

Some Additional Findings on the Genus *Carabus* (Coleoptera,
Carabidae) from the Dabashan Mountains of
Sichuan Province, Central China

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Abstract Three species of the genus *Carabus* (s. lat.) are newly recorded from the Dabashan Mountains at the northeastern end of Sichuan Province, Central China, with description of a new species and a taxonomic modification: *Carabus* (*Apotomopterus*) *manlius* sp. nov., *C. (Oreocarabus) ohshimaianus* DEUVE, bona sp., and *C. (O.) titanus* BREUNING. The male of *C. (Shunichiocarabus) uenoianus* IMURA is described at the same time.

In my previous papers (IMURA, 1995 a, b), I recorded seven species of the genus *Carabus* from the Dabashan Mountains at the northeastern end of Sichuan Province, Central China. Very recently, I had an opportunity to examine some specimens additionally obtained from the same mountain range, through the courtesy of Mr. Wakô KITAWAKI. The collection contains a new species belonging to the subgenus *Apotomopterus* and two species belonging to the subgenus *Oreocarabus*, i.e., *C. (O.) ohshimaianus* DEUVE and *C. (O.) titanus* BREUNING, both of the latter two are newly recorded from the Dabashan Mountains. Besides, I was able to examine the males of *Carabus (Shunichiocarabus) uenoianus* IMURA included in the same collection, which has been known so far from only two female specimens. In the following lines, I am going to record these species with necessary descriptions and some taxonomical notes.

The abbreviations used herein are the same as those explained in my previous papers.

I thank Dr. Shun-Ichi UÉNO of the National Science Museum, Tokyo, for reviewing the original manuscript of this paper. My deep gratitude is also due to Mr. Wakô KITAWAKI, Osaka, for his kindness in giving me the opportunity to examine the materials used for this study.

1. *Carabus (Apotomopterus) manlius* IMURA, sp. nov.

(Figs. 1, 5, 8)

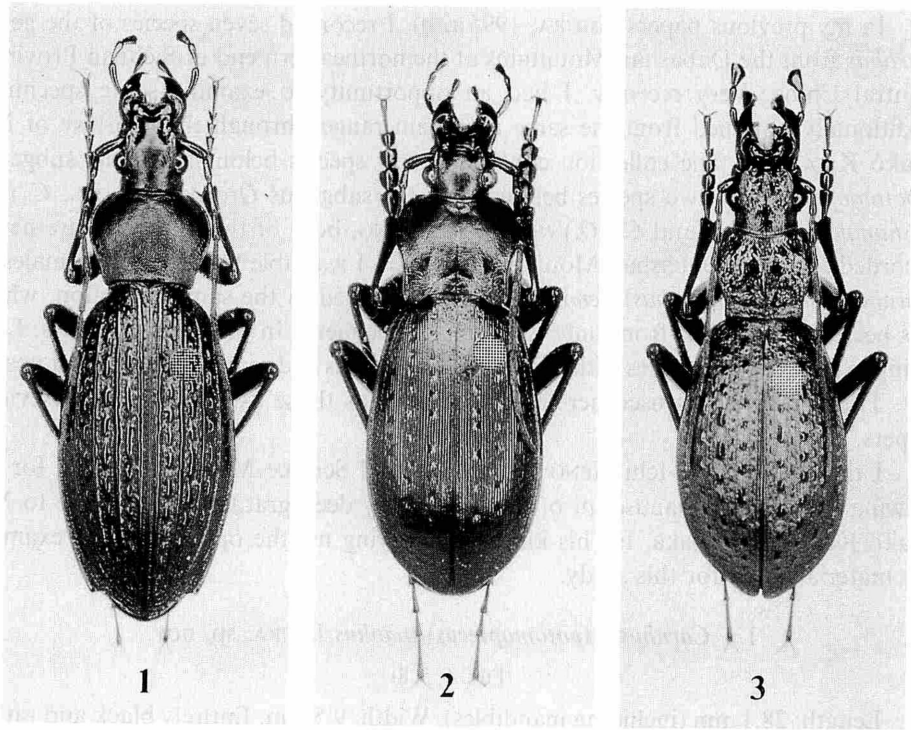
Length: 28.1 mm (including mandibles). Width: 9.5 mm. Entirely black and rather mat.

