

## Three New *Gabrius* (Coleoptera, Staphylinidae) from Japan

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**Abstract** Three new staphylinid beetles belonging to the genus *Gabrius* are described from Japan under the names of *G. okamotoi*, *G. multipunctatus* and *G. japonicus*. They are relatively large-sized within the genus and have peculiarly shaped male genitalia. *Gabrius multipunctatus* is the first Japanese member bearing nine punctures in the inner row on its pronotum.

The *Gabrius* fauna of Japan was studied by SHARP (1874, 1889), CAMERON (1930), BERNHAUER (1939), TOTTENHAM (1940) and SMETANA (1960, 1973, 1984), and fifteen species have been recorded up to the present.

Through the courtesy of Mr. Iwao OKAMOTO, I have recently had an opportunity to examine an interesting species of this genus obtained at Anjûkyô in Hiroshima Prefecture, West Japan. On this occasion, I examined many specimens of the Japanese species collected at various localities.

After a careful study, it became clear that the species collected at Anjûkyô and two more species found in central Honshu and Hokkaido are new to science. They will be described in the present paper.

The following abbreviations are used in this paper: HL – greatest length of head; HW – greatest width of head, including eyes; CL – longitudinal diameter of eye; PO – length of postocular area; PL – length of pronotum, measured along the mid-line; PW – greatest width of pronotum; EL – greatest length of elytra; EW – greatest width of elytra.

Before going further, I wish to express my cordial thanks to Professor Yasuaki WATANABE of Tokyo University of Agriculture for his continuous guidance and encouragement, and to Dr. Shun-Ichi UENO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness extended to me in various ways. Hearty thanks are also due to Messrs. T. GOH, A. IZUMI, S. NISHIGAKI, I. OKAMOTO and N. YASUDA for their help in supplying with material, and to Mr. Akinori YOSHITANI for his assistance in preparing the illustration of whole insect and male secondary sexual characters inserted in the present paper.

*Gabrius okamotoi* sp. nov.

(Figs. 1–5)

Body elongate, nearly parallel-sided and moderately shining. Head and pro-

notum piceous black to black; elytra, abdomen and antennae dark brown; mouth parts and legs brownish yellow, inner portion of tibiae somewhat darkened.

Body length: 7.0–7.5 mm.

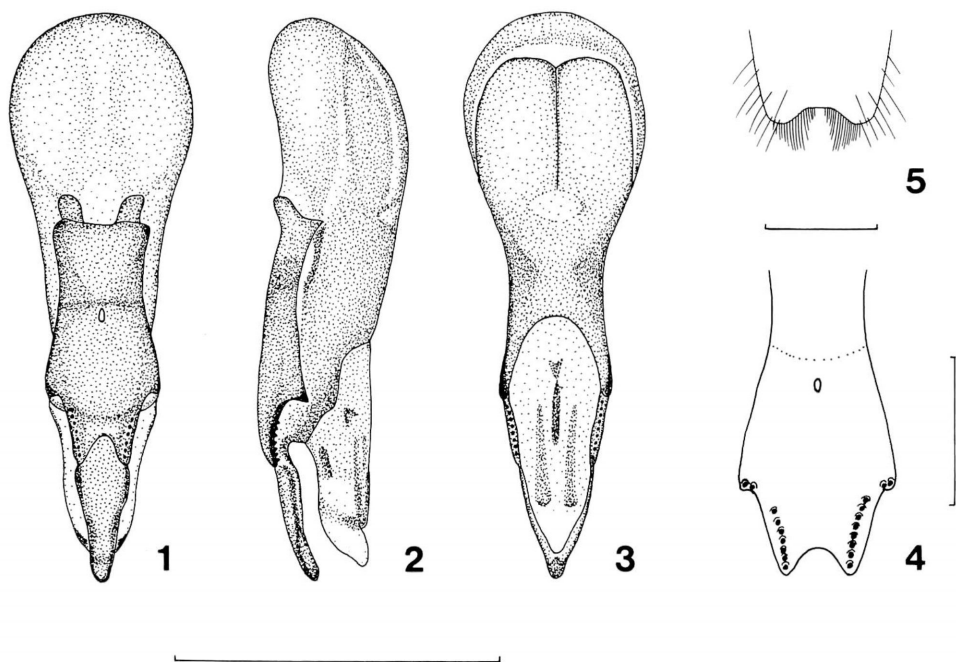
Head subquadrate, slightly longer than wide ( $HL/HW=1.09$ ), widest just before posterior angles and indistinctly narrowed anteriorly, with lateral sides slightly arcuate; frons triangularly and shallowly impressed, the disc almost impunctate; median interocular punctures widely separated, nearly four times as distant from each other as from ocular punctures, postero-laterally with sparse and rather strong setiferous punctures; surface covered with microscopic transversely lineate ground sculpture. Eyes small though feebly protruding from lateral lines of head, its longitudinal diameter a little smaller than the length of postocular area ( $CL/PO=0.76$ ). Antennae long, almost reaching the posterior margin of pronotum, and hardly thickened towards apex, basal three segments polished, the remainings opaque, 1st segment dilated apically, about 3.5 times as long as broad, 2nd about a half as long as 1st ( $2nd/1st=0.48$ ) and about twice as long as broad, 3rd elongate, a little longer than 2nd ( $3rd/2nd=1.30$ ), 4th to 10th subequal in length to one another and feebly dilated towards each apex, 4th to 6th gradually increasing in width, 7th to 10th each about as long as broad ( $width/length=1.03$ ), the apicalmost subacuminate towards the tip, a little longer than 10th ( $11th/10th=1.38$ ) and about 1.5 times as long as broad.

