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Contribution to the Knowledge of the Carabid Fauna (Coleoptera, Carabidae) of Kangding Xian and Jiulong Xian in Western Sichuan, China

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Abstract Six species of the subtribe Carabina and a species of the genus *Cychrus* are recorded from Kangding Xian and Jiulong Xian in western Sichuan, China, with descriptions of the following one new species and three new subspecies: *Zheduocarabus jiulongensis fabricioides*, *Neoplesius kaschkarowi muganglingensis*, *N. chomae* and *Eccoptolabrus exiguus absconditus*.

Our knowledge has become rapidly enriched in the past decade of the carabid fauna of Sichuan Province and yet many records are still fragmentary and often insufficient in accuracy of the locality of each taxon. Through the courtesy of Mr. and Mrs. Roman BUSINSKÝ (Prague), I recently had an opportunity to examine a series of carabid beetles with detailed collecting data. All the specimens were obtained from the alpine zones in Kangding Xian and Jiulong Xian at the western part of the same province. The former is the region corresponding to the western continuation of the Gongga Shan massif including the Mugangling Mountains stretching from north to south in the southeastern corner of Kangding Xian, and the latter is represented by the southeastern slope of the Wannianxue massif situating near the southeastern end of Jiulong Xian. To my knowledge, nothing has been reported on the carabid beetles from both of these regions. In this paper, I am going to record six species of the Carabina and a species of the genus *Cychrus*, four of which will be described as new to science.

For the higher classification of the subtribe Carabina, I will follow the newest system proposed by myself on other pages of this volume (IMURA, 2002 b), and the abbreviations employed herein are the same as those explained in my previous papers.

Before going further, I wish to thank Mr. and Mrs. Roman BUSINSKÝ (Prague) for their kind cooperation to my taxonomical works in various ways. My deep appreciation is also due to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the manuscript of this paper.

1. *Zheduocarabus jiulongensis fabricioides* IMURA, subsp. nov.

(Figs. 1 & 5)

Description. Length: 16.4–17.8 mm (including mandibles). Allied to nominotypical *jiulongensis* DEUVE (type locality: "route entre Sabde et Jiulong, col à 40 km nord de Jiulong, zone alpine, 3,500 mètres"), but discriminated from it by the following respects: 1) greenish tinge on dorsal surface a little weaker; 2) pronotum more transverse, more strongly narrowed towards base, with the sides more strongly sinuate before hind angles which are a little less prominently protruded posteriorly; 3) elytra more acutely narrowed towards base to form more effaced shoulders; 4) elytral sculpture smoother, with the primary costae much less frequently interrupted; 5) aedeagus with the apical lobe less strongly hooked and more gradually convergent towards tip in lateral view, less prominently constricted at base in dorsal view. Membraneous part of male genitalia as illustrated in Fig. 5: OL low and not bilobed at tip; BL vaguely inflated on both sides, ML conspicuously inflated and hemispherical in shape, PRE large and almost symmetrical, PAR well-developed with obtusely rounded tips, PP asymmetrical with a hump-like inflation vaguely protruded at the left side near apical base, AL strongly inflated, PL feebly so, inflexed side of endophallus weakly and subtriangularly protruded in lateral view, AGG slightly projected bilaterally to form a pair of short terminal plates.

