

New *Rhagio*-species from Japan (3) (Diptera, Rhagionidae)

Akira NAGATOMI

(Entomological Laboratory)

I am accumulating the specimens of the genus *Rhagio* from Japan but it is premature to prepare the key to species, for the material gathered is still insufficient. Here are given the descriptions of two new species which are similar to *R. tringarius* (Linnaeus, 1758).

I wish to express my sincere thanks to Drs. K. Iwata, T. Shirôzu, S. Ito, T. Okutani, K. Morimoto, K. Kusigemati, and Messrs. T. Kimura, K. Hashimoto, A. Tanaka, H. Shima, T. Nishiyama, R. Oishi, S. Ohga, H. Takizawa, S. Hashimoto for their generous gift of the specimens and to Dr. K. Kusigemati for his help in preparing the photographs.

Rhagio sikisimanus Nagatomi, new species Fig. 1

Yellowish (sometimes somewhat reddish) brown; head except appendages dark brownish to blackish and pale gray pollinose; tarsus may be somewhat darker; stigma of wing not distinctly marked; abdominal terga 2-7 with basal black bands.

This species may be distinguished from *R. tringarius* (Linnaeus, 1758) from Europe by having the abdominal terga 2-7 without lateral margins dark brownish to blackish and with basal black bands which are not extending to lateral margin and are sometimes divided into 2 spots (in *tringarius*, abdominal terga 2-7 with lateral margins dark brownish to blackish and with median black spots which are separated from anterior margin of each segment).

R. sikisimanus is closely related to *R. yasumatsui* n. sp. but may be separated from the latter in the following points: practically whole surface of mesonotum yellowish brown; basal black spots on abdominal dorsum smaller in size and their middle points not produced posteriorly; and in ♀ trapezoid patch on front covered with pale gray pollen and indistinct.

♂. Head: Head except its appendages dark brownish to blackish, pale gray pollinose; palpus, proboscis, and antenna (except arista which is darkened) yellowish brown; side of face (except upper portion), palpus, cheeks, and occiput (except upper part) with pale yellowish pile which is shorter on side of face; antenna (except arista) and proboscis with shorter pile which is wholly or chiefly black; ocellar triangle, vertex, and area just behind upper margin of eye with shorter, stout black hairs; width of one eye on a mid line from a direct frontal view about equal to distance from antenna to median ocellus (1.0-1.1×), longer than width of face at lowest portion from a direct frontal view (1.2-1.4×), and roughly 3 × width of front just above antenna (2.9-3.3 ×); eyes contiguous for a distance which is 0.9-1.7 × length of ocellar triangle; ocellar triangle about as wide as long (0.9-1.0×); space between antennae about 0.1-1.2 × width of ocellar triangle; distance from proboscis to antenna about 1/2 that from antenna to median ocellus (0.4-0.5×); facial swelling roughly as wide as long and somewhat narrower than width of face at top portion of facial swelling (0.8-0.9 ×);

antenna minus arista less than $1/2$ as long as distance from antenna to median ocellus ($0.3\times$); relative length of antennal segments 1-3, 116(100-125) : 100 : 93(75-125) and their relative width 162(120-175) : 161(130-175) : 135(100-150) (based on 10 specimens; measured along mid-outer surface); arista $2.0-2.4\times$ as long as rest of antenna.

Thorax: Wholly yellowish brown; mesonotum and scutellum chiefly black haired and propleura and anterior part of metapleura pale yellowish pilose; haltere yellowish brown (knob may be somewhat darker).

