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Contribution to the knowledge of genus *Clanoptilus* Motschulsky, 1854 in the Eastern Mediterranean region (Coleoptera: Melyridae, Malachiinae)

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Abstract
This paper deals with two species of the genus *Clanoptilus* Motschulsky, 1854. A new one is described from Aegean region of Turkey; one from Azerbaijan is resurrected from synonymy and redescribed, and a neotype is proposed.

Key words: Malachiinae, Taxonomy, new species, new status, neotype.

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Introduction

The genus *Clanoptilus* is a large genus of Melyridae Malachiinae with Palaearctic distribution, with more than a hundred species listed in the catalogue of Mayor (2007). It has been treated in recent papers (*e.g.* Tshernyshev 1999; Franzini 2019), but new taxa are still being identified, and many old ones have not been subject of modern revisions. So, except for some European countries, the knowledge of this genus must be considered still far from settled.

Materials and Methods

The specimens studied are kept in the following repositories:
CFr = collection Gabriele Franzini, Milano, Italy
CGa = collection Tomasz Gazurek, Warszaw, Poland
CLi = collection Gianfranco Liberti, Uboldo, Italy
MSNG = Museo Civico di Storia Naturale "G. Doria", Genova, Italy
MSNVR = Museo Civico di Storia Naturale, Verona, Italy

Morphometric measurements were taken using an ocular micrometer mounted on a stereoscope Leica S9E. All values have been supplied with one decimal digit. The following abbreviations are used:
AL Antennal length
EL Elytron length from humerus to apex
EW Elytra width measured across both elytrons at the base
HW Head width including the eyes
IOW Interocular width, the minimum distance between the inner margins of the eyes
PL Pronotal length
PW Pronotal width
TL Total body length

Photographs have been taken by means of a Canon EOS M3 digital camera; stacking of images has been performed with Helicon Focus 8 software.

Antennal articles are considered in physiological position, i.e. facing forward: the term upper refers to the superior side (generally uniform and devoid of differentiated structures), and lower to the inferior one (in genus *Clanoptilus* often concave, serrate or triangular in some antennomeres).

Results

***Clanoptilus* (*Clanoptilus*) *caricus* sp. nov.** (Figs 1, 2)

Diagnosis

A species of *Clanoptilus* (s.str.) close to *C. parilis* (Erichson, 1840) for structure of antennae but more slender, with male having metatibiae keeled and lacking long white setae on all femora.

Material examined

Holotype male, **TURKEY**, labeled: "TR (Denizli prov.) / Yahşiler Geçidi / 37°39.7N 28°.51.5E / 1006 m 23.V.[20]10 Liberti" (white, printed); "Holotypus / *Clanoptilus caricus* n.sp. / G. Franzini des. 2024" (red, handwritten) (MSNG). Other specimens examined: 3 ♂♂, 11 ♀♀ same data as the Holotype; 3 ♂♂, 1 ♀ Turkey (Manisa prov.) / Akçakertikbeli Geç[idi] / 39°04.4N 28°.43.2E / 1257 m 24.V.[20]10 Liberti (CFr, CLi, MSNG); 1 ♂, 7 ♀♀ Turkey (Manisa prov.) / Boz Dag, m 1500 / VII.1973 leg. M. & G. Osella (MSNVR).

Description of the Holotype (Fig. 1): Body metallic bronze-green, shining, with yellow spot at elytral apex. Integument covered with two types of setae, both abundant: long black erect and short, whitish adpressed. Head sharply bi-coloured, anteriorly yellow to middle of eyes, metallic green extending up to front margin of clypeus; mandibles yellow, with some black setae on sides; apical joint of palpi and base of the first two dark; antennomeres with short white pubescence, 1–10 bicolorous, metallic green at base and part of upper side, pale on the rest; 11 black. Elytra at apex with oval pale yellow spot with black margin; sutural angle black. Knees and distal part of protibiae pale, rest of the legs metallic green; pubescence of metatibiae sparser than that of other pairs, giving them a shiny appearance. Underside metallic green, covered with white setae; mesepimera yellow.

Fig. 1 – *Clanoptilus caricus* **sp. nov**. Male Holotype habitus (scale bar: 2 mm).

