

Descriptions of new species of the Family Bethyilidae
from the Ryukyus, and taxonomic notes
on the Japanese species
of the genus *Sclerodermus*

by Mamoru Terayama

Thirty-one species of the family Bethyilidae are described as new to science. *Sclerodermus nipponicus* Yuasa, 1930, is synonymized with *Sclerodermus harmandi* (Buysson, 1903) which is transferred from the genus *Dissomphalus* to *Sclerodermus*.

Subfamily Pristocerinae

Acropyris ryukuensis Terayama, sp. nov.
(Figs. 1,2)

Japanese name Katamaru-mukashiarigatabachi.

Holotype Male. HL (head length) 1.95 mm; HW (head width) 1.85 mm; WF (width of frons) 1.20 mm; LM (length of mesosoma) 3.25 mm; LPD (length of propodeal disc) 1.15 mm; WPD (width of propodeal disc) 1.40 mm; FWL (forewing length) 6.10 mm; TL (total length) not measured since metasoma lacking.

Body black; mandible, antenna, and legs blackish brown.

Head round, almost as long as wide, with convex posterior margin in frontal view; posterolateral corner round, not forming an angle; WF 0.65 times HW and 1.41 times EL; frons coarsely punctate; vertex less strongly punctate than frons. Mandible with 4 teeth. Clypeus truncate apically. First 5 antennomeres in a ratio of about 12 : 3 : 8 : 7 : 6.5 in length; scape 3.1 times as long as wide; 2nd

segment slightly wider than long; 3rd 2.7 times as long as wide. EL (eye length) 0.85 mm. Ocelli in a compact triangle; anterior ocellus lying at the level of posterior margin of eyes; OOL (distance between a posterior ocellus and eye) 1.23 times WOT (distance across and including posterior ocelli); DAO (diameter of anterior ocellus) 0.13 mm.

Anterior margin of pronotal disc round; anterolateral corner not forming an angle in dorsal view; disc strongly punctate; viewed in lateral side, anterodorsal corner overhung. Mesoscutum with strong punctures; notauli complete; scutellum with punctures. Propodeal disc widest at posterior 1/4 and 0.82 times as long as maximum width; median carina reaching posterior end of the disc; median and submedian areas reticulate; sublateral area with transverse rugae.

Holotype Male, Shimoji, Miyako-jima, Ryukyu Is., Okinawa Pref., 7. III. 1953, T. Shiraki leg. (metasoma lacking).

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus (Miyako-jima).

Apenesia bishamon Terayama, sp. nov.
(Figs. 3-7)

Japanese name Katasuji-arigatabachi.

Holotype Male. HL 1.05 mm; HW 0.96 mm; FW 0.58 mm; LM 1.63 mm; LPD 0.65 mm; WPD

0.58 mm; FWL 3.0 mm; TL 4.6 mm.

Head and mesosoma black; metasoma brown with a reddish tinge; 1st metasomal tergite with a large blackish brown spot at middle; its anterior portion blackish brown; mandible and antenna reddish brown; legs brown with a reddish tinge.

Head round, 1.09 times as long as wide, with shallowly convex posterior margin in frontal view; posterolateral corner rounded, not forming an angle; frons and vertex smooth and shining with small, shallow and widely separated punctures. Mandible with 5 acute teeth; apical 2 teeth developed; basal 2nd and 3rd small. Clypeus produced, forming an obtuse angle. First 5 segments of antenna in a ratio of about 12 : 2 : 8 : 8 : 7.5 in length; scape short, broadest at midlength, 2.4 times as long as wide; 2nd segment wide, 1.8 times as wide as long; 3rd 2.7 times as long as wide. Eye hairless; EL 0.45 mm; FW 1.29 times EL. Ocelli forming a rather compact triangle; POL (distance between posterior ocelli): AOL (distance between posterior ocellus and anterior ocellus) = 1 : 1; OOL 1.3 times WOT.

Pronotal disc flat and trapezoidal, 0.47 times as long as wide in dorsal view; anterior and lateral margins carinate; surface smooth and shining; in lateral view, pronotum with obtusely angulate anterodorsal corner and straight anterior margin. Mesonotum smooth and shining with a few shallow small punctures. Propodeal disc 1.12 times as long as wide, with almost parallel, but very weakly convex sides in dorsal view; transverse carina strong; median carina present in basal 4/5 of disc; sublateral carinae present in posterior half of disc; basal triangular area smooth and shining, with strong reticulum; sublateral area with rather irregular oblique rugae; lateral areas with transverse rugae; declivity smooth and shining, with 6 transverse rugae.

Metasoma sessile, smooth and shining.

Postmarginal vein of forewing long, 0.63 mm in length, 1.79 times as long as length of pterostigma; discoidal vein interstitial with median vein.

Variation The number of mandibular teeth is usually 5, and 4 in some individuals.

Holotype Male, Omoto-dake, Ishigaki-jima, Okinawa Pref., 29. VI. 1988, K. Kusigemati leg.

Paratypes 2 males, Nishinakama, Amami-ôshima, Kagoshima Pref., 26-28. VII. 1969, H. Makihara leg.; 1 male, Yona, Okinawa-jima, 9-13. VIII. 1969, H. Makihara leg.; 2 males, 10-11. X. 1988, Okinawa-jima, Okinawa Pref., K. Konishi leg.; 1 male, same data as holotype.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and the other paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Distribution C. and S. Ryukyus.

Apenesia daikoku Terayama, sp. nov.

(Figs. 8-11)

Japanese name Daikoku-arigatabachi.

Holotype Male. HL 1.00 mm; HW 1.00 mm; WF 0.63 mm; LM 2.00 mm; LP 0.78 mm; WPD 0.63 mm; FWL 3.4 mm; TL 5.5 mm.

Head and mesosoma black; metasoma brown with a reddish tinge; mandible and legs yellow; antenna brown.

Head as long as wide, smooth and shining with shallow punctures and smooth interspaces; punctures on frons separated by 1-1.5 times their own diameter. Mandible with 5 teeth. Anterior margin of clypeus broadly rounded, with a very weak projection medially. First 5 antennomeres in a ratio of 9 : 2 : 6.5 : 6 : 5.5 in length.

Eye without hairs; EL 0.43 mm; WF 1.47 times LE. Ocelli forming a regular triangle; POL : AOL = 1 : 1; OOL 1.4 times WOT.

Pro- and mesonotal disc moderately punctate with smooth and shining interspaces; punctures on mesonotal disc larger than those on pronotal disc. Propodeum 1.24 times as long as wide, lateral margins of anterior 2/3 parallel in dorsal view; median carina present in anterior 3/5 of disc; basal

triangular area small, reticulate; posterior half of disc microreticulate.

Metasoma sessile, smooth and subopaque.

Postmarginal vein of forewing 0.25 mm long, slightly shorter than pterostigma; discoidal vein very feebly recognizable, interstitial with median vein.

Holotype Male, Komi, Iriomote-jima, Okinawa Pref., 3. VII. 1988, K. Kusigemati leg.

Paratypes 1 male, Uehara, Iriomote-jima, 5. VII. 1982, K. Kusigemati leg.; 1 male, Omoto-dake, Ishigaki-jima, Okinawa Pref., 29. IV. 1988, K. Kusigemati leg.

Type depository Holotype is deposited in the National Institute of Agro-Environmental Sciences,

Tsukuba, and paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Other specimens examined 25 males, Shiramizu, Ishigaki-jima, Okinawa Pref., 30. VI. - 3. VII. 1993, K. Ohara leg.; 17 males, same locality, 1-3. VII. 1993, K. Konishi leg.; 1 male, Kanpira, Iriomote-jima, 28. VI. 1993, K. Konishi leg.; 2 males, Airagawa, Iriomote-jima, 27-29. VI. 1993, K. Konishi leg.

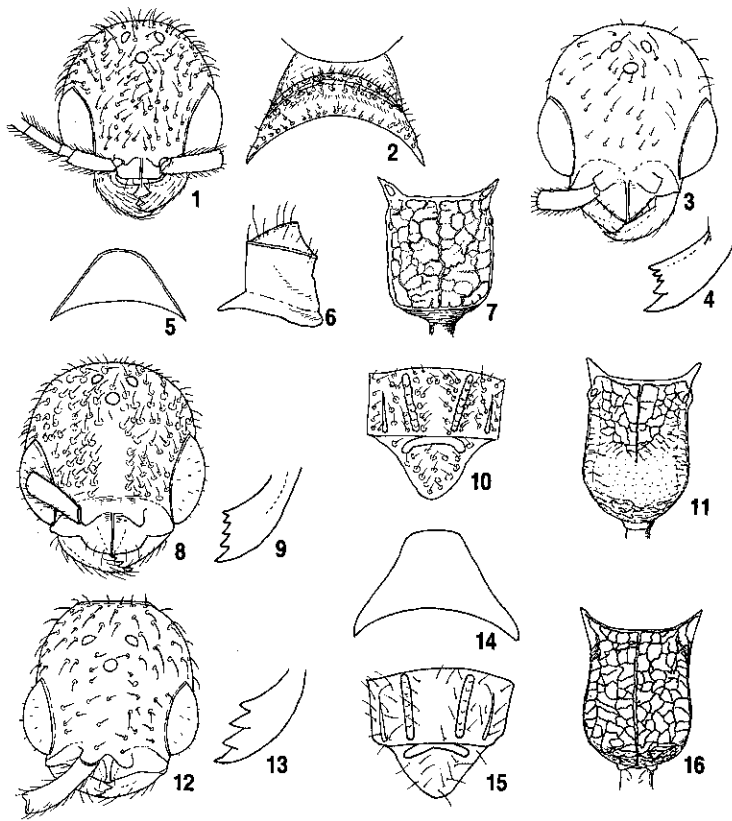
Distribution S. Ryukyus.

Apenesia elegans Terayama, sp. nov.

(Figs. 12-16)

Japanese name Bekkô-arigatabachi.

Holotype Male. HL 0.73 mm; HW 0.70 mm;



Figs. 1-16 *Acrepyris ryukyuensis* sp. nov. and *Apenesia* species, male. 1,2: *Acrepyris ryukyuensis* sp. nov.; 3-7: *Apenesia bishamon* sp. nov.; 8-11: *A. daikoku* sp. nov.; 12-16: *A. elegans* sp. nov. 1,3,8,12: Head, frontal view; 2,5,14: pronotum, dorsal view; 4,9,13: mandible; 6: pronotum, lateral view; 7,11,16: propodeum, dorsal view; 10,15: mesonotum, dorsal view.

WF 0.45 mm; LA 1.40 mm; LP 0.60 mm; WPD 0.44 mm; FWL 2.7 mm; TL 4.0 mm.

Head black; pro- and mesonotum testaceous excepting pronotal collar yellow; propodeum blackish brown; 1st and 2nd segments, and anterior portion of 3rd segment of metasoma brown, and the remainder dark brown; mandible and antenna yellow to brown; legs yellow.

Head 1.04 times as long as wide, posterolateral corner rounded, not forming a distinct angle in frontal view; frons and vertex with punctures and smooth interspaces; the punctures separated by lengths about 2 times their own diameter. Mandible with 4 acute teeth. Anterior margin of clypeus broadly rounded, with a minute median angle. First 5 antennomeres in a ratio of about 8 : 2 : 5 : 4.5 : 4.5 in length; scape with almost parallel sides; 2nd segment slightly longer than wide; 3rd 2.6 times as long as wide. Eye 0.30 mm long, with short erect hairs sparsely; WF 1.5 times EL. Ocelli forming a regular triangle; POL : AOL = 1 : 1; OOL 1.3 times WOT.

Pro- and mesonotal disc smooth and shining, with a few punctures. Propodeum 1.36 times as long as wide, with subparallel sides in dorsal view; median carina strong; median area smooth with transverse rugae; sublateral area and declivity strongly reticulate.

Metasoma sessile, rather smooth and subopaque.