Medium- or a little small-sized species for the subgenus, with external features

similar to those of *C. (A.) telemachus* HAUSER or to *C. (A.) torquatus* CAVAZZUTI.

Head as in *C. torquatus*, but the frontal surface is smoother, much less strongly rugulose and never punctate; apical margin of labrum much more deeply emarginate than in *C. telemachus*; penultimate segment of labial palpus multisetose, with four setae on the right side and six on the left side; mentum almost the same in shape as that of *C. telemachus*, which is obviously more transverse than in *C. torquatus*; submentum bisetose; antennae rather long, extending slightly beyond the middle of elytra, which are much longer than in *C. telemachus* and almost same in relative length as in *C. torquatus*.

Pronotum more transverse than in *C. telemachus* and *C. torquatus*, with the sides more roundly arcuate near the widest part, more strongly cordate and sinuate towards hind angles which are obviously protrudent posteriad though the apices are obtusely rounded. Discal surface almost as in *C. telemachus* and never punctate as in *C. torquatus*; basal foveae much shallower than in both the species, which are hardly concave; lateral margins bisetose, one seta at a little behind the widest part and the other one before hind angles; PW/HW 1.58, PW/PL 1.34, PW/PAW 1.69, PW/PBW 1.31, PBW/PAW 1.29.



Figs. 1-3. *Carabus* (s. lat.) spp. from the Dabashan Mountains in northeastern Sichuan, Central China.—1, *Carabus (Apotomopterus) manlius* sp. nov., holotype, ♀; 2, *C. (Oreocarabus) ohshimaianus* DEUVE, ♂; 3, *C. (Shunichiocarabus) uenoianus* IMURA, ♂.

Elytra shorter and robuster, with deep preapical emargination though a little shallower than that of *C. torquatus*; EW/PW 1.45, EL/EW 1.84; primary tubercles much narrower and smaller than in *C. telemachus*, and rows of granules on the tertiary intervals much less prominent than in both the species; prepisterna more minutely and coarsely punctate; metacoxa trisetose; sternal sulci completely and prominently carved.

Tarsi a little longer and slenderer than in both the species.

Male unknown.

Holotype: ♀, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, V~VII–1995, in coll. NSMT.

Derivatio nominis. *Manlius*, the name of this new species, comes from an old family name of the Roman, and is well-known to be dubbed “*Torquatus*” which is the name given to the allied species distributed in Guangxi Province.

2. *Carabus (Oreocarabus) ohshimaianus* DEUVE, 1988, bona species

(Figs. 2, 11, 12)

Carabus (Oreocarabus) ohshimaianus DEUVE, 1988, L'Entomologiste, **44**, p. 324: type locality; Chine, Hubei, Shennongjia.

Carabus (Oreocarabus) reitterianus ohshimaianus: DEUVE, 1994, Bibliothèque Entomologique, **5**, p. 165.