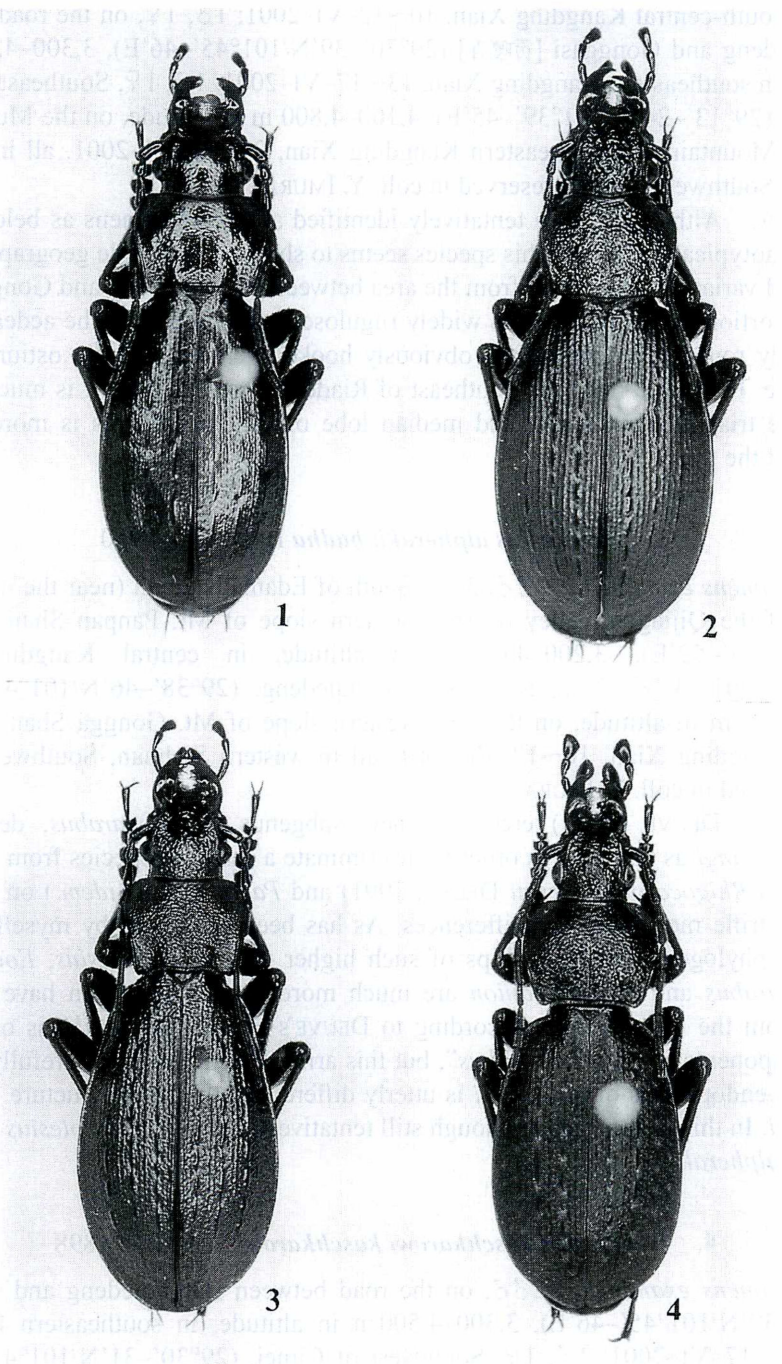
Type series. Holotype: ♂, North of Bamuqiedeng [坂母切登], (29°38′–46′N/101°42′–45′E), 3,800–4,400 m in altitude, on the northwestern slope of Mt. Gongga Shan [贡嘎山] in south-central Kangding Xian [康定县] of western Sichuan, Southwest China, 10～12–VI–2001, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Paratypes: 1♂, 2♀♀, same data as for the holotype; 2♂♂, 2♀♀, Southwest of Cimei [次梅], (29°30′–31′N/101°42′–44′E), 4,000–4,800 m in altitude, in southwestern Kangding Xian, 18～19–VI–2001; 1♂, 1♀, Municha [木尼查], East of Liuba [六巴] (29°26′–30′N/101°36′–41′E), 3,700–4,000 m in altitude, in southern Kangding Xian, 20～22–VI–2001, all preserved in coll. Y. IMURA.

Notes. According to a close similarity in the basic structure of the endophallus, I regard *jiulongensis* as belonging to the genus *Zheduocarabus* recently described by myself designating *zheduoshanensis* CAVAZZUTI as the type species (IMURA, 2002 a).