Postmarginal vein of forewing 0.28 mm in length, longer than pterostigma; discoidal vein arising slightly down on transverse median vein.

Variation In Okinawa material, the median clypeal carina does not reach the anterior clypeal margin, and sublateral areas of propodeum are much weakly reticulate and much smoother. A single specimen from Okinawa lacks a median clypeal angle.

Holotype Male, Iwatsuki-shi, Saitama Pref., Honshu, 27. VIII. 1971, Y. Yoshikawa leg.

Paratypes 5 males, same data as holotype; 1 male, Kitamoto-shi, Saitama Pref., 26. V. 1990, T. Nambu leg.; 2 males, Itabashi-ku, Tokyo, 10. IX.

1985, T. Niisato leg.; 1 male, Okinoerabu-jima, Ryukyus, Kagoshima Pref., 31. VII. - 2. VIII. 1969, H. Makihara leg.; 1 male, Nishinakama, Amami, Ryukyus, Kagoshima Pref., 26-28. VII. 1969, H. Makihara leg.; 3 males, 10-11. X. 1988, Kunigamison, Okinawa-jima, Okinawa Pref., K. Konishi leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and other paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Other specimens examined 2 males, Sumiyoson, Amami-ōshima, Kagoshima Pref., 2. VIII. 1996, M. Uchida leg.

Distribution Honshu, C. Ryukyus.

Remarks The Okinawa specimens differ from the type in several details. The median clypeal carina does not reach the anterior clypeal margin; the sublateral areas of propodeal disc are relatively weakly reticulate and much smoother. However, there are no important differences in genitalia and subgenital plate between the Okinawa and the Honshu specimens.

Apenesia kusigematii Terayama, sp. nov.
(Figs. 17-22)

Japanese name Ryukyu-eri-arigatabachi.

Holotype Male. HL 1.00 mm; HW 0.95 mm; WF 0.55 mm; LM 1.85 mm; LPD 0.50 mm; WPD 0.70 mm; FWL 3.4 mm; TL 5.4 mm.

Body black; mandible and antenna brown; legs yellow.

Head 1.05 times as long as wide; frons and vertex subopaque and moderately punctate; punctures strong, separated by 0.5-1.0 times their own diameter. Mandible relatively thin and long, with an acute apical tooth alone. Anterior margin of clypeus triangular, strongly produced medially. First 5 segments of antenna in a ratio of about 14 : 4 : 8 : 8 : 7 in length; 2nd segment 1.3 times as long as wide; 3rd 2.7 times as long as wide. Eye 0.48 mm long, hairless; WF 1.15 times EL. Ocelli form-

ing a regular triangle; DAO 0.10 mm; OOL 1.18 times WOT.

Pronotal disc with relatively large distinct punctures and smooth and shining interspaces. Mesoscutum smooth and shining, with relatively large distinct punctures except for the median area impunctate. Scutellar disc mostly smooth and shining. Propodeum 0.71 times as long as wide, with median and transverse carinae; median carina distinct, reaching the transverse carina; sublateral carinae present; basal triangular area depressed, with 7-8 pairs of oblique rugae; sublateral areas with rather irregularly transverse rugulae.

Metasoma sessile, smooth and shining.

Postmarginal vein of forewing short, 0.38 times length of pterostigma; discoidal vein arising well down on transverse median vein.

Variation Males vary in head length from 0.80 to 1.25 mm, and in head width from 0.75 to 1.13 mm. Punctures on head are fewer in smaller individuals.

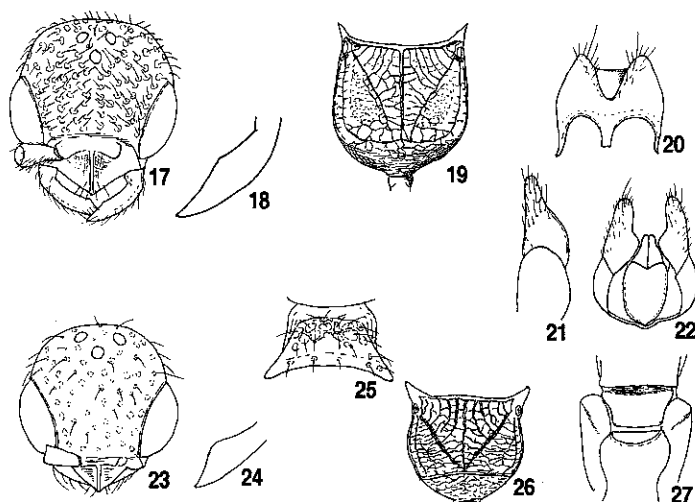
Holotype Male, Kanpira, Iriomote-jima, Okinawa Pref., 1. VII. 1988, K. Kusigemati leg.

Paratypes 11 males, the same data as holotype;

2 males, Komi, Iriomote-jima, 3. VII. 1988, K. Kusigemati leg.; 3 males, Uehara, Iriomote-jima, 5. VII. 1982, K. Kusigemati leg.; 6 males, Omoto-dake, Ishigaki-jima, 29. VI. 1988, K. Kusigemati leg.; 1 male, Iriomote-jima, 9. I. 1953, T. Shiraki leg.; 1 male, Sonai, Yonaguni-jima, 25-29. VIII. 1969, H. Makihara leg.; 1 male, Otowa-dake, Nakijin, Okinawa-jima, 23. X. 1990, M. Hayashi leg.; 2 males, Kunigami-son, Okinawa-jima, 10-11. X. 1988, K. Konishi leg.; 1 male, Hatsuno, Amami-ōshima, Kagoshima Pref., 11. XI. 1962, Y. Miyatake leg.; 1 male, Amami-ōshima, Kagoshima Pref., 16. III. 1964, H. Takada leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and the other paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima, National Science Museum, Tokyo, and Faculty of Agriculture, Kyushu University, Fukuoka.

Other specimens examined 8 males, Shiramizu, Ishigaki-jima, Okinawa Pref., 1-3. VII. 1993, K. Konishi leg.; 10 males, same locality, 30. VI. - 3.



Figs. 17-27 *Apenesia kusigemati* sp. nov. (17-22: male), *A. okinawensis* sp. nov. (23-26: male), and *A. otohime* sp. nov. (27: female). 17,23: Head, frontal view; 18,24: mandible; 19,26: propodeum, dorsal view; 20: subgenital plate; 21: paramere, lateral view; 22: genitalia, dorsal view; 25: pronotum, dorsal view; 27: mesonotum, dorsal view.

VII. 1993, K. Ohara leg.; 1 male, same locality, 2. X. 1993, M. Hayashi leg.; 3 males, Omoto-dake, Ishigaki-jima, 2. VII. 1993, K. Konishi leg.; 2 males, Aira-gawa, Iriomote-jima, 27-29. VI. 1993, K. Konishi leg.; 1 male, Kanpira, Iriomote-jima, 28. VI. 1993, K. Konishi leg.

Distribution C. and S. Ryukyus.

Apenesia okinawensis Terayama, sp. nov.
(Figs. 23-26)

Japanese name Okinawa-eri-arigatabachi.

Holotype Male. HL 0.98 mm; HW 0.93 mm; WF 0.54 mm; LM 1.63 mm; LPD 0.39 mm; WPD 0.60 mm; FWL 2.8 mm; TL 3.7 mm.

Body black; clypeus dark reddish brown; mandible, antenna, and legs reddish brown.

Head almost as long as wide, with weakly convex posterior margin and dully angulate posterolateral corners in frontal view; frons and vertex strongly microreticulate with relatively large punctures; punctures separated by lengths 0.5-1.0 times their own diameter. Mandible with an apical tooth only. Clypeus produced medially, forming an obtuse angle. First 5 antennomeres in a ratio of about 12 : 4 : 6.5 : 6 : 6 in length; 2nd segment slightly longer than wide; 3rd 2.6 times as long as wide. Eye without hairs; EL 0.45 mm; FW 1.2 times EL. Ocelli relatively large, forming a regular triangle; DAO 0.09 mm; OOL 1.1 times WOT.

Pronotal disc trapezoidal, 0.44 times as long as wide; anterior half with large irregular punctures; posterior half smooth, shining, and largely impunctate. Mesonotum smooth and shining with only a few shallow small punctures. Propodeal disc short, 0.65 times as long as wide, with weakly convex sides in dorsal view; lateral and transverse carinae present; median carina reaching the transverse carina; basal triangular area coarsely reticulate; sublateral area with transverse rugae.

Metasoma sessile, relatively flat in profile, and smooth and shining.

Postmarginal vein of forewing short, 0.33 times

length of pterostigma; pterostigma large and wide, 2.4 times as long as wide; discoidal vein arising well down on transverse median vein.

Variation Specimens vary in head length from 0.72 to 1.00 mm, and punctures on head and pronotum are weaker in smaller individuals.

Holotype Male, Omoto-dake, Ishigaki-jima, Okinawa Pref., 29. VI. 1988, K. Kusigemati leg.

Paratypes 1 male, same data as holotype; 1 male, Ushikumori, Shirahama, Iriomote-jima, Okinawa Pref., 3. XI. 1963, H. Hasegawa leg.; 1 male, Ura, Kunigami-son, Okinawa-jima, Okinawa Pref., 3. X. 1991, M. Hiratate leg.; 1 male, same locality, 4. X. 1991, M. Hiratate leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and other paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Other specimen examined 1 male, Shiramizu, Ishigaki-jima, 30. VI. - 3. VII. 1993, K. Ohara leg. (by Malaise trap.)

Distribution C. and S. Ryukyus.

Apenesia otohime Terayama, sp. nov.
(Fig. 27)

Japanese name Otohime-arigatabachi.

Holotype Female. HL 0.75 mm; HW 0.53 mm; LM 1.30 mm; LP (length of propodeum) 0.69 mm; WPD 0.34 mm; TL 3.9 mm.

Head castaneous; mesosoma reddish brown; metasoma yellowish brown except for anterior half of 1st and 2nd tergites reddish brown; mandible, antenna and legs yellow.

Head long, 1.42 times as long as wide, with parallel sides and straight posterior margin; frons microreticulate with punctures; the punctures shallow but rather distinct, and separated by lengths about 1.5-2.5 times their own diameter. Mandible with 4 teeth; apical two teeth long and acute; basalmost smallest and blunt. Median lobe of clypeus roundly produced, with a minute median angle. First 5

segments of antenna in a ratio of about 13 : 2.3 : 2.5 : 2.5 : 2.8 in length; 2nd to 12th segments each wider than long; apical segment 1.9 times as long as wide, shorter than two preceding segments together. Eye 0.08 mm long, consisting of about 13 facets, and situated laterally at about 0.88 times distance from occipital corner to anterior cephalic corner.

Pronotal disc 1.21 times as long as wide, with parallel sides and broadly convex anterior margin in dorsal view; surface microreticulate with scattered punctures; a longitudinal impunctate belt present medially. Mesonotum narrow, 0.58 times as long as wide, microreticulate and impunctate, and with straight posterior margin. Propodeum 2.03 times as long as wide; maximum width 1.30 times minimum width; disc microreticulate, impunctate medially.

Metasoma smooth and shining, 0.65 mm wide in dorsal view.

Holotype Female, Higashi-nakama, Amami-ōshima, Kagoshima Pref., 29. V. 1963, Y. Arita & N. Ohbayashi leg.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution C. Ryukyus.

Dissomphalus kyushuensis

Terayama, sp. nov.

(Fig. 28)

Japanese name Harabiro-arigatabachi.

Holotype Male. HL 0.49 mm; HW 0.45 mm; WF 0.30 mm; LM 0.83 mm; DPL 0.23 mm; DPW 0.30 mm; FWL 1.70 mm; TL 1.9 mm.

Head and mesosoma black; metasoma blackish brown; antenna dark brown; legs brown.

