

New or Least Known Carabid Beetles (Coleoptera, Carabidae)
from the Dabashan Mountains at the Northeastern End of
Sichuan Province, Central China

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Abstract Seven species of the genus *Carabus* and two species of the genus *Cychrus* are recorded from the Dabashan Mountains at the northeastern end of Sichuan Province, Central China. Of these, seven are newly described as follows: *Carabus* (s. str.) *pseudolatipennis bashanensis* subsp. nov., *C.* (s. str.) *vigil dabashanus* subsp. nov., *C.* (*Leptocarabus*) *yokoae chengkouensis* subsp. nov., *C.* (*Coptolabrus*) *formosus wanxianicus* subsp. nov., *C.* (*C.*) *pustulifer wakoi* subsp. nov., *Cychrus* *bispinosus dabashanensis* subsp. nov. and *C. uenoi* sp. nov.

In the summer of 1994, a long series of insect specimens were obtained by native collectors from the Dabashan Mountains stretching along the borders between Sichuan and Shaanxi Provinces in Central China, and all the examples belonging to the tribes Carabini and Cychrini were brought to me for identification and taxonomic study. The collection contains seven species of the genus *Carabus* (s. lat.) and two species of the genus *Cychrus*, and I have already described the most remarkable new species belonging to the former under the name of *Carabus* (*Shunichiocarabus*) *uenoianus* IMURA in one of my entomological papers recently published (IMURA, 1995), in view of its taxonomical importance.

In the present paper, I am going to give a list of all the remaining species included in the same collection, seven of which will be described as new to science.

The abbreviations used herein are the same as those explained in my previous papers, and all the holotypes of newly described taxa will be preserved in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Before going into further details, I wish to thank Dr. Shun-Ichi UENO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the manuscript of this paper. Heartly thanks are also due to Messrs. Wakô KITAWAKI, Osaka, and Kiyoyuki MIZUSAWA, Yokosuka, for their kind assistance.

1. *Carabus* (s.str.) *pseudolatipennis bashanensis* IMURA, subsp. nov.

(Figs. 1, 7–8)

Description. Length: 20.6–23.2 mm (including mandibles). Entirely black, though the lateral margins of elytra often bear faint bronze or dark greenish lustre. Allied to the nominotypical subspecies distributed from southwestern Shaanxi to southern Gansu, but easily distinguishable from it by the following points: 1) pronotal disc a little less strongly convex above, with the hind angles more strongly and sharply protrudent posteriad; 2) apical lobe of aedeagus shorter, almost parallel-sided and not obviously dilated towards apex in lateral view; 3) copulatory piece much wider, about twice as long as wide, whereas it is narrower and about three times as long as wide in the nominotypical form.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 25–VI–1994, in coll. NSMT. Paratypes (including allotype): 1 ♂, 10 ♀♀, same locality as for the holotype, 25–V ~ 14–VII–1994, in colls. Y. IMURA and K. MIZUSAWA.

2. *Carabus* (s. str.) *vigil dabashanus* IMURA, subsp. nov.

