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Description of Seven New Species of the Genus *Coelotes* (Arachnida: Araneae: Amaurobiidae) from the Amami and the Tokara Islands, Japan

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Abstract — Following seven new species of the genus *Coelotes* from the Amami and the Tokara Islands in the Ryukyus are described: *Coelotes oshimaensis, C. tokunoshimaensis, C. tokaraensis, C. insulanus, C. nasensis, C. akakinaensis, C. kakeromaensis*.

Key words — Araneae, Amaurobiidae, *Coelotes*, new species, Amami Islands, Tokara Islands, Ryukyu Islands.

Introduction

In the present paper, I will describe seven new coelotine species from the Amami and the Tokara Islands in the Ryukyu Islands.

According to my investigation, the range of distribution of these species belonging to the genus *Coelotes* in the Ryukyu Islands except northern Ryukyus (Yakushima Is. and Tanegashima Is. etc.) seems to be strongly restricted. All of them are endemics in the Ryukyu Islands for the present (Paik 1978; Yaginuma 1986; Yaginuma et al. 1990; Wang & Ono 1998). All the specimens used were collected by the author unless otherwise noted.

Abbreviations used in the text and on figures

Chelicerae: Marginal teeth=promargin/retromargin(p/r). Eyes: AER=anterior eye row, AME=anterior median eyes, ALE=anterior lateral eyes; PER=posterior eye row, PME=posterior median eyes, PLE=posterior lateral eyes; MOAH=height of median ocular area; MOAW=width of median ocular area. NSMT=National Science Museum Tokyo. Legs: Fe=femur, Pa=patella, Ti=tibia, Mt=metatarsus, Ta=tarsus, Uc=upper claw, Lc=lower claw; Tricho.=trichobotheria; R or (r)=right, L or (l)=left, weak (w). Spiniformation: Please refer to the previous paper (Description of eleven new species of the genus *Coelotes* from the Ryukyu Islands) for details. Copulatory organs: Male: c=conductor, ec=end of conductor, e=embolus, ma=median apophysis, pa=patellar apophysis, ta=tibial apophysis, cf=cymbial furrow; Female: p=projection, at=atrium, co=copulatory opening, cd=copulatory duct, ss=stalk of the spermatheca, hs=head of the spermatheca, bs=base of the spermatheca.

Description

Coelotes oshimaensis n. sp.

[Japanese name: Oshima-yachigumo]

(Figs. 2-10)

Etymology. The specific name is derived from Amami-oshima Island in the Mid-Ryukyus.