Pronotum oblong, a little longer than wide ( $PL/PW=1.24$ ) and about as wide as head ( $HW/PW=1.00$ ), widest behind anterior angles and slightly narrowed posteriorly; lateral sides almost straight as seen from above; anterior margin broadly rounded, though subtruncated at middle, posterior margin feebly arcuate; anterior angles obtuse and not visible from above, posterior angles narrowly rounded; disc on either side of the middle with a somewhat irregular row of seven punctures, and outside this series with three or four punctures; surface covered with very fine microscopic transversely lineate ground sculpture. Scutellum large, triangular, finely and densely punctured and pubescent, surface with the same ground sculpture as on pronotum.

Elytra subtrapezoidal, somewhat dilated posteriorly and flat above, slightly wider than long ( $EW/EL=1.07$ ), and a little longer than pronotum ( $EL/PL=1.31$ ), considerably wider than pronotum ( $EW/PW=1.73$ ); lateral sides almost straight; posterior angles broadly rounded; surface finely and densely punctured, and densely covered with brownish pubescence decumbent backwards, devoid of microscopic ground sculpture.

Abdomen elongate, slightly dilated towards the 6th segment which is the widest, 7th to the extremity distinctly narrowed; surface covered with finer and denser punctures and pubescence than on elytra; 8th sternite in male somewhat deeply and widely emarginate at middle of posterior margin, which bears numerous long and rather strong setae becoming gradually shorter both medially and laterally. Legs relatively long, protarsi thin in both sexes.

Male genital organ relatively small but voluminous, well sclerotized and very peculiar; median lobe gradually narrowed towards apex; fused paramere broad, strong-



Figs. 1–5. *Gabrius okamotoi* sp. nov., male genital organ; ventral view (1); lateral view (2); dorsal view (3) (scale: 1.0 mm); underside of fused paramere (4) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (5) (scale: 0.8 mm).

ly widened anteriorly, and then abruptly narrowed at about anterior fourth, forming a sharp angle on each side, anterior margin semicircularly emarginate; black tubercles on the underside of paramere seven to eight in number, forming two irregular longitudinal rows, two isolated tubercles being present on each lateral margin at the corner of narrowed part.

*Type series.* Holotype: ♂, Anjūkyō, Kake-chō, Yamagata-gun, Hiroshima Pref., 20–X–1990, I. OKAMOTO leg.; paratypes: 3 ♂♂, same data as for the holotype; 1 ♂, Nakatsuya, Yoshiwa-mura, Hiroshima Pref., 28–VII–1990, I. OKAMOTO leg.

The holotype is deposited in the collection of the Laboratory of Entomology, Tokyo University of Agriculture, and the paratypes are preserved in the author's private collection.

*Distribution.* Japan (western Honshu).

*Notes.* In general appearance, this new species somewhat resembles *G. unzenensis* BERNHAUER, but can be readily distinguished from the latter by the larger and robust body, different structure of male genital organ and secondary sexual characters of the last abdominal sternite in the male.

All the specimens of the type series were found from heaps of wet fallen leaves accumulated by the water at the sides of a narrow stream.

*Gabrius multipunctatus* sp. nov.

(Figs. 6-11)

Closely similar to *G. okamotoi* in external features, but can easily be distinguished from the latter by the following points: body larger and more robust; longitudinal diameter of eye much smaller than the length of postocular area ( $CL/PO=0.62$ ); inner dorsal row of punctures on pronotum composed of eight to nine ones, usually nine; elytra about as broad as long ( $EW/EL=0.99$ ); differently shaped male genital organ and secondary sexual character of abdominal sternite in male.

