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A new species of *Mogulones* Reitter from Macedonia (Coleoptera: Curculionidae, Conoderinae)

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Abstract: *Mogulones macedonicus* sp. n. from Galichica mountains in Macedonia is here described. It is close to the morphologically similar *M. t-album* (Gyllenhal, 1837) and related species. The new species was collected on plants of the genus *Myosotis*.

Key words: Coleoptera, Curculionidae, Conoderinae, Ceutorhynchitae, *Mogulones*, new species, taxonomy, bionomics, Macedonia.

INTRODUCTION

The genus *Mogulones* Reitter, 1916 is the second most numerous one among the supertribe Ceutorhynchitae Gistel, 1848. It includes 74 species distributed all over the Palaearctic region (Alonzo-Zarazaga *et al.* 2017, Krátký & Szypuła 2018). All species, of which the bionomy is known, develop on plants of the family Boraginaceae.

The new species here described was found in high mountain habitats during collecting trips of several Czech and Polish entomologists to the Balkans, together with some other *Mogulones* species, such as *M. angulicollis* (A. Schultze, 1897), *M. asperifoliarium* (Gyllenhal, 1813), *M. aubei* (Boheman, 1845), *M. crucifer* (Pallas, 1771), *M. diecki* (C. Brisout de Barneville, 1870), *M. euphorbiae* (C. Brisout de Barneville, 1866), *M. gibbicollis* (A. Schultze, 1897) and *M. javetii* (Gerhardt, 1867). It was surprising the new species was the most common among other members of the genus.

MATERIAL AND METHODS

Measurements of the specimens were taken as follows: body length from the base of rostrum to the apex of the elytra; rostral length meant as a straight line going from the base of the curved rostrum to the rostral apex in lateral view; pronotal length from the anterior margin of pronotum to the tip of its base in front of scutellum; elytral length from the middle of a line tangent to shoulders to elytral apex. All above measurements were taken using a Novex RZ trinocular microscope with original scale under 20x magnification.

Aedeagus or spermatheca of dissected specimens were mounted using DMHF (dimethyl hydantoin formaldehyde resin) on the same card as the respective specimen, except the aedeagus of the holotype, which is mounted on a separate card.

Locality data are as written on labels; separate lines on labels are indicated by a comma, and separate labels by a semicolon; additional comments and explanations are given in square brackets. Taxonomy follows Alonso-Zarazaga *et al.* (2017).

Abbreviations of the type depositories:

BMNH	The Natural History Museum, London, United Kingdom
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
ECPC	Enzo Colonnelli private collection, Rome, Italy
JKPC	Jiří Krátký private collection, Hradec Králové, Czech Republic
JPPC	Jan Pelikán private collection, Hradec Králové, Czech Republic
JSPC	Jerzy Szypuła private collection, Wrocław, Poland
LSPC	Lukáš Sekerka private collection, Prague, Czech Republic
NMPC	National Museum, Prague, Czech Republic
PBPC	Piotr Białooki private collection, Sopot, Poland
RSPC	Richard Škoda private collection, Liberec, Czech Republic
ZIN	Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia

RESULTS

Mogulones macedonicus sp. n.
http://zoobank.org/urn:lsid:zoobank.org:act:D30E423D-5205-436F-9473-C076BCC3A17A

Type material. Holotype: Macedonia - Ohrid, PN Galičica – Lako, Signoj 13.6.2012, lgt. Jan Pelikán; 40°57.905'N, 20°49.887'E 1600-1950 m Fagetum, osmyk Myosotis sp. [black printed on white card]; HOLOTYPE, *Mogulones, macedonicus* sp. n., J. Krátký des. 2018 [black printed on red card, bottom side white] (NMPC). **Paratypes**: same locality and date as in holotype, 19 ♂♂, 24 ♀♀, J. Pelikán lgt.; 19 ♂♂, 16 ♀♀, L. Sekerka lgt.; 20 ♂♂, 56 ♀♀, R. Škoda lgt.; 2 ♂♂, 3 ♀♀: Macedonia 7.VI.2015, Ohrid PN Galičica, 5 km E of Lako Signoj, lgt. R. Škoda; 1490 m, 40°58.570'N, 20°51.578'E; 8 ♂♂, 9 ♀♀: 13.06.2015 Galicica, Nat. Park., Mt. Magaro, SW Macedonia, leg. P. Bialooki; all J. Krátký des. (BMNH, SDEI, ECPC, JKPC, JPPC, JSPC, LSPC, NMPC, PBPC, RSPC, ZIN).

