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journal or publication title	鹿児島大学理学部紀要. 地学・生物学
volume	18
page range	97-103
別言語のタイトル	日本と台湾のヒラタハネカクシ属の新種について
URL	http://hdl.handle.net/10232/00000474

ON SOME NEW SPECIES OF GENUS *SIAGONIUM*
FROM JAPAN AND FORMOSA
(Insecta, Coleoptera, Staphylinidae)

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(Received Sept. 10, 1985)

Abstract

Descriptions of five new species of staphylinid-beetles belonging to the genus *Siagonium* are presented. Four of them from Japan are named *yamashitai*, *kojimai*, *nikkoense* and *incertum* and another from Formosa named *miyamotoi*. A key to the species of this genus from Japan and Formosa is provided.

Key words: Staphylinidae *Siagonium* New species Japan & Formosa Key

Introduction

Genus *Siagonium* Kirby & Spence is a small genus consisted of only nine species from Europe, Ceylon, Japan and America. They are generally found under the bark of trees. From Japan Weise (1879) firstly described a species *Haroldi* and Sharp (1889) described three species, *nobile*, *debile* and *gracile*. Bernhauer & Schubert (1910) treated *Haroldi* as a synonym of *S. vittatum* from East-Siberia. After these studies, no additional species has been recorded from Japan. Cameron (1949) recorded *vittatum* from Formosa. This is the only species known from Formosa.

In Nakane's collection there is a series of specimens of this genus and among them five new species have been found. Present authors describe them here and propose a key to species occurring in Japan and Formosa.

Descriptions of new species

Siagonium yamashitai Takai et Nakane sp. nov.

♂ : Black, subshiny. Gibbose elevation on each side of forehead, antenna, mouth part and legs are reddish brown and shiny. Elytra sometimes reddish.

Head transverse, roughly and densely punctured, having pubescence. Forehead widely depressed but middle part feebly elevated, and each side has gibbose elevation with its front part lacking a horn, but in large individuals the front part of forehead triangularly produced on both sides. Eyes convex. Behind eye there is an impunctate space. Mandible with a process on upper side.

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Pronotum moderately convex, punctured and pubescent like head, but apical and lateral areas often sparsely punctured and pubescent. Base membranous, without punctures. Sides clearly marginated. Some specimens have impunctate area at middle part of base. Widest at about one-third, constricted behind and parallel before the hind angles. Hind angles about rectangular. Propleuron with a microsculpture consisting of microscopic punctures. Scutellum microsculptured in front half, sparsely punctured in hind half. Metasternum with a longitudinal wrinkle-like microsculpture.

Each elytron with nine series of punctures, but the 5th is very sparse. The 1st at the suture, 2nd to 4th are jointed before apex, 6th and 7th are jointed behind middle and with 8th and 9th before apex. There are indistinct puncture series along lateral margin. Intervals slightly elevated and subshiny. Epipleuron with two series of punctures.

Abdomen almost parallel, weakly narrowing anteriorly and posteriorly. Surface shagreened and pubescent. There is a carina at the base of 3rd sternite. The 3rd tergite almost covered with elytra.

Measurement values (mm.) of 10 exs. The mean values in parenthesis.

L : Length, W : Width, H : Head, P : Pronotum, PB : Pronotal Base, E : Elytra.

LH : 0.45 - 0.56(0.49) WH : 0.55 - 0.63(0.58) LP : 0.46 - 0.53(0.51)

WP : 0.65 - 0.70(0.68) WPB : 0.45 - 0.51(0.49) LE : 0.93 - 1.05(1.00)

WE : 0.70 - 0.90(0.84) L : 3.2 - 3.5(3.4)

♀ : Head longer than in male and the elevation of forehead more clear. Antenna shorter. Mandibles without process. Punctures of pronotum being stronger and in some specimens longitudinally connected.

Measurement values of 8 exs. Mean values in parenthesis.

