

**On the Japanese Species of the Genus *Spilopteron*
Townes, with Description of a New Species
(Hymenoptera, Ichneumonidae)**

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Introduction

The genus *Spilopteron* Townes, a small group of the Acaenitinae, has been represented by only eight species in the world: four from the Nearctic region, two from Formosa and two from Japan. In the course of the present study I have found three species in Japan, of which one is new to science. It is said that the species of Acaenitinae are parasites of the larvae of wood boring Coleoptera. No host record is, however, given in the Japanese species. The holotype of the new species is preserved in the collection of the Entomological Institute, Hokkaido University, Sapporo.

Genus *Spilopteron* Townes

Spilopteron Townes, U. S. Nat. Mus. Bul. 216(2): 568, 1960. [Type-species: *Spilopteron franclemonti* Townes].

Key to the Japanese species of *Spilopteron*

1. Female.2
- Male.4
2. Propodeum with median basal area usually longer than wide, 1.0-1.2 times as long as wide at base. Last segment of hind tarsus about 1.7 times as long as the 2nd one. Ovipositor sheath 2.1 times as long as hind tibia. Body entirely black; inner orbit black, with a yellow spot (Fig. 3).3. *pyrrhoniae*, sp. nov.
- Propodeum with median basal area usually wider than long, 0.6-1.0 times as long as wide at base. Last segment of hind tarsus 1.2-1.4 times as long as the 2nd one. Ovipositor sheath 1.7-1.9 times as long as hind tibia. Body black, with numerous yellow spots and bands.....3
3. Head (Fig. 2) with face black, inner orbit yellow; frons black; temple blackish, with a large yellowish brown spot. Metapleurum and hind coxa entirely black. First abdominal tergite black, with a yellow band apically.....1. *apicalis* (Matsumura)
- Head (Fig. 1) with face and inner orbit entirely yellow; frons black, the longitudinal carina being yellow; temple almost yellowish brown. Metapleurum yellowish brown, or tinged with yellowish brown. Hind coxa entirely yellowish brown, or black, and with a yellowish brown stripe on ventral side. First abdominal tergite black, with basal and apical yellow bands.2. *tosensis* (Uchida)
4. Leg with hind femur comparatively stout, 3.7-4.0 times as long as wide in lateral view; last

- segment of hind tarsus about 1.4 times as long as the 2nd one. Flagellum with a subapical white ring. Temple, scutellum, hind and middle coxae black3. *pyrrhoniae*, sp. nov.
- Leg with hind femur comparatively slender, 5.0–5.3 times as long as wide in lateral view; 1st segment of hind tarsus about as long as the 2nd one. Flagellum without white ring. Temple, scutellum, front and middle coxae yellowish to yellowish brown.5
5. Pronotum, mesoscutum, mesopleurum and metapleurum entirely black. Hind coxa black, without yellow stripe. First tergite with a yellow band apically.1. *apicalis* (Matsumura)
- Pronotum, mesoscutum and mesopleurum bicoloured, yellow and black. Hind coxa black, with a longitudinal yellow stripe on ventral side, or entirely reddish brown. First tergite with basal and apical yellow bands.2. *tosensis* (Uchida)

1. *Spilopteron apicalis* (Matsumura) (Figs. 2, 4 & 7)

Chorischizus apicalis Matsumura, Thousand insects of Japan, supplement 4: 149, 1912.

Phaeonolobus apicalis: Uchida, Jour. Fac. Agr. Hokkaido Imp. Univ. 25: 34, 1928.

Arotes apicalis: Uchida, Ins. Mats. 6: 160, 1932.