Leg: Yellowish brown; tarsus may be somewhat darker; coxa pale yellowish pilose; pile on fore and mid femora chiefly pale yellowish and that on hind femur chiefly black; relative length of segments (excluding coxa and trochanter) of fore leg 141(133-146) : 170(164-176) : 100 : 40(37-43) : 34(32-36) : 24(22-27) : 26(24-27), of mid leg 153(143-159) : 185(177-192) : 99(93-105) : 35(32-38) : 26(24-29) : 16(15-18) : 23(21-25), of hind leg 229(217-238) : 282(276-288) : 124(119-130) : 42(37-48) : 29(27-32) : 18(17-19) : 24(23-26) and in hind leg from a lateral view relative width of femur, tibia, and tarsal segments 1-3, 30(27-32) : 21(19-22) : 13(12-14) : 11(10-12) : 10(8-11) (tarsal segment 1, 0.1, segment 2, 0.2-0.3, segment 3, $0.25-0.35\times$ as wide as long), these were calculated from 10 specimens.

Wing: Membrane tinged with yellowish brown; stigma yellowish brown but not distinctly marked.

Abdomen: Yellowish brown; terga 2-7 each with a basal black band which does not extend to lateral margin of segment and which is sometimes divided into 2 spots; abdomen above and below clothed with black hairs which are longer on sides of terga 1-4 (or 1-5); sternum 1 bare but area behind hind coxa pale yellowish pilose; sometimes sterna 2-3 (or 2-4) and sides of terga 1-3 (or 1-4) chiefly pale yellowish haired.

Length: Body 8-11 mm; wing 8-9.5; fore basitarsus 1.5-1.7.

♀. Similar to ♂ except as follows: Head: Pile on antenna and proboscis wholly or chiefly pale yellowish brown; width of one eye on a mid line from a direct frontal view about equal to distance from antenna to median ocellus ($1.0-1.1\times$) as in ♂, nearly equal to width of face at lowest portion from a direct frontal view ($0.8-0.9\times$), and broader than width of front just above antenna ($1.1-1.4\times$); width of front at median ocellus narrower than that just above antenna ($0.8-0.9\times$), roughly equal to that at transverse suture ($0.9-1.2\times$), and roughly twice width of ocellar triangle ($1.9-2.3\times$); space between antennae variable and $0.2-0.8\times$ (mostly $0.2-0.3\times$) width of ocellar triangle; ocellar triangle about as wide as long as in ♂ ($0.9-1.1\times$); distance from proboscis to antenna over $1/2$ that from antenna to median ocellus ($0.6-0.7\times$); facial swelling about as wide as long as in ♂ and narrower than width of face at top portion of facial swelling ($0.6-0.8\times$); antenna minus arista about $1/2$ as long as distance from antenna to median ocellus ($0.4-0.6\times$); relative length of antennal segments 1-3, 128(120-150) : 100 : 92(75-100) and their relative width 139(120-167) : 157(120-183) : 139(110-183) (based on 10 specimens; measured along mid-outer surface); arista $1.9-2.4\times$ as long as rest of antenna as in ♂.

Thorax: Pile on mesonotum and scutellum shorter than in ♂.

Leg: Relative length of segments of fore leg 152(145-155) : 173(165-183) : 100 : 41(38-43) : 34(32-35) : 23(20-25) : 27(26-28), of mid leg 170(161-178) : 195(190-203) : 101(95-106) : 35(32-39) : 25(24-29) : 15(13-17) : 24(21-26), of hind leg 247(232-268) : 295(276-