Types. Male holotype and female allotype, Akakina, Amami-oshima Island,

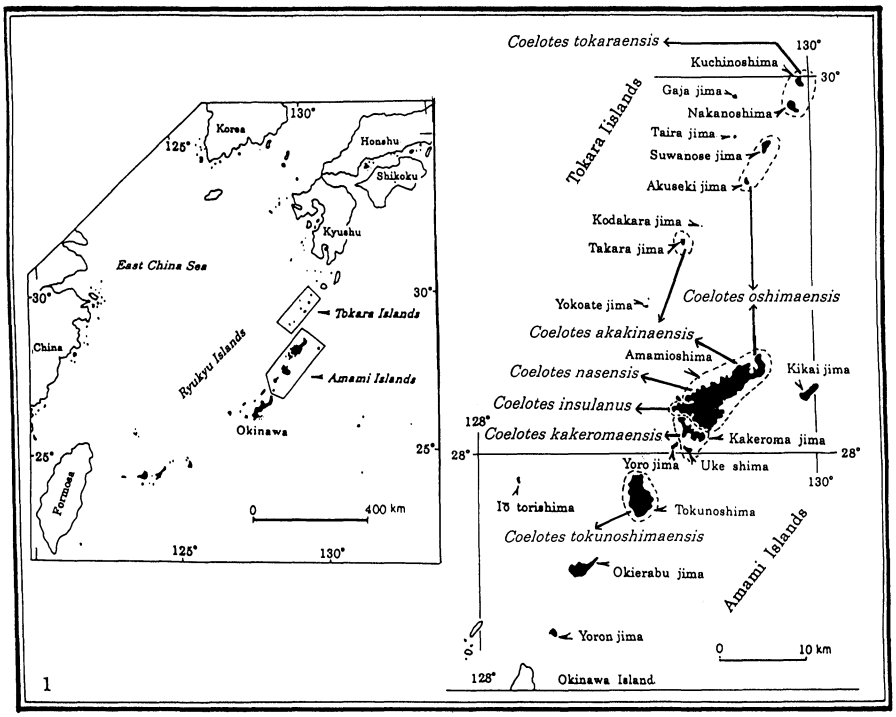


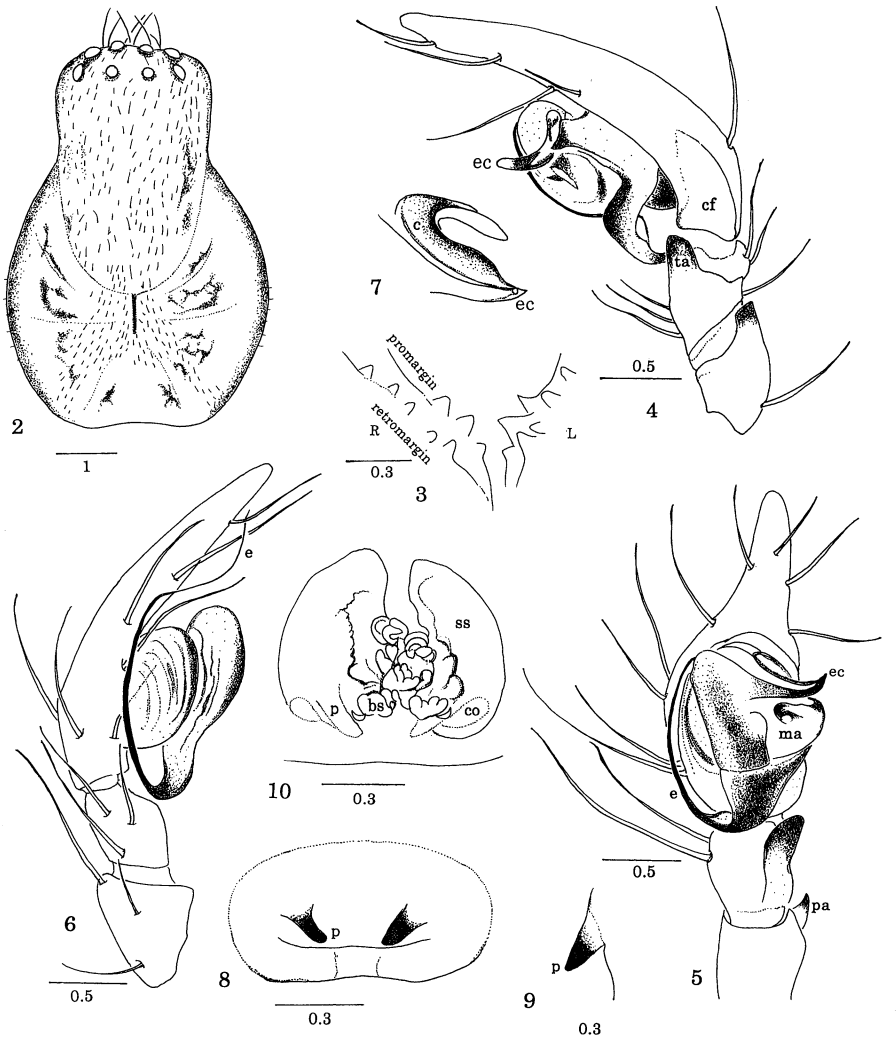
Fig. 1. A map of the Amami Islands and Tokara Islands, representing distribution of *Coelotes* species described in the present paper.

Kagoshima Prefecture, Japan, 2 Nov. 1997; deposited in NSMT.

Diagnosis. Large-sized coelotine species. The ranges of total length of *C. oshimaensis* n. sp. are in males 7.6–11.4 (n=8: $\bar{x}$=8.8±1.3 SD),in females 8.0–12.2(n=13: $\bar{x}$= 10.2±1.3 SD), Number and arrangements of promarginal teeth of chelicerae on the right and left in the both sexes always 3 teeth; but retromarginal ones variable from 4 to 5. This species can be distinguished by the shape of palpal conductor of male (Figs. 4–7), the shape of epigynal projections, the shape of spermathecal ducts. (Figs. 8, 10).

Description. Male holotype: Body length 11.6, carapace 6.5 long, 4.5 wide; sternum shield-shaped, 3.0 long, 2.5 wide; labium wedge-shaped, 0.8 long, 0.7 wide; height of clypeus 0.4, with 9 long bristles; both promargin with 3 teeth, left retromarginal teeth 4 (right 5) (Fig. 3); cervical groove, median furrow and radial furrows distinct (Fig. 2). AER weakly procurved, posterior one weakly recurved seen from upper; AER strongly procurved, PER weakly procurved in frontal view; order of eye sizes ALE=PLE>AME=PME; interdistances of eyes: AME-AME 0.06, AME-ALE 0.08, PME-PME 0.14, PME-PLE 0.10, ALE-PLE 0.04; MOAW>MOAH; Leg formula 4, 1, 2, 3. Leg I 6.1/2.2/5.5/6.2/2.9/22.9//13(12)/3/8; Leg II 5.8/2.0/4.7/5.2/2.5/20.2//11(11)/3/8; Leg III 5.1/2.0/3.8/5.2/2.2/18.3//9(9)/3/8; Leg IV 6.3/2.0/5.4/7.0/2.6/23.3//10(9)/3/8.