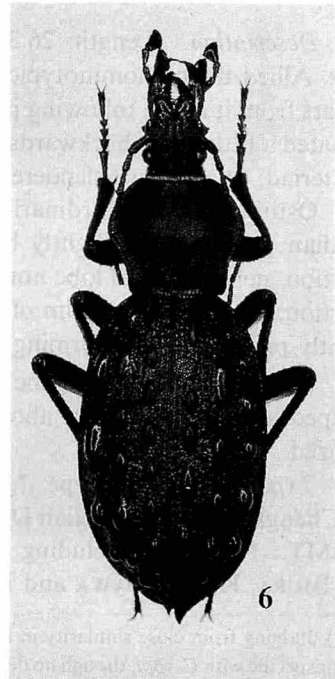
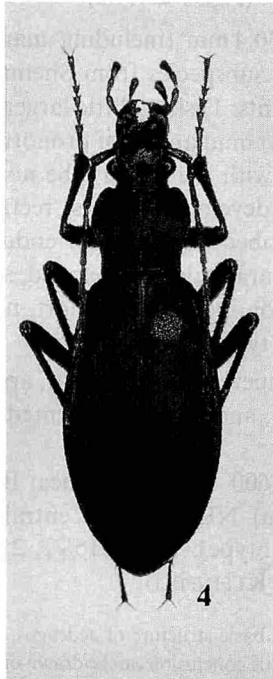
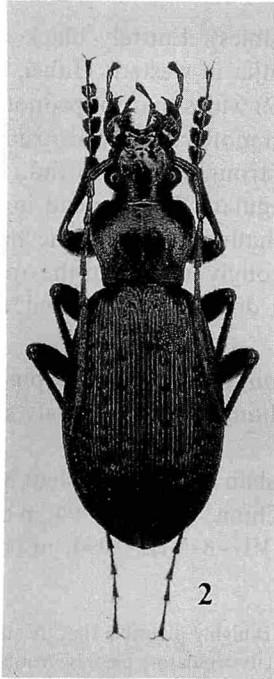
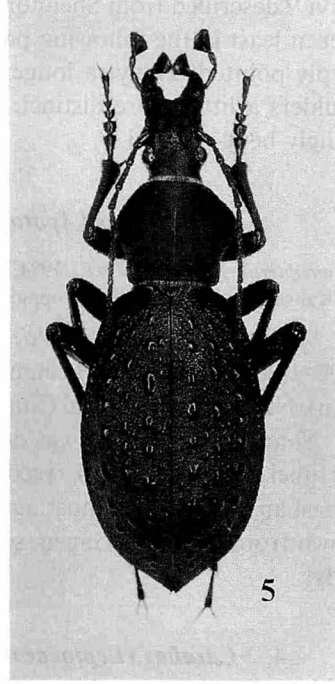
(Figs. 2, 9–10)

Description. Length: 21.4–26.8 mm (including mandibles). Entirely black, with faint bronze or dark bluish lustre. Differs from the nominotypical subspecies and subsp. *pseudoparis* DEUVE in the following points: 1) frons more minutely punctate; 2) antennae a little longer, obviously extending to the middle of elytra in male; 3) pronotal disc less strongly convex above, with the surface less strongly punctatolugulose; 4) hind angles of pronotum narrower and more sharply pointed; 5) tertiary intervals of elytra not contiguous but segmented by invasion of large primary foveoles to form the so-called chain-striae just as primary intervals; 6) apical lobe of aedeagus a little slenderer and not obviously dilated towards apex.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 25–VI–1994, in coll. NSMT. Paratypes (including allotype): 18 ♂♂, 45 ♀♀, 15–V ~ 17–VII–1994, in colls. Y. IMURA and K. MIZUSAWA.

Notes. This new subspecies is comparable also with *Carabus ohshimaorum*

Figs. 1–6. Holotypes (1–3, 5–6) and allotype (4) of *Carabus* spp. from near Bashan on the Dabashan Mountains in northeastern Sichuan, Central China. — 1, *Carabus* (s. str.) *pseudolatipennis bashanensis* subsp. nov., ♂; 2, *C.* (s. str.) *vigil dabashanus* subsp. nov., ♂; 3–4, *C.* (*Leptocarabus*) *yokoei chengkouensis* subsp. nov., 3, ♂, 4, ♀; 5, *C.* (*Coptolabus*) *formosus wanxianicus* subsp. nov., ♂; 6, *C.* (*C.*) *pustulifer wakoi* subsp. nov., ♂.



DEUVE¹⁾ described from Shennongjia of western Hubei, but the former differs from the latter at least in the following points: 1) hind angles of pronotum narrower and more sharply pointed; 2) elytra longer and slenderer, less strongly convex above, with the shoulders a little more distinct; 3) apical lobe of aedeagus shorter and a little more strongly bent ventrad.

