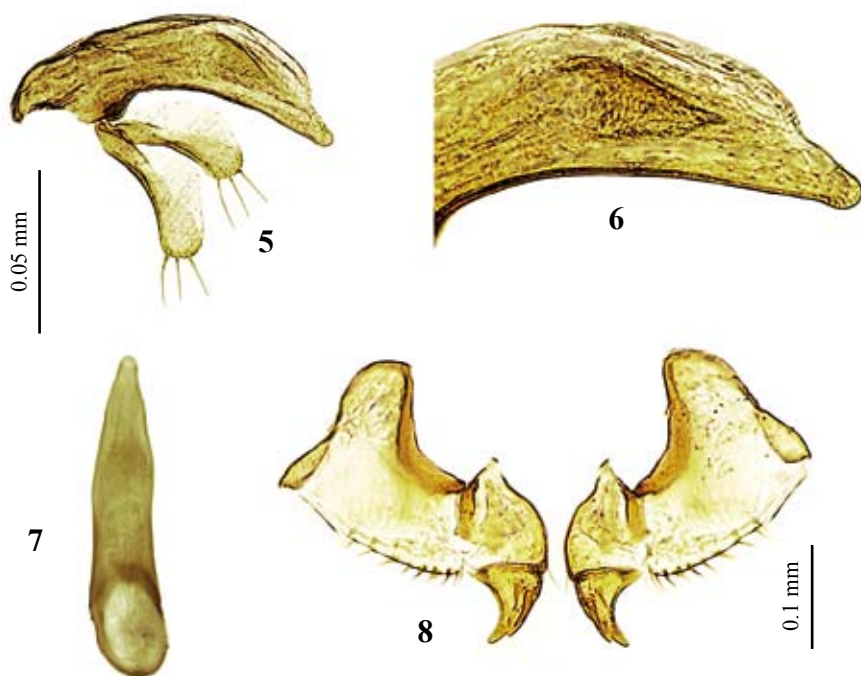
Pronotum transverse, slightly convex, clearly larger than long, glabrous, with lateral borders regularly rounded and narrowing toward the base, not sinuate. Maximal width H and P 0.70 mm; width of the base H 0.56 mm, P 0.53 mm; length along the median line H 0.50, P 0.48 mm; ratio maximal width/length H 1.40; P 1.45. Front angles obtuse, amply rounded, not prominent; hind angles obtuse as well, with blunt apex. Lateral furrows narrow and regular. Insertion of anterior pair of marginal setae (all were lost) at the first third of the pronotum, before the point of maximal width; posterior setae clearly before the hind angles. Base arcuate, narrower than fore edge (fig. 4). Deep microsculpture with polygonal isodiametric meshes, more marked at the basis and in the basal foveae. Elytra rather flattened, especially on the disk, elongated, bare. Shoulders widely rounded; basal border of elytra slightly oblique. Marginal furrow narrow and regular. Striae very thin, vanishing. Total width H 1.11 mm, P 1.06 mm; length from scutellar basis to elytral apex H 1.54 mm; P 1.37 mm. Length/width ratio between 1.13 e 1.38. Elytra width/maximal width of pronotum ratio between 1.51 e 1.58. Marginal series of umbilicate pores normal, with 4 + 4 setae; four setae of the humeral group regularly disposed and aequidistant. Two discal setae on the third stria, the foremost at the same level as the fourth humeral seta, the hindmost a little after the half of elytral length. Apical triangle without noteworthy peculiarities. Microsculpture with transversal meshes, well marked on the whole elytral surface.

Legs thin, of medium length. Only the first tarsal segment in male forelegs dilated and dentate at the inner apex, with adhesive hairs on the lower face. Fore tibiae sulcate on the whole length. First tarsal segment of hind legs slightly shorter than the subsequent three together.

Median lobe of the aedeagus in the only known male short, stout and little arcuate, 1.10 mm long, with basal bulb big and slightly curved in respect to median lobe (fig. 5). Apex of median lobe, in lateral view, narrowed and rounded; in ventral view almost straight, subtriangular (fig. 7).