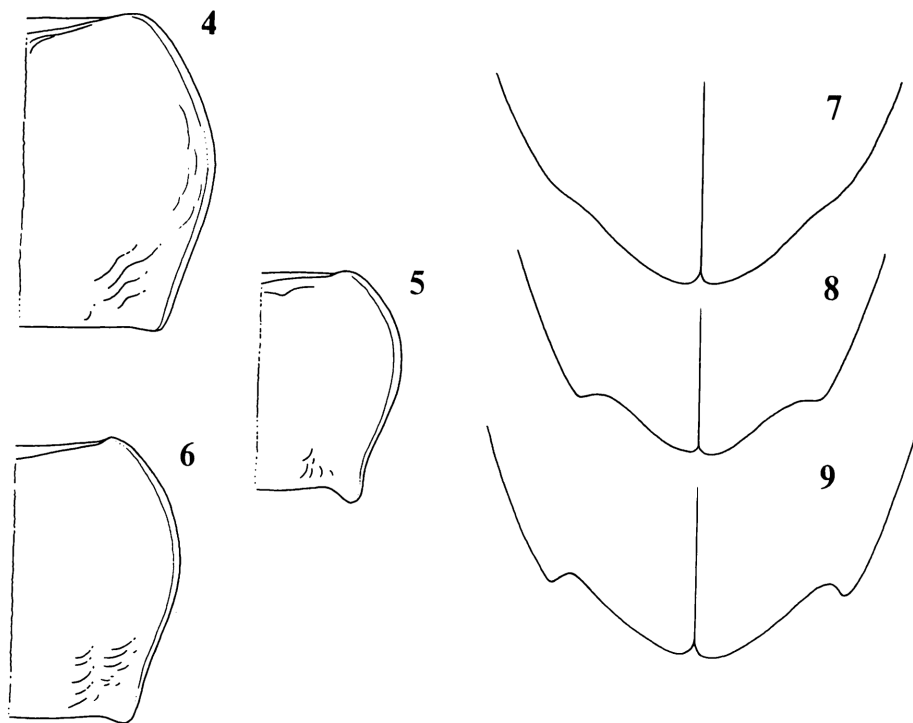
Male genitalia. In contrast with similarity in the external features, basic structure of the endophallus of this taxon is much different from that of *C. reitterianus*; median lobe not developed at all, while it is strongly and triangularly projected in *C. reitterianus*; praeputial pad much more characteristic in shape, strongly protrudent dorsad to form a plate-like sclerite with marked pigmentation, the centre of which is deeply guttered, though it is quite simple and rather atrophic in *C. reitterianus*; apical part of endophallus much more elongate than in *C. reitterianus*, though the aggonoporus is not sclerotized as that of *C. reitterianus*.

Specimen examined. 1 ♂ (27.7 mm in length including mandibles), 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, V~VII–1995, in coll. Y. IMURA.

Notes. Although DEUVE (1994, p.165) downgraded this taxon to the subspecies of *C. reitterianus* according probably to similarity in the external and aedeagal features, endophallic structure of the former is much different from that of the latter as mentioned above, and therefore *C. ohshimaianus* should be regarded as a distinct species. It is worth noting that some Chinese species belonging to the subgenus *Oreocarabus*, e.g., *C. titanus* BREUNING and *C. kitawakianus* IMURA, often show such a remarkable modification in the endophallic structure, and it will be necessary to discuss their systematic relationship in due consideration of the characteristics of the same organ.

3. *Carabus (Oreocarabus) titanus* BREUNING, 1932

Carabus (Oreocarabus) titanus BREUNING, 1933, Best.-Tab. eur. Coleopt., (107), p. 729: type locality; China,



Figs. 4–9. Pronotum (4–6, ♀, right half in dorsal view) and apical part of elytra (7–9, ♀) of *Carabus (Apotomopterus)* spp. — 4 and 7, *Carabus (Apotomopterus) telemachus* HAUSER, from Mt. Heng Shan, Hunan; 5 and 8, *C. (A.) manlius* IMURA, sp. nov., from Dabashan Mts., NE Sichuan; 6 and 9, *C. (A.) torquatus* CAVAZZUTI, from Mt. Miao'er Shan, NE Guangxi.

Prov. Hupe, Tan-che-chan.

Specimen examined. 1♀ (36.5 mm in length including mandibles), 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, V~VII–1995, in coll. Y. IMURA.