LH : 0.44 - 0.54(0.49) WH : 0.50 - 0.61(0.54) LP : 0.46 - 0.54(0.51)

WP : 0.65 - 0.71(0.68) WPB : 0.46 - 0.56(0.50) LE : 0.98 - 1.08(1.01)

WE : 0.73 - 0.93(0.89) L : 3.3 - 3.8(3.5)

Holotype : ♂, Masaki-toge(alt. 1660m), Mt.Ohdai, Nara Pref., Japan. 26. v. 1972, Z. Yamashita leg. Paratypes : 13 ♂♂ 2 ♀♀, same data as holotype. 2 ♂♂ 2 ♀♀, Mt. Ohdai(1530-1570m), 27. viii. 1972, Z. Yamashita leg. 1 ♂ 3 ♀♀, Mt. Ohdai(1580m), Nara Pref., 28. viii. 1972, Z. Yamashita leg. 2 ♂♂ 1 ♀, Hinodedake(1550m), Mt. Ohdai, Nara Pref., 28. viii. 1972, Z. Yamashita leg.

These specimens were taken from Pinaceae trees, *Abies firma*, *A. homolepis* and *Picea jezoensis* var. *hondoensis* by smoking with insecticide.

Closely allied to *S. gracile* Sharp, but it can be separated from the latter by the following characters. In *gracile* the 5th series of punctures on elytron is well continuous and more than half of 3rd tergite uncovered with elytra. Further in male of *gracile* there are two horns on the forehead.

Siagonium kojimai Takai et Nakane sp. nov.

♂ : Unknown.

♀ : Blackish brown, rather strongly shining. Elevation on each side of forehead,

antenna, mouth part, elytra and legs brown. Elytra and abdomen subshiny.

Head transverse, roughly and densely punctured having pubescence. Each side of forehead depressed and the outer part of depression reflexed, and with distinct gibbose elevation. Front part of it lacks horns. Eyes convex. Behind eye without impunctate area. Mandible without a process on upper side.

Pronotum wide(WP/WPB = 1.5), slightly convex, punctured and pubescent like head, but apical and lateral areas sparsely punctured and pubescent and middle part of base narrowly impunctate. Sides clearly margined. Widest at about one-third, gently constricted behind. Hind angles obtuse. Scutellum microsculptured in front half, sparsely punctured in hind half. Metasternum with a longitudinal wrinkle-like microsculpture. Each elytron with nine series of punctures and some indistinct series along outer margin. The 1st along the suture indistinct. Intervals of 3rd and 4th, 5th and 6th with few setae. The 3rd turned outward, before apex and going into the outside of 5th. The 2nd turned outward, going around the tip of 3rd and jointed with 6th. Along the lateral margin there is a series of setae.

Abdomen almost parallel. Surface shagreened and pubescent. There is a carina at the base of 3rd sternite. The 3rd tergite almost covered with elytra.

LH : 0.52 WH : 0.65 LP : 0.56 WP : 0.80 WPB : 0.56
LE : 1.12 WE : 1.00

Holotype : ♀, Nishina, Shizuoka, Japan. 7.v.1951, K.Kojima leg.

This species looks like *yamashitai* in having no depressions on pronotum and having long elytra, but *kojimai* clearly separated from it by having wider pronotum. And differences are shown in the pattern of series of punctures on elytron.

Siagonium nikkoense Takai et Nakane sp. nov.

♂ : Unknown.

♀ : Dark brown, shining. Elytra reddish brown, rather shining. Mouth part, antenna, gibbose elevation on each side of forehead and legs reddish brown.

Head transverse, roughly and rather densely punctured, having pubescence but on forehead sparsely punctured and pubescent. Forehead widely and shallowly depressed and outer area reflexed there. Eyes convex. Behind each eye there is an impunctate area. Mandible with a carina on upper side.

Pronotum moderately convex, without depressions nor grooves, punctate and pubescent like head, but apical and lateral areas sparsely punctured and pubescent, posterior middle area having an impunctate part. Hind margin membranous without punctures. Widest at about one-third, constricted behind and parallel-sided before the hind angles. Hind angles subrectangular. Side margined but bordering indistinct near hind corner.