Etymology. The habitat of the present new subspecies, the high altitudinal area of the western slope of Mt. Gongga Shan, somewhat resembles that of a cute Alpine species, *Platycarabus fabricii*. The new taxon is therefore named *fabricioides*.

2. *Mianningocarabus confucius confucius* BREUNING, 1933

Specimens examined. 2♂♂, 2♀♀, South of Edamaibaercun [俄打麦巴二村] (near the uppermost stream of the Qijiagou [七家沟] Valley on the southern slope of Mt. Panpan Shan [盤盤山]) (29°46′–59′N/101°45′–52′E), 3,200–4,600 m in altitude, in central Kangding Xian, 2～9–VI–2001; 1♂, North of Bamuqiedeng, (29°38′–46′N/101°42′–45′E), 3,800–4,400 m in altitude, on the northwestern slope of Mt. Gongga



Figs. 1–4. Holotypes of newly described taxa from western Sichuan. —— 1, *Zheduocarabus jiulongensis fabricioides* subsp. nov. (North of Bamuqiedeng in south-central Kangding Xian); 2, *Neoplesius kaschkarowi muganglingensis* subsp. nov. (Southeast of Riade on the Mugangling Mts. in southeastern Kangding Xian); 3, *N. chomae* sp. nov. (Pass between E'eryizuxiang and Ning'yuan in southeastern Jiulong Xian); 4, *Eccoptolabrus exiguus absconditus* subsp. nov. (North of Bamuqiedeng in south-central Kangding Xian).

Shan in south-central Kangding Xian, 10～12–VI–2001; 1♂, 1♀, on the road between Bamuqiedeng and Gonggasi [贡嘎寺] (29°30′–39′N/101°45′–46′E), 3,300–4,500 m in altitude, in southeastern Kangding Xian, 13～17–VI–2001; 1♂, 1♀, Southeast of Riade [日阿德], (29°13′–24′N/101°39′–45′E), 4,100–4,800 m in altitude, on the Mugangling [木杠岭] Mountains in southeastern Kangding Xian, 23～30–VI–2001, all in western Sichuan, Southwest China, preserved in coll. Y. IMURA.

Notes. Although I have tentatively identified all the specimens as belonging to the nominotypical *confucius*, this species seems to show considerable geographical and individual variations. In a male from the area between Bamuqiedeng and Gonggasi, the median portion of the aedeagus is widely rugulose at the right side, the aedeagal apex is strongly rounded at the tip and obviously hooked ventrad, and the ostium lobe is very large. In a male from the Southeast of Riade, the aedeagal apex is much shorter and more triangularly shaped, and median lobe of the endophallus is more sharply pointed at the tip.

3. ***Neoplesius alpherakii budha*** BREUNING, 1950

Specimens examined. 2♂♂, 3♀♀, South of Edamaibaercun (near the uppermost stream of the Qijiagou Valley on the southern slope of Mt. Panpan Shan (29°46′–59′N/101°45′–52′E), 3,200–4,600 m in altitude, in central Kangding Xian, 2～9–VI–2001; 3♂♂, 2♀♀, North of Bamuqiedeng, (29°38′–46′N/101°42′–45′E), 3,800–4,400 m in altitude, on the northwestern slope of Mt. Gongga Shan in south-central Kangding Xian, 10～12–VI–2001; all in western Sichuan, Southwest China, and preserved in coll. Y. IMURA.

Notes. DEUVE (1997) erected a new subgenus *Cupreocarabus*, designating *Carabus huangi* as the type, in order to discriminate a series of species from those belonging to *Rhigocarabus* (*sensu* DEUVE, 1991) and *Pagocarabus* (*idem.*) on the basis of rather trifle morphological differences. As has been suggested by myself (IMURA, 2002 b), phylogenetic relationships of such higher taxa as *Neoplesius*, *Eocechenus*, *Cupreocarabus* and *Pseudocranion* are much more complicated than have been inferred from the morphology. According to DEUVE's system, *alpherakii* is one of the nine components of "*Cupreocarabus*", but this arrangement must be carefully revised, since the endophallus of *alpherakii* is utterly different in the basic structure from that of *huangi*. In this paper, I apply, though still tentatively, the genus *Neoplesius* in a wide sense to *alpherakii*.