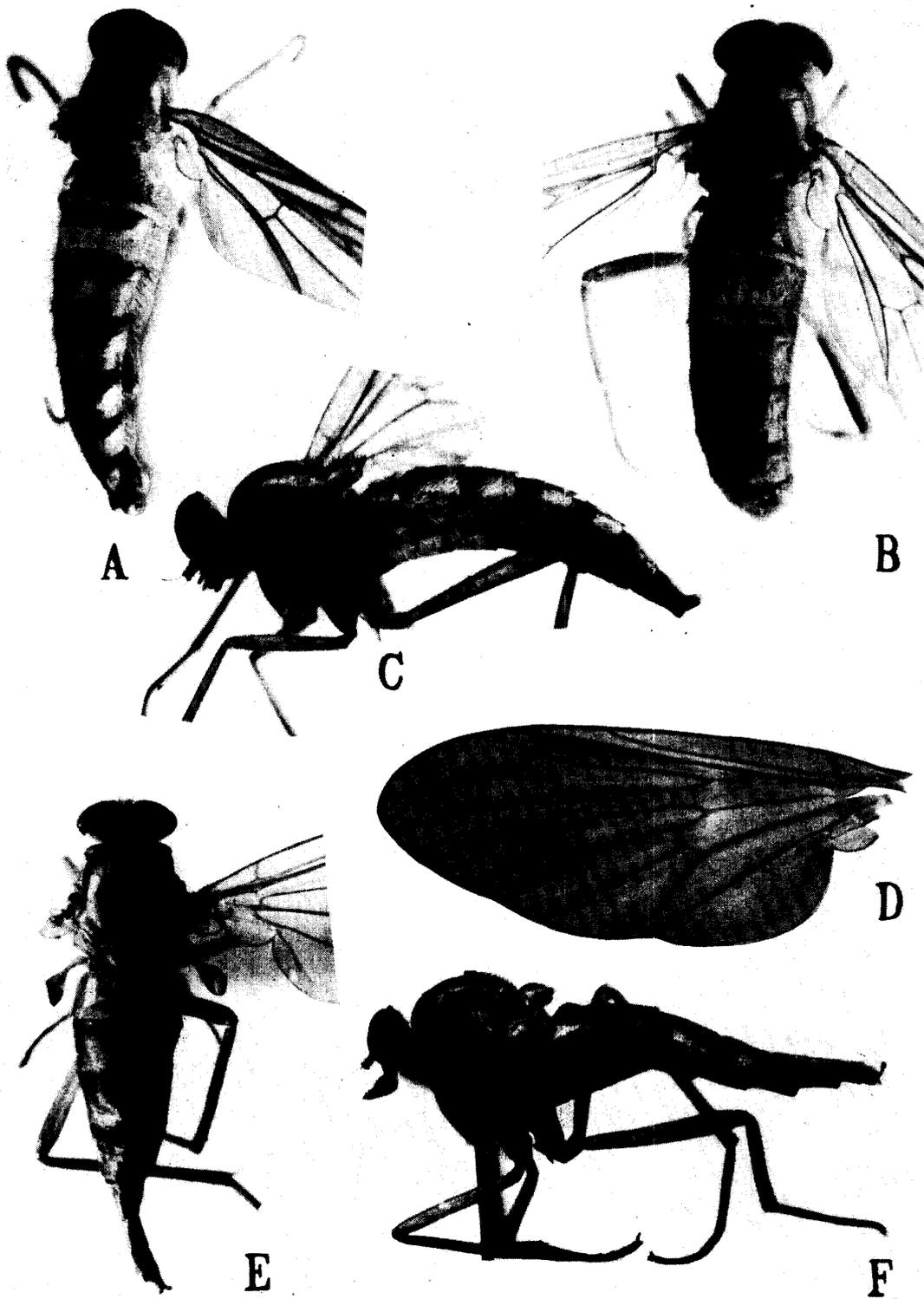


Fig. 1. *Rhagio sikisimanus* n. sp. (A-D: ♂; E-F: ♀; A, B, E: dorsal view; C & F: lateral view; D: wing)

