

Three New Species of *Retalia* Seyrig from Formosa and Japan (Hymenoptera : Ichneumonidae)

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Abstract

This paper deals with the descriptions of new species of the genus *Retalia* Seyrig from Formosa and Japan. Three new species of *Retalia* are described: *R. rubida* and *R. nigrescens* from Formosa; and *R. japonica* from Japan. The genus *Retalia* is recorded for the first time from Formosa. A key is provided to distinguish the three species.

Introduction

The genus *Retalia* Seyrig, a small group of the subfamily Gelinae, has been represented by only one described species from Madagascar. In 1970 H. Townes gave Japan and the Philippines as a locality of the genus with no species names. In the course of the present investigation I have found two species in Formosa and one in Japan, all of which are new to science. The hosts of this genus remain unknown. The types of these species will be deposited in the collection of the Entomological Institute, Hokkaido University, Sapporo.

Genus *Retalia* Seyrig

Retalia Seyrig, Mém. Acad. Malgache 39: 70, 1952. [Type-species: *Retalia nitida* Seyrig].

This genus is easily distinguished from any other genera of the subtribe Bathytrichina by the following combination of characters.

Head wide and short, less than 0.8 times as long as wide in dorsal view; clypeus weakly convex, broadly convex on apex, the median portion truncate to weakly concave; apical margin of clypeus beveled to a rather sharp forward edge, without a median tooth or group of teeth but with a row of crenular protuberances along the apical margin (Fig. 1); upper tooth of mandible about 1.6–2.3 times as long as the lower tooth (Fig. 3). Notaulus distinct, short, and ending abruptly at a pit-like groove, just mesad of the notaulus a fine vertical carina or ridge. Propodeum

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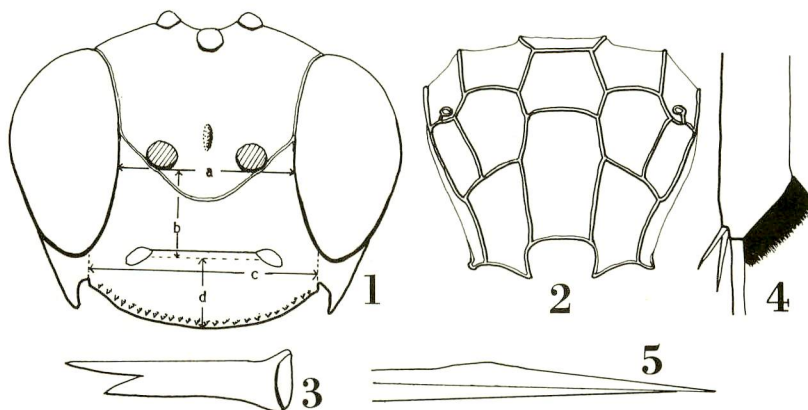


Fig. 1. Head in frontal view, ♀, *Retalia rubida* sp. nov.
 Fig. 2. Propodeum in dorsal view, ♀, *R. rubida* sp. nov.
 Fig. 3. Mandible, ♀, *R. japonica* sp. nov.
 Fig. 4. Apical part of hind tibia, ♀, *R. rubida* sp. nov.
 Fig. 5. Apical part of ovipositor, *R. nigrescens* sp. nov.

(Fig. 2) completely areolated, without crest. Wings (Figs. 6-11) with 2nd recurrent vein inclivous, with two bullae; areolet pentagonal, the 2nd intercubitus sometimes absent; nervellus intercepted or not intercepted. First abdominal segment slender, cylindrical, without any longitudinal carinae, the spiracle situated near apical 2/5. In Formosan and Japanese species inner dorsoapical portion of hind tibia abruptly narrowed, with a row of long and closed hairs (Fig. 4).