4. ***Neoplesius kaschkarowi kaschkarowi*** SEMENOV, 1898

Specimens examined. 2♂♂, on the road between Bamuqiedeng and Gonggasi (29°30′–39′N/101°45′–46′E), 3,300–4,500 m in altitude, in southeastern Kangding Xian, 13～17–VI–2001; 1♂, 1♀, Southwest of Cimei, (29°30′–31′N/101°42′–44′E), 4,000–4,800 m in altitude, in southwestern Kangding Xian, 18～19–VI–2001; 3♂♂,

2♀♀, Municha, East of Liuba (29°26′–30′N/101°36′–41′E), 3,700–4,000 m in altitude, in southern Kangding Xian, 20~22–VI–2001; all from western Sichuan, Southwest China, and preserved in coll. Y. IMURA.

5. *Neoplesius kaschkarowi muganglingensis* IMURA, subsp. nov.

(Figs. 2 & 6)

Description. Length: 20.5–23.0 mm (including mandibles). Allied to the nominotypical subspecies, but discriminated from it by the following points: 1) sides of pronotum less strongly sinuate before hind angles which are hardly protruded posteriad; 2) basal foveae of pronotum shallower; 3) elytral intervals more prominently raised, with the secondaries and tertiaries contiguous to form low costae; 4) male genital organ as shown in Fig. 6, with apical part of aedeagus narrower and more sharply pointed at tip in dorsal view.

Type series. Holotype: ♂, Southeast of Riade, (29°13′–24′N/101°39′–45′E), 4,100–4,800 m in altitude, on the Mugangling Mountains, in southeastern Kangding Xian of western Sichuan, Southwest China, 23~30–VI–2001, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Paratypes: 3♂♂, 4♀♀, same data as for the holotype, in coll. Y. IMURA.

6. *Neoplesius chomae* IMURA, sp. nov.

(Figs. 3 & 7)

Description. Length: 23.4–23.8 mm (including mandibles). Dark reddish coppery, bearing yellow-greenish tinge on bottoms of primary foveoles and striae of elytra. Appendages black.

Head as in the other members of the same genus, with moderately concave frontal furrows and strongly rugoso-punctate vertex; retinaculum of mandible bidentate, with the anterior tooth shorter than the posterior on both sides; terminal segments of palpi not strongly dilated in male; penultimate segment of labial palpus bisetose, though exceptionally trisetose on the left side of the paratype specimen, maybe due to mal-formation; median tooth of mentum shorter than lateral lobes, with the apex triangularly pointed and produced ventrad; submentum asetose; antennae reaching the basal third of elytra in male.

Pronotum subquadrate, wider than long, widest near apical fourth and much more acutely narrowed towards apex than towards base; PW/HW 1.31–1.34, PW/PL 1.38, PW/PAW 1.35–1.43, PW/PBW 1.26–1.35, PBW/PAW 1.00–1.14, apical margin moderately or rather deeply emarginate, front angles obtusely rounded and not protruded anteriad; lateral sides gently rounded in front and weakly sinuate towards hind angles which are weakly or rather prominently produced posteriad with rounded tips; disc weakly convex above, with the surface remarkably wrinkled; basal foveae not so large though rather deep; median longitudinal line narrow but clearly impressed throughout;

two pairs of lateral setae inserted on both sides, one near the middle of pronotum and the other before hind angles.