Description of holotype. (Fig. 1)

Body length: 4.1 mm.

Integument and vestiture. Body completely black, only tarsal segments 3 and 4 and antennal funicle reddish-brown. Dorsal vestiture consisting of hairlike brown scales distributed on head, pronotum and elytral intervals and of oval whitish scales distributed at the base of rostrum, very sparse on frons, on disc of pronotum forming distinct longitudinal stripes, in the middle almost complete and laterally interrupted, and on elytra forming a postscutellar T-shaped spot at base of intervals 1 and 2, lateral transverse spots in the middle of the length of intervals 6-8 and a rectangular apical spot on sutural interval. These scales are also sparse on apical half of elytra, and on intervals 9 and 10 visible also on the basal half.

Underside irregularly and sparsely covered with whitish oval scales same as those on elytra, not completely concealing integument, only slightly denser on lower side of pronotum. Rostrum covered rather sparsely by light hairlike scales, darkening to brown towards apex; part of rostrum apicad of antennal insertion covered with fine brown hairs. Legs clothed with hairlike white scales mixed with same brownish ones on anterior legs, and with oval whitish scales same as those on the underside more dense on the apical half of femora, on anterior legs inwardly and on middle and posterior legs outwardly. Apical part of middle and posterior tibiae outwardly densely covered with golden-brown hairs.

Head. Rostrum 1.08 as long as pronotum, regularly curved, laterally indistinctly angled on underside at the level of antennal insertion, and slightly widened in the middle, dorsally regularly widened from base to antennal insertion, then parallel towards apex; from base to antennal insertion moderately punctured and slightly corrugated, with 3 longitudinal carinae, onwards to the apex moderately punctured, with shiny interspaces, apex smooth. Antennae inserted approximately at 2/3 of the length of rostrum; scape nearly straight, clubbed at apical third; funicle 7-segmented, segment 1 clubbed, about three times longer than wide, segment 2 subconical and as long as segment 1, from segment 3 which is about 1.5 times as long as wide, to the isodoametric segment 6 diminishing in length, segment 7 rounded; club fusiform, slightly more than twice as long as wide in the middle, about half as long as the funicle. Head slightly depressed in the middle between eyes, punctures same as on pronotum; eyes in dorsal view slightly rounded, moderately protruding from outline of head, in lateral view suboval, protruding anteriorly downwards.

Pronotum 0.72 times as long as wide, widest anteriad of middle, sides from base regularly rounded, at apical third straight and convergent, apical margin slightly wider than half of base, base broadly V-shaped, protruding toward scutellum in the middle; in lateral view slightly and regularly vaulted, anterior margin raised; disc regularly punctured, lacking antero-lateral impressions, lateral tubercles only indicated by several small granules, dorsal sulcus in the form of subtriangular basal impression, not continuing anteriorly.

Elytra 1.06 times as long as wide, widest at 1/3 of their length, longitudinaly moderately convex and only slightly convex transversally, with protruding humeral tubercles; sides regularly rounded from humeri to apex, with small and sharpened preapical tubercles on intervals 5–7 forming low elevation indistinctly protruding from elytral outline; a row of blunt granules on upper margin of interval 8 apically connected with respective elevation. Striae deep, strongly and regularly punctured, with sharp edges, with golden-brownish short hairs in each puncture. Intervals 2 times as wide as striae, flat, with 3 irregular rows of punctures.

