Elytra, Tokyo, **24** (1): 1–4, May 15, 1996

Notes on *Carabus* (*Teratocarabus*) *azrael* (Coleoptera, Carabidae) with Description of a New Subspecies

Yûki IMURA

Department of Gynecology, Tôkyû Hospital, Kita-senzoku,
1–45–6, Ôta-ku, Tokyo, 145 Japan

Abstract *Carabus mizunumaianus* IMURA is downgraded to a subspecies of *Carabus* (*Teratocarabus*) *azrael* SEMENOV-TIAN-SHANSKIJ et ZNOJKO, and a new subspecies of the latter is described from the southern part of Liaoning Province, Northeast China, under the name of *gaizhouensis* nov. The male of the same species is described for the first time.

Carabus azrael is one of the most poorly known species of the genus *Carabus* (s. lat.), described by SEMENOV-TIAN-SHANSKIJ et ZNOJKO (1932, p. 215) based on a single female specimen collected from San-dzjao-dze (Sandaohezi at present, about 75 km distant to the north from Mudanjiang of Southeast Heilongjiang Province, Northeast China). It is a very strange carabid beetle in having a combination of marked cychrization of the mouth-parts and dark purplish colour of the dorsal surface with the elytral margins metallic reddish, and a new subgenus was erected for it by the same authors at the same time, under the name of *Teratocarabus*. Later, in 1991 (p. 277), I described a taxon *Carabus mizunumaianus* as a new species belonging to the subgenus *Cychrostomus*, also based on a single female specimen from the eastern part of Liaoning Province. In 1994, I had an opportunity to make a comparative study between the holotypes of both the species while visiting the Zoological Institute of the Academy of Sciences, St. Peterburg, and realised that my species is conspecific with *C. azrael* though slightly different in details. The former is therefore downgraded to a subspecies of the latter in the first section of this paper. Anyway, both of these taxa seem to be very rare, and no other finding has been reported up to the present. Needless to say, the male of this strange carabid beetle has never been introduced to the science.

Recently, through the courtesy of Mr. Kiyoyuki MIZUSAWA, I was able to examine a short series of the same species collected from the eastern part of Gaizhou situated in South Liaoning. The series contained a male which must be the first for the species, and besides, the Gaizhou population was apparently different from the two known subspecies mainly in the shape of the pronotum. In the second section of this paper, I am going to describe it as a new subspecies,

with description of the male including the detailed findings of the genital organ.

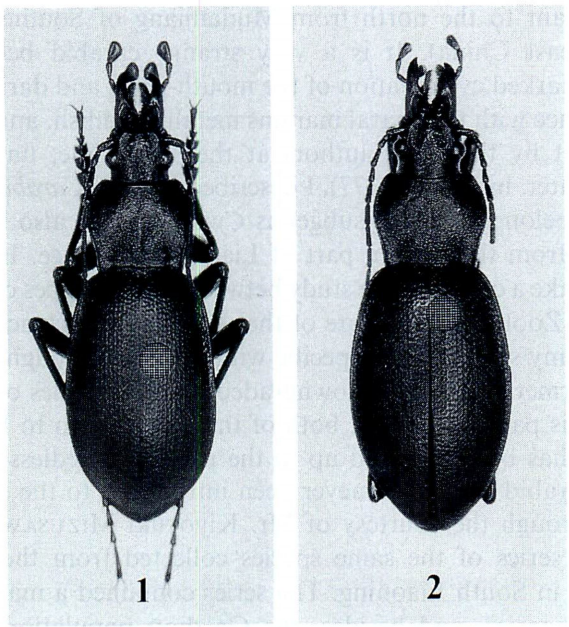
I am grateful to Dr. Shun-Ichi UÉNO of the National Science Museum, Tokyo, for his kindness in revising the manuscript of this paper. My deep gratitude is due to Dr. O. L. KRYZHANOVSKIJ of the Zoological Institute of the Academy of Sciences, St. Peterburg, for kindly permitting me to examine the holotype of *Carabus azrael*. I also thank Mr. Kiyoyuki MIZUSAWA for his kind assistance in giving me an opportunity to examine the specimens necessary for this study.

1. ***Carabus* (*Teratocarabus*) *azrael mizunumaianus*** IMURA, stat. nov.

Carabus (*Cychrostomus*) *mizunumaianus* IMURA, 1991, Elytra, Tokyo, **19**, p. 277; type locality: Shuidong, Xiaoshi, Benxi Xian, East Liaoning, Northeast China.

Closely allied to the nominotypical subspecies, but discriminated from it mainly by having differently shaped pronotum, which is a little more transverse (PW/PL 1.48), with the widest part being situated a little more backwards.

Specimen examined. 1♀ (holotype of *Carabus mizunumaianus*), Shuidong, Xiaoshi, Benxi Xian, East Liaoning, Northeast China, 12～18–VII–1990, in coll. NSMT.



Figs. 1–2. *Carabus* (*Teratocarabus*) *azrael gaizhouensis* IMURA, subsp. nov., from Gaizhou, South Liaoning, Northeast China; 1, ♂(allotype); 2, ♀(holotype).

2. ***Carabus* (*Teratocarabus*) *azrael gaizhouensis*** IMURA, subsp. nov.