The ratios of body parts are summarized as follows:  $HL/HW=1.09$ ;  $PL/PW=1.32$ ;  $HW/PW=1.02$ ;  $EL/PL=1.30$ ;  $EW/PW=1.69$ . Body length: 8.0-8.5 mm.

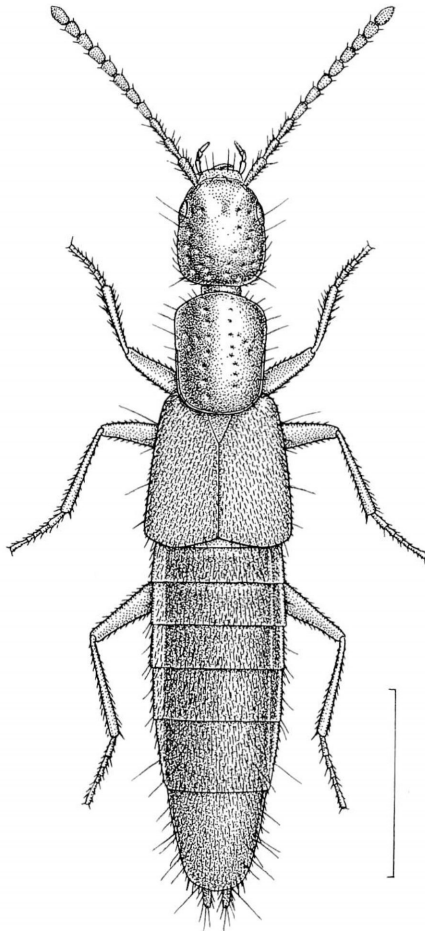
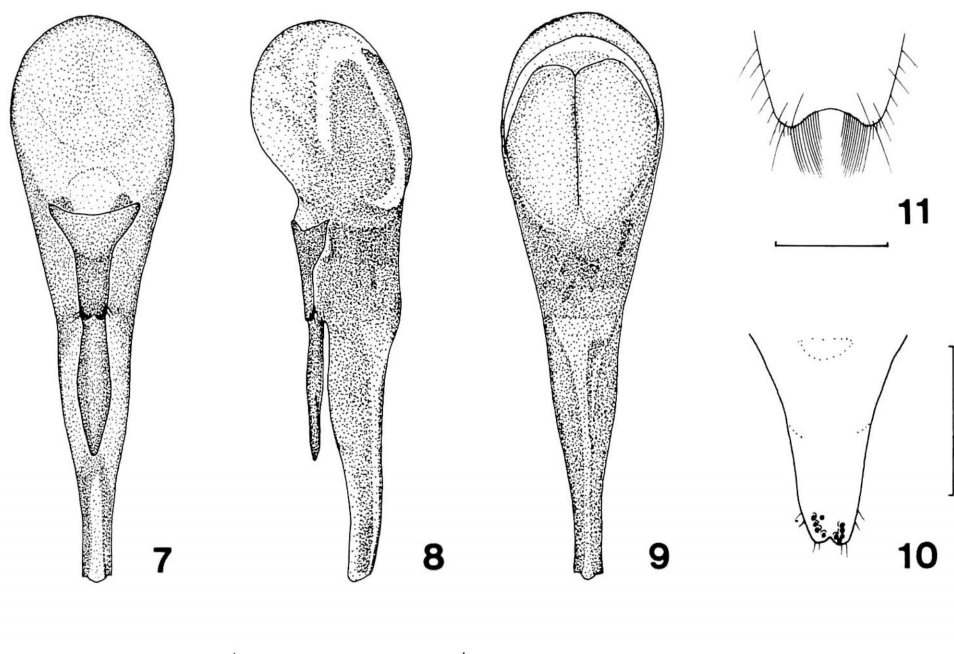


Fig. 6. *Gabrius multipunctatus* sp. nov., ♂, from Akazawa Spa in Yamanashi Pref. (Scale: 2.0 mm.)



Figs. 7-11. *Gabrius multipunctatus* sp. nov., male genital organ; ventral view (7); lateral view (8); dorsal view (9) (scale: 1.0 mm); underside of fused paramere (10) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (11) (scale: 0.8 mm).

Male. Eighth sternite deeply and subtriangularly emarginate at the middle of posterior margin, small triangular median area before the emargination flattened and smooth, latero-apical margins of the emargination provided with rather strong and very long setae becoming gradually shorter both medially and laterally.