3. *Carabus (Apotomopterus) hupeensis buycki* HAUSER, 1924

Apotomopterus Buycki HAUSER, 1924, Soc. Ent., Stuttgart, **39**, p. 6: type locality; Chinae provinciae Kansu pars meridionalis, ad oppidum Hoei-shien.

Specimens examined. 2 ♀♀ (28.5 mm and 29.7 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, 15–V–1994, in colls. Y. IMURA and K. MIZUSAWA.

Notes. This species was described by HAUSER (1924, p. 2) from “Tan-che-chan” of Hubei Province, and is recorded probably for the first time from Sichuan. The Dabashan specimens almost agree in general appearance with subsp. *buycki* HAUSER known from southern Gansu, so far as I have examined the two females used for this study.

4. *Carabus (Leptocarabus) yokoae chengkouensis* IMURA, subsp. nov.

(Figs. 3–4, 11–12)

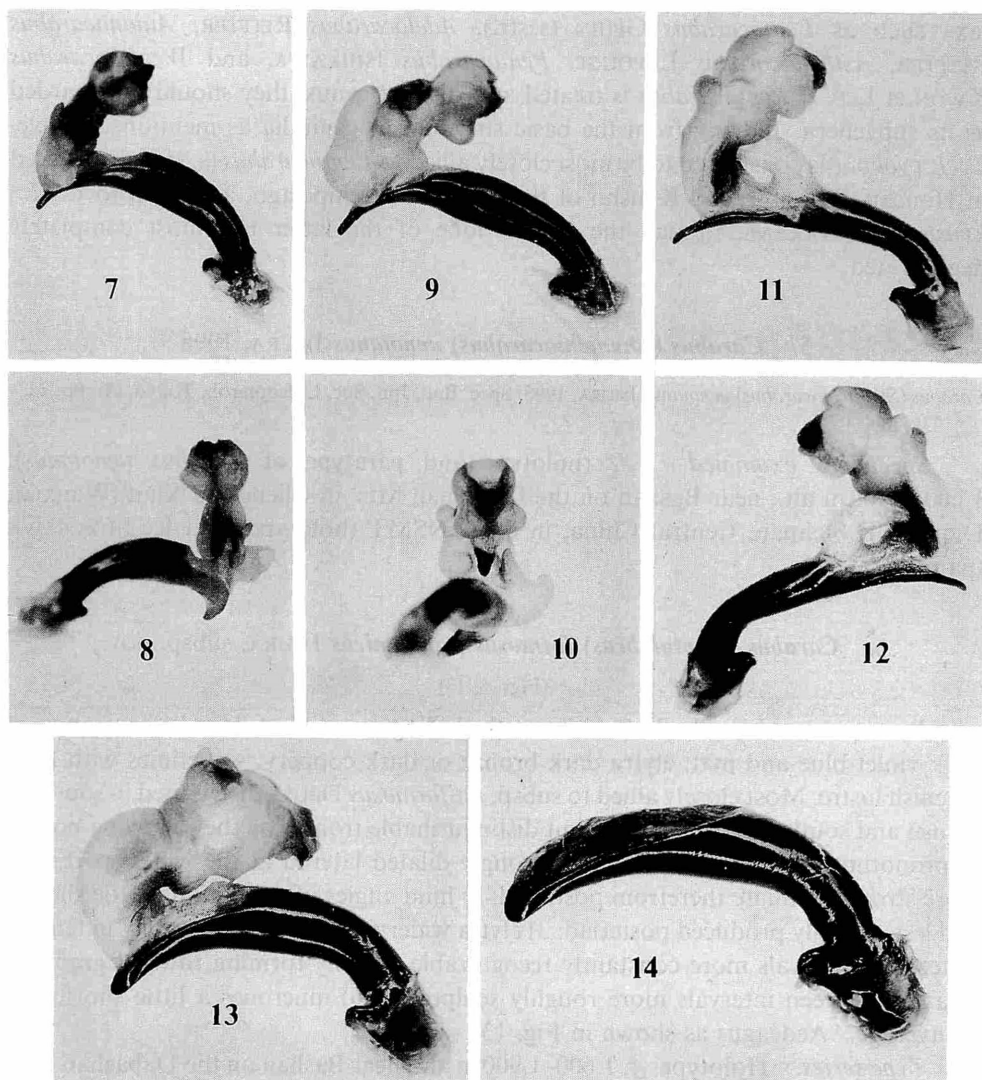
Description. Length: 26.3–30.4 mm (including mandibles). Entirely black and mat. Allied to the nominotypical subspecies from Shennongjia in western Hubei, but differs from it in the following points: 1) size a little larger; 2) widest part of pronotum situated a little more backwards; 3) hind angles of pronotum more strongly protrudent posteriad; 4) aedeagus slenderer, with the apical lobe not strongly bent ventrad.