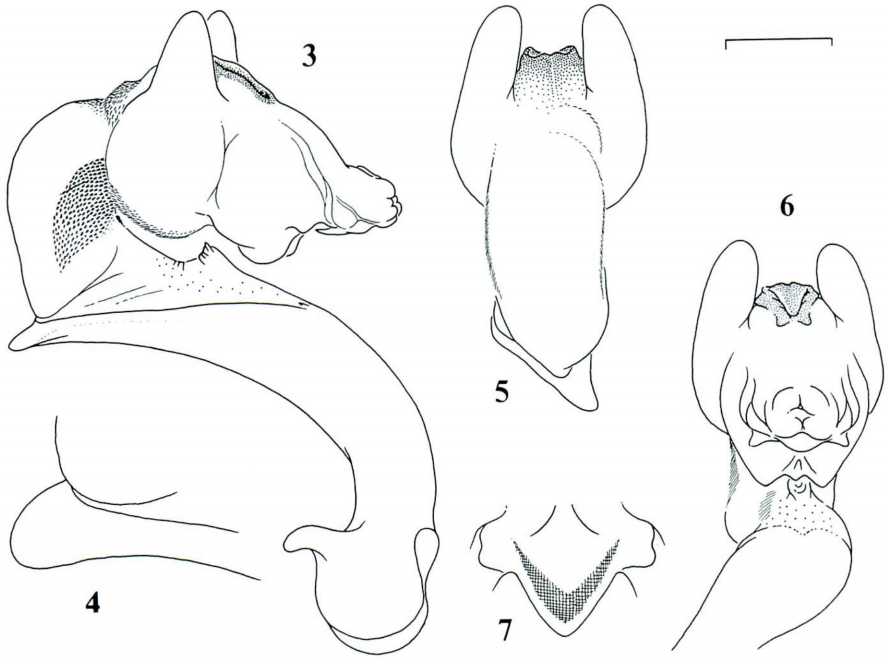
(Figs. 1–7)

Length: 23.0–23.5 mm.

This new subspecies is distinguished from the nominotypical subspecies and subsp. *mizunumaianus* IMURA by the following respects: pronotum slenderer, PW/PL 1.34–1.35 in female (1.43 in the nominotypical subspecies, and 1.48 in subsp. *mizunumaianus*); hind angles of pronotum longer and more triangularly protruded posteriad; elevated parts of elytral intervals a little wider and a little more strongly convex above; striae between intervals more weakly punctate.

Male. In comparison with female, apical segments of palpi more widely dilated, antennae a little longer, reaching basal third of elytra, shoulders a little more effaced, sides of elytra less roundly arcuate especially in basal halves, and the widest part of elytra is situated a little more backwards. Basal three segments of foretarsus dilated, with hair pads on the ventral surface.

Male genitalia. Aedeagus rather simple in outline, with the apical lobe short, robust, widely rounded at the tip, and rather strongly compressed; ostium lobe very small, unilobate, and not strongly protruded dorsad; paraligula not



Figs. 3–7. Male genital organ of *Carabus* (*Teratocarabus*) *azrael gaizhouensis* IMURA, subsp. nov.; 3, aedeagus with fully everted endophallus in right ventro-lateral view; 4, apical part of aedeagus in right lateral view; 5, endophallus in posterior view; 6, ditto in anterior view; 7, gonoporal plate in ventral view. Scale: 1 mm for 3, 5, 6; 0.5 mm for 4, 7.

developed at all; neither basal lateral lobes nor median lobe developed on endophallus, though a pair of vertical lobes at the sides of praeputial pad (I call them parapraeputial lobes) are strongly and symmetrically developed; praeputial pad not so remarkably modified, though rather strongly pigmented and slightly sclerotized along the mid-line; aggonoporius not strongly sclerotized but obviously protruded ventrad at the centre to form a triangularly shaped gonoporal plate with wide V-shaped mild pigmentation.

Type series. Holotype: ♀, Chi Shan, near Gaizhou, S. Liaoning, NE China, 1995, in coll. NSMT. Paratypes (including allotype): 1♂, 1♀, Shi-zhi-jie, E of Gaizhou, S. Liaoning, NE China, 13–VII–1995, in coll. K. MIZUSAWA.

Notes. Detailed structure of the male genital organ of this unique carabid beetle suggests that it belongs to the Multistriati (sensu ISHIKAWA, 1978), or to the Lobifera (DEUVE, 1994), and is most closely allied to the subgenus *Cychrostomus* REITTER of Qinghai and Gansu, as has readily been expected from the similarity in the external features.

要　　約

井村有希：ムラサキホソキバオサムシに関する知見と雄を含む1新亜種の記載．—— ムラサキホソキバオサムシ *Carabus* (*Teratocarabus*) *azrael* SEMENOV-TIAN-SHANSKIJ et ZNOJKO は，中国黒龙江省の牡丹江市北方にある三道河子 Sandaohezi から得られた1♀の標本にもとづいて記載されたもので，中国産オサムシのなかでももっとも知見の少ない種のひとつである．筆者は1994年，サンクト・ペテルブルクの科学アカデミー動物学研究所を訪れ，本種の正基準標本を検することができた．その結果，辽宁省東部から新種として記載された *C. mizunumaianus* IMURA は，これと同じものであろうという結論に達したので，本論文の第1節において前者を後者の亜種に降格した．また，ごく最近，辽宁省南部の盖州近郊から，これら2亜種とは形態的に異なる集団が発見されたので，第2節においてこれを新亜種として記載するとともに，これまで未知であった本種の♂に関する記載を与えた．

References

IMURA, Y., 1990. Notes on carabid beetles (Coleoptera, Carabidae) from East Liaoning, Northeast China. *Elytra, Tokyo*, **19**: 273–283.

SEMENOV-TIAN-SHANSKIJ, A., & D. ZNOJKO, 1932. Novye dannye k poznaniiou roda *Carabus* (L.) (Coleoptera, Carabidae), IV. *Dokl. Akad. Nauk. SSSR*, **1932**: 215–218.