Elytra elongate oval, widest at about apical third, and much more gradually narrowed towards bases than towards apices with strongly effaced shoulders; EW/PW 1.57–1.65, EL/EW 1.57–1.67; sculpture triploid heterodyname — primaries the widest, rather regularly segmented by small primary foveoles to form rows of moderately raised costae; secondaries narrower than the primaries and longitudinally contiguous, frequently scattered with large granules; tertiaries the weakest, indicated by irregularly set rows of large granules; umbilicate series indicated by irregularly and rather sporadically set rows of granules with various sizes.

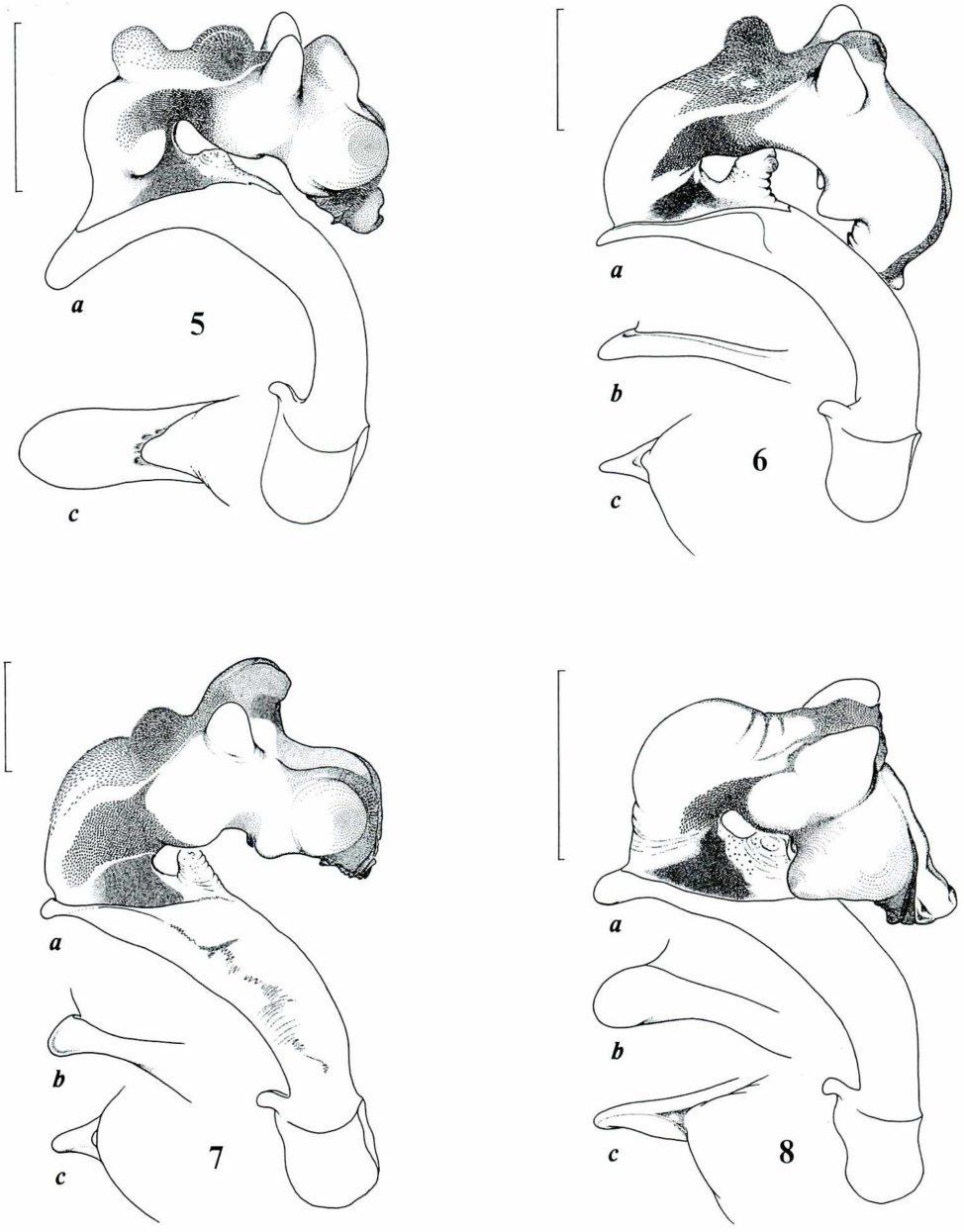
Episterna and sides of sternites almost smooth, sternal sulci unrecognized; metacoxa tri- to quadrisetose; basal four segments of male foretarsus dilated and haired on the ventral surface.