Ostium lobe extraordinarily developed, almost rectangularly bent apicad in the median portion, and slightly bilobed at the apex; endophallus simple in the basal portion, neither lateral lobe nor paraligula is developed, strongly inflated in the apical portion, with peripheral rim of gonopore small, short, not distinctly sclerotized, and lightly pigmented, not forming a typical aggonoporus.

Femele genitalia with the inner plate of ligular apophysis very small, spindle-shaped, obviously concave above, and lightly pigmented though rather strongly sclerotized.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 14–VII–1994, in coll. NSMT. Paratypes (including allotype): 15 ♂♂, 15 ♀♀, 25–VI~8–VIII–1994, in colls. Y. IMURA, K. MIZUSAWA and F. KLEINFELD.

1) Judging from close similarity in the basic structure of aedeagus, it is highly plausible that this taxon is conspecific with *C. vigil*, though no definite conclusion can be drawn until its copulatory piece is scrutinized. Nothing was mentioned in the original description about the organ.



Figs. 7-14. Male genital organ of *Carabus* spp. from near Bashan on the Dabashan Mountains in northeastern Sichuan, Central China.—7, 9, 11, 13, 14, aedeagus with fully everted endophallus (except for 14) in right lateral view; 12, ditto in left lateral view; 8, 10, endophallus in basal view, showing copulatory piece.—7-8, *Carabus* (s. str.) *pseudolatipennis bashanensis* subsp. nov.; 9-10, *C.* (s. str.) *vigil dabashanus* subsp. nov.; 11-12, *C.* (*Leptocarabus*) *yokoae chengkouensis* subsp. nov.; 13, *C.* (*Coptolabus*) *formosus wanxianicus*; 14, *C.* (*C.*) *pustulifer wakoi* subsp. nov.

Notes. The subgenus *Leptocarabus* in the present sense includes several higher taxa such as *Leptocarabus* GÉHIN (s. str.), *Adelocarabus* REITTER, *Aulonocarabus* REITTER, *Asthenocarabus* LAPOUGE, *Pentacarabus* ISHIKAWA, and *Weolseocarabus* KWON et LEE. If *Leptocarabus* is treated as a distinct genus, they should be regarded as its subgenera. Judging from the basic structure of genitalia as mentioned above, *C. (L.) yokoae* is considered to be most closely allied to *Leptocarabus* (s. str.) distributed in Honshu, Shikoku, and Kyushu of the Japanese Archipelago, above all to *C. (L.) kyushuensis* NAKANE, though the ostium lobe of the latter is almost completely degenerated.

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

Carabus (Shunichiocarabus) uenoianus IMURA, 1995, Spec. Bull. Jpn. Soc. Coleopterol., Tokyo, (4), pp. 227–232, figs. 1–2.

Specimens examined. 2 ♀♀ (holotype and paratype of *Carabus uenoianus*), 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, in colls. NSMT (holotype) and K. MIZUSAWA (paratype).

6. *Carabus (Coptolabrus) formosus wanxianicus* IMURA, subsp. nov.