Fig. 2 – *Clanoptilus caricus* **sp. nov**., Female paratype habitus (Turkey: Yahşiler Geçidi). Scale bar: 2 mm.

Head: about as wide as long, eyes moderately convex. Antennae reaching half of elytra; antennomere 1 conical; 2 short, transverse; 3-6 nodose, gradually decreasing in width, with lower margin sinuate; 7-10 triangular, 11 elongate oval.

Thorax: pronotum slightly transverse, 1.2 times wider than long, with a distinct raised margin throughout the base; hind angles strongly reflexed.

Elytra: parallel, about three times longer than wide, rugose, excavate at apex, with upper margin of excavation triangular, pointed, bearing a bunch of long black strong setae. Appendix of excitators straight, slightly protruding from apex of elytra, with a row of black setae on inner side at apex.

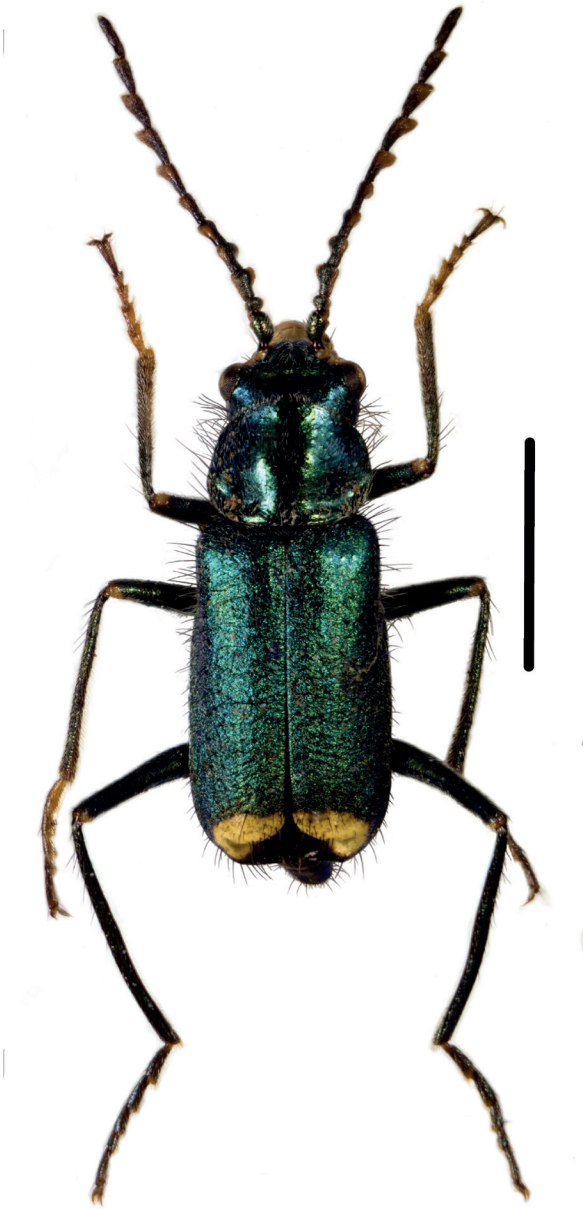

Fig. 3 – *Clanoptilus obconicus* (Abeille de Perrin, 1891) **stat. nov.** Neotype habitus (Azerbaijan, Yardımlı rayonu). Scale bar: 2 mm.

Legs: very slender; tibiae straight, thin and rounded, metatibiae with longitudinal keel on whole length of posterior side.

Abdomen: apical tergite rounded at apex.

Measurements: TL 5.5 mm; HW 1.4 mm; IOW 1.0 mm; AL 3.7 mm; PL 1.4 mm; PW 1.5 mm; EL 3.5 mm; EW 1.8 mm.

Female (Fig. 2): Differs from the male for legs and antennae proportionally shorter, apex of elytra simple, metatibiae without keels, and shape of antennomeres: 3 triangular, 4-6 almost rectangular, with lower margin of 4 and 5 slightly sinuate.

Variability. Body length of examined specimens ranges from 4.5 mm to 5.5 mm in males, 5.5 mm to 6.5 mm for females. No significant variation has been observed in colour pattern.

Etymology. The adjective *caricus* is derived from Caria (turkish Karya), ancient name for the region where the new species has been collected.