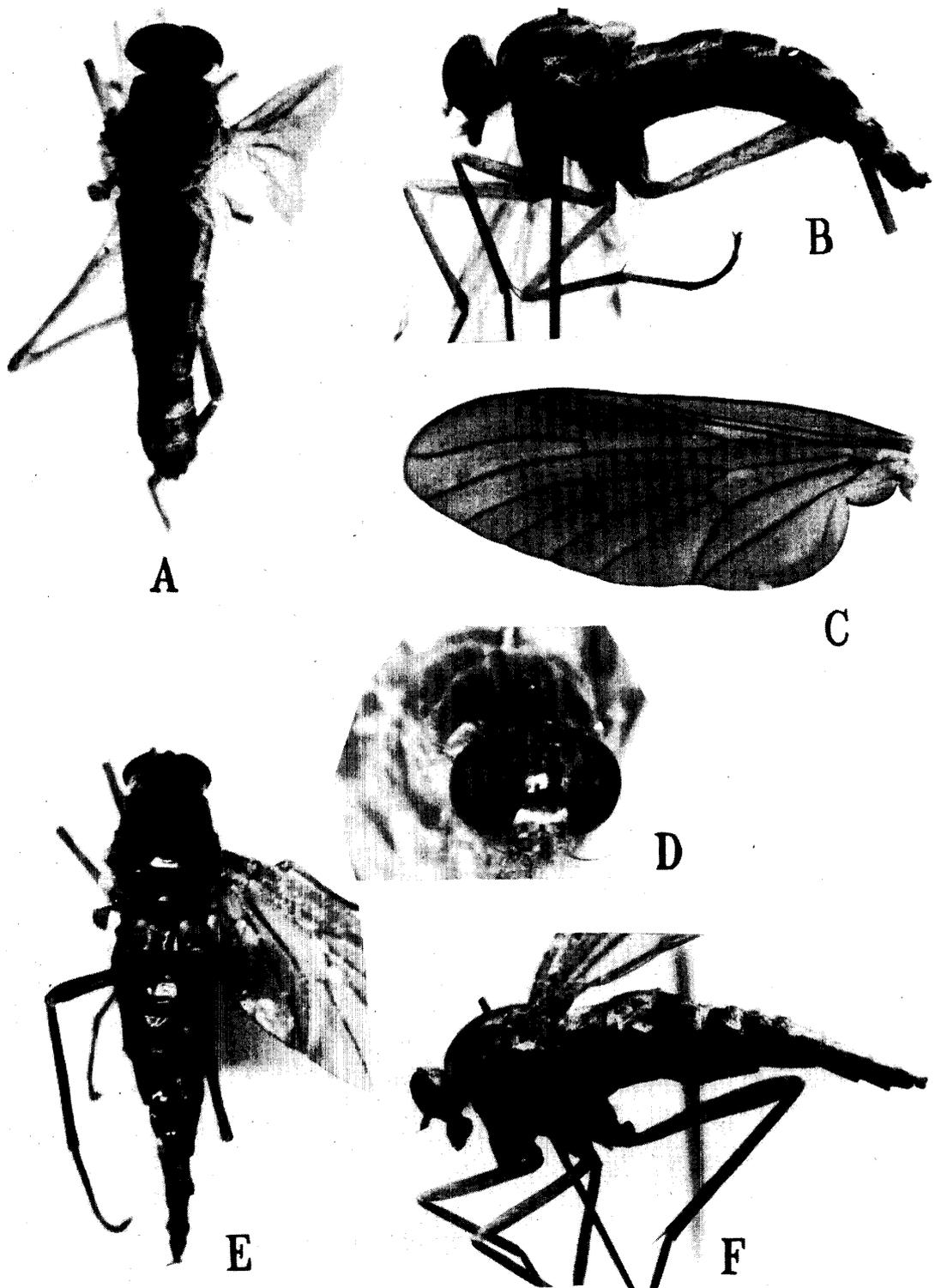


Fig. 2. *Rhagio yasumatsui* n. sp. (A-C: ♂; D-F: ♀; A & E: dorsal view; B & F: lateral view; C: wing; D: head from a direct frontal view)

306) : 129(118-133) : 42(33-45) : 29(26-33) : 17(14-20) : 26(24-28) and in hind leg from a lateral view relative width of femur, tibia, and tarsal segments 1-3, 30(26-33) : 22(21-25) : 13(12-15) : 12(10-13) : 11(9-12) (tarsal segment 1, 0.1, segment 2, 0.25-0.35, segment 3, 0.3-0.4 × as wide as long), these were calculated from 10 specimens.

Abdomen: Pile on abdomen is shorter than in ♂ and that on ovipositor may be pale in color (often pile on venter wholly pale).