(Figs. 5, 13)

Description. Length: 33.6–40.7 mm (including mandibles). Head and pronotum dark violet-blue and mat; elytra dark bronze or dark coppery, sometimes with faint greenish lustre. Most closely allied to subsp. *latiformosus* DEUVE distributed in southern Gansu and southwestern Shaanxi, but distinguishable from it by the following points: 1) pronotum more transverse, more strongly dilated laterad at the widest part, and more strongly sinuate therefrom posteriad; 2) hind angles of pronotum a little shorter and less strongly produced posteriad; 3) elytra wider and robuster especially in female; 4) tertiary intervals more constantly recognizable, usually forming rows of granules; 5) areas between intervals more roughly sculptured; 6) mucrones a little shorter on an average. Aedeagus as shown in Fig. 13.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 30–VII–1994, in coll. NSMT. Paratypes (including allotype): 2 ♂♂, 8 ♀♀, 3–VI~20–VIII–1994, in colls. Y. IMURA and K. MIZUSAWA.

7. *Carabus (Coptolabrus) pustulifer wakoi* IMURA, subsp. nov.

(Figs. 6, 14)

Description. Length: 38.8–44.7 mm (including mandibles). Head and pronotum dark bluish violet and mat; elytra dark, with weak bronze or deep greenish lustre

which is stronger and more metallic on the marginal areas. Distinguishable from all the known subspecies by the following characteristics or by combination of them: 1) pronotum wider and robuster, strongly dilated laterad and angulate at the widest part, with the lateral margins less strongly reflexed above; 2) basal foveae of pronotum very shallow or often hardly recognizable; 3) elytra more oblong-shaped, with the sides almost parallel-sided in median portions; 4) innermost primary callosities of elytra obviously weaker than median and outermost ones; 5) tertiary intervals constantly recognizable as rows of granules. Aedeagus as shown in Fig. 14.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 30–VII–1994, in coll. NSMT. Paratypes (including allotype): 5♂♂, 1♀, 3–VI~30–VII–1994, in colls. Y. IMURA and K. MIZUSAWA.

Derivatio nominis. This new subspecies is named after Mr. Wakô KITAWAKI, Osaka.

8. *Cychrus bispinosus dabashanensis* IMURA, subsp. nov.

(Figs. 15, 18–19)

Description. Length: 15.2–20.0 mm (including mandibles). Most closely allied to the nominotypical subspecies described from the western part of the Qinling Mountains in Shaanxi Province, but distinguishable from it by the following points: 1) size a little larger on an average; 2) pronotum slenderer, widest at about the middle, and acutely narrowed therefrom towards apex; 3) spine-like hind angles of pronotum much shorter, their apices not reaching the basal margin of pronotum; 4) elytra matter, and areas between intervals more vaguely punctate; 5) prepisterna and epipleura also more vaguely punctate, and the surface of the latter obviously scattered with small granules.

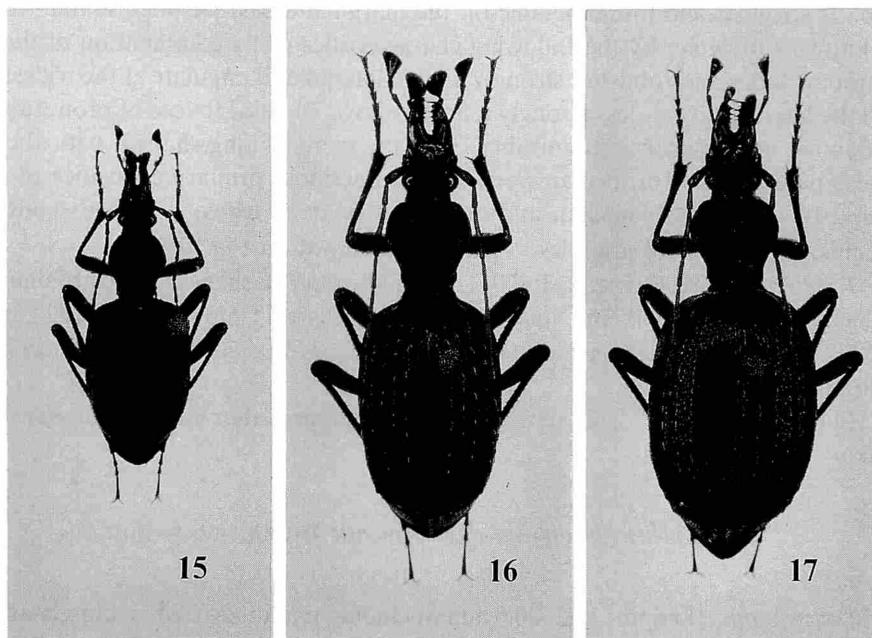
Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 14–VII–1994, in coll. NSMT. Paratypes (including allotype): 112 exs., 14–VII~14–VIII–1994, in colls. NSMT, Y. IMURA and K. MIZUSAWA.