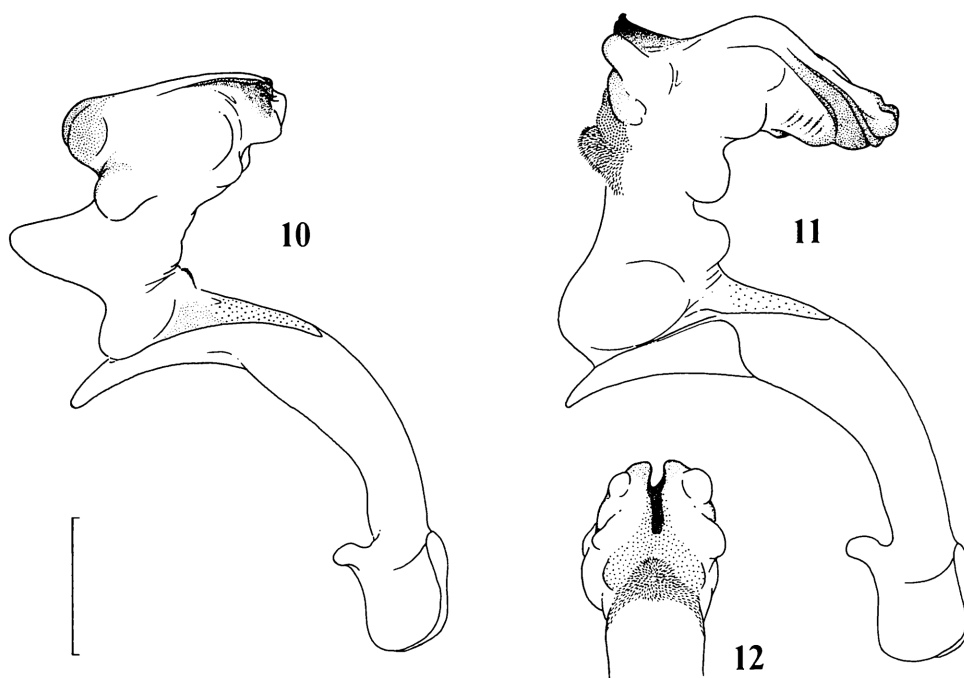
Notes. So far as judging from the external features of the single female specimen, the Dabashan race is not so remarkably different from the population of Shaanxi and Gansu Province, and belongs presumably to the nominotypical subspecies.

4. *Carabus (Shunichiocarabus) uenoianus* IMURA, 1995

(Figs. 3, 13–16)

Carabus (Shunichiocarabus) uenoianus IMURA, 1995, Spec. Bull. Jpn. Soc. Coleopterol., Tokyo, (4), p. 229: type locality; 1,600–1,900 m alt., near Bashan on the Dabashan Mountains in Chengkou Xian (Wanxian Diqu), northeastern end of Sichuan Province near the Shaanxi borders, Central China.

Male. Macrocephalism almost as in female, with the apical segments of palpi more widely and triangularly dilated. Eyes a little larger than in female. Antennae a

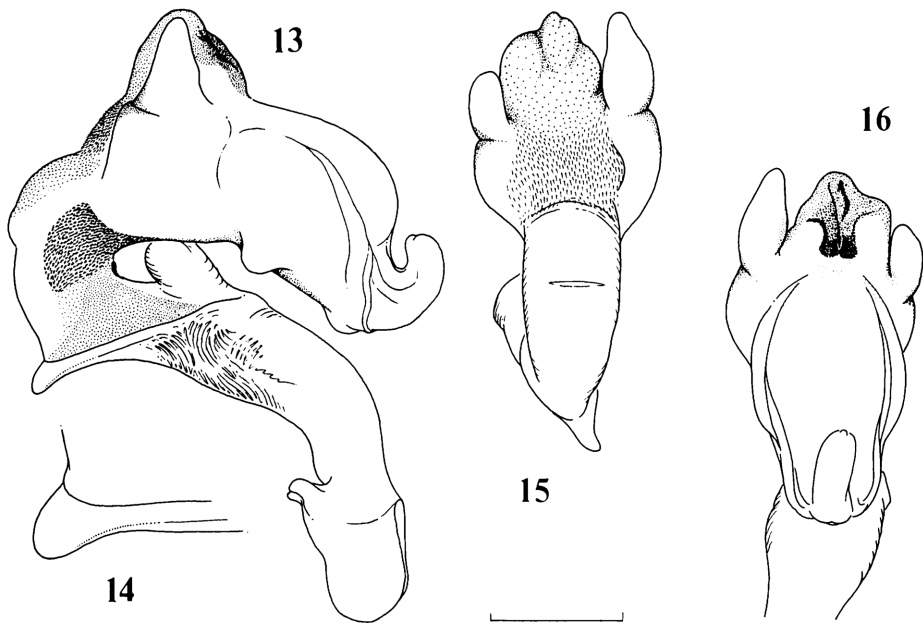


Figs. 10–12. Male genital organ of *Carabus (Oreocarabus)* spp. — 10, *Carabus (Oreocarabus) reitterianus* BREUNING, from Mt. Xinglong Shan, Gansu; 11 and 12, *C. (O.) ohshimaianus* DEUVE, from the Dabashan Mts., NE Sichuan; 10 and 11, aedeagus with fully everted endophallus in right lateral view; 12, median portion of endophallus in basal view. Scale: 2 mm.

little longer, extending slightly beyond the middle of elytra. Pronotum a little slenderer and a little less strongly cordate. Basal four segments of protarsus dilated, with hair pads on the ventral surface, though the fourth segment is obviously smaller than the basal three. Sternal sulci absent as in female.