Head 1.09 times as long as wide, with gently convex posterior margin in frontal view; frons and vertex coarsely microreticulate and impunctate. Median lobe of clypeus dully angulate medially. First 5 segments of antenna in a ratio of about 8 : 2.8 : 3 : 3 : 2.5 in length; 2nd segment 1.6 times as long as wide; 3rd and 4th segments each about 1.7

times as long as wide. Eye with relatively long hairs; length of the hairs ca. 0.02 mm; EL 0.18 mm; FW 1.67 times LE. Ocellar triangle obtuse; POL : AOL = 2 : 1.7; OOL 1.6 times WOT.

Pro- and mesonotum microreticulate and impunctate. Propodeal disc 0.77 times as long as wide, with parallel sides and straight posterior margin; median carina reaching posterior margin of disc; lateral and transverse carinae distinct; basal triangular area large and reticulate; sublateral area smooth and shining.

Metasoma petiolate, smooth and shining; 2nd metasomal tergite with moderately large, oval depressions laterally; the depressions with a pit on its anterior portion, and without hairs.

Holotype Male, Kamiozoegawa, Fuji, Saga Pref., Kyushu, 28. IV. 1973, K. Yamagishi leg.

Paratype 1 male, Yaku-shima, Kagoshima Pref., 2. VI. 1965, H. Tanaka leg.

Type depository Holotype is deposited in the Faculty of Agriculture, Kyushu University, Fukuoka, and the paratype in the Entomological Institute, Hokkaido University, Sapporo.

Distribution Kyushu, N. Ryukyus.

Dissomphalus minutulus

Terayama, sp. nov.

(Figs. 29-31)

Japanese name Hime-harabiro-arigatabachi.

Holotype Female. HL 0.35 mm; HW 0.28 mm; LM 0.53 mm; LP 0.28 mm; WPD 0.14 mm; TL 1.5 mm.

Body yellow, with a brownish tinge; antenna and legs pale yellow.

Head 1.25 times as long as wide, weakly microreticulate, with almost parallel sides and shallowly concave posterior margin in frontal view. Mandible with 2 acute teeth. Anterior margin of clypeus trapezoidal. Antenna with 13 segments; scape 3.5 times as long as wide; 2nd segment as long as wide; 3rd 0.6 times as long as wide; 4th to 12th each wider than long; apical segment 1.5 times

as long as wide. Eye small, consisting of 4 facets.

Pronotal disc 0.86 times as long as wide, weakly microreticulate. Mesonotum 0.50 times as long as wide. Propodeum twice as long as wide, with lateral margins almost parallel, weakly narrowed toward base; maximum width 1.07 times minimum width; disc weakly microreticulate; reticulum weaker than that on pronotum.

Metasoma petiolate, smooth and shining, 0.85 mm in maximum width in dorsal view.

Holotype Female, Shirahama, Iriomote-jima, Okinawa Pref., 22. III. 1975, K. Onoyama leg. [Right antenna mounted on a slide.]

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Remarks The type specimen is collected in leaf litter of a evergreen broad-leaved forest.

Pseudisobrachium ryukyuanum

Terayama, sp. nov.

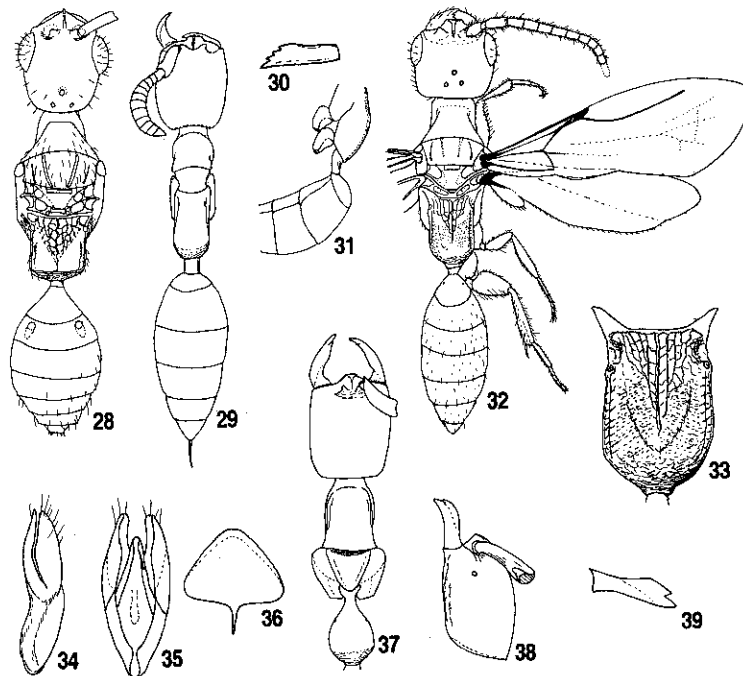
(Figs. 32-36)

Japanese name Ryūkyū-kubire-arigatabachi.

Holotype Male. HL 0.88 mm; HW 0.83 mm; WF 0.58 mm; LM 1.68 mm; LP 0.68 mm; WPD 0.50 mm; FWL 2.65 mm; TL 4.5 mm.

Head and mesosoma black; metasoma dark reddish brown; mandible and antenna reddish brown; legs yellow.

Head rectangular, 1.06 times as long as wide, with almost straight posterior margin in frontal view; frons and vertex strongly microreticulate with scattered shallow punctures. Mandible with 5 teeth; apical tooth most projecting and basal 3 minute. Anterior margin of clypeus trapezoidal with a median carina. First 5 segments of antenna in a



Figs. 28-39 *Dissomphalus* and *Pseudisobrachium* species. 28: *Dissomphalus kyushuensis* sp. nov., male (wings omitted); 29-31: *D. minutulus* sp. nov., female; 32-36: *Pseudisobrachium ryukyuanum* sp. nov., male; 37-39: *P. onoyamai* sp. nov., female. 28,29,32,37: Body, dorsal view; 30,39: mandible; 31: propodeum and anterior half of metasoma, lateral view; 33: propodeum, dorsal view; 34: paramere, lateral view; 35: genitalia; 36: subgenital plate; 38: head, lateral view.

ratio of about 14 : 3 : 9 : 7 : 7 in length; 2nd segment wider than long; 3rd 2.0 times as long as wide; 4th 1.4 times as long as wide. Eye 0.38 mm in diameter, with long erect hairs; FW 1.52 times LE. Ocellar triangle equilateral; DAO 0.08 mm; OOL 1.44 times WOT.

Pro- and mesonotum strongly microreticulate. Propodeum 1.36 times as long as wide, with parallel sides in dorsal view. Median carina reaching 7/10 distance from anterior margin of propodeum; submedian carina obscure; sublateral area with transverse striae.

Metasoma smooth and shining. Subgenital plate with a median basal stalk.

Holotype Male, Nago-shi, Okinawa-jima, Okinawa Pref., 12. X. 1988., K. Konishi leg.

Paratypes 1 male, Ura, Kunigami, Okinawa-jima, 3. X. 1991, M. Hiratate leg.; 1 male, Shinmura, Amami-oshima, Kagoshima Pref., 9. XI. 1962, Y. Miyatake leg.

Type depository Holotype and one paratype are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and the other paratype in the Faculty of Agriculture, Kyushu University, Fukuoka.

Distribution C. Ryukyus.

Pseudisobrachium onoyamai

Terayama, sp. nov.

(Figs. 37-39)

Japanese name Onoyama-kubire-arigatabachi.

Holotype Female. HL 0.48 mm; HW 0.35 mm; LA 0.80 mm; LP 0.28 mm; WPD 0.23 mm; TL 2.6 mm.

Head and mesosoma brown; metasoma yellowish brown; antenna and legs yellow; mandible yellow with a brown tip.

Head long, 1.37 times as long as wide, with parallel sides and almost straight posterior margin in frontal view; posterolateral corner forming a dull angle; frons and vertex weakly microreticulate with shallow punctures. Mandible with 2 strong

teeth; masticatory margin dully angulate near midlength. Anterior margin of clypeus trap-ezoidal, very weakly concave medially. Antenna with 13 segments; scape widest at apical end, 4.0 times as long as maximum width; 2nd to 12th segments each wider than long; apical segment 1.4 times as long as wide. Eye minute, consisting of a single facet only.

Pronotum microreticulate, with shallow large punctures; disc 0.28 mm wide and 1.10 times as long as wide. Mesonotum 0.63 times as long as wide, microreticulate, with 5 large punctures. Mesopleuron microreticulate. Propodeal disc microreticulate, 1.22 times as long as wide in dorsal view; maximum width 3.60 times minimum width.

Metasoma very weakly microreticulate and subopaque; maximum dorsal width 0.50 mm. Middle tibiae setose.

Holotype Female, Sonai-dake, Iriomote-jima, Okinawa Pref., 21. III. 1975, K. Onoyama leg.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Remarks The type was collected from leaf litter in an evergreen broad-leaved forest.

Subfamily Epyrinae

Epyris konishii Terayama, sp. nov.

(Figs. 40-43)

Japanese name Nebuto-arigatabachi.

Holotype Female. HL 0.95 mm; HW 0.95 mm; WF 0.60 mm; LM 1.75 mm; LPD 0.48 mm; WPD 0.70 mm; FWL 2.3 mm; TL ca. 3.3 mm.

Body black; mandible blackish brown in basal half, reddish brown in apical half; antenna reddish brown; legs brown; wings hyaline; wing veins brown to dark brown.

Head as long as wide, with convex posterior margin in frontal view; frons and vertex microreticulate with shallow small punctures densely. Mandible with 5 teeth; apicalmost tooth acute and

developed; basal 4 teeth small and blunt. Anterior margin of clypeus forming an obtuse triangle. First 5 flagellomeres of antenna short, 6th to terminal segment thin and slender; flagellomeres covered with relatively long straight suberect hairs which are 0.05–0.06 mm in length; first 5 segments of antenna in a ratio of about 5 : 4 : 4.5 : 6 : 6 in length; scape short, 1.2 times as long as wide; 2nd segment slightly longer than wide; 3rd shorter than wide; 4th to 6th each very slightly longer than wide; 7th 1.6 times as long as wide and its width 1.3 times that of 3rd segment; 8th and 9th each 2.0 times as long as wide; 10th 2.8 times as long as wide; 11th to 13th thin and slender. Eye 0.45 mm long, hairless; FW 1.3 times EL. Ocelli forming a compact triangle; DAO 0.08 mm; POL : AOL = 3 : 2.5; OOL 1.7 times WOT.

Pronotal disc microreticulate with very shallow and weak punctures sparsely. Mesonotum microreticulate and impunctate; notauli thin, diverging toward anterior portion; scutellar pits relatively large and round, separated by 1.3 times their own diameter. Propodeal disc 0.68 times as long as wide, with weakly concave posterior margin; median carina reaching the transverse carina; median area reticulate; sublateral area microreticulate; sublateral carina absent.

First to 3rd metasomal tergites smooth and shining; 4th to 6th segments weakly microreticulate.

Postmarginal vein of forewing very short, 0.2 times the length of pterostigma.

Variation A single paratype shows 0.85 mm in head length and 0.81 mm in head width.

Holotype Female, Shiramizu, Ishigaki-jima, Okinawa Pref., 1-3. VII. 1993, K. Konishi leg.

Paratype 1 female, same data as holotype.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Epyris hagoromonis Terayama, sp. nov.

(Figs. 44–46)

Japanese name Hagoromo-arigatabachi.

Holotype Female. HL 0.83 mm; HW 0.78 mm; FW 0.50 mm; LM 1.58 mm; LPD 0.40 mm; WPD 0.65 mm; FWL 2.5 mm; TL 4.4 mm.

Head and mesosoma black; metasoma black with a brownish tinge; mandible brown; antenna brown except for basal 2/3 of scape blackish brown; coxae, trochanters, femora, and anterior half of tibiae blackish brown; posterior half of tibiae and tarsi yellow.