Male genitalia as shown in Fig. 7, aedeagus robust, hardly arcuate throughout, subcylindrical in median portion, and rather abruptly narrowed apicad; apical lobe of aedeagus very short, weakly hooked ventrad, rather strongly compressed right laterad, and obtusely rounded at tip; OL medium-sized and faintly bilobed at tip; endophallus with the ligulum indicated by longitudinally set rows of granules to form a narrow ridge, neither BL nor ML developed, PRE moderately inflated, not bilobed and symmetrical, PAR prominently protruded and asymmetrical (right lobe a little larger than the left), PP large, symmetrical and strongly protruded dorsad, AL weakly inflated, PL well-recognizable though small, AGG not remarkable; inflexed side of endophallus with a small pigmented projection before the middle.

Type series. Holotype: ♂, Southwestern side of the Pass (28°47′N/101°58′E; on the southeastern slope of Mt. Wannianxue [万年雪]) on the road between E'eryizuxiang [俄尔彝族鄉] and Ning'yuan [宁源], 2,900–4,100 m in altitude, in the southeastern end of Jiulong Xian [九龙县] near the Mianning Xian [冕宁县] border, of western Sichuan, Southwest China, 17～18–VII–2001, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Paratype: 1♂, same data as for the holotype, in coll. Y. IMURA.

Notes. The present new species is readily discriminated by characteristically shaped aedeagus from such allied species as *kamensis* SEMENOV, *kaschkarowi* SEMENOV, *tatsienlui* BREUNING (incl. *krali* DEUVE), *panda* DEUVE, *trachynodes* BATES and *morvanellus* DEUVE, all bearing much slenderer and more evidently arcuate aedeagus.

The new species should also be compared with the two problematical taxa, that is, "*Carabus*" *hummelioides* and "*C.*" *bruggeianus* both described by DEUVE. The former was described as belonging to the subgenus *Pagocarabus* from "Tibet, Qarchang, 2,300m" based upon a single female specimen preserved in the Academia Sinica of Beijing. So far as I have surveyed, there is no local name with the spelling of "Qarchang" at least in the regions of so-called Tibet, excepting a poor possibility that it might have been the misspelling of Qarhan [察尔汗] in central Qinghai, and it is impossible to specify the exact locality only by such a poor data. The latter was described



Figs. 5–8. Male genital organ of newly described taxa from western Sichuan. —— 5, *Zheduocarabus jiulongensis fabricioides* subsp. nov. (North of Bamuqiedeng in south-central Kangding Xian); 6, *Neoplesius kaschkarowi muganglingensis* subsp. nov. (Southeast of Riade on the Mugangling Mts. in southeastern Kangding Xian); 7, *N. chomae* sp. nov. (Pass between E'eryizuxiang and Ning'yuan in southeastern Jiulong Xian); 8, *Eccoptolabrus exiguus absconditus* subsp. nov. (North of Bamuqiedeng in south-central Kangding Xian). —— a, Aedeagus with fully everted endophallus in right lateral view; b, apical part of aedeagus in the same view; c, ditto in dorsal view. Scale: 2 mm for a, 1 mm for b & c