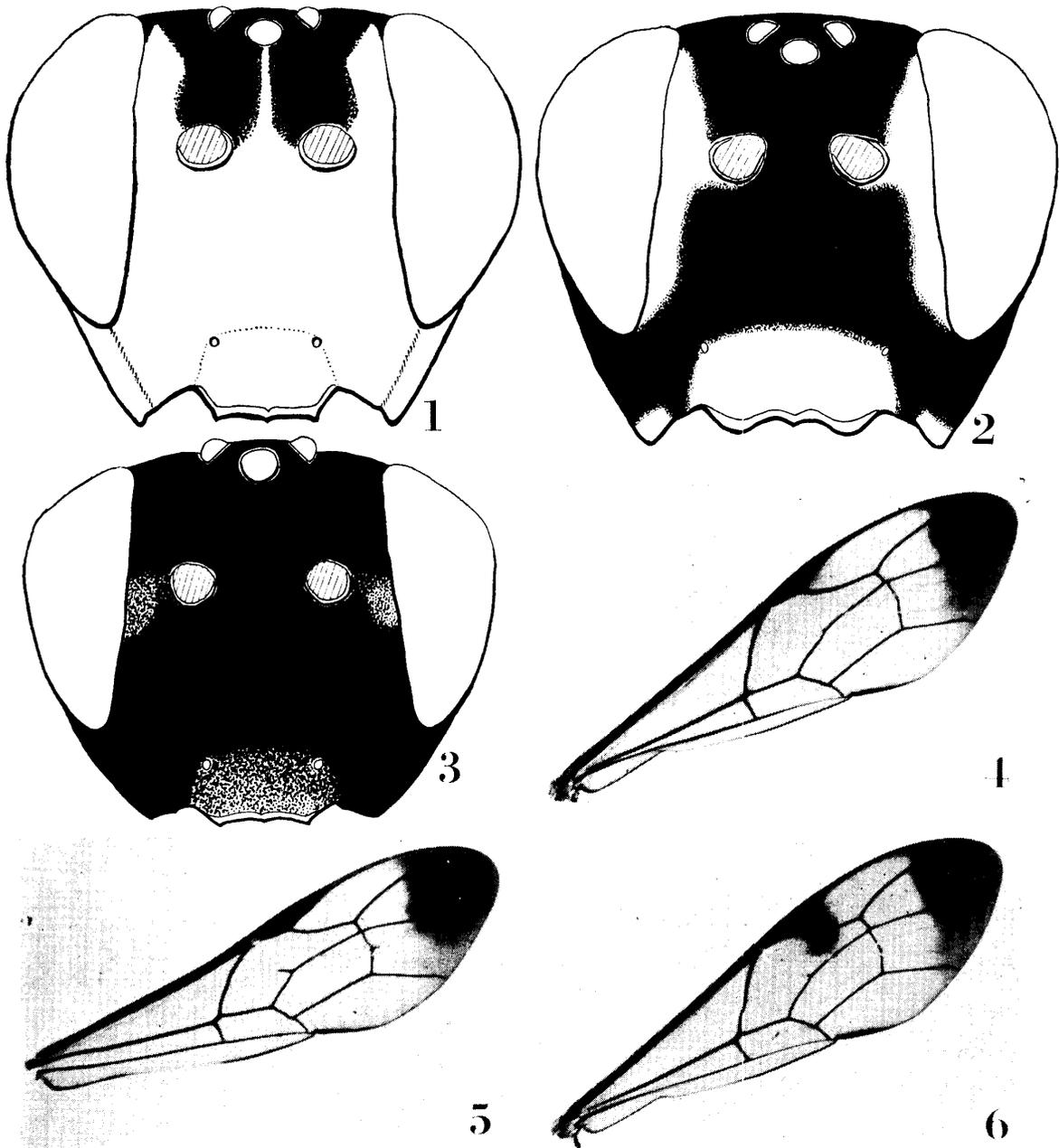
Siphimedia apicalis: Uchida, Ins. Mats. 9: 52, 1934.

Siphimedia apicalis: Iwata, Acta Hymenopterologica 1: 72, 1958.

Spilopteron apicalis: Townes, Momoi and Townes, Mem. Amer. Ent. Inst. 5: 391, 1965.