The Formosan and Japanese species can be distinguished by the following key: —

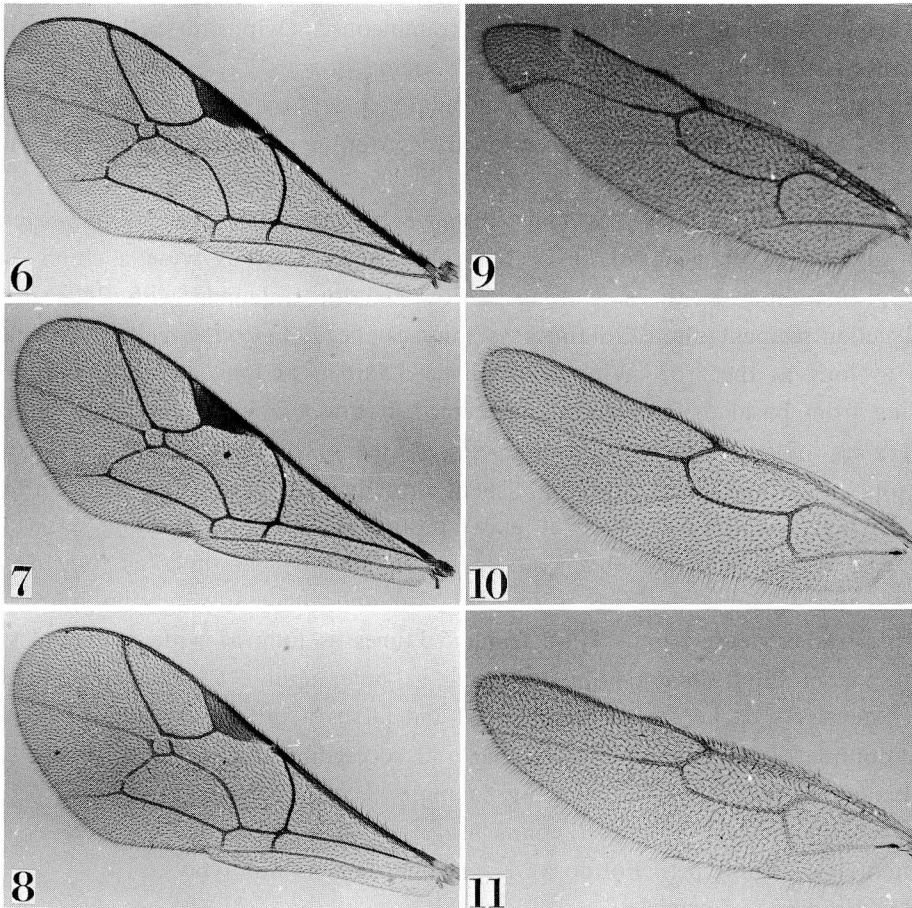
Key to the Formosan and Japanese species of *Retalia*

- 1. Female. 2
- Male. 4
- 2. Face comparatively wide, 1.8 times as wide as high; malar space about 1/3 as long as basal width of mandible; flagellum with 20 segments; frons, vertex and temple more densely haired. Nervellus intercepted. Postpetiole comparatively slender, 1.9 times as long as wide at apex; ovipositor sheath 1.1 times as long as hind tibia. Thorax light ferruginous. *R. rubida* sp. nov.
- Face comparatively narrow, 2.0-2.2 times as wide as high; malar space 2/5-1/2 as long as basal width of mandible; flagellum with 17 or 18 segments; frons, vertex and temple less densely haired. Nervellus intercepted or not intercepted. Postpetiole comparatively stout, 1.0-1.5 times as long as wide at apex; ovipositor sheath 0.8-1.0 times as long as hind tibia. Thorax ferruginous or black. 3

3. Wings with stigma comparatively slender, 2.9–3.2 times as long as wide; nervellus intercepted at lower $3/7$. Distance between lateral ocelli and eyes 1.7 times as long as diameter of an ocellus. Thorax and abdomen entirely black.
 2. *nigrescens* sp. nov.
- Wings with stigma comparatively large, 3.3–3.5 times as long as wide; nervellus not intercepted. Distance between lateral ocelli and eyes 2.1–2.3 times as long as diameter of an ocellus. Thorax and abdomen light ferrugineous.
 3. *japonica* sp. nov.
4. Flagellum with 22 segments. Hind femur 5.3 times as long as wide in lateral view; basitarsus of hind leg a little longer than the remaining segments together except claws. Nervellus intercepted. Thorax light ferrugineous.
 1. *rubida* sp. nov.
- Flagellum with 19 segments. Hind femur 5.5–5.8 times as long as wide in lateral view; basitarsus of hind leg shorter than the remaining segments together except claws. Nervellus intercepted or not intercepted. Thorax dark brown to black. 5
5. Clypeus 3.1 times as wide as high; distance between lateral ocelli and eyes 1.8 times as long as diameter of an ocellus. Wing with stigma slender, 2.9 times as long as wide; nervellus intercepted at lower $3/8$ 2. *nigrescens* sp. nov.
- Clypeus 2.5–2.9 times as wide as high; distance between lateral ocelli and eyes 2.1–2.3 times as long as diameter of an ocellus. Wing with stigma large, 3.5–3.7 times as long as wide; nervellus not intercepted. 3. *japonica* sp. nov.
1. *Retalia rubida* sp. nov.