Spiniformation of legs. Dorsal: Fe 1 1-0-1-2-1, 2 1-2-1-3-1, 3, 4 1-1-1-2-1; Pa 1, 2, 4 1-0-1, 3 1-1-1; Ti 3, 4 1-1-0; Mt 3 1-1-2, 4 2-2-2. Ventral: Ti 1-4 2-2-2; Mt 1-4 2-2-2. Prolateral: Pa 4 0-1-0; Ti 3 0-1-1, 4 1-1-0; Mt 3 1-1-1, 4 0-1-1. Ta 4 0-



Figs. 2–10. *Coelotes oshimaensis* n. sp., —— 2–7, Male holotype, Carapace (2); dorsal view; Cheliceral teeth (3). 4–7 Left palp, lateral (4) views, ventral (5) and retrolateral (6); Conductor seen from above (7). 8–10, Female allotype, ventral (8); lateral (9); and dorsal (10) views of genitalia.

0–1. Retrolateral: Fe 1–4 0–1–0; Pa 3–4 0–1–0, Ti 2, 4 1–1–0, 3 0–1–1, Mt 1 0–0–1, 2, 4 0–1–1, 3 0–1–0.

Male palp (Figs. 4–7). Patellar apophysis, ax-shaped; tibial apophysis well developed (Figs. 4–5); embolus relatively long, filiform (Figs. 5–6); end of conductor pointed, curved upward (Figs. 4–5, 7), conductor crescent-shaped seen above (Fig. 7), margin of it weakly sclerotized; latero-cymbial furrow short and wide (Fig. 4).

Marking and coloration: Marks on the carapace less developed. Cephalic region and median furrow reddish brown, thoracic region lightish yellow brown, chelicerae, maxillae and labium reddish black. Dorsum of opisthosoma with two longitudinal

rows of some irregular blackish grey flecks, ventral surface of opisthosoma with four pair of blackish flecks. Dorsum of basal segment of the posterior spinnerets with large blackish mark. Femora and tibiae of leg I with lightish ring flecks, but the other ones less developed.

Female allotype: Body length 10.6, carapace 4.9 long, 3.3 wide; sternum 2.6 long, 1.7 wide, posterior end pointed same as in male; labium 0.7 long, 0.6 wide; height of clypeus 0.3; both chelicerae with 3 teeth of promargin; retromargin with 4 teeth (Fig. 3); order of eye sizes ALE=PLE>AME=PME; interdistances of eyes: AME-AME 0.08, AME-ALE 0.10, PME-PME 0.18, PME-PLE 0.12, ALE-PLE 0.06; MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 4.3/1.7/3.9/4.2/2.0/16.1//13(14)/4/7; Leg II 3.9/1.5/3.1/3.6/1.7/13.8//13(13)/4/6; Leg III 3.5/1.4/2.6/3.5/1.6/12.6//11(11)/4/6; Leg IV 4.6/1.6/3.9/4.8/1.6/16.5//12(12)/4/6.

Spiniformation of left legs. Dorsal: Fe 1 1-0-1-2-1, 2 1-2-1-2-1, 3, 4 1-1-1-2-1; Pa 1-4 1-0-1; Ti 1, 3, 4 1-1-0, 2 0-0-1; Ventral: Ti 1, 2 2-2-1, 3, 4 2-2-2; Mt 1-4 2-2-2; Prolateral: Pa 3, 4 0-1-0, Ti 3, 4 1-1-0, Mt 3 0-1-1, 4 1-1-1; Ta 4 0-0-1. Retrolateral: Fe 1 0-1-0; Pa 2, 4 0-1-0, 3 1-0-1; Ti 2-4 1-1-0; Mt 2 1-0-1, 3, 4 0-1-1; Ta 3 0-1-0, 4 0-1-1.

Female genitalia (Figs. 8-10). Atrium elliptic-shaped. Epigynal projections short, stout and blunt, situated at mid-portion of atrium, obliquely downward (Figs. 8-9); copulatory opening located at lower side of the projections (Fig. 10); spermathecal ducts membranous, pouch-shaped, expanded; spermathecae convoluted; spermathecal head small; spermathecal bases slightly separated from each other. (Fig. 10).

Markings and coloration of female allotype very similar to male holotype.

Material examined. 4 males, 14 Oct. 1997; 4 males and 3 females, 2 Nov. 1997; 4 females, 30 Jan. 1982; 3 females, 29 Jan. 1997; Yodoyama, Kasari-cho; Takinohanayama; 3 females, 19 Dec. 1983; Takinohanayama, Sumiyo-son. All localities on Amami-oshima Is.; 1 male, 14 Nov. 1985; Suwanose-jima Is.; 14 females, 9-10 Nov. 1997; Akuseki-jima Is.

Biology. This species construct a tubular nest with sheet web in rotten bough and decaying tree hole, or among the litter leaves in the bush or the forest.

Distribution. Amami-oshima Is. Akuseki-jima Is. Suwanose-jima Is. of the Ryukyu Islands.

Coelotes tokunoshimaensis n. sp.