9. *Cychrus uenoi* IMURA, sp. nov.

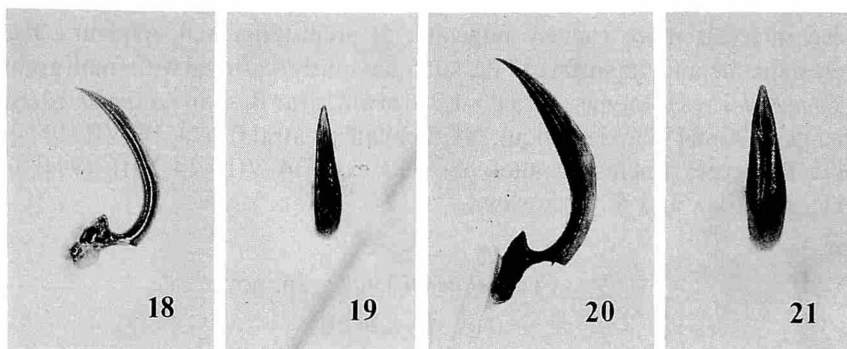
(Figs. 16–17, 20–21)

Description. Length: 21.8–26.8 mm (including mandibles). Most closely allied to *C. sinicus* DEUVE of the Qinling Mountains in Shaanxi Province, but distinguishable at first sight from it by much larger size and matter body.

Head as in *C. sinicus*, with the inner teeth of mandibles tridentate, but the basalmost tooth is completely separated from the median one, and a little shorter than the other two (in *C. sinicus*, it is nearer to the median tooth and much shorter); outer edges of head before eyes more strongly raised and widely margined to form distinct ridges; basalmost parts of frontal furrows obliquely and very deeply guttered at about the



Figs. 15–17. Holotypes (15, 16) and allotype (17) of *Cychrus* spp. from near Bashan on the Dabashan Mountains in northeastern Sichuan, Central China. — 15, *C. bispinosus dabashanensis* subsp. nov., ♂; 16–17, *C. uenoi* sp. nov., 16, ♂, 17, ♀.



Figs. 18–21. Aedeagus of *Cychrus* spp., in right lateral view (18, 20) and dorsal view (19, 21), from near Bashan on the Dabashan Mountains in northeastern Sichuan, Central China. — 18–19, *C. bispinosus dabashanensis* subsp. nov.; 20–21, *C. uenoi* sp. nov.

mid-eye level; frons more strongly depressed as a whole, with the longitudinal depression along the mid-line very deep.

Pronotum also as in *C. sinicus*, with the sides more narrowly contracted towards base, and the margins more strongly reflexed above especially near hind angles; PW/HW

1.38–1.54 (M 1.44), PW/PL 0.97–1.03 (M 1.00), PW/PAW 1.48–1.67 (M 1.57), PW/PBW 2.17–3.52 (M 2.97), PAW/PBW 1.40–2.33 (M 1.89); epipleura wider, more strongly rounded upwards, and obviously dilated posteriad in lateral view; disc matter and vaguely punctate; basal foveae deeper.

Elytra large, robust, and more oblong in shape, with the shoulders distinct; EW/PW 1.68–2.05 (1.86), EL/EW 1.53–1.64 (M 1.58); areas between intervals vaguely punctate and rather coarsely granulate; epipleura distinctly and rather coarsely scattered with small granules (they are not granulate but only punctate in *C. sinicus*).