Male genital organ rather large, well sclerotized and very peculiar; median lobe relatively broad, gradually and distinctly narrowed towards almost truncated apex; fused paramere very small, strongly narrowed towards apical margin, which is shallowly and subtriangularly excised at the middle; underside of paramere with about five black tubercles on each side near the apex.

*Type series.* Holotype: ♂, Akazawa Spa, Masuho, Yamanashi Pref., 4-V-1974, Y. SHIBATA leg.; allotype: ♀, same data as for the holotype. Paratypes: 1 ♂, same data as for the holotype; 1 ♂, Gozaishi, Yamanashi Pref., 27-VII-1967, Y. SHIBATA leg.; 2 ♀♀, Kinzandaira, Sudama, Yamanashi Pref., 25-VIII-1986, Y. SHIBATA leg.; 1 ♀, Mt. Sobatsubuyama, Haibara, Shizuoka Pref., 21-VIII-1986, A. IZUMI leg.; 1 ♂, Kanamegawa, Minoge, Kanagawa Pref., 18-X-1986, A. IZUMI leg.

The holo- and allotypes are deposited in the collection of the Laboratory of Entomology, Tokyo University of Agriculture, and the paratypes are preserved in the author's private collection.

*Distribution.* Japan (central Honshu).

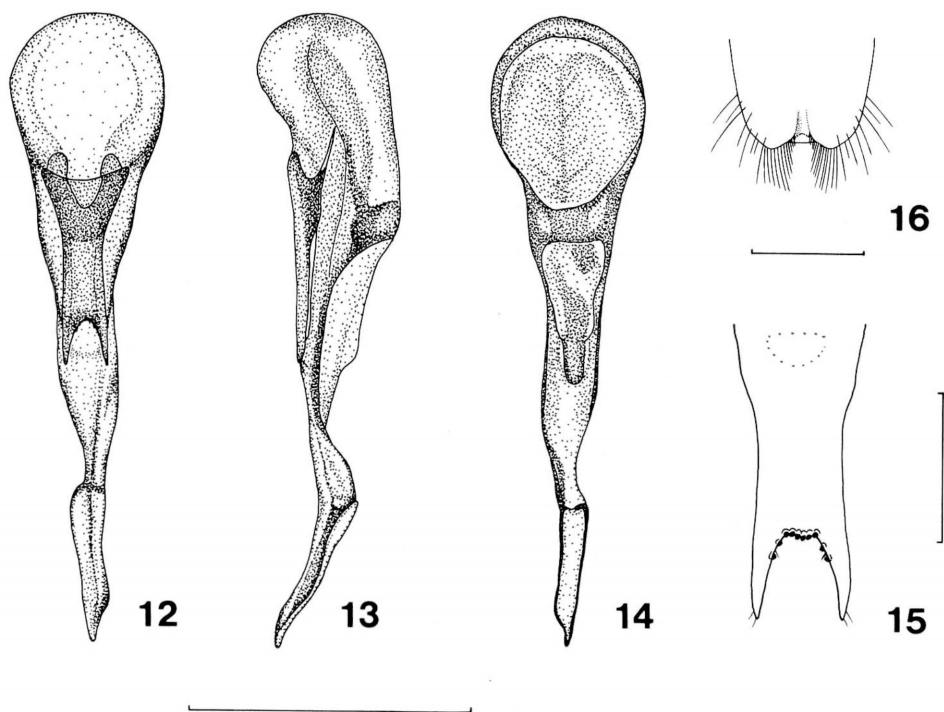
*Notes.* This peculiar new species can be easily distinguished from the other Japanese species by having nine punctures in the inner row on the pronotum and uniquely shaped male genitalia.

Variation in the dorsal rows of punctures on the pronotum is as follows: of the eight specimens of the type series, three (2 ♂♂, 1 ♀) lack one puncture on one side, and one (1 ♂) on both sides.

*Gabrius japonicus* sp. nov.

(Figs. 12–16)

The present new species also closely resembles *G. okamotoi* in general appearance, but differs from it in the following points: body a little larger in size; head oval and somewhat longer than broad ( $HL/HW=1.20$ ), eyes small and flat, its longitudinal diameter much smaller than the length of postocular area ( $CL/PO=0.64$ ), punctures of the inner dorsal row on pronotum six in number; elytra slightly longer than pronotum ( $EL/PL=1.19$ ); and differently shaped male genital organ and secondary sexual character of 8th abdominal sternite in male.



Figs. 12–16. *Gabrius japonicus* sp. nov., male genital organ; ventral view (12); lateral view (13); dorsal view (14) (scale: 1.0 mm); underside of fused paramere (15) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (16) (scale: 0.8 mm).