also based on a single female preserved in the Zoological Museum of Amsterdam, with the attached label of "Tatsienlu" (=Kangding; without further details). Although the French author placed this taxon in the subgenus *Pseudocranion* (DEUVE, 1992, p. 20, '94, p. 203, and '97, p. 138), this inference is utterly wrong, since the penultimate segment of the labial palpus of the Tatsienlu race is bisetose. It should be correctly classified into the *Neoplesius* series. In my view after examining the holotypes of both the races, the present new species is characteristic at least in having shorter median tooth of the mentum, differently shaped pronotum and much more effaced shoulders, and so on. However, taxonomic relationships between these three "species" must be considered still uncertain, since the males of both *hummelioides* and *bruggeianus* have not been introduced into science up to the present.

Etymology. The new specific name comes from *Choma*, which is one of the commonest hypocorism for the female horse in Tibet.

7. ***Eccoptolabrus exiguus absconditus*** IMURA, subsp. nov.

(Figs. 4 & 8)

Description. Length: 15.8–19.0 mm (including mandibles). Most closely allied to subsp. *nivium* BREUNING (type locality: "Gebirge bei Mienning, 2,000 m"), but discriminated from it by the following respects: 1) pronotum more strongly transverse, with the hind angles more prominently protruded posteriad; 2) elytral sculpture smoother, with the elevated parts of each interval more vaguely raised; 3) apical lobe of the aedeagus a little narrower and longer in lateral view. From subsp. *cordimeatus* CAVAZZUTI (type locality: "Sumdo, Colle a Nord, verso Cogsum, 4,500 m"), the present new race is distinguished by smaller body, more transverse pronotum, more evidently impressed median longitudinal line of pronotum, more effaced shoulders, narrower primary costae of elytra and a little narrower apical lobe of aedeagus.

Type series. Holotype: ♂, Northern part of Bamuqiedeng, (29°38′–46′N/101°42′–45′E), 3,800–4,400 m in altitude, on the northwestern slope of Mt. Gongga Shan, in south-central Kangding Xian of western Sichuan, Southwest China, 10～12–VI–2001, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Paratype: 1♂, Southwest of Cimei, (29°30′–31′N/101°42′–44′E), 4,000–4,800 m in altitude, in southwestern Kangding Xian, Southwest China, 18～19–VI–2001, in coll. Y. IMURA.

8. ***Cychrus thibetanus thibetanus*** FAIRMAIRE, 1893

Specimens examined. 1♂, 1♀, North of Bamuqiedeng, (29°38′–46′N/101°42′–45′E), 3,800–4,400 m in altitude, on the northwestern slope of Mt. Gongga Shan in south-central Kangding Xian, 10～12–VI–2001; 2♂♂, 2♀♀, Southeast of Riade, (29°13′–24′N/101°39′–45′E), 4,100–4,800 m in altitude, on the Mugangling Mountains in southeastern Kangding Xian, 23～30–VI–2001; all in western Sichuan, South-

west China, and preserved in coll. Y. IMURA.

要　　約

井村有希：中国四川省康定县と九龙县のオサムシ．—— 中国四川省のオサムシ相については近年，急速に解明が進んできてはいるものの，それぞれの記録は断片的で，また産地の正確さに関しても問題のある場合が多い．本論文では，同省西部に位置する康定县南東部と九龙县南東部の山岳地帯から，6種のオサムシと1種のセダカオサムシを，正確な産地のデータとともに記録した．この地域は，高峰・贡嘎山の西～南方にあたり，オサムシ類の記録が報告されるのは今回が初めてであろう．検討の結果，1新種と3新亜種が含まれていることが判明したので，それぞれをチュウロンドウガネオサムシ *Zheduocarabus jiulongensis* の新亜種 *fabricioides*，カシュカロフチベットオサムシ *Neoplesius kaschkarowi* の新亜種 *muganglingensis*，チョマチベットオサムシ *Neoplesius chomae*（新種新称），およびヒメカブリモドキ *Eccoptolabrus exiguus* の新亜種 *absconditus* と命名し，記載した．

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