Each elytron with eleven series of shallow punctures. The 1st series at the suture and turned outward along the end of elytron at apex, but indistinct; 2nd turned outward with angle and jointed with 5th which is turned inward before apex; 3rd disappeared at

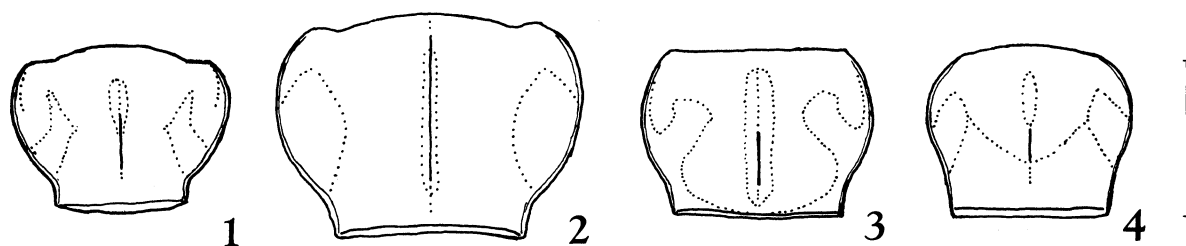
three-fourths and 4th at half, more few punctures of them appear posterior portion; Interval of 5th and 6th having one or two punctures; 6th reaching posteriorly; 7th disappeared at five-eighths and few punctures of this series appear in posterior part; 8th extending to end; 9th closely approached to 8th and indistinct in anterior and posterior area; 10th and 11th along the margin.

Abdomen almost parallel, weakly narrowing anteriorly and posteriorly. Surface shagreened and pubescent. There is a carina at the base of 3rd sternite. The 3rd tergite widely exposed.

LH : 0.50 WH : 0.62 LP : 0.50 WP : 0.75 WPB : 0.57
LE : 1.07–1.23 WE : 0.90–1.0 L : 4.0

Holotype and 1 Paratype : 2 ♀ Sanno-toge, Oku-Nikko, Japan, 21. vi. 1960, T. Nakane leg.

Nikkoense looks like *gracile* in the absence of depression on pronotum and having short elytra, but easily distinguished by the colour of body being bright, especially rather strongly shiny elytra and by the character of puncture series of elytra.



Figs. 1–4. Pronotums of *Siagonium* spp. 1. *debile* Sharp. 2. *nobile* Sharp. 3. *incertum* sp. nov. 4. *miyamotoi* sp. nov. Scale : 0.5mm.

Siagonium miyamotoi Takai et Nakane sp. nov.

♂ : Unknown.

♀ : Head and abdomen blackish brown, pronotum dark reddish brown, antenna, mouth part, legs and elytra reddish brown. Strongly shining.

Head transverse, roughly and rather densely punctured, having pubescence, but on forehead sparsely punctured and pubescent. Forehead widely depressed and middle area somewhat elevated, outer area there strongly reflexed. Eyes convex. There is an impunctate area behind eye.

Pronotum convex with depression at anterior middle, punctured and pubescent. Depression on each side is shallow, indistinct, and connected with a very shallow U-shaped depression. A longitudinal groove short. Widest at one-third, slightly narrowing anteriorly and posteriorly. Hind corner rectangular.

Elytra somewhat widened to apex, with eleven series of punctures. The 1st at the

suture and turned outward along the end of each elytron at apex, but indistinct; 2nd turned outward and confluent with 4th, 3rd disappeared at half; 4th to 6th weakly curved and reaching posterior area; 7th and outer series sparse and indistinct. There is a pair of swellings behind scutellum at one-fifth of dorsum.

Abdomen parallel, weakly narrowing anteriorly and posteriorly. Surface shallowly shagreened and pubescent. There is a carina at the base of 3rd sternite. The 3rd tergite widely exposed.