Head 1.06 times as long as wide, with convex posterior margin in frontal view; frons and vertex microreticulate and moderately punctate. Mandible with two teeth. Clypeus narrowly rounded anteriorly. First 5 segments of antenna in a ratio of about 12 : 4 : 3 : 3.8 : 4 in length; 2nd segment slightly longer than wide; 3rd almost as long as wide; 4th slightly longer than wide. Eye with relatively long erect hairs; EL 0.34 mm; FW 1.47 times LE. POL : AOL = 5 : 3.5; OOL 1.5 times WOT.

Pronotal disc 0.62 times as long as wide, microreticulate and moderately punctate. Mesonotum microreticulate with scattered shallow punctures; scutellar pits rather transverse, ca. 4.0 times as long as wide, situated close to each other. Propodeal disc 0.61 times as long as wide, widest at posterior end, with weakly concave posterior margin; 5 discal carinae present; median carina and 2nd submedian carina reaching the transverse carina; 1st submedian carina reaching near the transverse carina; strong sublateral carina present; sublateral area with oblique rugae; lateral area with transverse rugae.

Metasoma smooth and shining. Middle tibia spinose.

Postmarginal vein of forewing minute; pterostigma wide, 2.0 times as long as wide; transverse median vein not strongly turned to the base posteriorly.

Variation Specimens examined vary in head

length from 0.78 to 0.83 mm, and in head width from 0.68 to 0.78 mm.

Holotype Female, Iwatsuki-shi, Saitama Pref., Honshu, 23. V. 1965, Y. Yoshikawa leg.

Paratypes 1 female, Tenjinzawa, Miyagi Pref., 17. VI. 1985, K. Goukon leg.; 1 female, Numata-shi, Gunma Pref., 30. VII. 1977, T. Takei leg.; 1 female, Izumi-mura, Fukui Pref., 12. VI. 1989, Y. Haneda leg.; 1 female, Iwatsuki-shi, Saitama Pref., 29. VII. 1964, Y. Yoshikawa leg.; 1 female, same locality, 25. V. 1965, Y. Yoshikawa leg.; 1 female, same locality, 20. VIII. 1968, Y. Yoshikawa leg.; 1 female, same locality, 29. VIII. 1971, Y. Yoshikawa leg.; 1 female, Setagaya-ku, Tokyo, 8. IV. 1928, K. Sato leg.; 1 female, Kitayama, Fujinomiya-shi, Shizuoka Pref., 27-28. IX. 1980; 1 female, Sugitate near Matsuyama, Ehime Pref., 9. VI. 1958, M. Miyatake leg.; 1 female, Fukuoka, 16. III. 1929, T. Matsuno leg.; 1 female, Kaimon-dake, Kagoshima Pref., 19. VII. 1970, Y. Yoshikawa leg.; 1 female, Yaku-shima,

Kagoshima Pref, 5. VIII. 1980, T. Hiro leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and the other paratypes in the National Science Museum, Tokyo, Faculty of Entomology, Ehime University, Matsuyama, and Faculty of Agriculture, Kyushu University, Fukuoka.

Distribution Honshu, Shikoku, Kyushu, N. Ryukyus.

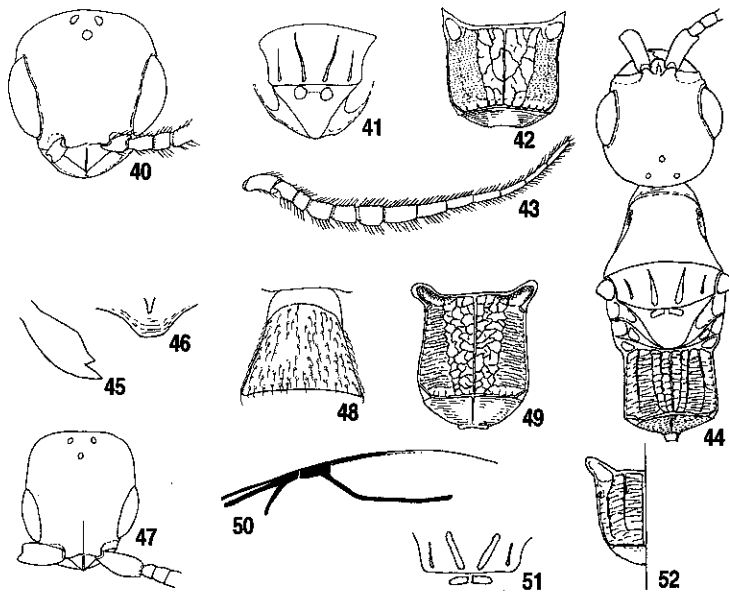
Epyris otome Terayama, sp. nov.

(Figs. 47-49)

Japanese name Otome-arigatabachi.

Holotype Female. HL 0.90 mm; HW 0.75 mm; WF 0.50 mm; LM 1.55 mm; LPD 0.54 mm; WPD 0.59 mm; FWL 2.1 mm; TL 4.0 mm.

Body black; mandible and antenna brown except for anterior 2/3 of scape dark brown; coxae black-



Figs. 40-52 *Epyris* species. 40-43: *Epyris konishii* sp. nov., female; 44-46: *E. hagoromonis* sp. nov., female; 47-49: *E. otome* sp. nov., female; 50-52: *E. yakushimanus* sp. nov., male. 40,47: Head, frontal view; 41: mesonotum, dorsal view; 42,49,52: propodeum, dorsal view; 43: antenna; 44: body, dorsal view; 45: mandible; 46: anterior margin of clypeus; 48: pronotum, dorsal view; 50: pterostigma and postmarginal vein; 51: notauli and scutellar pits.

ish brown; middle trochanter yellowish brown, femur dark brown, tibia and tarsus yellowish; hind trochanter yellowish brown, femur dark brown, tibia and tarsus yellowish brown.

Head longer than wide, with straight posterior margin in frontal view; frons and vertex somewhat weakly microreticulate and subopaque, with small shallow punctures densely. Mandible with a sharp apical tooth alone. Anterior clypeal margin narrowly rounded. First 5 antennomeres in a ratio of about 14 : 3.5 : 3 : 4 : 4.5 in length; 2nd segment as long as wide; 3rd slightly wider than long; 4th almost as long as wide. Eye 0.33 mm long, with relatively long erect hairs; WF 1.51 times EL. POL : AOL = 8 : 5; OOL 1.75 times WOT.

Pronotum and mesonotum somewhat weakly microreticulate, with small shallow dense punctures. Scutellar pits oblique and elliptical, separated by lengths 1.7 times their own maximum diameter. Propodeal disc 0.92 times as long as wide; its maximum width 1.14 times minimum width; median carina present; median area reticulate; lateral area microreticulate with rugosity.

Metasoma smooth and shining. Middle tibia with several weak spines.

Postmarginal vein of forewing minute.

Holotype Female, Sanage-yama, Aichi Pref., Honshu, 9. X. 1970, K. Yamagishi leg.

Paratype 1 female, Shinbo-dake, Asahi-mura, Niigata Pref., 5. VI. 1980, K. Maeto leg.

Type depository Types are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba.

Other specimens examined 1 female, Omoto-rindō, Ishigaki-jima, Okinawa Pref., 7-13. III. 1995, T. Matsumura leg.; 1 female, same locality, 20-25. III. 1995, T. Matsumura leg.

Distribution Honshu, S. Ryukyus.

Epyris yakushmanus Terayama, sp. nov.

(Figs. 50-52)

Japanese name Yakushima-hime-arigatabachi.

Holotype Male. HL 0.43 mm; HW 0.43 mm; WF 0.23 mm; LM 0.75 mm; LPD 0.24 mm; WPD 0.26 mm; FWL 1.4 mm; TL ca. 2.5 mm.

Body black; legs brown.

Head as long as wide, with straight posterior margin in frontal view; frons and vertex weakly microreticulate and opaque. Mandible not dissected. Antenna relatively short; scape 0.13 mm in length; 2nd segment as long as wide; 3rd and 4th each slightly longer than wide. Eye 0.23 mm long, with short erect hairs; WF 1.0 times EL. Ocelli forming an obtuse triangle; OOL 1.2 times WOT.

Pronotal disc moderately microreticulate. Scutellar pits longitudinally rectangular, separated by a rather thin septum. Propodeal disc slightly wider than long; median and sublateral carinae straight and parallel, and sublateral carinae only reaching the posterior 1/3 of disc; median area microreticulate with transverse rugae; sublateral area microreticulate.

Metasoma smooth.

Postmarginal vein longer than the length of pterostigma.

Holotype Male, Yoshima, Yaku-shima, Kagoshima Pref., 8. VII. 1970, K. Yamagishi leg.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution N. Ryukyus.

Epyris yamatonis Terayama, sp. nov.

(Figs. 53-60)

Japanese name Yamato-hime-arigatabachi.

Holotype Male. HL 0.70 mm; HW 0.70 mm; WF 0.43 mm; LM 1.45 mm; LPD 0.38 mm; WPD 0.63 mm; FWL 2.1 mm; TL 3.8 mm.

Head and mesosoma black; 1st and 2nd metasomal tergites dark brown, the other segments black; mandible and legs dark brown.

Head round, as long as wide, with convex posterior margin in frontal view; posterolateral corner not forming an angle; frons and vertex microreticulate and moderately punctate. Mandible

with a large apical tooth and a small basal tooth. Anterior margin of clypeus rounded medially. First 5 antennomeres in a ratio of 8 : 3 : 4 : 6 : 6 in length; 2nd segment as long as wide; 3rd 1.3 times as long as wide. Eye 0.30 mm long, with erect hairs; FW 1.43 times EL. Ocelli forming an obtuse triangle; OOL 1.1 times WOT.

Pronotal disc microreticulate and moderately punctate; the punctures finer than those on head. Scutellar pits each wider than long, separated by a rather thin septum. Propodeal disc wider than long, broadest at posterior end, with concave posterior margin in dorsal view; 3 discal carinae present which reach the transverse carina; median area with 2 weak longitudinal carinae and with transverse rugae; sublateral areas with transverse rugae; sublateral carina distinct; lateral area with transverse rugae.

Metasoma smooth and shining.

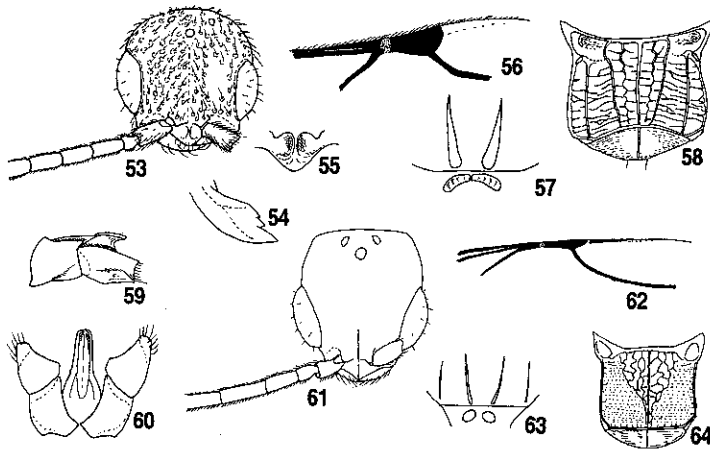
Postmarginal vein of forewing very short.

Variation Head length varies from 0.53 to 0.80 mm. In small individuals, the inner submedian rugae and transverse rugae on sublateral areas of propodeum are indistinct.

Holotype Male, Iwatsuki-shi, Saitama Pref.,

Honshu, 29. VII. 1971, Y. Yoshikawa leg.