The ratios of body parts are summarized as follows: PL/PW=1.30; HW/PW=0.91; EW/EL=1.08; EW/PW=1.66. Body length: 7.5–8.0 mm.

Male. Eighth sternite moderately and rather widely emarginate at the middle of posterior margin, small subtriangular median area before the emargination flattened and smooth, latero-apical margins of the emargination provided with rather strong and long setae, which gradually become shorter both medially and laterally, and of which the innermost short setae extend for a short distance upwards along the lateral margin of the median smooth portion.

Male genital organ rather large, asymmetrical, well sclerotized and very peculiar; median lobe produced into a long and slender projection which is more or less asymmetrical; fused paramere relatively short and narrow, with the apical part divided into two fairly narrow lobes widely separated from each other; black tubercles on the underside of paramere ranged along the median part of apical margin.

*Type series.* Holotype: ♂, Near Bodai, Tanzawa, Kanagawa Pref., 25-IV-1971, Y. SHIBATA leg.; allotype: ♀, same locality as for the holotype, 4-V-1969, Y. SHIBATA leg. Paratypes: 1 ♀, Near Ohkura, Tanzawa, Kanagawa Pref., 20-IV-1969, Y. SHIBATA leg., 1 ♀, same locality, 27-IV-1974, Y. SHIBATA leg.; 1 ♀, Hikawa, Okutama, Tokyo, 5-V-1968, T. GOH leg.; 1 ♂, 2 ♀♀, Near Kurio, Minamiaiki, Nagano Pref., 20-IX-1986, S. NISHIGAKI leg.; 1 ♀, Near Nidoage, Gumma Pref., 21-VIII-1960, Y. SHIBATA leg.; 1 ♀, River Ishikari, 1,100 m alt., Daisetsu Mts., Hokkaido, Japan, 22-VIII-1983, N. YASUDA leg.; 1 ♀, Sōunkyō, Kamikawa-chō, Hokkaido, Japan, 7-V-1981, N. YASUDA leg.

The holo- and allotypes are deposited in the collection of the Laboratory of Entomology, Tokyo University of Agriculture, and the paratypes are preserved in the author's private collection.

*Distribution.* Japan (central Honshu, Hokkaido).

*Notes.* The present new species can be easily distinguished from the other Japanese species by the hypertrophied apical part of the median lobe of male genitalia.

## 要 約

柴田泰利: 日本産ホソコガシラハネカクシ属 (*Gabrius*) の 3 新種。—— 日本産ホソコガシラハネカクシ属の研究は, SHARP (1874, 1889), CAMERON (1930), BERNHAUER (1939), TOTTENHAM (1940) および SMETANA (1960, 1973, 1984) らによって行われ, 現在までに 15 種が記録されている。そのうち, 7 種は前胸背板中央両側の点刻列が 6 個のもので, 8 種は 7 個のものである。

この属に含まれる種は, いずれも体長 10 mm 以下の小型で, 外見はコガシラハネカクシ (*Philonthus*) 属のものによく似ているが, 下唇肢第 2 節は先端に向かって膨らみ, 第 3 節は細く短いこと, および雄の前脚付節は拡張しないなどの点で識別できる。

今回, 日本各地からの標本を調べていたところ, 本属のなかでも大型できわめて特徴のある雄交尾器をもつ 3 種をみつけることができた。そのうちの 1 種は, 日本から記録のなかった前胸背板の中央両側に 9 点刻 (8–9 個) をもつ種で, 残りの 2 種はそれぞれ 7 点刻, 6 点刻のものである。精査の結果いずれも新種と認められたので, 下記のとおり命名記載した。

オカモトホソコガンラハネカクシ *Gabrius okamotoi* は、前胸背板の点刻列が7個で、雄交尾器は幅広く、側片は先端に向かって拡張するが先端から約1/4のところで鋭くえぐられ、先端裏面両側の黒色突起が7-8個であることなどの特徴により他種との識別は容易である。

オオホソコガンラハネカクシ *Gabrius multipunctatus* は、日本産既知種のなかでは最大で、前胸背板の点刻列は9個(8-9個)からなる。雄交尾器側片はきわめて小さく、先端はわずかに二裂し、先端裏面両側に5個の黒色突起があるなどの点で識別は容易である。

ヤマトホソコガンラハネカクシ *Gabrius japonicus* は、前胸背板の点刻列が6個で、雄交尾器中葉はいちじるしく細長く左右非対称である点、他の日本産の種とはいちじるしく異なり、きわめて容易に識別することができる。

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