

A New Japanese Species of the Genus *Carcinocephalus*
(Coleoptera, Staphylinidae, Omaliinae)

Yasuhiko HAYASHI

Suimeidai 3–1–73, Kawanishi C., Hyogo, 666–0116 Japan

Abstract A new species of the genus *Carcinocephalus* is described from Japan under the name of *Carcinocephalus satoi*.

The genus *Carcinocephalus* BERNHAUER is a rather small genus, which consists of two subgenera and seven known species (NEWTON *et al.*, 2000; SMETANA, 2004). Species of this genus show peculiar distribution, that is, one species is known from Italy, three from the Balkan Peninsula and three from North America (NEWTON *et al.*, 2000). No species is known from the Asian Continent.

American species of *Omaliium flavidum* HAMILTON (cited as a *Carcinocephalus* species by THAYER, 1992, and NEWTON *et al.*, 2000) shows wing dimorphism (THAYER, 1992), but in Japanese species such a dimorphism is not found.

Before going into further details, I wish to express my hearty thanks to Mr. Tateo ITO, Yawata City, Kyoto, for his kind offer of many materials of *Carcinocephalus* specimens. I am very grateful to Dr. Shun-Ichi UENO, Emeritus Curator of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in critically reading the manuscript of this paper.

The genus is very similar in general appearance and structures of mouth organs to the genus *Omaliium* GRAVENHORST, but the former is easily distinguished from the latter in the different structures of head, mesosternum and genital segments as in the following key:

1. Head elevated above eyes from frons to vertex, the elevation separated from eyes by fine oblique sulci on each side, and rather shallowly depressed before ocelli; distance between ocelli nearly equal to one-third of head width; mesosternum without a median carina; metasternum with a large remarkable fovea just before posterior margin; male 9th sternite not projected posteriorly, simply rounded at apical margin; female 2nd gonocoxite with very short minute stylus; parameres of male genitalia slender, relatively long, reaching near apex of penis or sometimes extending a little beyond it; 4th and 5th tergites each with a pair of pruinose patch in middle.....*Carcinocephalus*.
— Head weakly elevated from frons to vertex but not sulcate between eyes and the

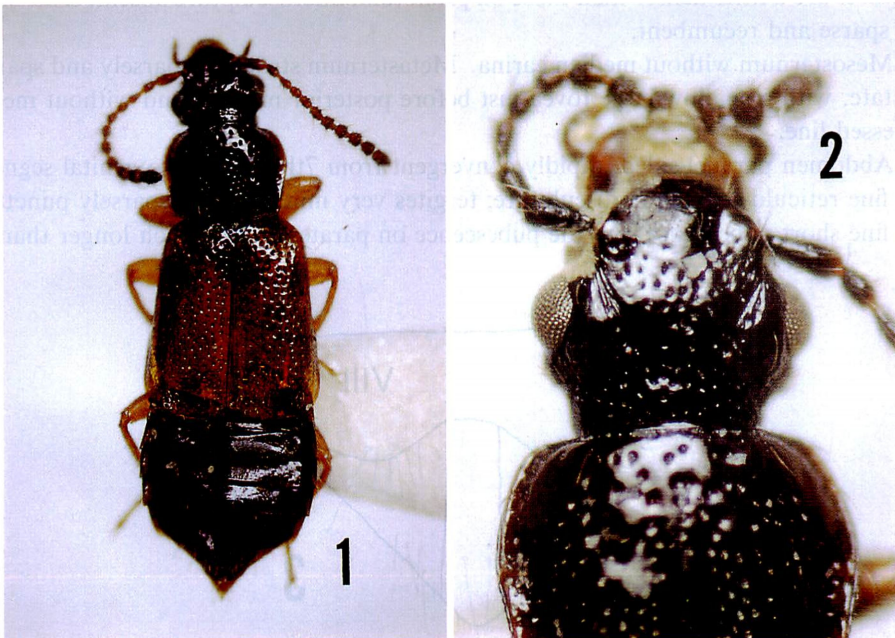
elevation, and very deeply depressed (foveate) before ocelli; distance between ocelli distinctly smaller than one-third of head width; mesosternum with a median carina; metasternum without fovea; male 9th sternite sharply projected posteriorly, subacute at apex; female 2nd gonocoxite with long minute stylus; parameres of male genitalia short, markedly widened, not reaching apex of penis; 4th tergite of abdomen only with a pair of small pruinose patches*Omalium*.

Carcinocephalus satoi sp. nov.

(Figs. 1-8)

Body elongate, subelliptical, weakly dilated posteriad, weakly convex above and well shiny; colour nearly black, pronotum sometimes piceous, elytra dark brown (yellowish brown in teneral specimens), mouth organs and legs pitchy brown, antennae blackish brown, and genital segments yellowish brown. Length: 2.7–3.4 mm; width: ca. 1.0 mm.