[Japanese name: Tokunoshima-yachigumo]

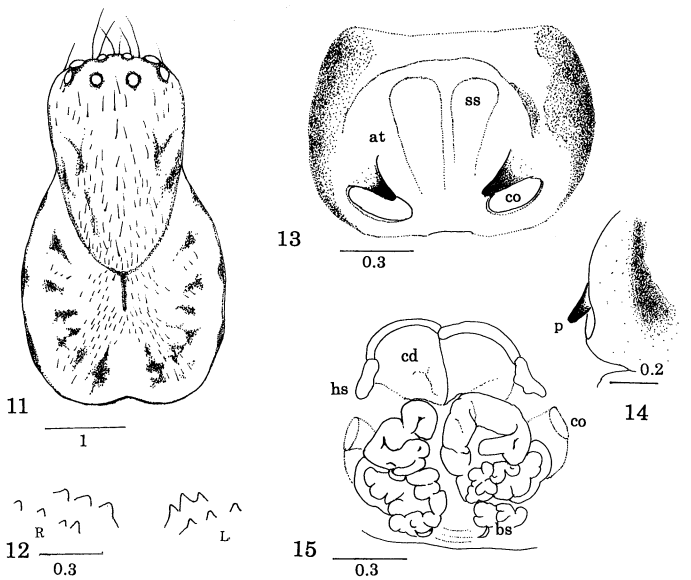
(Figs. 11-15)

Etymology. Named after the type locality.

Type. Female holotype, Kametoku, Tokunoshima Island, Kagoshima Prefecture, Japan, 3 March 1998, deposited in NSMT.

Diagnosis. *Coelotes tokunoshimaensis* n. sp. resembles *Coelotes tokaraensis* n. sp. but can easily be distinguished by the shape of the projections (Figs. 13-14, 22-23); shape of internal genitalia of female, such as spermathecal heads (Figs. 15, 24), spermathecal bases widely separated from each other in the latter.

Description. Female holotype: Body length 9.5, carapace 4.5 long, 3.0 wide. sternum shield-shaped, 1.8 long, 1.5 wide, labium 0.6 long, 0.6 wide; height of clypeus 0.2, with some long bristles, both cheliceral promargin with 3 teeth, left and right retromargins with 3 and 4 teeth, respectively. Cervical groove, median furrow and radial furrows apparent. AER weakly procurved, PER recurved seen from above; AER weakly procurved, PER strongly procurved from frontal view; order of eye sizes: ALE=



Figs. 11–15. *Coelotes tokunoshimaensis* n. sp. —— 11–15, Female holotype, Carapace (11); dorsal views; Cheliceral teeth (12). 13–14, Epigynum: ventral (13); lateral (14); and dorsal (15) views of genitalia.

PLE>AME=PME; MOAW>MOAH; interdistances of eyes: AME-AME 0.08, AME-ALE 0.06, PME-PME 0.14, PME-PLE 0.20, ALE-PLE 0.04; Leg formula 4, 1, 2, 3. Leg I 4.1/1.6/3.7/4.0/2.0/15.4//13(14)/4/8; Leg II 3.8/1.4/2.9/8.5/1.7/13.3//11(12)/5/8; Leg III 3.2/1.4/2.5/3.3/1.4/11.8//11(11)/3/7; Leg IV 4.3/1.5/3.6/4.6/1.9/15.9//11(10)/4/7.

Spiniformation of left legs. Dorsal: Fe 1 1-0-1-2-1, 2 1-2-1-2-0, 3, 4 1-1-1-2-1; Pa 1-4 1-0-1; Ti 3, 4 1-1-0; Mt 2 0-0-1, 3, 4 1-1-2. Ventral: Ti 1 2-2-1, 2-4 2-2-2. Mt 1-4 2-2-2. Prolateral: Pa 2 0-0-1, 3, 4 0-1-0; Ti 3, 4 1-1-0; Mt 2 0-0-1, 3, 4 1-1-1; Ta 4 0-1-0. Retrolateral: Fe 1 0-1-0; Pa 3, 4 0-1-0; Ti 2 0-1-1, 3, 4 1-1-0; Mt 1 0-1-0, 2, 3 0-1-1, 4 0-0-1; Ta 3 0-1-0, 4 0-1-1.