LH : 0.50 WH : 0.60 LP : 0.50 WP : 0.66 WPB : 0.50
LE : 1.16 WE : 0.96 L : 3.85

Holotype : ♀, Mt.Niitaka-Hattukan, Formosa, 16.vii.1941, S.Miyamoto leg.

Siagonium incertum Takai et Nakane sp. nov.

♂ : Unknown.

♀ : Head blackish brown, pronotum dark reddish brown ; mouth part and legs yellowish brown ; antenna and gibbose elevation reddish brown. Subshiny. Elytra yellowish brown, darkened around scutellum.

Head transverse, roughly and rather densely punctured, having pubescence, but on forehead sparsely punctured and pubescent. Forehead weakly depressed and middle area somewhat elevated, outer areas strongly reflexed. Eyes convex. There is an impunctate area behind eye.

Pronotum convex with a depression at anterior middle, punctured and pubescent. Depression on each side shallow, indistinct, A median longitudinal groove short. Widest at one-third, slightly narrowing anteriorly and posteriorly. Hind corner rectangular. Sides and base marginated, but lateral margin well narrowed at hind angle.

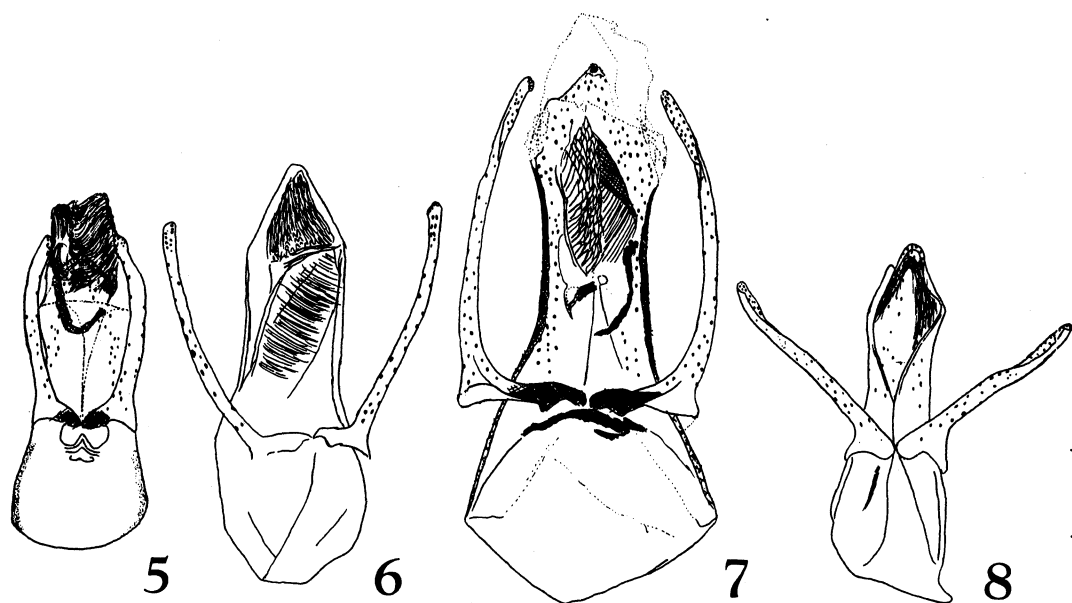
Each elytron with twelve series of punctures. The 1st at the suture and turned outward along the end of elytron at apex, 2nd to 7th consist of rough punctures; 2nd turned outward before end and joined with 5th; 3rd disappeared at middle, reappear after middle and jointed with 2nd; 4th consisting of shallow punctures, roundly turned inward, contact to 5th at middle. Interval of 5th and 6th bearing few shallow fine punctures; 6th and 7th closely contact, disorderly lined up; 8th consisting of shallow rough punctures, approaching to 6-7th; 9th to 11th consisting of fine punctures; 9th extending from shoulder to posteriorly; 10th closely contact to 9th and indistinct except middle; 11th indistinct after middle; 12th consisting of rough punctures lined up at margin, disappeared before hind angle. Epipleura with two series of fine punctures lined up near margin.