♀. Face about 1.5 times as wide as high, weakly convex centro-dorsally, strongly and sparsely punctured, sometimes rugoso-punctured on central portion; clypeus short, with a strong, sharp, subapical transverse carina, its apex slightly concave and with a very weak, median projection (Fig. 2); mandible strongly and transversely wrinkled except for apical teeth, the lower tooth being 1.4–1.6 times as long as the upper one; malar space a little shorter than basal width of mandible; exposed portion of labrum about 3/5 as long as wide; frons rather strongly concave, polished, and with a vertical carina; temple weakly convex, polished, weakly and sparsely punctured, 5/8 as long as diameter of eye in lateral view; distance between lateral ocelli and eyes about 1.6 times as long as diameter of an ocellus; occipital carina complete; antennae with 35–38 segments. Pronotum strongly and transversely striate on central portion, sparsely and distinctly punctured on posterior portion, and smooth on collar; notauli sharp and deep, convergent to just behind center of mesonotum; front profile of mesoscutum vertical; scutellum weakly convex, rather strongly punctured, with a distinct lateral carina on basal 2/5; prepectal carina reaching subtegular ridge. Propodeum strongly carinate and polished; areola confluent with petiolar area; median basal area smooth, wider than long, 0.7–0.9 times as long as wide at base; 1st lateral area weakly and sparsely punctured; areola, 2nd lateral area, 2nd and 3rd pleural areas coarsely rugose; petiolar area transversely and strongly rugose on basal half, weakly and longitudinally rugose or smooth on apical half. Wing (Fig. 4) with areola absent; intercubitus basad of 2nd recurrent vein by 2/9–2/3 its length; nervellus intercepted near its lower 1/2–5/8. Leg with front and middle tarsal claws with an acute accessory tooth near apex; hind tarsal claws simple; hind femur 4.0–4.3 times as long as wide in lateral view; last segment of hind tarsus 1.2–1.4 times as long as the 2nd one. Abdomen with apex of 1st sternite 4/7–5/7 the distance from base of tergite to spiracle; 1st sternite with a median convexity that bears numerous long hairs. Ovipositor compressed, its tip without transverse ridges; ovipositor sheath 1.7–1.9 times as long as hind tibia.