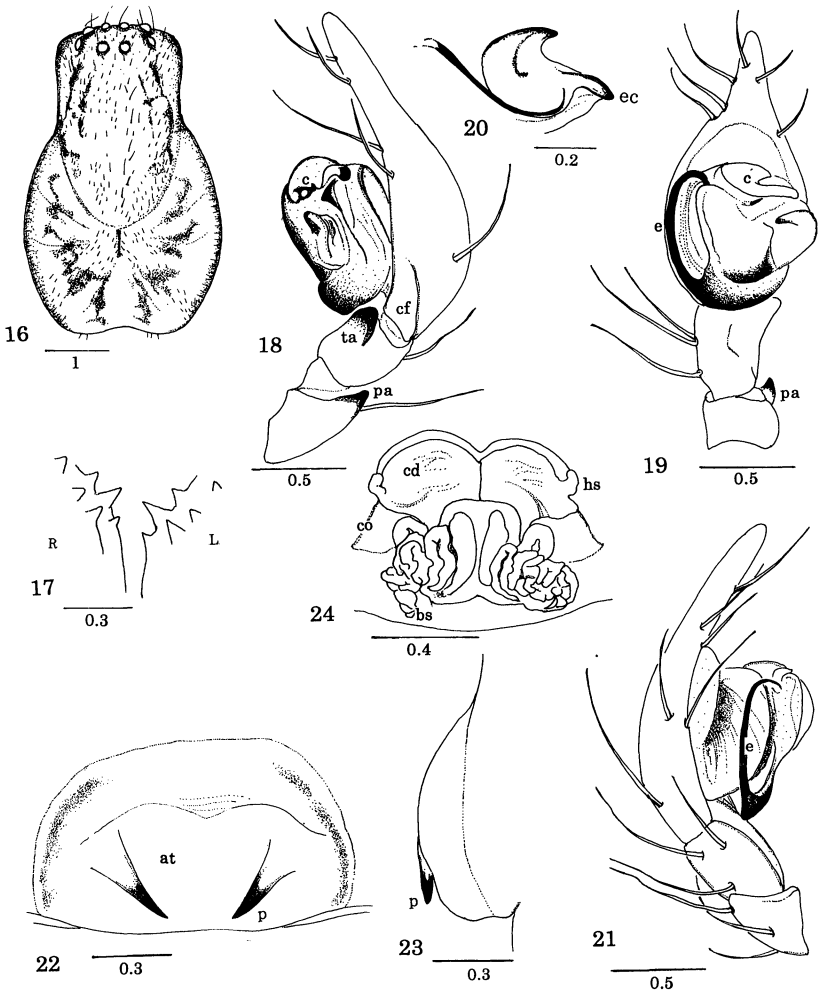
Female genitalia (Figs. 13, 15): Epigynal projections situated at posteriorly of atrium, short, relatively blunt and stout (Figs. 13, 14). Copulatory opening located at lower side of projections; spermathecal stalks visible through thin cuticle; spermathecae convoluted; spermathecal head small, ridge of it undulated; spermathecal ducts membranous and expanded; spermathecal bases separated from each other (Fig. 15).

Markings and coloration: Carapace dorsally with some irregular blackish grey flecks as shown in figure 11. Dorsum of opisthosoma without chevron marks, with many small lightish grey marks. Venter of opisthosoma with many irregular flecks. Femora and tibiae of each leg with two imcomplete greyish black ring flecks. Epigynal projections wholly black. Both sides of epigynum with wide longitudinal blackish bands (Figs. 13–14).

Biology. This new species construct a tubular nest in the ground with a sheet web on cliffy places in the forest. Population density of this species is very low.

Remarks. Male unknown.

Distribution. Tokunoshima Island, of the Amami Islands.



Figs. 16–24. *Coelotes tokaraensis* n. sp. —— 16–21, Male holotype, Carapace (16), dorsal view; Cheliceral teeth (17). 18–21, Left palp, lateral (18); ventral (19) views; Conductor seen from above (20); retrolateral (21) view. 22–24, Female allotype, 22–23, Epigynum: ventral (22); lateral (23); and dorsal (24) views of genitalia.

Coelotes tokaraensis n. sp.
[Japanese name: Tokara-yachigumo]
(Figs. 16–24)

Etymology. The specific name is derived from the Tokara Islands.

Types. Male holotype and female allotype, Nakanoshima Is. of the Tokara Islands, Japan, 15 Nov. 1985; deposited in NSMT.

Diagnosis. Large sized coelotine species. The range of body length of *Coelotes tokaraensis* n. sp. are in males 7.7–11.3 (n=16: $\bar{x}=9.3\pm1.4$ SD), in females 7.7–10.6

(n=12: $\bar{x}=9.1\pm1.4$ SD). Both chelicerae with 3 marginal teeth. This species is similar to *Coelotes yambaruensis* n. sp. (from Okinawa Is.) but can be distinguished by the shape of conductor seen from above; half-rounded in the former (pentagonal in the latter); epigynal projections dangled-shape (Fig. 23) in *Coelotes tokaraensis* n. sp. obliquely protruded in *Coelotes yambaruensis* n. sp., spermathecal ducts of this species close together, but in the latter weakly separated from each other.