Paratypes 10 males, same data as holotype; 11 males, same locality, 30. VII. 1971, Y. Yoshikawa leg.; 1 male, same locality, 27. VIII. 1971, Y. Yoshikawa leg.; 1 male, same locality, 21. VII. 1966, Y. Yoshikawa leg.; 2 males, same locality, 31. VIII. 1964, Y. Yoshikawa leg.; 1 male, same locality, 29. VIII. 1964, Y. Yoshikawa leg.; 3 males, Yoga, Setagaya, Tokyo, 2. X. 1972, Y. Yoshikawa leg.; 2 males, same locality, 13. X. 1972, Y. Yoshikawa leg.; 2 males, same locality, 5. X. 1972, Y. Yoshikawa leg.; 1 male, same locality, 7. X. 1972, Y. Yoshikawa leg.; 1 male, same locality, 30. IX. 1972, Y. Yoshikawa leg.; 1 male, Takefu-shi, Fukui Pref., 22. VII. 1956, Y. Murakami leg.; 3 males, Kanagura-yama, Ojiya-shi, Niigata Pref., 19. VIII. 1970, K. Yamagishi leg.; 5 males, Ikuta, Kawasaki, Kanagawa Pref., 5. IX. 1972, Y. Yoshikawa leg.; 1 male, same locality, 3. VII. 1972, Y. Yoshikawa leg.; 1 male, Ebina, Kanagawa Pref., 10. X. 1992, H. Nagase leg.; 1 male, same locality, 1. IX. 1993, H. Nagase leg.; 1 male, Shimonoseki, Yamaguchi Pref., 22. VIII. 1930, K. Yasumatsu leg.; 1 male, Inagi, Tokyo, 15. VIII. 1968, S. Katsuya leg.; 1 male, Nishiyama, Syuso, Ehime Pref., 17. VIII. 1954, H. Tokunaga leg.; 1



Figs. 53-64 *Epyris yamatonis* sp. nov. (53-60: male) and *E. yasha* sp. nov. (61-64: male). 53,61: Head, frontal view; 54: mandible; 55: anterior margin of clypeus; 56,62: pterostigma and postmarginal vein of forewing; 57,63: notauli and scutellar pits; 58,64: propodeum, dorsal view; 59: paramere lateral view; 60: genitalia, dorsal view.

male, Yokohama, Kanagawa Pref., IX. 1941, K. Sato leg.; 1 male, Miho, Shizuoka Pref., 25. XI. 1933, K. Sato leg.; 2 males, Sugidate, Ehime Pref., 6. VIII. 1972, Y. Yoshikawa leg.; 2 males, Nogami, Chichibu, Saitama Pref., 28. VIII. 1971, Y. Yoshikawa leg.; 1 male, Kado-dake, Amakusa, Nagasaki Pref., 13. VII. 1961, Hidaka & Azim leg.; 2 males, Kaimon-dake, Kagoshima Pref., 19. VII. 1971, Y. Yoshikawa leg.; 1 male, Nagata, Yaku-shima, Kagoshima Pref., 9. VII. 1973, K. Kusigemati leg.; 1 male, Ohara, Iriomote-jima, Okinawa Pref., 17. III. 1973, H. Hasegawa leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and the other paratypes in the Faculty of Agriculture, Meijo University, Aichi, Faculty of Agriculture, Ehime University, Matsuyama, Faculty of Agriculture, Kagoshima University, Kagoshima, National Science Museum, Tokyo, and Faculty of Agriculture, Kyushu University, Fukuoka.

Distribution Honshu, Shikoku, Kyushu, N. and S. Ryukyus.

Epyris yasha Terayama, sp. nov.

(Figs. 61-64)

Japanese name Yasha-arigatabachi.

Holotype Male. HL 0.93 mm; HW 0.85 mm; WF 0.53 mm; LM 1.55 mm; LPD 0.48 mm; WPD 0.63 mm; FWL 3.1 mm; TL ca. 3.4 mm.

Body black; antennal scape and pedicel brown, funicule dark brown; legs yellow; wings hyaline; wing veins brown to dark brown.

Head slightly longer than wide, with straight posterior margin and dully angulate posterolateral corners in frontal view; frons and vertex microreticulate with shallow small punctures moderately. Mandible with an acute apical tooth alone. Clypeus with an obtusely angulate median lobe. Antenna long; first 5 antennomeres in a ratio of about 12 : 5 : 9 : 10 : 12 in length; scape 3.4 times as long as wide; 2nd segment 1.7 times as long as

wide; 3rd 3.0 times as long as wide; 4th 3.3 times as long as wide; 5th 4.0 times as long as wide. Eye 0.40 mm long, with short erect hairs sparsely; WF 1.33 times EL. Anterior angle of ocellar triangle almost right-angled; DAO 0.09 mm; POL : AOL = 4 : 3; OOL 1.4 times WOT.

Pronotal disc short, 0.43 times as long as maximum width; maximum width 1.75 times minimum width; surface microreticulate, with very faint punctures sparsely. Mesonotum microreticulate; notauli thin, gradually diverging anteriorly. Scutellar pit oval, 0.08 mm in diameter, and separated by spaces 0.7 times their own diameter. Pronotal disc 0.76 times as long as wide, with parallel sides and straight posterior margin; median carina reaching the transverse carina; basal area triangular and reticulate; lateral area microreticulate; sublateral carina absent.

Metasoma smooth and shining.

Postmarginal vein as long as the length of pterostigma.

Holotype Male, Omoto-rindō, Ishigaki-jima, Okinawa Pref., 20-25. III. 1995, T. Matsumura leg. (taken from Malaise trap).

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Holepyris amamiinsulanus

Terayama, sp. nov.

(Figs. 65,66)

Japanese name Amami-maedate-arigatabachi.

Holotype Female. HL 0.83 mm; HW 0.74 mm; WF 0.45 mm; LM 1.60 mm; LPD 0.45 mm; WPD 0.50 mm; FWL 2.5 mm; TL 4.1 mm.

Body black; mandible, antenna and legs brown.

Head 1.12 times as long as wide, with straight posterior margin and dully angulate posterolateral corners in frontal view; frons and vertex coarsely microreticulate with small punctures densely. Mandible slender, with an apical tooth. Median lobe of clypeus rather broad, without an acute

median angle; lateral lobe with a dull angle at inner portion. First 5 antennomeres in a ratio of 16 : 6 : 4 : 4.5 : 5 in length; scape broadest at apex, 2.7 times as long as wide; 2nd segment slightly longer than wide; 3rd to 5th each as long as wide. Eye 0.30 mm long; WF 1.5 times EL. Ocelli forming a compact triangle; OOL 1.5 times WOT.

Pro- and mesonotum microreticulate, with very weak and sparse punctures. Propodeal disc 0.90 times as long as wide, with 5 discal carinae; submedian carinae straight, almost parallel; inner submedian carina almost reaching the transverse carina.

Metasoma smooth and shining.

Holotype Female, Amami-oshima, Kagoshima Pref., 8. V. 1966, K. Kusigemati leg.

Paratype 1 female, same locality, 9. V. 1966, K. Kusigemati leg.

Type depository Holotype is deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and a paratype in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Distribution C. Ryukyus.

Holepyris matsumurai Terayama, sp. nov.
(Figs. 67,68)

Japanese name Medaka-arigatabachi.

Holotype Female. HL 0.90 mm; HW 0.85 mm; WF 0.45 mm; LM 1.83 mm; LPD 0.75 mm; WPD 0.68 mm; FWL 1.2 mm; TL ca. 3.5 mm.

Body black; mandible reddish brown; antenna dark brown excepting posterior 1/3 of scape, 2nd and 3rd segments reddish brown; coxae and femora blackish brown; tibiae reddish brown; tarsi yellowish brown; forewing subhyaline, tinged with brown excepting basal and outer marginal portion hyaline; wing veins dark brown.

Head as long as wide including eyes, with convex posterior margin in frontal view; posterolateral corner rounded, not forming an angle; frons and vertex strongly microreticulate. Mandible with an apical tooth alone. Median lobe of clypeus

rounded; lateral lobe broadly rounded. First 5 antennomeres in a ratio of 12 : 7 : 5.5 : 5 : 5 in length; scape 2.5 times as long as wide; 2nd segment 2.3 times as long as wide; 3rd 1.7 times as long as wide; 4th slightly longer than wide. Eye large and produced laterally, 0.48 mm long, with short erect hairs sparsely; WF 1.05 times EL. Ocelli forming an obtuse triangle; OOL 1.2 times WOT.

Pronotum microreticulate, with shallow small punctures moderately; length of disc 0.59 times its maximum width, with concave sides and straight anterior margin in dorsal view. Mesonotum microreticulate with small shallow punctures sparsely. Propodeal disc slightly longer than wide, with parallel sides; 5 straight subparallel discal carinae present of which inner submedian carinae hardly reaching transverse carina; sublateral carina straight and reaching transverse carina; interspace of discal carinae with transverse rugae.

Metasoma impunctate, smooth and shining.

Holotype Female, Ohtomi, Iriomote-jima, Okinawa Pref., 15-22. III. 1995, T. Matsumura leg. (taken from Malaise trap).

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Holepyris omotoensis Terayama, sp. nov.
(Figs. 69,73,74)

Japanese name Amime-maedate-arigatabachi.

Holotype Female. HL 0.68 mm; HW 0.54 mm; WF 0.38 mm; LM 1.20 mm; LPD 0.48 mm; WPD 0.40 mm; FWL 1.9 mm; TL ca. 2.8 mm.

Body black; mandible reddish brown; antenna brown excepting basal 1/3 of scape blackish brown; legs brown; apical 1/3 of forewing hyaline; basal 2/3 tinged with brown; wing veins yellowish brown.

Head long, 1.26 times as long as wide, with straight posterior margin in frontal view; posterolateral corner forming a dull angle; frons and vertex weakly microreticulate, with small punctures moderately. Mandible with a dull apical tooth

alone. Median lobe of clypeus acutely rounded; lateral lobe broadly rounded. First 5 antennomeres in a ratio of 9 : 4 : 3.5 : 3.5 : 3.5 in length; scape 2.3 times as long as wide; 2nd segment 1.6 times as long as wide; 3rd and 4th each slightly longer than wide. Eye 0.45 mm long, with erect hairs; the hairs ca. 0.03–0.04 mm in length; WF 1.5 times EL. Ocellar triangle compact, with an acute anterior angle; OOL 2.2 times WOT.

Pronotum microreticulate and scattered with shallow punctures; length of disc 0.59 times its maximum width; anterior margin weakly convex in dorsal view. Mesonotum weakly microreticulate, impunctate. Propodeal disc longer than wide, with parallel sides; 5 discal carinae present of which inner submedian carinae relatively irregular and forming chains; outer submedian carina straight, reaching transverse carina; sublateral carina straight and reaching transverse carina; interspaces of discal carinae with transverse rugae.

Metasoma smooth and shining.

Holotype Female, Omoto, Ishigaki-jima, Okinawa Pref., 26. I. 1993, M. Hiratate leg.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Holepyris susanowo Terayama, sp. nov.

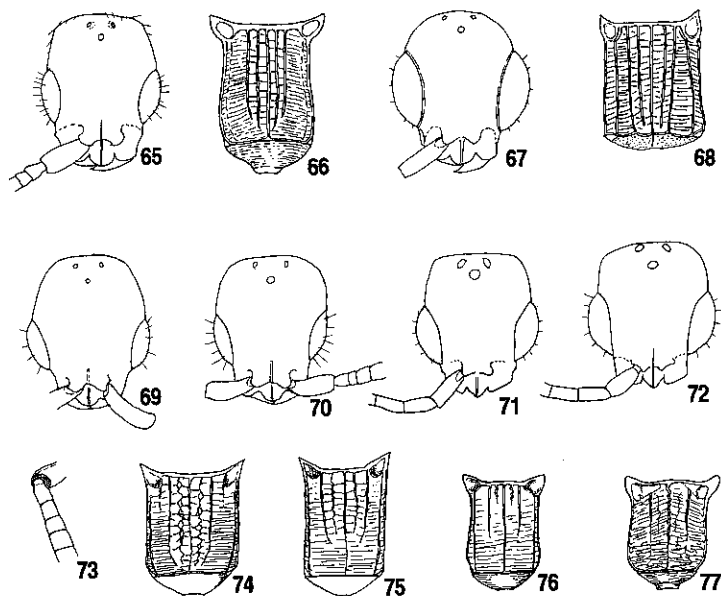
(Figs. 70,71,75,76)

Japanese name Hosomaedate-arigatabachi.