Male genitalia. Aedeagus rather short and robust, strongly bent ventrad at the basal third, with the median portion slightly but obviously inflated at the middle before membranous preostium, and remarkably rugulose especially on the ventral surface; aedeagal apex short, rounded and rather strongly depressed laterad; ostium lobe large, robust, and unilobate, though the apex is very slightly bifurcate; endophallus rather simple in the basal portion, neither paraligula nor basal lobe is developed; praeputial pad remarkably protrudent dorsad, rather strongly sclerotized and pigmented, and asymmetrical in shape either in apical or in basal view, with the lateral lobes also asymmetrical in size, the right one being much larger than the left; aggonoporus simple and not developed at all, neither sclerotized nor protruded apicad.

Specimens examined. 3 ♂♂ (22.4–25.6 mm in length including mandibles), 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, V~VII–1995, in coll. Y. IMURA.



Figs. 13–16. Male genital organ of *Carabus (Shunichiocarabus) uenoianus* IMURA; 13, aedeagus with fully everted endophallus in right lateral view; 14, apical part of aedeagus in right lateral view; 15, endophallus in basal view; 16, ditto in apical view. Scale: 2 mm for 13, 15, 16; 1 mm for 14.

Notes. Judging from the detailed structure of the male genitalia, this unique carabid beetle doubtless belongs to the Multistriati (sensu ISHIKAWA, 1978) or to the Lobifera (DEUVE, 1994), and seems to be most closely allied to the subgenus *Pseudocranion* distributed mainly from northern Sichuan to southern Gansu, as has already been expected on the basis of external features and basic structure of the female genitalia.

要 約

井村有希：大巴（Daba）山脈のオサムシに関するいくつかの追加知見。——筆者はさきに、中国四川省の北東端にある大巴山脈から7種のオサムシを記録したが、本論文では同山脈から1新種を含む3種をあらたに記録するとともに、これまで未知であったコブキバオサムシ *Carabus (Shunichiocarabus) uenoianus* IMURA の♂を記載した。1) マーンリウストゲオサムシ *Carabus (Apotomopterus) manlius* sp. nov.：湖南省のテーレマクストゲオサムシ *C. (A.) telemachus* HAUSER や広西省のトルクアートウストゲオサムシ *C. (A.) torquatus* CAVAZZUTI に近いが、下唇基節、前胸背板、♀上翅端、ならびに上翅彫刻などの形態が異なることにより識別できる。2) オオシマミヤマオサムシ *C. (Oreocarabus) ohshimaianus* DEUVE：湖北省西部の神农架 Shennongjia から独立種として記載されたのち、記載者の DEUVE 自身によってライターミヤマオサムシ *C. (O.) reitterianus* BREUNING の1亜種に降格されていたものだが、今回、大巴山脈から記録された♂の交尾器形態を詳しく調べた結果、その内

袋はライターミヤマオサムシのそれと大きく異なることが判明した。したがって、これらふたつの分類単位は、やはり種のレベルで異なるものとみなすべきだろう。3) ティーターンミヤマオサムシ *C. (O.) titanus* BREUNING: 湖北省西部, 陝西省南部, 甘肅省南部などに分布する中国産ミヤマオサムシ類中の最大種で, 四川省においては北部の南坪県から記録されていたが, 北東部の大巴山脈にも生息していることが明らかになった。本種は地理的変異に乏しく, 大巴山脈の個体もほぼ基亜種に相当する形態を有している。4) コブキバオサムシ *Carabus (Shunichiocarabus) uenoianus* IMURA: 1995年の春に記載された時点では2頭の♀が知られていたにすぎなかったが, 同年の夏に基準産地から複数♂の♂が得られたので, 陰茎や内袋を含む諸形態の全貌を明らかにすることができた。その結果, 外部形態や♀交尾器形態などからほぼ予測されたとおり, この顕著なオサムシはニセキンオサムシ亜属 *Pseudocranion* にもっとも類縁が近いことが判明した。

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