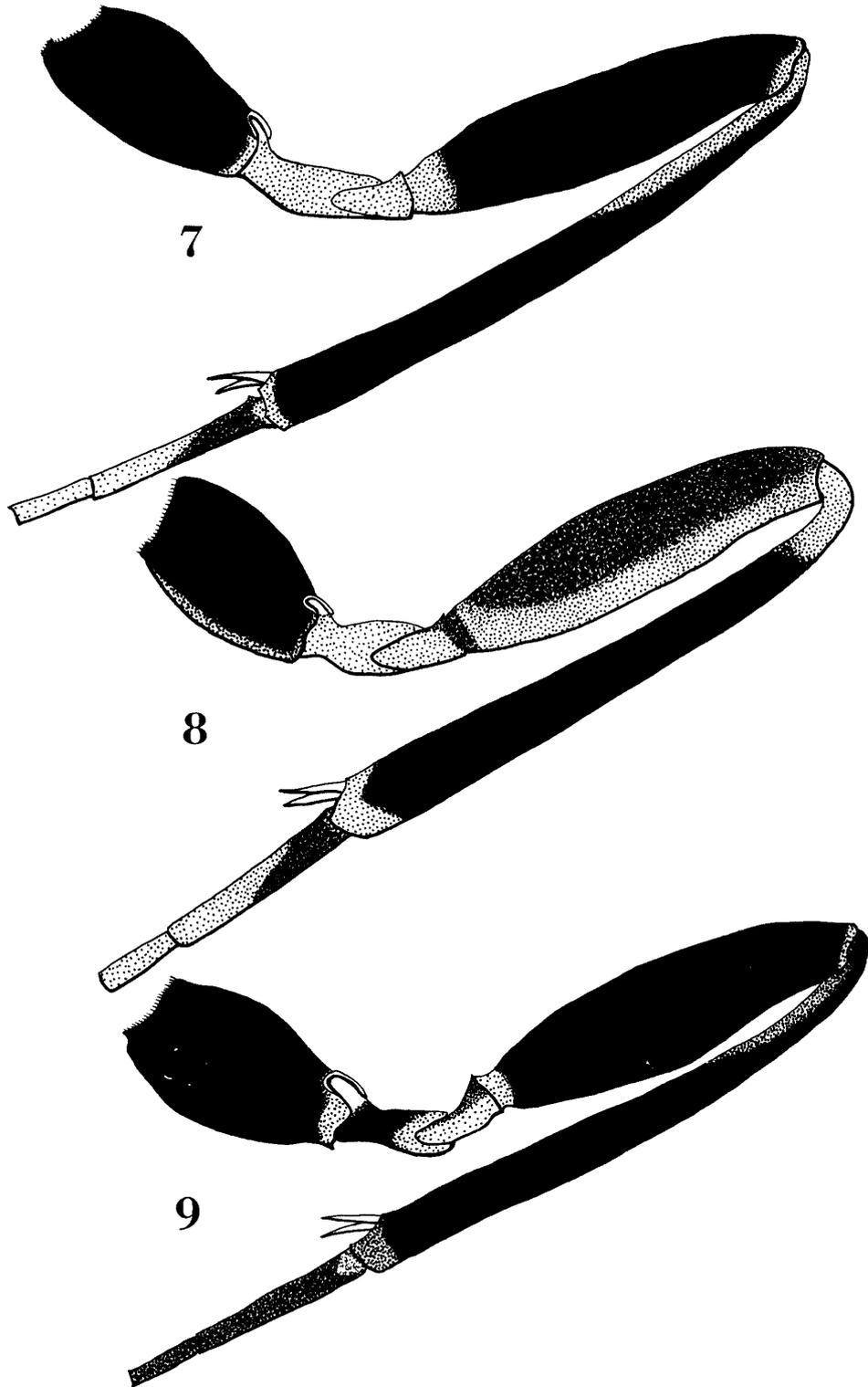
Black. Face (Fig. 2) dark brown to black, sometimes weakly tinged with yellowish brown on dorsal portion; facial and frontal orbits, clypeus, labrum, cheek, mandible except for black apical teeth, and palpi yellow to yellowish brown; temple black, indefinitely yellow medially; frons black.



Figs. 1–3. Head in frontal view, female: 1, *Spilopteron tosensis* (Uchida); 2, *Spilopteron apicalis* (Matsumura); 3, *Spilopteron pyrhoneae*, sp. nov.

Figs. 4–6. Right forewings, female: 4, *Spilopteron apicalis* (Matsumura); 5, *Spilopteron pyrhoneae*, sp. nov.; 6, *Spilopteron tosensis* (Uchida).

Tegula, subtegular ridge, scutellum and postscutellum yellow to yellowish brown; collar, hind and lower corners of pronotum, front and hind margins of mesopleurum more or less tinged with yellowish to reddish brown; propleurum black, reddish brown on lower margin. Propodeum black; areola on apical part, petiolar area, 2nd lateral area on apical part, 3rd pleural area yellowish brown, sometimes the 3rd pleural area being entirely blackish. Front and middle legs yellowish brown, the coxae being fuscous to black on basal and dorsal portions. Hind leg (Fig. 7) with coxa black; trochanter yellowish brown; femur black, yellowish brown on both ends; tibia fuscous, yellowish on base, extreme apex and baso-ventral side; tarsus fuscous on basal half, yellowish brown on apical



Figs. 7-9. Left hind legs, female: 7, *Spilopteron apicalis* (Matsumura); 8, *Spilopteron tosensis* (Uchida); 9, *Spilopteron pyrrhoniae*, sp. nov.

half. Abdomen black; 1st and 2nd tergites each with a yellowish brown band apically; extreme apices and ventral margins of 3rd and following tergites tinged with yellowish brown; subgenital plate yellowish brown, darker basally; ovipositor sheath dark brown. Wings subhyaline; fore-

wing (Fig. 4) with a large fuscous spot in its apex; apex of hind wing, sometimes lower part of stigma, weakly fuscous-tinged.