Holotype Female. HL 0.73 mm; HW 0.58 mm; WF 0.40 mm; LM 1.35 mm; LPD 0.55 mm; WPD 0.43 mm; FWL 1.8 mm; TL ca. 2.5 mm.

Body black; mandible, clypeus reddish brown; antenna reddish brown excepting basal half of scape black; coxae blackish brown excepting apical 1/3 yellowish brown; trochanters, tibiae, and tarsi yellowish brown; femora blackish brown excepting apical 1/5 yellowish brown; wings hyaline; wing veins brown.

Head 1.26 times as long as wide, with straight



Figs. 65–77 *Holepyris* species. 65,66: *Holepyris amamiinsulanus* sp. nov., female; 67,68: *H. matsumurai* sp. nov., female; 69,73,74: *H. omotoensis* sp. nov., female; 70,71,75,76: *H. susanowo*, sp. nov. (70,75: female; 71,76: male); 72,77: *H. yambaru* sp. nov., male. 65,67,69–72: Head, frontal view; 66,68,74–77: propodeum, dorsal view; 73: 2nd to 5th antennal segments.

posterior margin in frontal view; posterolateral corner forming a distinct angle; frons and vertex strongly microreticulate, with shallow small punctures moderately. Mandible with an apical tooth alone. Median lobe of clypeus rounded; lateral lobe with gently convex anterior margin. First 5 antennomeres in a ratio of about 10 : 3.5 : 2 : 4 : 4 in length; scape 2.2 times as long as wide; 2nd segment 2.3 times as long as wide; 3rd short, 0.6 times as long as wide; 4th slightly longer than wide. Eye 0.25 mm long, with long erect hairs; FW 1.6 times EL. Ocelli forming an obtuse triangle; OOL 1.6 times WOT.

Pronotal disc microreticulate, with sparse small weak punctures; length 0.54 times maximum width. Mesonotum microreticulate and impunctate. Propodeal disc long, 1.3 times as long as wide, with parallel sides; 5 discal carinae present; median carina reaching transverse carina; sublateral carina reaching posterior 1/4 of disc; sublateral carina complete; sublateral area with relatively weak transverse rugae.

Metasoma smooth.

Possible male HL 0.59 mm; HL 0.53 mm; WF 0.30 mm; LM 1.00 mm; LPD 0.38 mm; WDP 0.31 mm; FWL 1.7 mm; TL ca. 2.2 mm.

Head, mesosoma black; metasoma dark brown; antenna and clypeus brown; legs brown; wings hyaline.

Head almost as long as wide, with straight posterior margin and angulate posterolateral corners in frontal view. Median lobe of clypeus acutely rounded. Eye 0.23 mm long. Propodeum longer than wide. Median carina reaching transverse carina; outer submedian carinae parallel and reaching midlength of disc; inner submedian carina weak and somewhat irregular, present at basal 1/4 of disc.

Holotype Female, Shiramizu, Ishigaki-jima, Okinawa Pref., 11-3. VII. 1993, K. Konishi leg. (taken from Malaise trap).

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Other material examined 1 male, Kawarayama,

Ishigaki-jima, 12. XI. 1963, H. Hasegawa leg.

Distribution S. Ryukyus.

Holepyris yambaru Terayama, sp. nov.

(Figs. 72,77)

Japanese name Yanbaru-maedate-arigatabachi.

Holotype Male. HL 0.65 mm; HW 0.63 mm; WF 0.33 mm; LM 1.20 mm; LPD 0.40 mm; WPD 0.41 mm; FWL 2.2 mm; TL 2.7 mm.

Head and mesosoma black; metasoma dark blackish brown; legs brown.

Head as long as wide, microreticulate, with weakly convex posterior margin in frontal view. Median lobe of clypeus triangular, with a dull median angle. First 5 antennomeres in a ratio of 7 : 6 : 7 : 7 : 7 in length. Eye 0.30 mm long; WF 1.1 times EL. Ocelli forming an obtuse triangle; OOL 1.0 times WOT.

Pro- and mesonotal dorsum microreticulate. Propodeal disc as long as wide; broadest at posterior 1/5 in dorsal view; median carina reaching the transverse carina; 2 pairs of submedian carinae present in basal half of disc; median and sublateral areas with transverse rugae.

Variation One specimen from Ishigaki-jima is small, with the following measurements: HL 0.55 mm; HW 0.50 mm; WF 0.30 mm; LM 0.95 mm; LPD 0.35 mm; WPD 0.33 mm; FWL 1.8 mm; TL 2.3 mm.

Holotype Male, 10-11. X. 1988, Kunigami-son, Okinawa-jima, Okinawa Pref., K. Konishi leg.

Paratypes 3 males, same data as holotype; 2 males, Yonaha-dake, Okinawa-jima, 12. VII. 1977, H. Makihara leg.; 1 male, Uebaru, Nakijin, Okinawa-jima, 1. V. 1991, M. Hayashi leg.; 1 male, Kawarayama, Ishigaki-jima, Okinawa Pref., 12. XI. 1963, H. Hasegawa leg.; 3 males, Yuwan-dake, Amami-oshima, Kagoshima Pref., 25. VI. 1971, M. Chujo leg.; 1 male, Hatsuno, Amami-oshima, 11. XI. 1962, Y. Miyatake leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-

Environmental Sciences, Tsukuba, and the other paratypes in the Faculty of Agriculture, Kyushu University, Fukuoka.

Other specimens examined 1 male, Shiramizu, Ishigaki-jima, Okinawa Pref., 30. VI. 1993, K. Ohara leg. (by Malaise trap); 1 male, Banna-dake, Ishigaki-jima, 24-30. VI. 1993, K. Ohara leg.; 1 male, Omoto-rindo, Ishigaki-jima, 3-7. III. 1995, T. Matsumura leg.

Distribution C. and S. Ryukyus.

Remarks Female unknown.

Sclerodermus harmandi

(Buysson, 1903) comb. nov.

(Figs. 78-82)

Dissomphalus harmandi Buysson, 1903. *Bull. Mus. d'Hist. Nat. Paris*, 9: 126.

Dissomphalus(?) harmandi Buysson: Kieffer, 1908. *Genera Insectorum*, 76: 36.

Sclerodermus nipponicus Yuasa in Yuasa and Onoe, 1930. *Jour. Imp. Agr. Exper. Stn.*, 1: 224. **Syn. nov.**

Scleroderma nipponica Yuasa: Evans, 1964. *Bull. Mus. Comp. Zool.*, 129: 177.

Japanese name Hoso-arigatabachi.

Description of holotype Apterous female. HL 0.55 mm; HW 0.50 mm; WF 0.30 mm; LM 1.00 mm; LP 0.43 mm; WPD 0.35 mm; TL 4.0 mm.

Head and mesosoma castaneous; metasoma black except for the 1st segment dark brown; legs castaneous; antenna yellowish.

Head slightly longer than wide, with subparallel sides and slightly convex posterior margin in frontal view; in lateral view, dorsal and ventral margins each convex. Mandible with 4 teeth; basalmost tooth minute; basal 2nd tooth smaller than apical and subapical teeth. Anterior margin of clypeus transverse, with a shallow notch medially. First 5 antennomeres in a ratio of about 8 : 2 : 1 : 1 : 1 in length; scape clavate, 3.2 times as long as maximum width; 2nd segment slightly longer than wide; 3rd to 12th each wider than long; apical segment 2.0

times as long as wide. Eye 0.16 mm long; WF 1.9 times EL; HW 3.1 times LE. Ocelli absent.

Pronotal disc as long as wide; mesonotum 1.20 times as long as wide; in dorsal view, propodeum broadest near posterior margin; maximum width 1.56 times minimum width; posterodorsal corner bluntly angulated.

Metasoma slender, with convex anterior margin in dorsal view; anterolateral corner of 1st segment convex, not forming a distinct angle.

Head and mesosoma weakly microreticulate; microreticulum of head weaker than that on mesosoma; metasoma smooth and subopaque.

Variation The apterous female varies in head length from 0.45 to 0.60 mm, and in head width from 0.40 to 0.62 mm. Head and mesosoma also vary from yellowish brown to blackish brown. Mandibles have 3 or 4 teeth since the basalmost minute tooth of mandibles is not recognized in some specimens.

The male varies in color from blackish brown to almost black.

Holotype examined Apterous female, labeled "Japan. Nippon Moyen env. de Tokio at Alpes de Nikko, J. Harmand leg., 1901", [Muséum National d'Histoire Naturelle, Paris.]

Additional specimens examined 156 individuals from the following localities in Japan: - Hokkaido: Sapporo. - Fukushima Pref.: Minamiaizu-gun, Adachi-machi. - Gunma Pref.: Kirizumi-yama. - Tochigi Pref.: Utsunomiya-shi. - Ibaraki Pref.: Tsukuba-shi, Gozen-yama, Suifu-mura. - Chiba Pref.: Ichikawa-shi, Tateyama. - Saitama Pref.: Hannou-shi, Yorii-machi, Tokorozawa-shi, Iwatsuki-shi. - Tokyo: Itabashi-ku, Komae-shi, Shibuya-ku, Ohta-ku, Setagaya-ku, Nishi-ogikubo, Kodaira-shi, Asagaya, Nippara, Shikine-jima, Mikura-jima, Aoga-shima, Chichi-jima. - Kanagawa Pref.: Yokohama-shi, Kamakura-shi. - Yamanashi Pref.: Iitomi. - Shizuoka Pref.: Kanaya. - Mie Pref.: Toga-jima, Owase-shi. - Yamaguchi Pref.: Shimonoseki. - Nagasaki Pref.: Tabira-cho. - Kagoshima Pref.: Yaku-shima,

Amami-ōshima. - Okinawa Pref.: Okinawa-jima, Ishigaki-jima.

Korea - 2 females, Suwon, Kyonggi-do, 25. VIII. 1990, M. Terayama leg.

Taiwan - 1 female, Nanshanchi, Nantou Hsien, Taiwan, 5. VIII. 1981, M. Terayama leg.

Remarks This species is originally described in the genus *Dissomphalus* by Buysson (1903). I have examined the type species and concluded that it is a member of the genus *Sclerodermus* and apparently conspecific with *Sclerodermus nipponicus* Yuasa, 1930. Therefore, the latter species is a junior synonym of *Sclerodermus harmandi*. Although the type-material of *Sclerodermus nipponicus* described by Yuasa in Yuasa and Onoe (1930) is not found in the National Institute of Agro-Environmental Sciences, and its whereabouts is unknown, the original description and distribution pattern of *S. nipponicus* support this treatment.

Distribution Japan (Hokkaido, Honshu, Shikoku, Kyushu, N. to S. Ryukyus, Izu Is., Ogasawara Is.); Korea (new record), Taiwan.

Sclerodermus yakushimensis

Terayama, sp. nov.

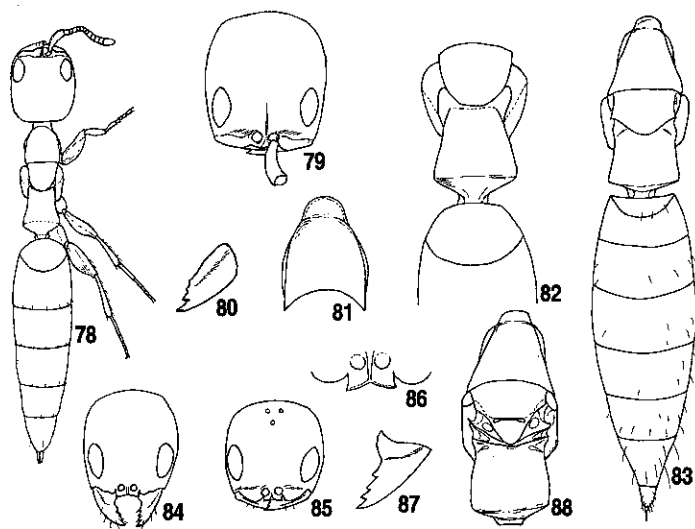
(Figs. 83-88)

Japanese name Yakushima-hoso-arigatabachi.