Description. Male holotype: Total length 10.3, carapace 4.9, 3.2 wide; sternum 2.0 long, 1.7 wide; labium wedge-shaped, 0.6 long, 0.6 wide. Cheliceral promargin and retromargin each with 3 teeth (Fig. 17); cervical groove, median furrow and radial furrows apparent (Fig. 16). AER weakly procurved, PER recurved in dorsal view; AER procurved, PER strongly procurved seen from frontal; order of eye sizes ALE= PLE>AME=PME interdistances of eyes AME-AME 0.06, AME-ALE 0.08, PME-PME 0.14, PME-PLE 0.20, ALE-PLE 0.04; MOAW>MOAH; Leg formula 4,1,2,3. Leg I 4.7/1.7/4.4/4.8/2.3/17.9//13(13)/4/10; Leg II 4.3/1.7/3.5/4.1/2.0/15.6//12(13)/4/9; Leg III 3.8/1.5/3.0/4.0/1.7/14.0//11(11)/4/9; Leg IV 4.5/1.4/3.8/4.9/2.1/16.7//11(10)/4/9.

Spiniformation of left legs. Dorsal: Fe 1, 2 1-0-1-2-1, 3 1-1-1-2-1, 4 1-1-1-3-0; Pa 2, 3 1-0-1, 4 1-1-1; Ti 3, 4 1-1-0, Mt 3 2-1-2, 4 0-1-1. Ventral: Ti 1 2-2-1, 2, 3 2-2-2, 4 1-1-1-2, Mt 1 1-1-2, 2 1-2-2, 3 2-2-2; Prolateral: Pa 3, 4 0-1-0, Ti 3 0-1-1, 4 0-1-0, Mt 3, 4 1-1-1. Retrolateral: Fe 1 0-0-1, Pa 2-4 0-1-0, Ti 2, 3 0-1-1, 4 0-1-0, Mt 1 0-0-1, 2, 3 0-1-1, 4 1-1-1, Ta 3 0-1-0, 4 0-0-1.

Male palp (Figs. 18-21). Patellar and tibial apophysis median sized, tibial one blunt from lateral view (Fig. 18); embolus comparatively thick and short (Figs. 19, 21); end of conductor blunt (Figs. 19-20); conductor semicircular shaped seen from upper side (Figs. 19-20).

Markings and coloration: *Coelotes tokaraensis* n. sp. has many greyish black irregular flecks on carapace (Fig. 16). Marks on dorsum of opisthosoma well developed. Opisthosoma posteriorly with three chevron marks, ventrally with small dropped flecks, less developed; Femur and tibia of each leg with two greyish black rings, incompletely around of eyes black.

Female allotype: Body length 11.6, carapace 5.7 long, 3.8 wide. sternum shield-shaped 2.8 long, 2.3 wide; labium 0.8 long, 0.6 wide; each chelicera with 3 marginal teeth, as same as in male holotype. General morphological feature as same as male holotype.

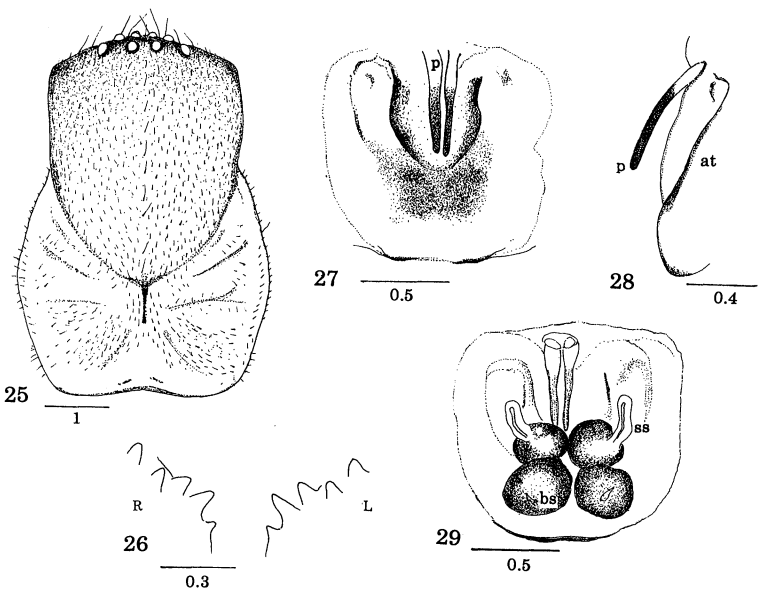
Leg formula 4, 1, 2, 3. Leg I 4.4/1.7/3.8/4.1/2.1/16.1//14(13)/3/9; Leg II 4.1/1.7/3.0/3.6/1.8/14.22//13(13)/2/7; Leg III 3.8/1.6/2.5/3.5/1.3/12.7//10(10)/2/7; Leg IV 4.7/1.8/3.8/4.9/2.0/17.2//10(9)2/8.

Spiniformation of left legs. Dorsal: Fe 1, 2, 4 1-0-1-2-0, 3 1-1-1-2-1; Pa 3, 4 1-0-1; Ti 3 1-1-0, 4 1-1-1; Mt 3 0-1-2, 4 2-2-2. Ventral: Ti 1, 2 2-2-1, 3 2-0-2, 4 2-2-2; Mt 1, 3, 4 2-2-2, 2 2-2-1. Prolateral: Pa 3, 4 0-1-0; Ti 3, 4 1-1-0; Mt 1, 2 0-0-1, 3 0-1-1, 4 1-1-1. Retrolateral: Fe 0-0-1, Pa 3, 4 0-1-0; Ti 2 0-1-1, 3 0-1-0, 4 1-1-0, Mt 1 0-0-1, 2, 3, 4 0-1-1; Ta 3 0-1-0, 4 0-1-1.

