

A new subspecies of *Carabus (Imaibius) wittmerorum* Heinert, 1978 from Mahabnir Mountains, Khyber province, Swabi district, Pakistan (Coleoptera Carabidae)

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ABSTRACT The description of a new subspecies of *Carabus (Imaibius) wittmerorum* Heinert, 1978 (Coleoptera Carabidae) from Bir Gali (District Swabi, Province Khyber, Pakistan) is given.

KEY WORDS Coleoptera; Carabidae; *Carabus*; *Imaibius*; new subspecies; Pakistan.

Received 08.06.2021; accepted 18.07.2021; published online 04.08.2021

INTRODUCTION

The *Carabus* Linnaeus, 1758 species of the subgenus *Imaibius* Bates, 1889 (Coleoptera Carabidae) are found in a geographical area extending from the Pakistan-Afghanistan border in the west and north to the mountains in the provinces of Kashmir and Himachal Pradesh in the east. In recent decades, a number of new species and subspecies have been described thanks to the exploration of new or less known areas, especially the provinces of Khyber Pakhtunkhwa, Gilgit-Baltistan, Punjab and Asad Jammu and Kashmir (Heinert 1977; Ledoux, 1977; Heinert, 1978a; Heinert 1978b; Letellier, 1979; Heinz, 1983; Heinz, 1993; Deuve, 1981; Deuve, 1982; Gottwald, 1992; Deuve & Kaláb, 2000; Kleinfeld & Reuter, 2007; Deuve, 2007; Kleinfeld, 2009). Three further species were discovered in Nepal (Mandl, 1974; Lassalle, 1985; Deuve & Schmidt, 2007).

In the summer of 2020, an area in the province of Khyber Pakhtunkhwa was surveyed that is a possible habitat for *Imaibius*, but no information was available in the literature so far. The study area in

the vicinity of Bir Gali (Beer Gali), is located in the Mahabnir Meadows, at the intersection of four districts - Haripur, Torghar, Buner and Swabi. The mountain ranges of the area, which are between 1700–2200 m, have predominantly pinewoods. The Mahabnir Meadows are located about 60 km south-east of the town of Mingora, in the vicinity of which the two species *Carabus (Imaibius) wittmerorum* Heinert, 1978, and *Carabus (Imaibius) grandharae* Heinert, 1978, were once found and described.

A small series of *Imaibius* could be caught, the specimens of which can be distinguished from *Carabus (Imaibius) wittmerorum* Heinert, 1978, occurring in the Swat Valley, by their elytra structure as well as the steel-blue reflections of the elytra and the posterior corners of the pronotum. We are describing them as new subspecies in the following lines.

RESULTS

Ordo COLEOPTERA Linnaeus, 1758

Subordo ADEPHAGA Schellenberg, 1806
 Familia CARABIDAE Latreille, 1802
 Subfamilia CARABINAE Latreille, 1802
 Genus *Carabus* Linnaeus, 1758
 Subgenus *Imaibius* Bates, 1889

***Carabus (Imaibius) wittmerorum vojtechii* n. ssp.**
<https://zoobank.org/act:69058697-0EFE-4E10-96C9-CD80E39B955A>

MATERIAL EXAMINED. Holotype male, Pakistan, Province Khyber, District Swabi, Bir Gali env., 1900 m, 03.VI.2020, Ikram Ullah legit. The holotype is temporarily housed at the author's collection (André Schneider, Germany) waiting to be definitively deposited in a public Institution. Paratypes: 5 females and 5 males, same data as Holotype. The paratypes are deposited in the author's collections in Italy and Germany.

DESCRIPTION OF HOLOTYPE MALE. Length, including mandibles, 30 mm (Fig. 1), maximum width of elytra 12.5 mm. Colour black quite mat, with a faint steel-blue tinge between the secondary and tertiary ribs at the base of the elytra, the margins of the elytra and pronotum. Head, legs, antennae and palps black. Head elongate, quite narrow, neck of normal shape, eyes moderately prominent, tooth of mentum triangular and rounded towards the tip (Fig. 4), upper side very finely punctate. Apical segment of palpi slightly dilatated; penultimate segment of labial palpi multisetose. Second segment of antennae long about half than the third. Sides of pronotum strongly cordate, hearth-shape, broadly set throughout and strongly curved upwards, about 1.6 times as broad as long; hind angles forming triangular lobes, slightly rounded at the end, reaching slightly behind the base, also slightly curved outwards; upper side of pronotum flatly curved, rather densely and moderately coarsely punctate on all margins, median furrow of pronotum visible. Elytra oval but massive, strongly convex, sloping sharply towards the end, the widest part slightly behind the middle; elytral sculpture of slightly heterodyname type, consisting of 15 moderately raised intervals: primary intervals larger and more prominent, interrupted in more or less long and convex segments; secondary smaller, forming ribbed lines or into rows of tubercles; tertiary intervals dissolved into a range of grains. Legs of normal length; male pro-tarsi with 3 dilated and fully soled segments. Male

aedeagus (Fig. 5) typical of the species but smaller and slender, apex smaller and lesser bent upwards.