Length: Body 14.3–18.4 mm., forewing 12.0–16.4 mm.

The male of this species was previously unknown.

♂. Agrees with the above-mentioned description of the female, except for the following aspects: —

Head with antennae with 41 segments, without white rings; intercubitus opposite 2nd recurrent vein; hind femur about 5.1 times as long as wide in lateral view; last segment of hind tarsus a little shorter than the 2nd one. Face and lower 2/3 of temple yellowish brown; frons black, yellow on vertical carina; antennae reddish brown, darker baso-dorsally. Propodeum with petiolar area blackish brown. Front and middle legs entirely yellowish brown.

Length: Body 14.1 mm., forewing 12.7 mm.

Specimens examined: 1♀, Sapporo, Hokkaido (13-viii-1966, T. Kocha); 1♀, Apoi-dake, Hokkaido (3-viii-1967, T. Kocha); 2♀♀, Narugo, Miyagi-ken (25-viii-1966, M. Suwa); 1♀ (holo-type of *apicalis*), Nikko, Tochigi-ken (viii-1912, S. Matsumura); 1♂, Yari-daira, Hida, Gifu-ken (26-vii-1969, A. Nagatomi).

Host: *Monochamus* sp. (Cerambycidae, Col.). (after Uchida, 1928).

Distribution: Japan (Hokkaido and Honshu).

2. *Spilopteron tosensis* (Uchida) (Figs. 1, 6 & 8)

Siphimedia apicalis f. *tosensis* Uchida, Ins. Mats. 9: 53, 1934.

Siphimedia apicalis f. *yakushimensis* Uchida, Ins. Mats. 9: 53, 1934.

Siphimedia apicalis tosaensis: Iwata, Acta Hymenopterologica 1: 72, 1958.

Spilopteron tosensis: Townes, Momoi and Townes, Mem. Amer. Ent. Inst. 5: 391, 1965.

♀. Face 1.5–1.6 times as wide as high, weakly convex on dorso-central portion, sparsely punctured, weakly striate on dorso-central portion; clypeus short, flat, with a strong, sharp, sub-apical transverse carina, its apex slightly concave and with a very weak median projection (Fig. 1); mandible strongly and transversely wrinkled except for apical teeth, the lower tooth being about 1.4–1.6 times as long as the upper one; malar space a little shorter than basal width of mandible; exposed portion of labrum 1/2 as long as wide; frons rather strongly concave, polished, and with a vertical carina; temple weakly convex, weakly and sparsely punctured, rather narrow, and 4/7 as long as diameter of eye in lateral view; distance between lateral ocelli and eyes 1.6–1.8 times as long as diameter of an ocellus; occipital carina complete; antennae with 34–37 segments. Pronotum polished, transversely striate on median portion, smooth on collar, and weakly and rather sparsely punctured on posterior portion; notauli sharp and deep, convergent to just behind center of mesoscutum; front profile of mesoscutum vertical; scutellum weakly convex, rather strongly punctured, with a distinct lateral carina on basal 3/7–4/7; prepectal carina reaching subtegular ridge. Propodeum strongly carinate and polished; areola confluent with petiolar area; median basal area smooth, wider than long, 0.8–1.0 times as long as wide at base; 1st lateral area moderately punctured; 2nd lateral area and 2nd and 3rd pleural areas coarsely rugose; basal half of petiolar area transversely and strongly rugose on basal half, smooth or weakly rugulose on apical half. Wing (Fig. 6) with areolet absent; intercubitus opposite 2nd recurrent vein, sometimes a little distad of the latter; nervulus antefurcal by about 1/3 of its length; nervellus intercepted near its lower 1/2. Leg with front and middle tarsal claws with an acute accessory tooth near apex; hind tarsal claws simple; hind femur rather slender, about 4.1–4.5 times as long as wide in lateral view. Abdomen