♀. Face (Fig. 1) subpolished, finely and sparsely punctate, about 1.8 times as wide as high; upper transverse carina of face strong, the carina broadly arched downward and joining orbital carina of frons; clypeus finely and sparsely punctate, wide, 3.1 times as wide as high; clypeal fovea very large (Fig. 1); mandible slender, weakly tapering towards apex, the upper tooth 2.5 times as long as lower tooth; malar space narrow, about $1/3$ as long as basal width of mandible; temple weakly swollen, with rather sparse, weak, setiferous punctures; frons densely and weakly punctate, with a short vertical groove at bottom; distance between lateral ocelli and eyes about 2.1 times as long as diameter of an ocellus. Antennae with 22 segments; flagellum weakly enlarged apically; 1st flagellar segment 1.1 times as long as the 2nd; 2nd flagellar segment about 1.2 times as long as the 3rd. Pronotum polished, with 3 short striae on lower corner and sparse hairs on dorsal portion; epomia strong, long, the upper end curved mesad near upper margin of pronotum; meso-scutum polished, sparsely and weakly punctate, with a deep concavity on median lateral side of lateral lobe, so that the lateral margin highly carinate as a lamella; scutellum weakly convex, with sparse hairs, without lateral carina. Propodeum (Fig. 2) polished, rather sparsely haired, strongly and completely areolated; areola

5/6 as long as wide at costula; petiolar area 1.9 times as long as areola. Mesopleurum polished, rather sparsely haired; sternaulus strong and complete, but interrupted by a distinct ridge at the middle; mesosternum densely haired; metapleurum with rather dense, long hairs; juxtacoxal carina strong and complete. Wings (Figs. 6 & 9) with nervulus postfurcal by $2/5$ of its own length; stigma large, 3.6 times as long as wide, with radius emitting from basal $5/8$; nervellus vertical, intercepted at lower $4/9$; apical 0.7 of mediella strongly arched. Hind femur slender, 5.6 times as long as wide in lateral view; inner spur of hind tibia about 1.3 times as long as outer spur; basitarsus of hind leg about 1.1 times as long as the remaining segments together except claws. First tergite slender, polished, bare, 5.1 times as long as wide at apex, its spiracle situated at apical $3/8$; postpetiole 1.9 times as long as wide at



Figs. 6-8. Left forewings: 6, *Retalia rubida* sp. nov., ♀; 7, *R. nigrescens* sp. nov., ♀; 8, *R. japonica* sp. nov., ♀.

Figs. 9-11. Left hind wings: 9, *R. rubida* sp. nov., ♀; 10, *R. nigrescens* sp. nov., ♀; 11, *R. japonica* sp. nov., ♀.

apex; 2nd tergite virtually bare, with a few hairs on lateral side, about 1.1 times as long as wide at apex and as long as the 3rd; 3rd to 5th tergites virtually bare, with a few, long hairs on lateral side; 6th and subsequent tergites with sparse, rather long hairs on apical and lateral sides. Ovipositor straight, compressed, the apical portion long sagittate, without apical tooth or ridge; ovipositor sheath 1.1 times as long as hind tibia.

Light ferruginous. Head black; clypeus yellowish brown, a little darker dorsally; mandible light yellowish brown, the apical tooth reddish brown; palpi pale yellow. Scape and pedicel light yellowish brown, a little darker dorsally; flagellum yellowish brown basally, dark brown to infusate apically. Thorax light ferruginous. Legs light yellowish brown, the hind femur, tibia and tarsus a little darker. First abdominal tergite dull ferruginous, darker posteriorly; 2nd and 3rd tergites dark brown; 4th and succeeding tergites stramineous. Ovipositor yellowish brown; ovipositor sheath fuscous. Wings hyaline; stigma fuscous.

Length: Body 4.2 mm., forewing 3.3 mm.