Length: Body 9-12 mm; wing 9-12; fore basitarsus 1.3-1.7.

Distribution: Japan (Honshu).

Holotype ♂, Sasayama, Tamba, 5. vi. 1954, A. Nagatomi.

Paratypes (31 ♂♂, 28 ♀♀): 28 ♂♂, 22 ♀♀, Sasayama, Tamba, 1-16. vi. 1952-59, A. Nagatomi; 1 ♀, Sasayama, 11. vii. 1954, K. Iwata; 1 ♀, Sasayama, 10. vi. 1958, T. Okutani; 1 ♂, 2 ♀♀, Bunagatake, Shiga Pref., 10-18. vii. 1938-41, T. Kimura; 1 ♂, 1 ♀, Iwawakisan, Osaka Pref., 23-24. vi. 1950, S. Ito; 1 ♂, 1 ♀, Hanase, Kyoto Pref., 25. vii. 1951, S. Ito.

Holotype in Kyushu University, Fukuoka and paratypes in Kyushu University, Kagoshima University, Kagoshima, University of Osaka Prefecture, Sakai, U. S. National Museum, Washington, D. C., and British Museum (Natural History), London.

Rhagio yasumatsui Nagatomi, new species Fig. 2

This species is figured by Yasumatsu (Ins. Jap. Ill. Icon., p. 407, pl. 181, 1939) as *R. tringarius* Linnaeus.

Yellowish (sometimes somewhat reddish) brown; head except appendages dark brownish to blackish and pale gray pollinose; in ♂ mesonotum largely and pleura partially dark brownish to blackish and in ♀ mesonotum with a distinct black spot or suture behind each humeral callus; tarsus somewhat or distinctly darkened; stigma of wing not distinctly marked; abdominal dorsum with large basal black spots (which are smaller in ♀) and at least middle portion of venter dark brownish to blackish.

This species may be distinguished from *R. tringarius* by having the abdominal terga 2-7 without lateral margins dark brownish to blackish and with basal black spots which are often obsolete on terga 5-7 in ♀.

R. yasumatsui is closely related to *R. sikisimanus* n. sp. but may be separated from the latter in the following points: in ♂ mesonotum (except lateral margin including humeral and posterior calli and anterior part alongside humeral callus) distinctly dark brownish to blackish and in ♀ mesonotum with a distinct black spot or suture behind each humeral callus; basal black spots on abdominal dorsum larger in size and their middle points produced posteriorly; and in ♀ trapezoid patch on front shining and distinct.

♂. Head: Head except appendages dark brownish to blackish, pale gray pollinose; antenna, palpus, and proboscis yellowish brown (arista except basal portion usually darkened); side of face (except upper part), palpus, cheeks, and occiput (except upper part) with pale pile which is shorter on side of face; antenna with shorter pile which is wholly or chiefly pale; proboscis with pile which appears to be brownish; ocellar triangle, vertex, and upper occiput with shorter, stout black hairs; structural characters similar to *sikisimanus*; in 10 specimens measured, width of one eye on a mid line from a direct frontal view 2.4-3.3 × (mostly 2.8-3.3 ×) width of front just above antenna, ocellar triangle 0.8-0.9 × as wide as long, width

of facial swelling $0.7-1.0 \times$ width of face at top portion of facial swelling, antenna minus arista $0.3-0.4 \times$ distance from antenna to median ocellus, relative length of antennal segments 1-3, 123 (100-150) : 100 : 109 (88-133) and their relative width 150 (125-183) : 156 (133-200) : 147 (120-183), and arista $1.8-2.3 \times$ as long as rest of antenna.

Thorax: Yellowish brown and pale gray pollinose but mesonotum (except for lateral borders including humeral and posterior calli and anterior area alongside humeral callus which are yellowish brown), sternopleura (except for posterior and usually upper parts), pteropleura at lower part before hind coxa, postscutellum, and often anterior part of mesopleura and mid basal part of scutellum dark brownish to blackish; dark brownish (or blackish) area of mesonotum divided into 3 parts by 2 longitudinal, pale gray pollinose stripes; mesonotum and scutellum with pale yellowish pile which is often intermixed with black one; pro- and anterior part of metapleura pale yellowish pilose; haltere yellowish brown.