Distribution. The new species is so far known from Manisa and Smirne provinces, in the Aegean part of Turkey.

Discussion

C. caricus **sp. nov.** belongs to subgenus *Clanoptilus,* because of the well-developed excitators at apex of elytra. Using the key to *Clanoptilus* of Evers (1985), the new species falls near couplet 70, having antennomere 1 conical. The nearest species by locality is *C. ambiguus* (Peyron, 1877), that is stouter, has antennomeres 3-7 with lower side almost straight, not sinuated; *C. anatolicus* Wittmer, 1987 has bicoloured pronotum, shorter legs, yellow area at apex of elytra much larger and different shape of antennomeres 3–7. Another close relative seems *C. parilis* (Erichson, 1840) from Sicily, that has very similar antennae and apex of elytra. However, both sexes of of *C. parilis* are much stouter, males have white long bristles on protibiae, and lack keels on metatibiae, while *C. caricus* **sp. nov.** is slender, male lacks white bristles on protibiae and has keels on metatibiae. The females look very close to those of *C. ambiguus,* but are slenderer, and have pale spots at knees of fore legs.

Clanoptilus* (*Clanoptilus*) *obconicus (Abeille de Perrin, 1891) **stat. nov.**

Malachius geniculatus var. *obconicus* Abeille de Perrin, 1891 is currently treated as a junior synonym of *Clanoptilus geniculatus* (Germar, 1824). Abeille de Perrin (1891) characterized this taxon after memory: «*Enfin, j'ai eu entre les mains, malheureusement à des intervalles éloignés, deux mâles absolument identiques à ceux de* M. geniculatus*, sauf les points suivants: ils avaient les genoux concolores, les antennes noires, sauf partie des trois premiers articles par-dessous; leur premier article antennaire était obconique et non*

cylindrique. Ces caractères sont évidemment des plus sérieux et ordinairement spécifiques. Mais, comme je n'ai plus ces mâles sous les yeux, je me contente de les désigner sous le nom de var. obconicus*, jusqu'à plus amples renseignements.* [...] M. obconicus *a pour patrie Lenkoran, port russe sur la mer Caspienne* [nowadays Lənkəran*,* in Azerbaijan]*, non loin des frontières de la Perse (Dr Martin)*.

Krauss (1902) basically repeated the Abeille de Perrin's (1891) diagnosis but suggested that *obconicus* should be treated as a proper species: "*var.* obconicus *Ab. aus Lenkoran [...], von der Abeille nur zwei ♂ kannte, scheint eine eigene Art zu sein*". He did not add any first-hand information, though, neither did Greiner in his Catalogue (1932), treating it as a variety. After a long absence of new data, the synonymy with *C. geniculatus* was published by Mayor (2007). The synonymy has been re-stated in several catalogues and regional faunas, e.g. Plata-Negrache (2012), Mirutenko & Ghahari (2016), Mirutenko (2018), and no new information has become available in recent years.

During the study of a batch of palaearctic Malachiinae of the collection of Tomasz Gazurek (Warsaw, Poland) the writer spotted two male specimens from Talysh Mountains (Azerbaijan) belonging to genus *Clanoptilus* Motschulsky, 1854 but apparently not matching any of the taxa known for the area. At a closer examination, a possible correspondence was found in *Malachius geniculatus* var. *obconicus,* as the two specimens bore resemblance to *C. geniculatus,* and had antennomere 1 conical, not cylindrical. They did not fit completely with original Abeille de Perrin's (1891) diagnosis, having pale spots at knees and all antennomeres partly pale, not only the first three; however, considering that Abeille de Perrin (1891) did not have the specimens available at time of description and he drew it from memory, the shape of antennomere 1 and the close distance between Lenkoran and Talysh Mountains seem sufficient elements to both identify them with Abeille de Perrin's (1891) taxon name, and confirm their status as a valid species. To preserve stability and universality in the usage of the name in the sense proposed here, it is deemed necessary to establish a Neotype under Article 75 of the International Code of Zoological Nomenclature.