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

Face 1.9 times as wide as high; distance between lateral ocelli and eyes 2.0 times as long as diameter of an ocellus; clypeus 2.8 times as wide as high; upper tooth of mandible 2.1 times as long as lower tooth; antennae with 24 segments; 1st flagellar segment about 1.3 times as long as the 2nd; 2nd flagellar segment 1.1 times as long as the 3rd. Wing with stigma 3.5 times as long as wide, with radius emitting from basal 5/9; nervellus intercepted at lower 2/5. Propodeum with areola 7/9 as long as wide at costula; petiolar area of propodeum 1.6 times as long as areola. First abdominal tergite polished, virtually bare, with a few hairs on lateral side, 6.0 times as long as wide at apex; postpetiole 2.2 times as long as wide at apex; 2nd tergite bare medially, sparsely haired laterally, 1.6 times as long as wide at apex and 1.4 times as long as the 3rd; 3rd and succeeding tergites with rather long and rather dense hairs. Hind femur 5.3 times as long as wide in lateral view; inner spur of hind tibia 1.4 times as long as outer spur. Clypeus and flagellum more extensively darker; hind femur, tibia and tarsus a little darker than in female; 1st abdominal segment dark brown; 2nd and succeeding tergites blackish.

Length: Body 4.3 mm., forewing 3.6 mm.

Holotype. ♀, Formosa: Lienhuachih, 500–550 m, Nantou Hsien, 28-iv-1981, K. Ôhara leg. Paratype. Formosa: 1 ♂, same data as holotype.

Distribution: Formosa.

This species is closely allied to the following Formosan *R. nigrescens* sp. nov., but it differs from the latter by the upper end of the epomia which is curved mesad near upper margin of the pronotum, the comparatively long ovipositor sheath, the densely haired frons, vertex and temple, the ferruginous thorax, etc. as mentioned in the key.

2. *Retalia nigrescens* sp. nov. (Figs. 5, 7 & 10)

In general appearance this new species closely resembles the preceding species, *R. rubida* sp. nov., from which it differs by the following characters: —

♀. Face faintly and transversely striate dorsally, with sparse, weak punctures, 1.0–2.1 times as wide as high; clypeus with very sparse, fine, setiferous punctures, 3.1–3.2 times as wide as high; upper tooth of mandible 1.7–1.9 times as long as lower tooth; temple more sparsely haired than in that of *rubida*; frons rather strongly and sparsely punctate, without a vertical groove; distance between lateral ocelli and eyes about 1.7 times as long as diameter of an ocellus. Antennae with 19 or 20 segments; 1st flagellar segment 1.1–1.2 times as long as the 2nd; 2nd flagellar segment about 1.2 times as long as the 3rd. Pronotum polished, virtually bare, with 3 short, transverse striae on lower corner, and sparse, setiferous punctures on dorsal margin; epomia strong, long, the upper end not curved, and reaching to dorsal ridge of pronotum; mesoscutum very sparsely haired, the median lateral side not specialized; scutellum with a few hairs. Mesopleurum more sparsely haired than in *rubida*, with a bare area on central portion; mesosternum and metapleurum sparsely haired. Propodeum strongly and completely areolated, with sparse, rather long hairs; areola $2/3$ – $5/7$ as long as wide at costula; petiolar area 2.1–2.2 times as long as areola. Wings (Figs. 7 & 10) with nervulus postfurcal by $4/7$ – $5/7$ of its own length; stigma comparatively large, 3.1–3.2 times as long as wide; nervellus intercepted at lower $3/7$. Hind femur 4.9–5.0 times as long as wide in lateral view; inner spur of hind tibia 1.4–1.5 times as long as outer spur; basitarsus of hind leg $4/5$ as long as the remaining segments together except claws. First tergite polished, very sparsely haired on lateral side, 3.1–3.3 times as long as wide at apex, its spiracle situated at apical $1/3$; postpetiole 1.1–1.2 times as long as wide; 2nd to 4th tergites virtually bare, with a few hairs on lateral side, respectively; 2nd tergite $2/3$ as long as wide at apex and about as long as the 3rd; 5th and succeeding tergites sparsely haired; ovipositor sheath $7/8$ as long as hind tibia.