Holotype Alate female. HL 0.85 mm; HW 0.80 mm; LM 1.63 mm; LPD 0.55 mm; WPD 0.60 mm; FWL 3.1 mm; TL 4.8 mm.

Body black; mandible and antenna yellowish brown; trochanters and femora castaneous; tibiae and tarsi yellowish brown.

Head slightly longer than wide, with gently convex sides and almost straight posterior margin in frontal view; frons and vertex largely smooth and even shining, but very weakly microreticulate. Mandible with 4 teeth; apical tooth most developed and basalmost smallest. Clypeus truncate apically, with a pair of deep notches; lateral lobe very weakly convex. First 5 segments of antenna in a ratio of about 14 : 3.5 : 2 : 2 : 2 in length; scape 3.4 times as long as maximum width; 2nd segment 1.8 times as long as wide; 3rd as long as wide; 4th to



Figs. 78-88 *Sclerodermus harmandi* (Buysson) comb. nov. (78-82) and *S. yakushimensis* sp. nov. (83-88: 83,84,86, 87: apterous female; 85,88: alate female). 78,83: Body, dorsal view; 79: head, frontal view, drawn from holotype [*Dissomphalus harmandi*]; 80,87: mandible; 81: pronotum, dorsal view, drawn from holotype [*Dissomphalus harmandi*]; 82: mesonotum and propodeum, dorsal view, drawn from holotype [*Dissomphalus harmandi*]; 84,85: head, frontal view; 86: clypeus; 88: mesosoma, dorsal view (wings omitted).

12th each slightly wider than long; apical segment 1.5 times as long as wide. Eye 0.28 mm long. Ocelli small, forming an obtuse triangle; OOL 3.5 times WOT.

Mesosoma largely smooth and shining, but weakly microreticulate. Pronotal disc 1.45 times as long as wide; mesonotum 0.71 times as long as wide. Propodeum broadest at posterior end; maximum width 1.1 times minimum width; posterolateral corner forming an angle; disc 0.92 times as long as wide.

Metasoma largely smooth and shining, but weakly microreticulate; 1st segment with concave anterior margin in dorsal view; anterolateral corner forming an acute angle.

Paratype apterous female HL 0.60 mm; HW 0.53 mm; WF 0.48 mm; LM 1.40 mm; LPD 0.50 mm; WPD 0.55 mm; TL 5.2 mm.

General shape as in alate female, but ocelli and tegulae absent.

Holotype Alate female, Onoaida, Yaku-shima, Kagoshima Pref., 7. III. 1991, T. Satoh leg.

Paratypes 2 alate females, 1 apterous female, same data as holotype.

Type depository Holotype is deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and paratypes in the Natural History Museum, London, and National Science Museum, Tokyo.

Other specimens examined 1 alate female, 1 apterous female, Kuantzulin, Chiai-Hsien, Taiwan, 22. VIII. 1993, S. Okajima leg.

Distribution N. Ryukyus; Taiwan.

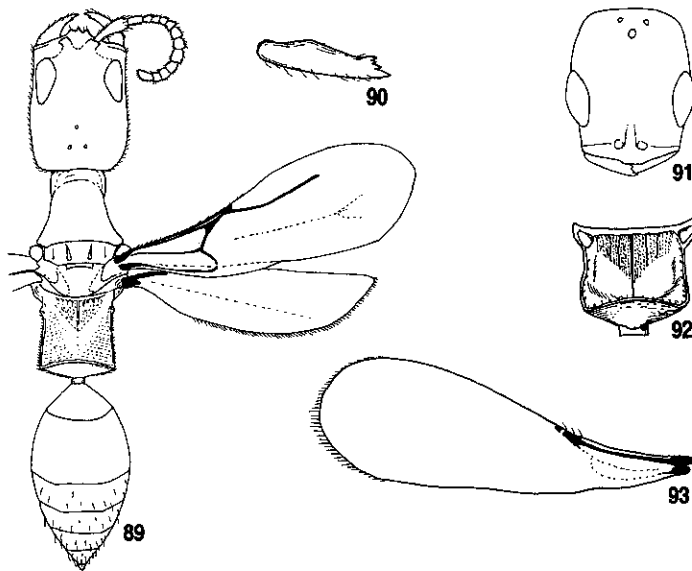
***Allobethylus tomoae* Terayama, sp. nov.**

(Figs. 89,90)

Japanese name Kibanaga-arigatabachi.

Holotype Female. HL 0.73 mm; HW 0.51 mm; WF 0.23 mm; LM 1.10 mm; LPD 0.35 mm; WPD 0.35 mm; TL 3.0 mm.

Body black; coxae, trochanters, femora and basal half of fore tibia blackish brown; tibiae except for basal half of fore tibia, tarsi brown;



Figs. 89-93 *Allobethylus tomoae* sp. nov., female (89,90) and *Cephalonomia shirahamana* sp. nov., female (91-93). 89: Body, dorsal view; 90: mandible, outer lateral view; 91: head, frontal view; 92: propodeum, dorsal view; 93: forewing.

mandible and antenna brown.

Head rectangular, 1.43 times as long as wide, microreticulate, with almost parallel sides and shallowly concave posterior margin in frontal view. Mandible sickle-shaped; tip with 3 teeth. Anterior margin of clypeus medially with 3 small blunt teeth. Antenna short, not reaching anterior margin of pronotum; first 5 segments in a ratio of about 10 : 3 : 1.5 : 1.5 : 1.7 in length; scape 3.3 times as long as wide; 2nd segment 2.0 times as long as wide; 3rd as long as wide; apical segment 1.5 times as long as wide, and 1.5 times as long as preceding segment. Eye flat, 0.25 mm long, with short erect hairs; WF 0.92 times EL. Ocelli small; front angle of ocellar triangle acute; POL : AOL = 5 : 7; OOL 2.8 times WOT.

Pronotal disc 0.79 times as long as wide, microreticulate. Mesonotum microreticulate; notauli short, thin and shallow. Propodeal disc as long as wide, with parallel sides and weakly concave posterior margin; anterior triangular area strongly microreticulate, Posterior and lateral areas moderately microreticulate; median carina reaching mid-length of the disc; lateral and transverse carinae distinct.

Metasoma smooth and shining.

Holotype Female, Kunigami-son, Okinawa-jima, Okinawa Pref., 18. VIII. 1994, M. Terayama leg.

Paratypes 1 female, Tadami-cho, Minami-aizugun, Fukushima Pref., 10. VI. 1959, M. Sugano leg.; 2 females, Shimoda, Izu, Shizuoka Pref., 30. VI. 1985, T. Satoh leg.; 1 female, Kamakura, Kanagawa Pref., H. Nagase leg.; 1 female, Okinawa-jima, Okinawa Pref., 13. V. 1989 (emerged from a dead wood of *Cinnamomum* sp.), H. Makihara leg.; 1 female, Nago-dake, Okinawa-jima, 17. VIII. 1994, M. Terayama leg.

Type depository Holotype and some paratypes are deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and other paratypes in the National Science Museum, Tokyo.

Distribution Honshu, C. Ryukyus.

Remarks This is the first record of the genus from Asia. The holotype and some paratypes were taken from broad-leaved natural or semi-natural forests.

Cephalonomia shirahamana

Terayama, sp. nov

(Figs. 91-93)

Japanese name Shirahama-arigatabachi.

Holotype Female. 0.63 mm; HW 0.55 mm; LM 0.93 mm; LPD 0.25 mm; WPD 0.36 mm; FWL 1.5 mm; TL ca. 2.3 mm.

Body black; antenna and legs dark brown.

Head rectangular, 1.15 times as long as wide, with weakly convex posterior margin in frontal view; frons and vertex largely smooth. Mandible with 3 teeth; apical tooth acute and most developed. Antenna remarkably short, not reaching posterolateral corner of head; scape 3.0 times as long as wide; 2nd segment longer than wide; 3rd to 11th each wider than long; apical segment longer than wide. Eye large, 0.23 mm long. Ocelli forming a right triangle.

Pro- and mesonotal dorsum weakly microreticulate. Propodeal disc wider than long, with weakly concave posterior margin; weak median carina present; basal triangular area microreticulate with 3-4 pairs of weak longitudinal rugulae; sublateral area smooth and shining.

Metasoma smooth and shining.

Holotype Female. Shirahama, Iriomote-jima, Okinawa Pref., 31. VIII. - 5. IX. 1969, H. Makihara leg.

Type depository National Institute of Agro-Environmental Sciences, Tsukuba.

Distribution S. Ryukyus.

Subfamily Bethylinae

Goniozus ryukyuensis Terayama, sp. nov.

(Figs. 94-97)

Japanese name Higebuto-hamaki-arigatabachi.**Holotype** Female. HL 0.63 mm; HW 0.55 mm; WF 0.35 mm; LM 1.00 mm; LPD 0.30 mm; WPD 0.48 mm; FWL 1.90 mm; TL 2.4 mm.

Body black; mandible and antenna yellow; coxae and femora brown; tibiae and tarsi yellowish brown; wings hyaline; wing veins light yellow; pterostigma dark brown.

Head rather long, 1.14 times as long as wide, with slightly convex posterior margin in frontal view; posterolateral corner not forming a distinct angle; HW 1.57 times WF; frons and vertex microreticulate and with scattered shallow punctures. Mandible with 4 blunt teeth. Median lobe of clypeus broad and relatively weakly produced medially; tip broadly angulated; lateral lobe weakly produced and broadly convex; median carina weakly arched in profile. Antenna short; first 4 segments in a ratio of about 3 : 2 : 1.5 : 2 : 2 in length; 2nd slightly longer than wide; 3rd to 9th each wider than long; 10th to 13th each moniliform. Eye long, 0.30 mm long, hairless, and 1.67 times as long as wide; WF 1.17 times EL. POL : AOL = 5 : 2; OOL as long as WOT.

Pronotal disc microreticulate, trapezoidal, and 0.60 times as long as wide. Mesonotum microreticulate, with shallow sparse punctures. Propodeum 0.63 times as long as wide; disc with smooth median surface and strongly microreticulate outer surface; transverse carina complete.

Metasoma smooth and shining.

Forewing without areola; median and submedian cells with decumbent short hairs sparsely.

Holotype Female, Shiramizu, Ishigaki-jima, Okinawa Pref., 1-3. VII. 1993, K. Konishi leg. (taken from Malaise trap).**Type depository** National Institute of Agro-Environmental Sciences, Tsukuba.**Distribution** S. Ryukyus.*Goniozus hoorai* Terayama, sp. nov.

(Figs. 98-101)

Japanese name Hôrai-hamaki-arigatabachi.**Holotype** Female HL 0.60 mm; HW 0.55 mm; WF 0.35 mm; LM 0.93 mm; LPD 0.30 mm; WPD 0.43 mm; FWL 1.70 mm; TL 2.4 mm.

Body black; mandible dark brown; antenna and legs yellow.

Head 1.09 times as long as wide, with straight posterior margin in frontal view; frons and vertex coarsely microreticulate; 2 pairs of long whitish hairs present near occipital margin; the longest hair ca. 0.18 mm. Median lobe of clypeus rather narrow, forming an acute angle. First 5 segments of antenna in a ratio of about 6 : 2 : 2 : 2 : 2.2 in length; 2nd to 4th segments each as long as wide. Frontal lobe with produced anterior margin. Eye with short erect hairs which are ca. 0.33 mm long. Ocelli relatively large; DAO 0.05 mm; ocellar triangle flat; POL : AOL = 2 : 1; OOL 0.8 times WOT.