Legs moderately long, not robust or elongate. Femora strongly dentate at about ¾ of their length on bottom margin, teeth of anterior femora with a second tip on outer margin; a second tip is also barely visible near the base of upper margin of the teeth of middle femora. Anterior tibiae straight, middle and posterior ones sinuate, posterior only very slightly; all tibiae apically regularly widened, with apical lobe on outer margin, smaller on hind tibiae, bordered by a group of strong hairs. Middle and posterior tibia with sharp triangular mucro at the apex of inner margin. Tarsi 0.74 times as long as tibiae, claws denticulate with long inner appendices.

Abdomen. Ventrites flat, ventrite 5 with preapical impression. Pygidium emarginate in the middle of apical margin and with feeble median keel, highlighted by denser oval white scales. Aedeagus widened to the apex, with V-shaped apical emargination thus forming two lateral apices, a feature unusual in *Mogulones* (Fig. 3). In lateral view, apical half of penis is strongly and almost regularly curved ventrad (Fig. 4).

Female. (Fig. 2) Body size on average larger (4.5-5.0 mm instead of 4.0-4.6 mm as in male). Rostrum longer than in male, on average 1.13 times as long as pronotum instead of about 1.08 as in male. Ventrite 5 apically not emerginate. Middle and hind tibiae without mucro.

Variability. Body length 4.0-5.0 mm. The species is only slightly variable in the number of white oval scales mixed between the dark vestiture of elytra and pronotum; white scales are sometimes present on almost all dorsal part of body and they can form small spots on basal part of interval 4, looking as a side-prolongation of the T-shaped postscutellar spot.

Diagnosis. Apart from the unusual form of its aedeagus with V-shaped apical excision forming two lateral apices, *Mogulones macedonicus*, according to its biapical teeth on anterior and middle femora and T-shaped postscutellar spot on elytra, is morphologically similar to species close to *M. t-album* (Gyllenhal, 1837) which all have aedeagus always with triangular more or less sharp apex. In particular, the here described new species differs from the other European ones of this group, namely *M. t-album*, *M. aubei* (Boheman, 1845) and *M. gratiosus* (C. Brisout de Barneville, 1869), by its broader pronotum roundly expanded at basal third, instead of being more elongate, and at the base almost parallel-sided as in all three compared species. On the other hand, *Mogulones macedonicus* differs from *M. dimidiatus* (J. Frivaldsky, 1865) by the absence of broad transversal stripe of white scales completely covering the apical half of elytra. Other species close to *M. macedonicus* are *M. cingulatus* (A. Schultze, 1897), *M. crucifer* (Pallas, 1771) and *M. aratridens* (A. Schultze, 1897), which all have completely rounded sides of pronotum instead of blunt angled sides in *M. macedonicus*, and usually cruciform instead of T-shaped white postscutellar spot. Shape of pronotum and elytra, and pattern of white scales are similar to those of *M. angulicollis* (A. Schultze, 1897) from Central and Southern Europe, a species also living on plants of the genus *Myosotis*. However, *M. angulicollis* is generally a smaller species whose size is 2.75-4.2 mm instead of 4.0-5.0 mm as in *M. macedonicus*, has the sides of pronotum protruding as to form distinct angles with sharp tip instead of blunt lateral angles of pronotum as in the new species, and has sharp apex of aedeagus.

Notes on ecology. The majority of specimens of the type series were swept in June from an unidentified species of the genus *Myosotis* (Boraginaceae) growing in open clearings surrounded by beech forest in southern part of Galichica mountains (Fig. 5). This plant is almost surely the true host of the here described species. Some specimens were occasionally swept, together with adults of *Mogulones gibbicollis* (A. Schultze, 1897), from *Gastrocotyle macedonica* (Decken & Dörfler) Bigazzi, Hilger & Selvi (Boraginaceae) growing there between the *Myosotis* plants.

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Fig. 1. *Mogulones macedonicus* sp. n., holotype, dorsal view (photo J. Krátký).

Fig. 2. *Mogulones macedonicus* sp. n., female paratype, lateral view (photo J. Krátký).

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Figs 3–5. *Mogulones macedonicus* sp. n., holotype, aedeagus in ventro-apical view (3); aedeagus in lateral view (4) (photos J. Krátký); Galichica mountains – habitat of the type-series of *Mogulones macedonicus* sp. n. (5) (photo R. Škoda).