Copulatory piece lanceolate, triangular, sharpened at the apex, little sclerified (fig. 6).

Paramera much enlarged, spatulate, bearing three short and stout apical setae, clearly isolated from each other (fig. 5).



Figs 5-8 – *Trechus gypaeti* n. sp.: aedeagus, left lateral view (holotype) (5); copulatory piece and apex of median lobe, left lateral view (holotype) (6); median lobe, ventral view (holotype) (7); female genital appendages (paratype) (8).

Female genital appendages with gonostyli short and curved, bearing one stout and long ensiform seta on inner edge, flanked by two smaller setae (fig. 8).

DERIVATIO NOMINIS. The name of the new species is related to the bearded vulture, *Gypaetus barbatus* (Linnaeus, 1758), a splendid specimen of which kept company to the collector on the top of Mt Encuolò.

COMPARATIVE NOTES. The main characters of the new subgenus easily isolate the new species from related forms (cfr. Jeannel 1928, 1936, 1950, 1954, 1960; Magrini & Sciaky, 2006; Pawlowsky, 2001, 2003).

ECOLOGICAL NOTES. The two specimens were collected under a single stone half buried on Mt. Encuolò top, at the basis of a *Lobelia* sp. (fig. 9). The collecting site (already depicted in Brignoli et al., 1978) lies in an open area with scattered *Lobelia* sp. and other pulvinus plants, just above the formations with *Erica*, *Senecio* and spiny thistle, in a splendid



Fig. 9 – The spot where the new species was found, on the top of Mt Encuolò (Enkuolo) (photo: A. Vigna Taglianti).

and lonely high mountain landscape haunted by klipspringer (*Oreotragus oreotragus*), bearded vulture (*Gypaetus barbatus*) and thick billed raven (*Corvus crassirostris*). The new species was found in the ground under deeply buried stones, along with another species of *Trechus* n. sp. (a lonely female belonging to a quite different species), a few *Bembidina*, *Hypsipezum mus* (Netolitzky, 1931) and a few *Agonini*, *Promegalonychus* cfr. *sphodroides* Basilewsky, 1975; *Calosoma* (*Carabophanus*) *gestroi* Breuning, 1927 (cfr. Vigna Taglianti & Bruschi 1987: 12) was also present in the area

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SUMMARY

A new subgenus and a new species of Trechus from Ethiopia (Coleoptera, Carabidae).

In the present note *Minitrechus*, a new subgenus of *Trechus*, characterized in the

male by only the first tarsal segment dilated and dentate, and by much enlarged paramera, bearing three apical setae, clearly isolated from each other, is described. The new species, *Trechus (Minitrechus) gypaeti*, is light yellow in colour, rather flattened, with little eyes, pronotum not sinuate, with fore and hind angles blunt; third elytral stria with two discal setae. The median lobe of the aedeagus is short, stout, little arcuate, with a copulatory piece triangular, lanceolate and sharpened at the tip, little sclerified. Female gonostyli short and curved, bear a stout and long ensiform seta on the inner edge, flanked by two smaller ones.

RIASSUNTO

Nella presente nota viene descritto *Minitrechus*, nuovo sottogenere di *Trechus*, caratterizzato dalla presenza del solo primo tarsomero dilatato nel maschio e da parameri molto larghi e forniti di tre setole apicali, ampiamente distanziate fra di loro alla base. La nuova specie, *Trechus (Minitrechus) gypaeti*, si presenta di colore giallo chiaro, piuttosto appiattita, con occhi ridotti, con pronoto non sinuato e con angoli anteriori e posteriori smussati; sono presenti due setole discali elitrali nella terza stria. L'edeago, corto, tozzo e poco arcuato, presenta al suo interno una lamella copulatrice triangolare lanceolata, ad apice acuminato, poco sclerificata. Gli apici degli stili femminili, corti e incurvati, presentano una grossa e lunga setola ensiforme sul margine interno, con affiancate due setole più piccole.

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