Black. Clypeus dark brown; mandible yellowish brown, the apical teeth fusco-rufous; palpi yellowish brown. Scape, pedicel and basal 2 or 3 flagellar segments light ferruginous; flagellum except for basal 2 or 3 segments dark brown to infusate, paler basally. Propleurum, collar area, anterior margin of pronotum and subtegular ridge tinged with dark brown. Tegula yellowish brown. Legs yellowish brown, tarsi a little darker. First to 3rd or 4th abdominal tergites faintly tinged with dark brown; 4th or 5th and succeeding tergites light yellowish brown. Wings hyaline; stigma fuscous.

Length: Body 3.1–3.5 mm., forewing 3.2–3.4 mm.

♂. Differs from female as follows: —

Head with malar space $3/8$ as long as basal width of mandible; upper tooth of mandible 1.6 times as long as lower tooth; distance between lateral ocelli and eyes 1.8 times as long as diameter of an ocellus; hairs of frons, vertex and temple

a little denser than in female; upper transverse carina of face not joining carina of frontal orbit. Antennae with 21 segments; 1st flagellar segment about 1.4 times as long as wide at apex. Wings with nervulus postfurcal by $4/9$ of its own length; stigma 2.9 times as long as wide; nervellus intercepted at lower $3/8$. Mesoscutum rather densely haired; mesopleurum a little more sparsely haired than in female; scutellum rather densely haired; hairs of metapleurum denser than in female. Propodeum with areola 0.9 times as long as wide at costula; petiolar area 1.4 times as long as areola; hairs of propodeum a little denser than in female. First tergite very sparsely haired wholly, 4.3 times as long as wide at apex, its spiracle situated at apical $4/9$; postpetiole 1.9 times as long as wide at apex; 2nd tergite sparsely haired, $5/6$ as long as wide and 1.9 times as long as 3rd; 3rd and succeeding tergites with dense, short hairs. Hind femur slender, 5.8 times as long as wide in lateral view; basitarsus of hind leg about as long as 2nd and the remaining segments together except claws. Flagellum entirely infusate; clypeus a little paler than in female. Front and middle legs a little paler than in female; hind leg with coxa and trochanter light yellowish brown to fuscous, a little darker basodorsally; tibia and tarsus infusate. Abdominal tergite entirely blackish.

Length: Body 4.1 mm., forewing 3.8 mm.

Holotype. ♀, Formosa: Meifeng-Tsuifeng, 2200–2300 m, Nantou Hsien, 27-iv-1981, K. Ôhara leg. Paratypes. Formosa: 1 ♀, 25-iv-1981, Meifeng-Tsuifeng, 2200–2300 m, K. Ôhara leg.; 1 ♂, 17-iv-1981, Mt. Lalashan, 1300–1500 m, Taoyuan Hsien, K. Ôhara leg.

Distribution: Formosa.

3. *Retalia japonica* sp. nov. (Figs. 3, 8, & 11)

♀. Face subpolished, 2.1–2.2 times as wide as high, with very fine, sparse, setiferous punctures; upper transverse carina of face strong, broadly arched downward, and joining carina of frontal orbit; hair arrangement of frons, vertex and temple similar to *nigrescens*; frons with a short, shallow vertical groove at bottom; malar space $1/2$ as long as basal width of mandible; clypeus weakly convex, with sparse, fine, setiferous punctures, 3.1–3.2 times as wide as high; mandible (Fig. 3) almost parallell-sided, the upper tooth 2.0–2.3 times as long as lower tooth; clypeal fovea very large; distance between lateral ocelli and eyes 2.1–2.3 times as long as wide. Antennae with 20 segments; 1st flagellar segment 1.1 times as long as the 2nd; 2nd flagellar segment 1.1 times as long as the 2nd; 2nd flagellar segment 1.2–1.3 times as long as the 3rd. Pronotum polished, almost bare, without striae on lower corner, with sparse, weak, setiferous punctures on upper margin; epomia distinct, long, the upper end not curved, and reaching to upper ridge of pronotum; mesoscutum covered with rather sparse hairs, with a shallow concavity on median lateral side of lateral lobe; scutellum weakly convex, polished, with sparse, rather long hairs, without lateral carina; mesopleurum polished, sparsely haired, with a hairless area