Female genitalia (Figs. 22-24): Epigynal projections long, sharply pointed (Fig. 22), dangling from lateral view (Fig. 23), spermathecal stalks visible through cuticle from ventral view, copulatory opening situated under the projections; copulatory ducts membranous, expanded; spermathecal head small, nipple-shaped (Fig. 24); spermathecae convoluted; spermathecal bases widely separated from each other (Fig. 24).

Markings and coloration of female allotype almost same as in male holotype.

Material examined. Kusunoki, Nakanoshima Is. 6 males and 7 females, 15 Nov. 1985. Kuchinoshima Is., 10 males and 5 females, 5-7 Nov. 1985.



Figs. 25–29. *Coelotes insulanus* n. sp. —— Female holotype, Carapace (25); Chelicer-al teeth (26). 27–29. Epigynum: ventral (27); lateral (28); and dorsal (29) views of genitalia.

Biology. *Coelotes tokaraensis* n. sp. constructs a tubular nest with sheet web at cliffy places, decaying bamboo stalks or rotten boughs in bush or wood.

Distribution. Nakanoshima Is. and Kuchinoshima Is. of the Tokara Islands.

Coelotes insulanus n. sp.

[Japanese name: Shima-yachigumo]

(Figs. 25–29)

Etymology. The specific name is derived from island of Amami-oshima.

Type. Female holotype: Takinohanayama, Sumiyo-village, Amami-oshima Island, 30 Jan. 1982, deposited in NSMT.

Diagnosis. Large-sized coelotine spider. Females of this species can easily be distinguished from other cogeners by having a epigynum with long softish projections and a simply-organized internal genitalia (Figs. 27–29).

Description. Female holotype: Body length 13.4. Carapace 5.6 long, 3.6 wide. Sternum shield-shaped, both sides of it undulated, 2.7 long, 2.3 wide. Labium ax-shaped, 1.0 long, 0.9 wide. Chelicera with 3 promarginal teeth, and 2 retromarginal teeth (Fig. 26); height of clypeus 0.3, with some long bristles; cervical groove, median furrow and radial furrows definite. AER procurved, PER weakly procurved from dorsal view; AER straight, PER procurved seen from front; order of eye sizes ALE> PLE>PME>AME; interdistances of eyes AME-AME 0.08, AME-ALE 0.08, PME-PME 0.14, PME-PLE 0.22, ALE-PLE 0.06; MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 4.1/1.7/3.5/3.7/2.1/15.1//10(9)/2/9; Leg II 3.9/1.7/2.8/3.2/1.9/13.5//9(9)/2/9; Leg III 3.6/1.6/2.3/3.4/1.6/12.5//8(8)/2/6; Leg IV 4.5/1.8/3.6/4.8/2.0/16.7//9(9)4/7.

Spiniformation of legs. Dorsal: Fe 1 1-0-1-2-1, 2, 3 1-2-1-2-1, 4 1-1-1-2-1; Pa

1, 2 1(w)-0-1(w), 3, 4 1(w)-0-1; Ti 3, 4 1-1(w)-0, Mt 2 0-0-1, 3 2-2-2, 4 1-2-2. Ventral: Ti 1-4 2-2-2; Mt 1, 2, 4 2-2-3, 3 2-2-2. Prolateral: Pa 3, 4 0-1-0; Ti 3, 4 1-1-0; Mt 1, 2 0-1-0, 3, 4 1-1-1; Ta 3, 4 0-1-1. Retrolateral: Fe 1 0-0-1; Pa 2-4 0-1-0; Ti 2-4 1-1-0; Mt 1, 2 0-1-1, 3, 4 1-1-1; Ta 3 0-1-0, 4 1-1-0.

Female genitalia. (Figs. 27-29). External genitalia with a pair of long softish projections, stalacte-shaped from ventral view (Fig. 27); an extremely concaved atrium; long projections slightly bent toward the atrium (Fig. 28). Internal genitalia with a pair of spermathecal ducts and apparent heads; spermathecal bases large, close together (Fig. 29).

Markings and coloration: Cephalic region reddish brown, median furrow blackish red. Carapace, legs and projections lightish brown or brown, around eyes black, spinnerets lightish yellow, surface of atrium with irregular large brown or reddish black.

Biology. Unknown.

Remarks. Male unknown.