Head (Fig. 2) subpentagonal, two-thirds as long as wide, nearly four-fifths as wide as and two-thirds as long as pronotum; upper surface widely and wholly elevated subhexagonally from frons to vertex, coarsely and sparsely punctured except for frons which is much more sparsely and finely punctured, finely and obliquely striolate between the elevation and supraorbital portion, shallowly depressed around ocelli and without



Figs. 1-2. *Carcinocephalus satoi* sp. nov.; 1, habitus (paratype); 2, head (holotype).

microsculpture; genae convex from supraorbital portions to postgenae; eyes large, well prominent, 1.5 times as long as postgenae; ocelli located at the post-eye level, and the width between the ocelli one-third as wide as head. Antennae long and slender, reaching posterior angles of pronotum; basal five segments polished; 1st to 6th segments more or less longer than wide, 7th nearly as long as wide, 8th to 10th more or less wider than long, and with the following relative lengths (widths) (from 1st to 11th): 15.0 (6.0) : 7.0 (4.5) : 8.5 (4.0) : 5.0 (4.5) : 5.5 (5.0) : 6.0 (5.0) : 6.5 (6.0) : 6.0 (6.5) : 6.5 (7.0) : 6.5 (7.0) : 11.0 (7.5).

Pronotum subquadrate, about four-fifths as long as wide, a little narrower than (31 : 39) and half as long as elytra, widest at about the middle, strongly marginated and narrowly reflexed at lateral sides; anterior margin slightly bisinuate, and hind one gently arcuate with the middle straight before scutellum; lateral margin gently arcuate and narrowed anteriorly in anterior half but faintly emarginate and narrowed posteriorly; disc strongly convex, bearing a pair of longitudinal depression in middle and an obscure short median one just behind front margin, coarsely, deeply and rather sparsely punctured except for anterior corners, inner portions of hind ones and median one before base, which are impunctate; anterior angles widely rounded, and posterior ones obtuse but the tip not angular; microsculpture absent.

Elytra subquadrate, a little longer than wide (60 : 49), weakly dilated posteriorly, straight at sides, widely rounded at postero-lateral angles and slightly emarginate at hind margin; disc rather flattened, coarsely and deeply punctured as on pronotum but the punctures are a little denser than those on pronotum; microsculpture absent; setae short, very sparse and recumbent.

Mesosternum without median carina. Metasternum strongly, coarsely and sparsely punctate, with a shallow large fovea just before posterior margin, and without median impressed line.

Abdomen parallel-sided, rapidly convergent from 7th segment to genital segment, with fine reticulo-striate microsculpture; tergites very minutely and sparsely punctured with fine short pubescence, but the pubescence on paratergites is much longer than the

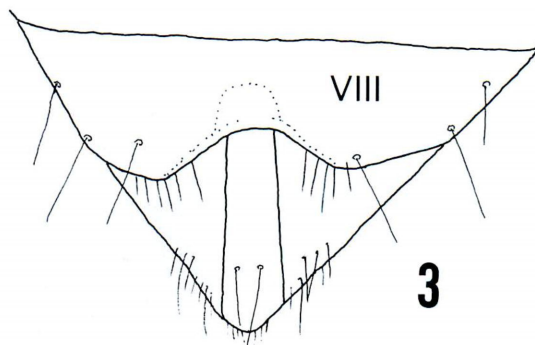
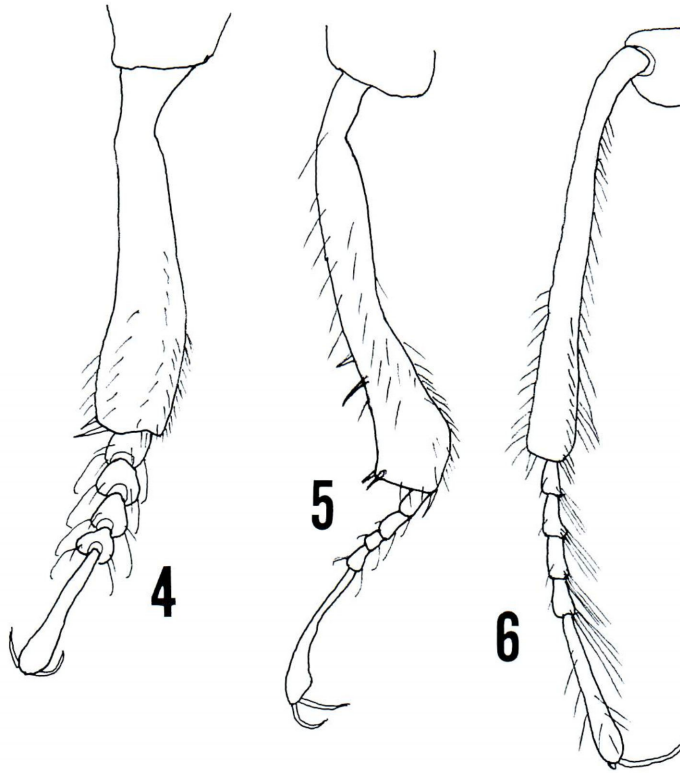