with 1st sternite with a median convexity that bears numerous long hairs; apex of 1st sternite $\frac{3}{4}$ the distance from base of tergite to spiracle. Ovipositor compressed, its tip without transverse ridges; ovipositor sheath 1.8–1.9 times as long as hind tibia.

Black. Head (Fig. 1) yellow, apical teeth of mandible, temple on dorsal $\frac{1}{3}$, vertex, occiput, frons except for yellow vertical carina and frontal orbit black; scape and pedicel yellowish brown, paler ventrally; flagellum reddish to dark brown, paler baso-ventrally, the basal 11th or 12th–15th or 16th segments yellowish brown. Pronotum blackish, front, hind and dorsal margins yellow to yellowish brown; mesoscutum black, yellow along frontal and lateral margins, sometimes with four longitudinal yellow stripes; scutellum and postscutellum yellow; axillary trough of meso- and metanotum yellow to dark brown; tegula and subtegular ridge yellow to yellowish brown; propleurum yellowish brown, or black; mesopleurum black, or yellowish brown, the front and hind margins being tinged with yellowish brown; metapleurum black, or yellowish to dark brown, sometimes weakly tinged with dark brown. Propodeum yellowish brown on apical half, black on basal half; basal areas, basal half of areola, and 2nd lateral and pleural areas black; petiolar area, apical half of areola, apical half of 2nd lateral and pleural areas and 3rd pleural area yellowish brown. Front and middle legs yellowish brown, sometimes coxae blackish brown on basal and dorsal portions. Hind leg (Fig. 8) with coxa dark brown to black; trochanter and tarsus yellowish brown, sometimes the baso-dorsal half of basitarsus being infuscate; femur entirely yellowish to reddish brown, or black to dark brown, paler ventrally, both extreme ends being yellowish brown; tibia infuscate, the base, extreme apex, and sometimes inner side being yellowish brown. Abdomen black; 1st tergite yellowish brown, black on median $\frac{2}{5}$ – $\frac{1}{5}$; 2nd and following tergites each with a yellowish brown band apically. Ovipositor sheath fuscous, paler apically. Wings subhyaline; forewing (Fig. 6) with two large fuscous spots in its apex and lower part of stigma; apical part of hind wing weakly fuscous-tinged.

Length: Body 14.0–17.3 mm., forewing 11.2–15.0 mm.

The male of this species was previously unknown.

♂. Head with face about 1.4 times as wide as high; distance between lateral ocelli and eyes 1.5 times as long as diameter of an ocellus; antennae longer than in female, with 40 or 41 segments. Wing with nervulus antefurcal by about $\frac{1}{4}$ of its length; intercubitus distad of 2nd recurrent vein by $\frac{1}{3}$ – $\frac{2}{3}$ its length; hind femur more slender, 5.1–5.3 times as long as wide in lateral view. In colouration, more extensively yellow than in female, frons entirely yellow, vertex, occiput and temple on dorsal $\frac{1}{7}$, black. Pronotum yellow, black on dorsal portion; mesoscutum black, with four yellow longitudinal bands, the median two bands not reaching apex; mesopleurum yellow, black on antero-median portion and dorso-submarginal band; mesosternum yellowish brown, with a wide longitudinal blackish band, sometimes entirely yellowish brown; metapleurum yellow, black on front margin, sometimes entirely yellow. Propodeum and abdomen more extensively yellow than in female. Hind leg with coxa yellowish brown on ventral half, blackish on dorsal half; femur reddish brown, sometimes dark brown on dorsal half; tarsus yellowish, infuscate on baso-dorsal half. Forewing without fuscous spot on lower part of stigma.