Leg: Yellowish brown, but tarsus more or less darkened; sometimes tarsus distinctly and hind tibia more or less darkened; coxa wholly, fore and mid femora chiefly pale yellowish pilose; hind femur chiefly or at least partly black haired; relative length of segments (excluding coxa and trochanter) of fore leg 142(133-150) : 168(159-176) : 100 : 40(38-44) : 37(34-39) : 25(24-28) : 25(22-27), of mid leg 165(156-174) : 190(182-202) : 95(89-100) : 36(32-39) : 26(24-29) : 15(13-17) : 22(18-24), of hind leg 232(221-245) : 278(268-289) : 120(113-126) : 42(36-46) : 30(27-33) : 17(15-19) : 23(20-25) and in hind leg from a lateral view relative width of femur, tibia, and tarsal segments 1-3, 29(26-33) : 20(19-21) : 12(11-14) : 10(9-11) : 9(8-10) (tarsal segment 1, 0.1, segment 2, 0.2-0.3, segment 3, $0.3 \times$ as wide as long), these were calculated from 10 specimens.

Wing: Membrane tinged with yellowish brown to brownish; stigma yellowish brown to brownish but not distinctly marked; veins brownish to dark brownish.

Abdomen: Yellowish brown with following dark brownish to blackish parts: middle part of tergum 1, a large basal median spot on terga 2-7 which are usually triangular or roughly so in shape and very often does not extend to posterior margin of segment (often almost whole surface of terga 6-7 dark brownish to blackish), middle portion of sterna 2-7 (often whole surface of sternum 7 or 6-7 or 1-7), and genitalia (except cerci and dististyle); abdomen above and below clothed with black hairs which are intermixed with pale ones on sides of terga 1-5, posterior margins of terga 5-6 (or 4-6), and sterna 2-4; sternum 1 bare but area behind hind leg with pale pile; hairs on sides of terga 1-5 longer.

[In 1 specimen on hand (Inunakiyama, Fukuoka Pref., 26. v. 1966, H. Shima) abdomen except for lateral portions of terga 1-4 almost wholly dark brownish to blackish]

Length: Body 8-11 mm; wing 7-10.5; fore basitarsus 1.2-1.8.

♀. Similar to ♂ except as follows: Head: Front with a large roughly trapezoid shining black patch whose base is situated at transverse suture and is connected with each eye margin; structural characters fit description of *sikisimanus*; in 10 specimens measured, width of front at median ocellus $0.6-0.8 \times$ that just above antenna, $0.8-1.0 \times$ that at transverse suture, and $1.6-2.1 \times$ width of ocellar triangle, relative length of antennal segments 1-3, 156(120-175) : 100 : 126(100-143) and their relative width 163(140-186) : 170(140-186) : 172(138-200).

Thorax: Mesonotum with 3 broad, blackish stripes of which the median one is obsolete or entirely absent and the lateral are usually interrupted at the suture and often obsolete or absent behind suture; pleura wholly yellowish brown; pile on mesonotum and scutellum black and that on metapleura partly black.

Leg: Pile on mid femur sometimes chiefly black (this may be true of ♂); relative length of segments of fore leg 157(147-164) : 172(158-183) : 100 : 42(38-44) : 36(31-39) : 23(21-26) : 26(23-29), of mid leg 184(175-193) : 196(180-210) : 94(88-103) : 34(28-38) : 26(22-29) : 14(13-17) : 23(21-25), of hind leg 250(233-266) : 296(271-322) : 118(107-126) : 43(40-49) : 31(28-35) : 16(14-19) : 24(22-27) and in hind leg from a lateral view relative width of femur, tibia, and tarsal segments 1-3, 31(29-33) : 21(19-22) : 13(12-14) : 11(10-13) : 10(9-12) (tarsal segment 1, 0.1, segment 2, 0.2-0.3, segment 3, 0.3-0.4 × as wide as long), these were calculated from 10 specimens.