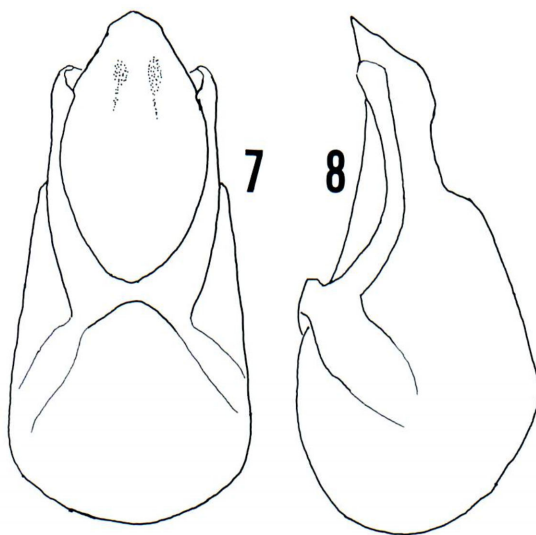
Fig. 3. *Carcinocephalus satoi* sp. nov.; 8th and genital segments of male in ventral view.



Figs. 4-6. *Carcinocephalus satoi* sp. nov.; 4, fore leg; 5, mid leg; 6, hind leg.

former; sternites distinctly and rather sparsely punctured with long pubescence as on paratergites, the punctures being a little larger than those on tergite; 3rd to 6th tergites weakly impressed at base; 4th tergite bearing a pair of transversely elliptical large pruinose patches in middle, and 5th also bearing a pair of rounded small ones; intersegmental membranes of 3rd to 7th tergites bearing microsculpture of brick-wall pattern; 7th tergite with apical palisade fringe in both sexes; 8th tergite truncate at apical margin. In male, 8th sternite (Fig. 3) widely and deeply emarginate and narrowly smooth and impunctate just before the emargination. In female, 8th sternite truncate at apex; second gonocoxite rather slender, with minute stylus short, with a long seta.

Legs (Figs. 4-6) moderately long, somewhat clavate in male and simply slender in female. In male, protibiae gently curved beneath, dilated distad from the middle and shallowly grooved on underside, which is pubescent as a brush in the apical fourth; protarsi weakly dilated in basal four segments, each with modified setae; mesotibiae bent near base, thence gently curved towards apex, rather markedly thickened in distal third, with brush-like long setae there; metatibiae nearly straight, gradually thickened distad, with 5th segment nearly as long as the preceding four segments combined together. In female, tibiae simple, nearly straight and only slightly thickened distally; protarsi simple,



Figs. 7-8. *Carcinocephalus satoi* sp. nov.; 7, male genitalia, ventral view; 8, ditto, lateral view.

narrow, without modified setae.

Male genitalia (Fig. 7 & 8) symmetrical, weakly curved ventrad; penis thick, somehow pear-shaped, gently narrowed apicad, gently arcuate at apical margin and obtusely angulate at the middle, evenly smooth on ventral surface, and in lateral view, strongly swollen in basal two-thirds and narrow in apical third, dorsum membranous in apical half; parameres bilobate, slender, weakly curved, weakly and gradually dilated apicad, truncate at apex, with a few fine setae at apical margin and the tip not reaching apex of penis.

Holotype: ♂, Mt. Amaishiyama, Sasayama City, Hyôgo, Japan, 2-II-1980, Y. HAYASHI leg. Allotype: ♀, same locality as the holotype, 19-II-2006, Y. HAYASHI leg. Paratypes: 6♂♂, 3♀♀, Yawata C., Kyoto, 31-XII-1978, T. Ito leg.; 1♂, 2♀♀, ditto, 4-I-1974, T. Ito leg.; 2♂♂, 1♀, ditto, 7-XII-1982, T. Ito leg.; 7♂♂, 6♀♀, ditto, 26-XII-1978, T. Ito leg.; 15♂♂, 7♀♀, ditto, 3-I-1983, T. Ito leg.; 1♂, 18♀♀, ditto, 18-I-1981, T. Ito leg.; 3♀♀, Obara, Kanazawa, Ishikawa, 3-XII-1961, Y. HAYASHI leg.