Length: Body 14.7–15.7 mm., forewing 12.3–13.6 mm.

Specimens examined: 1♀ (holotype of *tosensis*), Mt. Koeda, Kôchi-ken, Shikoku (12-vii-1933, Y. Sugihara); 1♀, Nakatsu-mine, Tokushima-ken (9-viii-1968, A. Mori); 1♂, Momiki, Gokanoshô, Kumamoto-ken (20-vii-1966, A. Tanaka); 1♂, Momiki, Gokanoshô, Kumamoto-ken (21-vii-1966, R. Ohishi); 1♀, Momiki, Gokanoshô, Kumamoto-ken (22-vii-1966, R. Ohishi); 1♂, Kurino-dake, Kagoshima-ken (13-vii-1969, N. Sakane); 1♀ (holotype of *yakushimensis*), Hanano-

egô, Yaku-shima, Kagoshima-ken (31-vii-1929, H. Hori); 1 ♀, Kosugidani, Yaku-shima, Kagoshima-ken (29-vii-1971, K. Sakamoto).

Host: Unknown.

Distribution: Japan (Shikoku and Kyushu).

The female of this species is variable in colouration. In general, specimens from northern localities are darker, with the mesoscutum almost entirely black, sometimes yellowish brown on lateral and frontal margins, the pronotum, propleurum, mesopleurum and metapleurum almost entirely black, the hind coxa black with a longitudinal yellow stripe on ventral side, and the apical yellow bands of 3rd and following tergites indistinct and narrow, while in specimens from Yaku-shima are largely yellow, with the mesoscutum with four distinct yellow longitudinal stripes, the pronotum and the pro-, meso- and metapleurum almost entirely yellow, the hind coxa entirely yellowish to dark brown, and the apical yellow bands of 3rd and following tergites distinct and wide.

3. *Spilopteron pyrrhoniae*, n. sp. (Figs. 3, 5 & 9)

♀. Face 1.3–1.5 times as wide as high, weakly convex on dorso-central portion, strongly and rather closely punctured, rugoso-punctured on dorso-central portion; clypeus short, with a strong, sharp, subapical transverse carina, its apex slightly concave and with a very weak, median projection (Fig. 3); mandible transversely and strongly wrinkled except for apical teeth, the lower tooth being 1.5 times as long as the upper one; malar space about as long as basal width of mandible; exposed portion of labrum about 1/2 as long as wide; frons rather strongly concave, polished, smooth, and with a vertical carina; temple weakly convex, polished, weakly and sparsely punctured, rather wide, 2/3 as long as diameter of eye in lateral view; distance between lateral ocelli and eyes 1.7 times as long as diameter of an ocellus; occipital carina complete; antennae with 35 or 36 segments. Pronotum transversely striate except for posterior dorsal portion, as in *apicalis*; notauli sharp and deep, convergent to just behind center of mesoscutum; front profile of mesoscutum vertical; scutellum weakly convex, rather weakly punctured, and with a distinct lateral carina on basal 1/2; prepectal carina reaching subtegular ridge. Propodeum strongly carinate and polished; areola confluent with petiolar area; median basal area longer than wide, 1.0–1.2 times as long as wide at base; basal area, areola and petiolar area smooth; 1st lateral area weakly punctured; lateral areas weakly rugose. Forewing (Fig. 5) with areolet absent; intercubitus opposite 2nd recurrent vein, sometimes a little basad of the latter; nervulus antefurcal by about 1/2 of its length; nervellus intercepted near its lower 3/5. Leg with front and middle tarsal claws with an acute accessory tooth near apex; hind tarsal claws simple; hind femur moderately slender, 3.5 times as long as wide in lateral view; last segment of hind tarsus about 1.7 times as long as the 2nd one. Abdomen with 1st sternite with a median convexity that bears numerous long hairs; apex of 1st sternite 4/7–2/3 the distance from base of tergite to spiracle. Ovipositor compressed, its tip without transverse ridges; ovipositor sheath about 2.1 times as long as hind tibia.