Abdomen: Blackish spots on dorsum smaller than in ♂ and those on terga 5-7 often obsolete; pile on dorsum black and that on venter pale; sides of terga 1-5 without pale pile; terga 6-7 may have pale pile and sterna 2-4 may have black one.

Length: Body 8-12.5 mm; wing 8-11.5; fore basitarsus 1.3-1.9.

Distribution: Japan (Shikoku and Kyushu).

Holotype ♂, Shiratori, Mt. Kirishima, Hyuga, Kyushu, 25. v. 1963, A. Nagatomi.

Paratypes (78♂♂, 36♀♀): *Shikoku* (2♂♂): 1♂, Ashizurimisaki, Kōchi Pref., 10. v. 1951, S. Ito; 1♂, Imanoyama, Kōchi Pref., 12. v. 1951, Ito. *Kyushu* (76♂♂, 36♀♀): 1♂, Inunakiyama, Fukuoka Pref., 1. vi. 1951, T. Shirozu; 1♂, 1♀, Inunakiyama, 26. v. 1966, H. Shima; 1♂, Aoidake, 28. v. 1951, Shirozu; 1♀, Mt. Hiko, Chikuzen, 14. vi. 1959, K. Morimoto; 4♂♂, 3♀♀, Tsukumi, Bungo, 28-30. v. 1950, Nagatomi; 4♂♂, Mt. Osuzu, Hyuga, 21. v. 1966, K. Kusigemati; 1♂, 1♀, Mt. Osuzu, 21. v. 1966, Nagatomi; 2♂♂, 1♀, Mt. Wanizuka, Hyuga, 23. v. 1966, Kusigemati; 1♀, Mt. Wanizuka, 23. v. 1966, A. Tanaka; 3♂♂, 2♀♀, Mt. Kurino, Satsuma, 25-26. v. 1966, Kusigemati; 8♂♂, 3♀♀, Mt. Kurino, 23. v. 1969, Kusigemati; 5♂♂, 2♀♀, Mt. Kirishima, Hyuga, 24. v. - 9. vi. 1963-64, Nagatomi; 8♂♂, 1♀, Ōhatanoike, Mt. Kirishima, Hyuga, 8-10. vi. 1964, A. Tanaka, H. Shima, and T. Nishiyama; 3♂♂, 4♀♀, Mt. Kirishima, Satsuma, 7-9. v. - 10. vi. 1964-67, A. Tanaka, S. Ohga, and H. Takizawa; 2♂♂, 3♀♀, Kagoshima, Satsuma, 10. v. 1961-62, Nagatomi; 5♂♂, 2♀♀, Kagoshima, Satsuma, 30. iv. 1966, Kusigemati; 3♂♂, 5♀♀, Kagoshima, Satsuma, 8. v. 1965, A. Tanaka and R. Ōishi; 2♂♂, Kagoshima, Satsuma, 30. iv. 1968, S. Hashimoto; 1♂, Kagoshima, Satsuma, 12. v. 1963, K. Hashimoto; 1♂, Kamou-cho, Satsuma, 16. v. 1965, Tanaka; 1♂, 1♀, Takakuma, Osumi, 6. vi. 1968, Nagatomi; 3♂♂, 3♀♀, Eboshidake, Satsuma, 3-12. v. 1964, Tanaka; 17♂♂, 2♀♀, Satamisaki, Osumi, 29-30. iv. 1966, Tanaka.

Holotype in Kyushu University, Fukuoka and paratypes in Kyushu University, Kagoshima University, Kagoshima, University of Osaka Prefecture, Sakai, U. S. National Museum, Washington, D. C., and British Museum (Natural History), London.

This species is dedicated to Dr. Keizō Yasumatsu, one of my respected teachers.