Diagnosis and Remarks. The present species is very similar in general appearance to *Omalium hibernum* HAYASHI from Japan, but is easily distinguishable from the latter by the absence of median carina on mesosternum and microsculpture on head. The present species is also similar in general appearance and in homologous structures of head, mesosternum, abdomen, genital segment, etc., to *Carcinocephalus flavidum* (HAMILTON), comb. nov. (long elytral type), but the present species is easily distinguishable from the latter by the following points: elytra of the former are nearly twice as long as pronotum, while in the latter species the elytra are three times as long as pronotum; in the former at least 8th to 10th antennomeres are more or less transverse, while in the latter all the antennomeres are longer than wide; in the latter species the

male genitalia are slenderer, the penis is markedly ridged in apical third of ventral surface (dorsal in repose).

Bionomics. The present species is obtained mainly by vegetable debris with *Orochares debilis* (SHARP) and rarely by baited traps with *Omalium hibernum* HAYASHI in the winter to the early spring. The type locality (Mt. Amaishiyama) is sometimes covered with snow 20–40 cm in thickness in the winter time.

Etymology. The specific name is given in dedication to the late Dr. Masataka SATÔ who was a great coleopterologist specializing in water beetles and the Cantharoidea.

Carcinocephalus flavidus (HAMILTON), comb. nov.

Homalium flavidum HAMILTON, 1895, Trans. Amer. ent. Soc., **22**: 347.

Omalium flavidum: BERNHAUER & SCHUBERT, 1910, Coleopt. Cat., pars 19: 53.

Omalium flavidum: THAYER, 1992, J. N. Y. ent. Soc., **100**: 540–573.

Omalium flavidum: DOWNIE & ARNETT, 1996, Beetles of NE. North America, **1**: 437.

Omalium flavidum: NEWTON, THAYER, ASHE & CHANDLER, 2000, American Beetles, **1**: 336. (*Carcinocephalus*?)

要 約

林 靖彦: 日本産 *Carcinocephalus* ニセヨツメハネカクシ属(新称)の1新種。—— 本属は外見上, *Omalium* ヨツメハネカクシ属にきわめてよく似ているが, 第4, 5腹背板上に1対の特異なパッチ様構造があることで容易に区別できる(ヨツメハネカクシ属では第4腹背板上のみ)。また, 本属は, 中胸腹板の正中隆条を欠いている。本種は *Omalium hibernum* HAYASHI に外見がきわめてよく似ていて, 同定を誤ることがある。本種はアメリカ産の *C. flavidus* (HAMILTON) に非常によく似ているが, 上翅が短く(本種の上翅は前胸背板の2倍の長さであるのに対して, 後者では3倍ある), 雄交尾器の形態に差があることで容易に区別できる。

種小名は, 水生甲虫, 軟鞘類などの分類学者としてわが国の第一人者であった故佐藤正孝博士のご逝去を悼んで献名した。

References

- BERNHAEUER, M., & K. SCHUBERT, 1910. Staphylinidae I. In JUNK, W., & S. SCHENKLING (eds.), *Coleopt. Cat.*, pars 19: 1–86. W. Junk, Berlin.
- DOWNIE, N. M., & R. H. ARNETT, JR., 1996. The Beetles of Northeastern North America. Volume 1: Introduction; Suborders Archostemata, Adephaga, and Polyphaga till Superfamily Canthaloidea. 880 pp. Sandhill Crane Press, Gainesville.
- HAMILTON, J., 1896. Catalogue of the Coleoptera of southwestern Pennsylvania, with notes and descriptions. *Trans. Amer. ent. Soc.*, **22** [for 1895]: 317–381.
- HAYASHI, Y., 2006. A new species of *Omalium* from Japan (Coleoptera: Staphylinidae). *Ent. Rev. Japan*, **61**: 75–79.
- NEWTON, A. F., M. K. THAYER, J. S. ASHE & D. S. CHANDLER, 2000. Staphylinidae. In ARNETT, R. H., & M. C. THOMAS (eds.), *American Beetles. Archostemata, Myxophaga, Adephaga, Polyphaga: Staphyliniformia*, **1**: 272–418.

- SMETANA, A., 2004. Family Staphylinidae LATREILLE, 1802. Subfamily Omaliinae MACLEAY, 1825. In LÖBL, I., & A. SMETANA (eds.), *Cat. Palaearct. Coleopt.*, **2**: 237–268. Apollo Books, Stenstrup.
- THAYER, M. K., 1992. Discovery of sexual wing dimorphism in Staphylinidae (Coleoptera): “*Omalium flavidum*”, and a discussion of wing dimorphism in insects. *J. N. Y. ent. Soc.*, **100**: 540–573.
- WATANABE, Y., 1990. A taxonomic study on the subfamily Omaliinae from Japan (Coleoptera, Staphylinidae). *Mem. Tokyo Univ. Agric.*, **31**: 55–391.
- ZANETTI, A., 1987. Coleoptera, Staphylinidae, Omaliinae. In: *Fauna d’Italia*, **25**: i–xii + 1–472. Calderini, Bologna.