on central portion; sternaulus strong and complete, but intercepted by a distinct ridge at the middle; mesosternum sparsely haired; metapleurum covered with rather sparse and rather long hairs; juxtacoxal carina strong and complete. Propodeum polished, sparsely haired, strongly and completely areolated; areola $3/4$ - $5/6$ as long as wide at costula; petiolar area 1.7-1.9 times as long as areola. Wings (Figs. 8 & 11) with nervulus postfurcal by $1/2$ - $5/8$ of its own length; stigma 3.3-3.4 times as long as wide; nervellus weakly reclivous, not intercepted. Hind femur 5.1-5.2 times as long as wide in lateral view; inner spur of hind tibia about 1.4 times as long as outer spur; basitarsus of hind leg about 0.9 times as long as the remaining segments together except claws. First tergite slender, 3.8-4.0 times as long as wide at apex, with very sparse hairs on lateral side, its spiracle situated at about apical $3/8$; postpetiole about 1.5 times as long as wide at apex; 2nd and 3rd tergites virtually bare, with very sparse hairs on lateral side; 2nd tergite $7/9$ as long as wide at apex and approximately as long as the 3rd; 4th and subsequent tergites with very sparse hairs. Ovipositor compressed, straight, the apical portion long sagittate, without apical tooth or ridge; ovipositor sheath 0.9-1.0 times as long as hind tibia.

Yellowish brown to dull ferruginous. Head black; clypeus yellowish brown; face weakly tinged with dark brown; mandible yellowish brown, the apical teeth light brown; scape and pedicel yellowish brown; flagellum yellowish brown to fuscous, paler basally. Thorax yellowish brown to dull ferruginous, the mesoscutum, mesosternum, propodeum and metapleurum a little darker. Legs light yellowish brown, all the last tarsal segments fuscous. First to 3rd tergites dull ferruginous; 4th and subsequent tergites yellowish brown. Ovipositor sheath fuscous. Wings hyaline; stigma dark stramineous.

Length: Body 2.7-3.3 mm., forewing 2.8-3.2 mm.

♂. Differs from female as follows: —

Face 1.9-2.0 times as wide as high; hairs of frons, vertex and temple a little denser than in female; malar space about $1/3$ as long as basal width of mandible; clypeus 2.6-2.9 times as wide as high; upper tooth of mandible 1.9-2.3 times as long as lower tooth. Antennae with 21 segments; 1st flagellar segment about 1.2 times as long as the 2nd; 2nd flagellar segment 1.0-1.3 times as long as the 3rd. Propodeum with areola 0.8-1.0 times as long as wide at costula; petiolar area 1.4-1.8 times as long as areola. Wings with nervulus postfurcal by $4/9$ - $5/9$ of its own length; stigma 3.5-3.7 times as long as wide. Hind femur slender, 5.5-5.8 times as long as wide in lateral view. First tergite very sparsely haired laterally and apically, slender, 5.5-5.6 times as long as wide at apex, its spiracle situated at apical $3/8$ - $2/5$; postpetiole 2.1-2.3 times as long as wide at apex; 2nd tergite very sparsely haired, 1.1-1.3 times as long as wide at apex and 1.2-1.5 times as long as the 3rd; 3rd and subsequent tergites with rather sparse, weak, setiferous punctures.

In colouration similar to female. Thorax and abdominal tergites dark brown; hind femur, tibia and tarsus a little darker than in female; flagellum more extensively

darkened.

Length: Body 3.0–3.6 mm., forewing 2.9–3.3 mm.

Holotype. ♀, Japan: Aizankei, Kamikawa, Hokkaido, 3–viii–1966, K. Kusigemati leg. Paratypes. Japan: 1 ♂, 31–viii–1966, Hayachine-san, Iwate-ken, Honshu, K. Kusigemati leg.; 1 ♂, 31–v–1959, Amagi-san, Shizuoka-ken, Honshu, K. Kamijo leg.; 1 ♂, 12–vi–1967, Amagi-san, Shizuoka-ken, Honshu, T. Kocha leg.; 1 ♀, 13–vi–1966, Hiko-san, Fukuoka-ken, Kyushu, K. Kusigemati leg.

Distribution: Japan (Hokkaido; Honshu; Kyushu).

This species may be readily distinguished from any other congeneric species by the nervellus which is not intercepted. Furthermore, in general appearance and colouration this species is most closely related to the preceding species, *R. rubida* sp. nov., but it can be immediately distinguished from the latter by the comparatively wide face and malar space, the flagellum with 18 segments in female, 19 in male, and the straight upper part of the epomia.

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