Materials examined

1 ♂ "**AZERBAIJAN**, Yardımlı rayonu \ 38°52'N 48°6'E 1890 m \ Talysh Mountains 3 km NW \ of Üzyübaşı Mt \ 15.V.2014 \ leg. Andrzej Lason", "slope with oak-maple forest \ coll. Andrzej Lason 62860" "NEOTYPUS\ *Malachius obconicus* \ Abeille de Perrin 1891 \ G. Franzini 2023 des." (red, handwritten). The Neotype is deposited in the collection of MSNG. This institution maintains a research collection, with proper facilities for preserving name-bearing types, and makes them accessible for study. 1 ♂ "Azerbaijan, Yardımlı rayonu \ 38°52'N 48°6'E 1930 m \ Talysh Mountains 2 km NW of \ Üzyübaşı Mt \ 26.V.2013 \ leg. Andrzej Lason", "mountain meadow \ flowers\ sweeping \ coll. Andrzej Lason 57837", "*Clanoptilus obconicus* \ (Abeille de P. 1891) \ det. G. Franzini 2023" (CGa).

Diagnosis

A species of *Clanoptilus* (s.str.) close to *C. abbreviatus* Tshernyshev, 1998 for structure of apex of elytra but larger, with pale mesepimera, pale knees, antennomere 1 conical.

Description of the Neotype (Fig. 3)

Measurements: TL 5.0 mm; HW 1.3 mm; IOW 1.0 mm; AL 3.3 mm; PL 1.2 mm; PW 1.5 mm; EL 3.0 mm; EW 1.8 mm. Body metallic green, shining, with yellow spot at elytral apex. Integument covered with two types of setae, long black erect and short, sparse, whitish adpressed. Head sharply bi-coloured, anteriorly yellow to middle of eyes, metallic green extending up to front margin of clypeus; mandibles yellow, with some black setae on sides; apical and base of the first two joints of palpi dark; antennomeres with short white pubescence, 1–10 bicolorous, metallic green at base and part of upper side, pale on the rest; 11 black. Elytra at apex with oval pale yellow spot with black margin; sutural angle black. Front and middle tarsi, knees and distal part of fore tibiae pale, rest of the legs metallic green; pubescence of metatibiae much sparser than that of other pairs, giving them a shiny appearance. Underside metallic blue-green, covered with white setae; mesepimera yellow.

Head: antennae reaching half of elytra; antennomere 1 conical, with some long black setae at apex; 2 short, transverse; 3-6 nodose, gradually decreasing in width, with lower margin sinuate, 7-10 triangular, 11 elongate oval.

Thorax: pronotum slightly transverse, 1.2 times wider than long, with a distinct raised margin throughout the base; hind angles strongly reflexed.

Elytra parallel, about three times longer than wide, rugose, with apex not protruding and upper margin of excavation convex and rounded. Appendix of excitators straight, slightly protruding from apex of elytra, with a row of black setae at apex.

Legs very slender; tibiae straight, thin and rounded, metatibiae with longitudinal keel on whole length of posterior side.

Abdomen: apical tergite rounded at apex.

Female: unknown so far.

Discussion

C. obconicus belongs to subgenus *Clanoptilus,* because of the well-developed excitators at apex of elytra. It differs from *C. geniculatus,* its current senior synonym, in shape of antennomeres, metatibiae and apex of elytra; from *C. abbreviatus* in antennae extensively pale, pale mesepimera, and shape of antennomere 1. Using the key to *Clanoptilus* of Evers (1985), the species falls near couplet 70. It differs from *C. ambiguus* (Peyron, 1877) for the upper side of excavation of apex of elytra blunt, not protruding, and of antennomeres 3-7, sinuated, not almost parallel; *C. italicus* (Pardo Alcaide, 1967) and *C. parilis* (Erichson, 1840) have white bristles on protibiae, antennomeres 3-7 not nodose, less excavated than in *C. obconicus*, metatibiae not keeled and upper side of excavation at apex salient, not rounded. The upper side of excavation at apex of elytra resembles the one of *C. calabrus (*Baudi di Selve, 1871), which has metatibiae of male not keeled and antennae proportionally much longer with antennomeres not nodose.

The Neotype is designated here with the purpose of clarifying the taxonomic status of *C. obconicus* in the sense proposed. The characters described above differentiate it from other taxa of genus *Clanoptilus;* the original name-bearing type specimens never existed as such, as they were already lost before 1891; the Neotype is consistent with what is known of the specimens on which the original description was based, and it comes closely from their reported locality.

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