Pronotal disc 0.45 times as long as wide and microreticulate. Mesonotal disc relatively flat, microreticulate. Propodeal disc 0.70 times as long as wide, with parallel sides and straight posterior margin in dorsal view; transverse carina distinct and complete; median area smooth and shining; remainder microreticulate; declivity rather strongly microreticulate.

Forewing with closed areola.

Holotype Female, Nantou, Meifeng (2140 m alt.), Taiwan, 3-15. X. 1990, C. K. Starr leg.**Paratypes** 1 female, Kubura, Yonaguni-jima, Okinawa Pref., 9. VIII. 1979, M. Terayama leg. [metasoma lacking]; 2 females, Hirara, Miyako-jima, Ryukyu Is., Okinawa Pref., 17-23. VIII. 1969, H. Makihara leg.; 1 male, Yona, Okinawa-jima, Okinawa Pref., 11. V. 1972, S. Okajima leg.; 1 female, Shin-mura, Yuwan, Amami-ôshima, Kago-shima Pref., 4. IV. 1956, S. Miyamoto leg.**Type depository** Holotype is deposited in the

Canada National Collection, Ottawa, and paratypes in the Faculty of Agriculture, Kyushu University, Fukuoka.

Distribution C. and S. Ryukyus; Taiwan.

Goniozus kusigematii Terayama, sp. nov.

(Figs. 102-104)

Japanese name Minami-hamaki-arigatabachi.

Holotype Female. HL 0.75 mm; HW 0.69 mm; WF 0.40 mm; LM 1.20 mm; LPD 0.33 mm; WPD 0.50 mm; FWL 2.4 mm; TL 3.2 mm.

Body black to blackish brown; mandible and antenna yellow; coxae and femora blackish brown; trochanters, tibiae and tarsi yellow.

Head longer than wide, with straight posterior margin and dully angulate posterolateral corners in frontal view; malar area broad in profile; frons and vertex microreticulate with shallow sparse punctures; malar areas smooth and shining. Mandible with 4 teeth. Median lobe of clypeus narrow-

ly convex anteriorly. First 5 antennomeres in a ratio of about 7 : 2.5 : 2.5 : 3 : 3 in length; 2nd and 3rd segments each short, as long as wide; 4th and 5th segments each slightly longer than wide. Eye hairless, 0.40 mm long; EL as long as WF. Ocellar triangle very flat; anterior ocelli almost reaching the level of posterolateral ocellus in frontal view; POL : AOL = 5 : 2; OOL 0.9 times WOT.

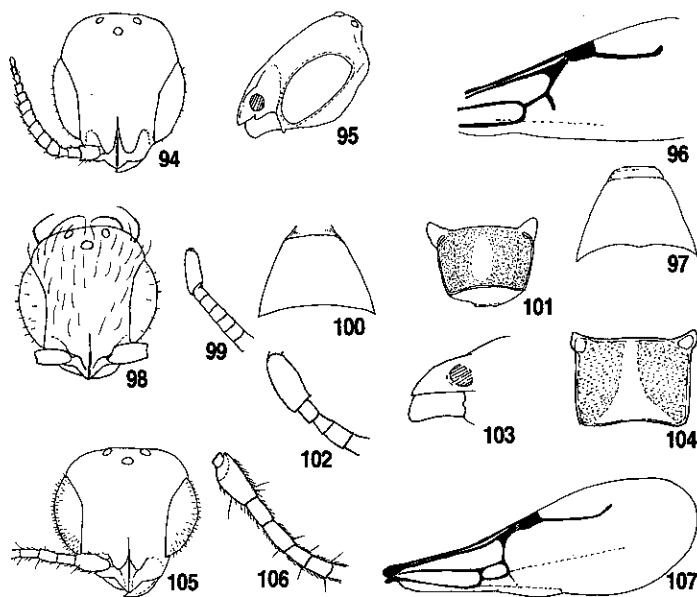
Pronotal disc 0.38 times as long as wide, microreticulate. Mesonotum microreticulate. Propodeal disc 0.66 times as long as wide; transverse carina strong and complete; median area smooth and shining; remainder reticulate; declivity mostly smooth and shining, but weakly microreticulate.

Metasoma smooth and shining.

Forewing with closed areola.

Holotype Female, Bōno-misaki, Kagoshima Pref., Kyushu, 27. IV. 1966, K. Kusigemati leg.

Paratypes 1 female, Sata-misaki, Kagoshima Pref., 18. V. 1966, K. Kusigemati leg.; 1 female,



Figs. 94-107 *Goniozus* species, female. 94-97: *Goniozus ryukyuensis* sp. nov.; 98-101, *G. hoorai* sp. nov.; 102-104: *G. kusigematii* sp. nov.; 105-107: *G. tosaensis* sp. nov. 94,98,105: Head, frontal view; 95: head, lateral view; 96, 107: forewing; 97,100: pronotum, dorsal view; 99: first 6 segments of antenna; 101,104: propodeum, dorsal view; 102,106: first 4 or 5 segments of antenna; 103: clypeus, lateral view.

Hedo, Kunigami-son, Okinawa-jima, Okinawa Pref., 5. IV. 1979, K. Ohara leg.

Type depository Holotype will be deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and paratypes in the Faculty of Agriculture, Kagoshima University, Kagoshima.

Other specimens examined 1 female, Kanpira, Iriomote-jima, Okinawa Pref., 28. VI. 1993, K. Konishi leg.; 1 female, Shiramizu, Ishigaki-jima, Okinawa Pref., 1-3. VII. 1993, K. Konishi leg.

Distribution Kyushu, C. and S. Ryukyus.

Goniozus tosaensis Terayama, sp. nov.

(Figs. 105-107)

Japanese name Tosa-hamaki-arigatabachi.

Holotype Female. HL 0.68 mm; HW 0.68 mm; WF 0.38 mm; LM 1.08 mm; LPD 0.35 mm; WPD 0.50 mm; FWL 2.10 mm; TL 3.0 mm.

Body black with a brownish tinge; 1st and 2nd metasomal tergites blackish brown; mandible, antenna and legs yellow.

Head as long as wide, with very weakly convex posterior margin in frontal view; frons and vertex microreticulate densely; malar area smooth and shining, and narrow in lateral view. Mandible with 4 teeth; apical tooth acute and longest. Median lobe of clypeus forming a right angle; median carina strongly convex in profile. First 5 segments of

antenna in a ratio of about 6:3:3.5:3:3 in length; scape 1.7 times as long as wide; 2nd 1.5 times as long as wide; 3rd 1.9 times as long as wide; 4th slightly longer than wide. Eye with abundant erect hairs; 1.68 times as long as wide; EL 0.40 mm; WF 0.95 times EL. Ocellar triangle flat; POL : AOL=2:1; OOL 1.1 times WOT.

Pronotal disc 2.50 times as long as wide; pro- and mesonotum microreticulate densely, but microreticulum weaker than that of head. Pronotal disc 0.70 times as long as wide; median area smooth and shining; remainder reticulate; declivity weakly reticulate; transverse carina present.

Metasoma smooth and rather subopaque.

Forewing with closed areola.

Holotype Female, Kuroson, Kochi Pref., Shikoku, 29. IV. 1956, Y. Murakami leg.

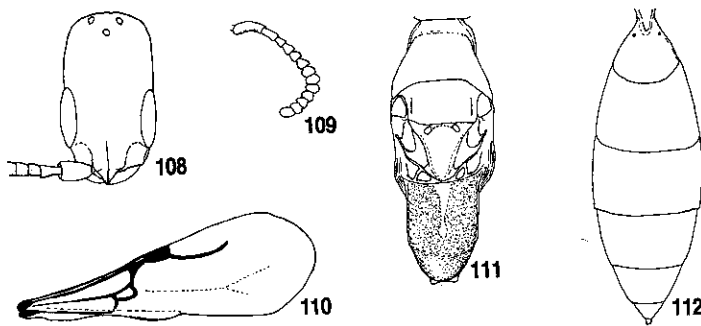
Paratype Kamiozegawara, Fuji, Saga Pref., 10. VIII. 1973, K. Yamagishi leg.

Type depository Holotype is deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and a paratype in the Faculty of Agriculture, Kyushu University, Fukuoka.

Other specimens examined 1 female, Kanpira, Iriomote-jima, Okinawa Pref., 28. VI. 1993, K. Konishi leg.; 1 female, Banna-dake, Ishigaki-jima, Okinawa Pref., 20-25. III. 1995, T. Matsumura leg.

Distribution Shikoku, Kyushu, S. Ryukyus.

Remarks This distinctive species is easily distin-



Figs. 108-112 *Goniozus yaeyamanus* sp. nov., female. 108: Head, frontal view; 109: antenna; 110: forewing; 111: mesosoma; 112: metasoma.

guished from the other East Asian congeners by the abundant erect hairs on eyes.

Goniozus yaeyamanus Terayama, sp. nov.

(Figs. 108-112)

Japanese name Omonaga-hamaki-arigatabachi.

Holotype Female. HL 0.70 mm; HW 0.43 mm; WF 0.25 mm; LM 1.05 mm; LP 0.43 mm; WPD 0.33 mm; FWL 1.9 mm; TL 5.5 mm.

Body black; mandible black; antennal scape and 6th to terminal segments of antenna brown; remainder of antennal segments yellowish brown; coxae, trochanters and femora blackish brown; basal half of tibiae dark brown; apical half of tibiae and tarsi yellow.

Head remarkably elongate, 1.63 times as long as wide, microreticulate, with parallel sides and evenly convex posterior margin in frontal view; posterolateral corner forming a dull angle. Mandible not dissected, but at least 3 teeth are recognizable. Anterior margin of clypeus with an obtuse median angle; median carina developed, strongly convex in profile. First 5 antennomeres in a ratio of about 5 : 2.5 : 2 : 2 : 2 in length; scape 1.7 times as long as wide; 2nd segment distinctly long, 1.7 times as long as wide; 3rd slightly longer than wide; 4th and 5th segments each as long as wide. Anterior margin of frontal lobe notched at midlength. Eye 0.28 mm long, with short erect hairs; WF 0.89 times EL. Ocelli forming a regular triangle; OOL 2.0 times WOT.

Pronotal disc 2.62 times as wide as long, and microreticulate. Mesonotum as long as wide and microreticulate; scutellum with a pair of pits which are connected by a shallow groove. Propodeum

1.31 times as long as wide in dorsal view; transverse carina absent; disc microreticulate with rugosity excepting median area smooth and shining; declivity weakly microreticulate.

Metasoma elongate, smooth and shining; 2nd segment 0.64 times as long as wide in dorsal view; 3rd segment 0.60 times as long as wide.

Forewing with a closed areola.

Holotype Female, Yarabu-dake, Ishigaki-jima, Okinawa Pref., 16. I. 1991, S. Okajima leg.

Paratype 1 female, Alishan (2400 m alt.), Taiwan, VI. 1977, J. & S. Klapperich leg.

Type depository Holotype is deposited in the National Institute of Agro-Environmental Sciences, Tsukuba, and a paratype in the Canada National Collection, Ottawa.

Distribution S. Ryukyus; Taiwan.

Remarks This species is easily distinguished from the other East Asian congeners by the extremely elongate head and mesosoma.

References

- Buysson, M. R. 1903. Hyménoptères récoltés au Japon par M. J. Harmand. *Bulletin du Muséum National d'Histoire Naturelle, Paris*, 9: 125-127.
- Evans, H. E. 1964. A synopsis of the American Bethyliidae (Hymenoptera, Aculeata). *Bulletin of the Museum of Comparative Zoology, Harvard University*, 132: 1-222.
- Kieffer, J. J. 1908. Bethyliidae. In: P. Wytsman (ed.), *Genera Insectorum*, 76: 1-50.
- Yuasa, H. and Onoe, T. 1930. *Ptilineurus marmoratus* Reitter, an anobiid-beetle noxious to the rush mat, with description of a new parasitic bethyloid-fly. *Journal of the Imperial Agricultural Experiment Station in Japan, Nishigahara, Tokyo*, 1: 215-230. (In Japanese with English Summary.)