Black. Face (Fig. 3) black; inner orbit with a yellowish white spot; clypeus weakly tinged with dark brown; labrum and palpi pale yellow to yellowish brown; mandible yellowish brown except for apical teeth black. Antennae with scape and pedicel dark brown, paler beneath; flagellum dark brown to black, paler baso-ventrally, the basal 15th or 16th–21st or 22nd segments being white. Leg (Fig. 9) with coxae black except for extreme apices fuscous; all trochanters yellowish to blackish brown, darker dorsally; front and middle femora dark brown, both ends being paler; hind femur (Fig. 9) black, yellowish brown on both extreme ends; front and middle tibiae

yellowish brown; hind tibia (Fig. 9) dark brown, a little paler baso-ventrally; front and middle tarsi infusate; 1st and 2nd segments of hind tarsus infusate (Fig. 9), the 3rd to 5th segments whitish. Abdomen entirely black; 1st tergite sometimes pale yellow at apex; subgenital plate dark brown to black, paler apically; ovipositor sheath yellowish to blackish brown. Wings subhyaline; forewing (Fig. 5) with a large spot in its apex.

Length: Body 11.4–12.0 mm., forewing 10.2–10.4 mm.

♂. Head with antennae more slender, with 40 or 41 segments; mandible with lower tooth 1.7–1.8 times as long as upper one. Forewing with nervulus antefurcal by about 1/3 its own length. Leg with hind femur more slender, 3.7–4.0 times as long as wide in lateral view. Abdomen with apex of 1st sternite 0.7–0.9 the distance from base of tergite to spiracle. Face and clypeus entirely whitish yellow; inner orbital white mark extending near top of eye. First to 15th flagellar segments blackish dorsally, whitish ventrally, 16th or 17th–27th or 28th segments white, the rest segments black. Scutellum at apex, postscutellum and petiolar area sometimes tinged with whitish yellow. Front and middle legs paler as in female; hind tibia infusate, whitish yellow basally. Abdomen black; 1st tergite black on basal 3/4, white on apical 1/4, sometimes the white area being extensive near the spiracle; 2nd tergite black, white on about apical 1/2.

Length: Body 11.5–15.0 mm., forewing 10.8–11.9 mm.

Holotype (♀): Takachiho-gawara, Kirishima-yama, Kagoshima-ken (24-iv-1975, Y. Minami), reared from a Cerambycid. Paratypes: 1♂, Takachiho-gawara, Kirishima-yama, Kagoshima-ken (8-vi-1973, K. Ôhara); 2♂♂, Kurino-dake, Kagoshima-ken (21-iii-1979, K. Tsuda), reared from *Pyrrhona laeticolor* Bates on *Symplocos lucida* Sieb. et Zucc.; 1♀, Kurino-dake, Kagoshima-ken (13-iv-1980, K. Tsuda), reared from *P. laeticolor* Bates on *S. cochinchinensis* Moore.

Host: *Pyrrhona laeticolor* Bates (Cerambycidae, Col.).

Distribution: Japan (Kyushu).

This species is readily distinguished from any other congeneric Japanese species by the colouration of the head, by the black thorax and by the smooth propodeum. Furthermore, this species resembles the Formosan *S. alishanus* Chiu, but it may be clearly differentiated from *alishanus* by the colouration of the body and by the propodeum, which is strongly carinate and smooth.

Summary

Three species of the genus *Spilopteron* are described: *S. pyrrhoniae*, n. sp. from Kyushu; *S. apicalis* (Matsumura); and *S. tosenis* (Uchida). A key to the species is given.

Acknowledgements

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