Abdomen somewhat spindle-shaped. Surface shagreened and pubescent. There is a carina at the base of 3rd sternite. The 3rd tergite widely exposed.

LH : 0.47 WH : 0.70 LP : 0.50 WP : 0.75 WPB : 0.50
LE : 0.95 WE : 0.84 L : 4.0

Holotype : ♀, Sanno-toge, Oku-Nikko, Japan, 21.vi.1960, T.Nakane leg.

This new species resembles *nobile* Sharp in having depressions and groove, but *nobile* is large and stout, and its 3rd tergite almost covered with elytra. This new species is



Figs. 5-8 Male genitalia of *Siagonium* spp. 5. *vittatum* Fauvel. 6. *debile* Sharp. 7. *nobile* Sharp. 8. *yamashitai* sp. nov. Scale : 0.1mm.

similar to *debile* Sharp too, but the structure of pronotum is clearly different.

Key to the species of the genus *Siagonium* from Japan and Formosa

- 1 (10) Pronotum without clear depression on the middle.
- 2 (3) Pronotum widely flat at middle with a pair of perceptible grooves along middle. Mandible with a process on upper side in both sexes. Elytra with reddish yellow patches on each side. *vittatum* Fauvel
- 3 (2) Pronotum more or less convex with or without a perceptible groove, Mandible without a process on upper side in female. Elytra usually without patches, but sometimes paler partially.
- 4 (5) Pronotum wide($WP/WPB = 1.5$), without depression nor groove. Impunctate area behind eye absent. *kojimai* sp.nov.
- 5 (4) Pronotum not so wide($WP/EPB = 1.3$), Usually impunctate area behind eye present.
- 6 (7) Elytra longer, covering the most part of 3rd tergite. Forehead without horns in both sexes. *yamashitai* sp.nov.
- 7 (6) Elytra shorter, covering less than half of 3rd tergite. Usually forehead with horns in male.
- 8 (9) Elytra dark brown, subshiny. *gracile* Sharp
- 9 (8) Elytra lighter brown, rather strongly shiny. *nikkoense* sp.nov.

- 10 (1) Pronotum with depressions including a groove at middle, but sometimes lacking the groove.
- 11(12) Gibbose elevation on each side of forehead not so large. The groove on pronotum short, the lateral depression extending along base inward. Margin of pronotum narrowed at hind angle. *incertum* sp.nov.
- 12(11) Gibbose elevation on each side of forehead large in female. Depression on each side of pronotum not reaching the base or not extending inward. Margin of pronotum not narrowed at hind angle.
- 13(14) Pronotum a little wider than long, the depression on each side shallow and connected with scarcely perceptible U-shaped groove. *miyamotoi* sp.nov.
- 14(13) Pronotum clearly wider than long, the depression on each side not connected.
- 15(16) Large and stout. Median depression on pronotum large, with clear groove, which reaches near apex and base. *nobile* Sharp
- 16(15) Small and somewhat slender. Median depression on pronotum smaller with a short perceptible groove not reaching near apical end. Sometimes the groove indistinct. *debile* Sharp

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Addendum :

Siagonium yamashitai kurinoense Takai et Nakane ssp. nov.

Closely allied to the nominate subspecies but distinguished from it by the following characters: 1) Antenna shorter, with 5th segment as long as 2nd, while in the nominate subspecies 5th twice as long as 2nd; 2) Elytra reddish brown.

♂	LH : 0.40	WH : 0.50	LP : 0.44	WP : 0.59
	WPB : 0.45	LE : 0.88	WE : 0.75	L : 3.0
♀	LH : 0.45	WH : 0.58	LP : 0.55	WP : 0.69
	WPB : 0.54	LE : 1.05	WE : 0.86	L : 4.2

Holotype: ♂, Mt. Kurinodake, Kagoshima Pref., Kyushu, Japan, 25. vii. 1974, T. Nakane leg. Paratype: 1 ♀, same data as Holotype.