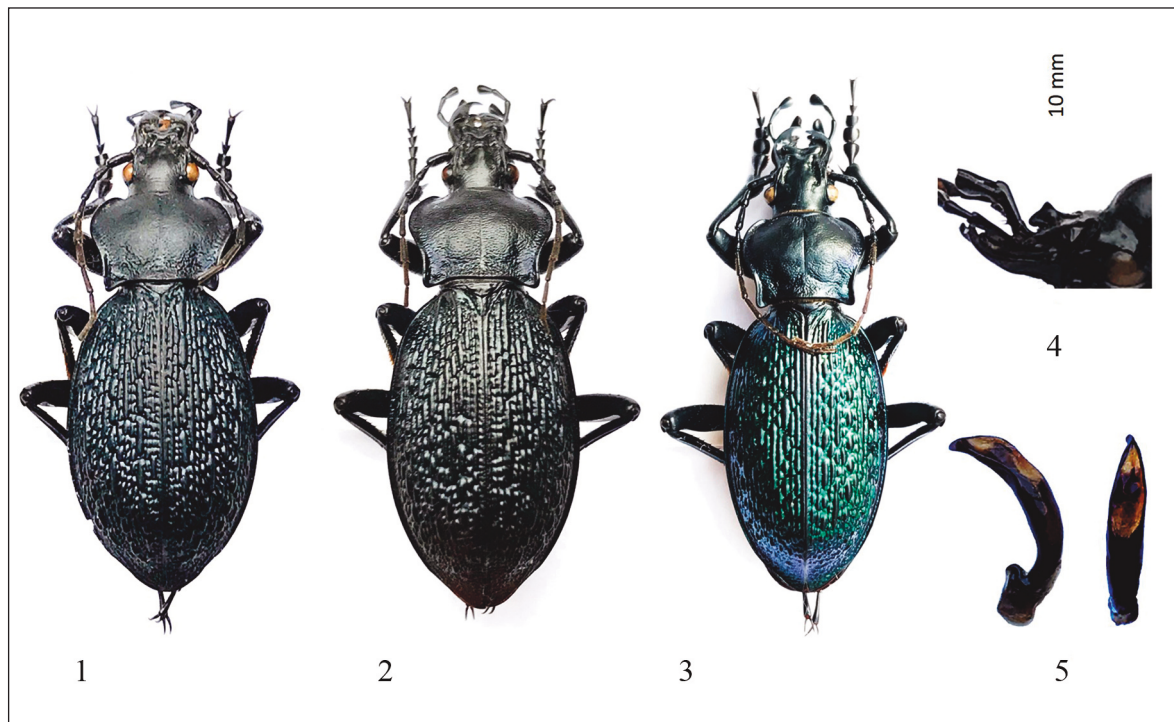
VARIABILITY. Very limited variability. It concerns the size that ranges from 28 mm to 30 mm for the males and 33 mm to 36 mm for the females. The colour is very constant, in some specimens are more pronounced the blue shimmer of the elytra and hind-angles of pronotum.

ETYMOLOGY. The new subspecies is warmly dedicated to the unforgotten Vojtěch Merta (1997–2019).

DISTRIBUTION. *Carabus (Imaibius) wittmerorum* Heinertz, 1978 is distributed in a small area of the Swat Valley of less than 100 km² (Heinz, 1983; Heinz, 1979). The area is bounded by the following locations: Miandam, Jabba and Shangla (Heinz, 1983; Deuve, 1984).

The new subspecies appears to be isolated in the Mahaban Medows, a 1700–2200 m high mountain range, on the left side of the Indus Valley and on the south side of the Barandu River.

COMPARATIVE NOTES. The new subspecies is closely related with nominate form of *C. (Imaibius) wittmerorum* Heinertz (1978), but easy to be distinguished by the following characteristics: elytra sculpture, clearly broader pronotum, clearly less coloured upper side of the elytra and lateral margins of the pronotum, male aedeagus smaller and slender, the specimens appear broader in build. Distinguishable from *C. (Imaibius) caschmirensis* Redtenbacher, 1842, by the following characteristics: less convex intervals of elytra; margins of pronotum and elytra colored; different shape of aedeagus. Furthermore, the new subspecies can be clearly distinguished from *C. (Imaibius) pachtoun marysae* Letellier, 1979, from the Swat Valley by the following characteristics (Letellier, 1979; Heinz, 1983): wider primary and secondary intervals of elytra, wider pronotum, shorter and broader shape, tooth of mentum not bluntly triangular and expanded perpendicular to the body into a pedunculate plate. Finally, the new subspecies can be clearly distinguished from *C. (Imaibius) grandtharae* Heinertz, 1978 (including subspecies *pseudograndtharae* Deuve, 1995) by the following characteristics (Heinertz, 1978; Heinz, 1983; Deuve, 1995): primary intervals less raised and interrupted in the specimens known so



Figures 1–5. *Carabus (Imaibius) wittmerorum vojtechi* n. ssp. holotype (Fig. 1); *Carabus (Imaibius) wittmerorum vojtechi* n. ssp. paratype female (Fig. 2); *Carabus (Imaibius) wittmerorum wittmerorum* Heinertz, 1978 (Fig. 3); tooth of mentum (Fig. 4); aedeagus in dorsal and lateral view from holotype (Fig. 5).

far; secondary and tertiary intervals more irregular and not forming ridges; wider pronotum; aedeagus broader and clearly blunter ending; shape larger and broader.

ACKNOWLEDGEMENTS

We are grateful to our colleague Ikram Ullah for planning and carrying out the research trip in Pakistan, despite the difficult conditions during a lockdown triggered by the Covid 19 pandemic. Sincere thanks go to Ms Senta Kühnhardt for her support in organizing the project.

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