Prepisterna much more vaguely punctate than in *C. sinicus*; abdominal sternites shallowly but obviously scattered with transversely set rows of small punctures, whereas they are not remarkably recognizable in *C. sinicus*; aedeagus with the apical portion more elongate, less strongly bent ventrad with the ventral margin almost straight in lateral view, widest at about apical third, and rather acutely narrowed therefrom to apex which is a little obtusely pointed in dorsal view.

Type series. Holotype: ♂, 1,600–1,900 m alt., near Bashan on the Dabashan Mts. in Chengkou Xian (Wanxian Diqu), NE Sichuan, Central China, 30–VII–1994, in coll. NSMT. Paratypes (including allotype): 4♂♂, 2♀♀, 14–VII~30–VII–1994, in colls. NSMT, Y. IMURA and K. MIZUSAWA.

Derivatio nominis. This remarkable new species is dedicated to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo.

要 約

井村有希：中国四川省大巴（Daba）山脈のオサムシ。——中国四川省北東端の大巴（Daba）山脈からオサムシ7種とセダカオサムシ2種を記録し、そのうちのななつを下記のごとく記載した。1) *Carabus* (s. str.) *pseudolatipennis bashanensis* subsp. nov.：基亜種に近いが、前胸背板後角がよりすどく突出し、陰茎先端と交尾片の形態が異なる。2) *C.* (s. str.) *vigil dabashanus* subsp. nov.：基亜種および亜種 *pseudoparis* DEUVE に近いが、上翅第3次原線が鎖線を形成し、陰茎先端が広がらない。湖北省の神农架から記載された *C. ohshimaorum* DEUVE（独立種として記載されたが、陰茎の基本形態は *C. vigil* とほとんど変わりがないので、後者の1亜種としての位置づけが妥当だろう）にもきわめて近いが、前胸背板、上翅ならびに陰茎先端の形態が異なる。3) *C. (Leptocarabus) yokoae chengkouensis* subsp. nov.：湖北省神农架から記載された基亜種よりも前胸背板後角がよりつよく突出し、陰茎先端はより細長く、腹側への湾曲が弱い。こんかい、基亜種の記載では述べられなかった雄交尾器内袋と雌交尾器についても検討をくわえたところ、本種はわが国に分布する狭義のクロナガオサムシ類、なかでもキュウシュウクロナガオサムシにもっとも類縁が近いらしいことが判明した。4) *C. (Coptolabrus) formosus wanxianicus* subsp. nov.：甘肅省南部から陝西省南部にかけて分布する亜種 *latiformosus* DEUVE にひじょうに近いが、前胸背板の形態が異なり、上翅基面はより粗で、第3次間室がより顕著な顆粒列として認められる。また、雌では上翅の幅がいちじるしく広がるものが多い。5) *C. (C.) pustulifer wakoi* subsp. nov.：前胸背板が最広部においてつよく側方へ突出し、辺縁はあまりつよく上方へ反らず、基部凹陥はほとんど認められないほど浅く、上翅は特徴的な箱形で、第3次間室が顆粒列としてつねに認められることなどにより、既知の諸亜種から識別される。6) *Cychnus*

bispinosus dabashanensis subsp. nov. : 秦嶺山脈西部から記載された基亜種にもっとも近いが、前胸背板は前方に向けてつよく狭まり、後角の棘状突起ははるかに短く、上翅基面、前胸背板側片および上翅側片の点刻がはるかに弱く、全体に光沢がきわめて鈍い点などにより識別はやさしい。7) *C. uenoi* sp. nov. : 秦嶺山脈の *C. sinicus* DEUVE に近いが、外部形態、交尾器形態ともに顕著な違いが認められるので、新種として記載した。本種は、中国産セダカオサムシのなかでも最大級のもので、雌では大顎を含めた体長が27mm ちかくに達する。

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