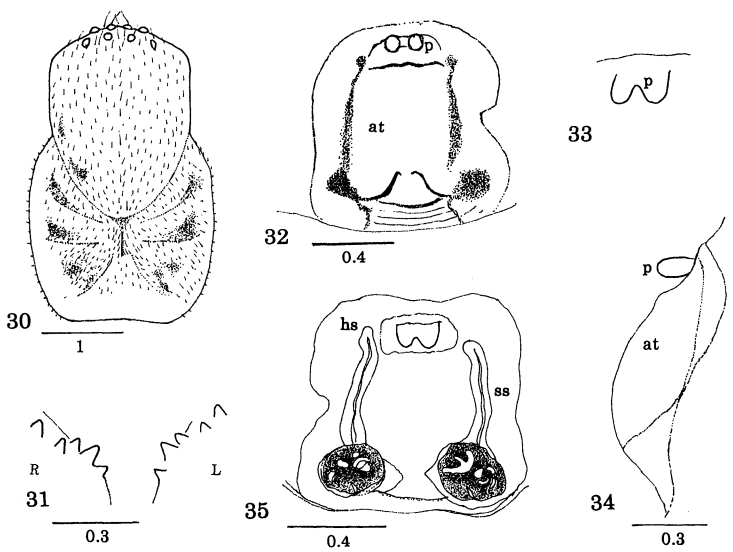
Distribution. Amami-oshima Is.

Coelotes nasensis n. sp.
[Japanese name: Nase-yachigumo]
(Figs. 30-35)

Etymology. The specific name is derived from the type locality.

Type. Female holotype, Nase city, Amami-oshima Is., Kagoshima Prefecture, Japan, 5 Feb. 1982, deposited in NSMT.

Diagnosis. Middle-sized coelotine species. The range of total length of body in females 7.7-12.0 (n=6, $\bar{x}=9.8\pm1.6$ SD), chelicera invariably with 3 promarginal and retromarginal 2. *Coelotes nasensis* n. sp. can easily be distinguished from other cogeneric



Figs. 30-35. *Coelotes nasensis* n. sp. —— Female holotype, Carapace (30), Cheliceral teeth (31). 32-34, Epigynum: ventral (32); projections seen from obliquely upper (33); lateral (34); dorsal (35) views of genitalia.

species by the simple shaped epigynum, w-shaped projection and long vertical spermathecal stalks of internal genitalia (Fig. 35).

Description. Female holotype: Body length 9.0 Carapace 3.7 long, 2.3 wide, covered with much short blackish brown hairs; thoracic region relatively narrow (Fig. 30). Sternum 1.6 long, 1.3 wide, shield-shaped. Labium 0.5 long, 0.5 wide. Clypeus 0.1 hight. Cervical groove, median and radial furrows apparent (Fig. 30). AER and PER weakly procurved seen from above; AER straight or weakly procurved, PER procurved in frontal view. Order of eye sizes ALE=PLE>PME>AME; interdistances of eyes: AME-AME 0.04, AME-ALE 0.06, PME-PME 0.08, PME-PLE 0.10, ALE-PLE 0.06; MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 2.6/1.1/2.0/2.1/1.3/9.1//11(12)/3/7; Leg II 2.3/1.1/1.6/1.9/1.1/8.0//11(11)/3/6; Leg III 2.1/1.0/1.4/2.0/1.0/7.5//9(9)3/6; Leg IV 2.8/1.2/2.3/2.9/1.2/10.4//10(10)/4/7.

Spiniformation of left legs. Dorsal: Fe 1 1-0-1-2-0, 2 1-0-1-2-1(w), 3 1-2-1-2-1, 4 1(w)-1(w)-0; Mt 3 1-1(w)-0, 4 1-2-1. Ventral: Ti 1 2-2-1, 2-4 2-2-2; Mt 1, 2 2-2-3, 3, 4 2-2-2. Prolateral: Pa 3, 4 0-1-0; Ti 3, 4 1-1-0; Mt 3, 4 1-1-1; Ta 3 0-1-0, 4 0-1-1. Retrolateral: Fe 1 0-0-1; Pa 3, 4 0-1-0; Ti 2 0-0-1, 3, 4 1-1-0; Mt 2, 3 0-1-1, 4 1-1-1; Ta 3 0-1-0, 4 0-1-1.

Female genitalia (Figs. 32-35): Epigynal shape alike to monkey face in ventral view, projections situated at anteriorly of an atrium, protruded (Fig. 34) short and distally diverging (Fig. 33). Outlines of internal genitalia visible through thin cuticle; spermathecal stalks long, ducts and spermathecal head apparent; spermathecal bases large, widely separated from each other (Fig. 35).

Markings and coloration: Carapace dorsally with some lightish irregular flecks. Opisthosoma posteriorly without chevron marks; laterally with some dropped marks; ventrally with poorly flecks; two ring flecks on each tibia of legs; femora and patellae of legs with no ring marks.

Material examined. Kinsakubaru Wood, Nase city 3 females, 26 Dec. 1975; Nase, 1 female, 5 Feb. 1982; Nase, Amami-oshima Is. 2 females, 18 Dec. 1983.

Biology. Materials were collected from cracked-ground at cliffy places in the wood, ecology of this species unknown.

Remarks. Male unknown.

Distribution. Amami-oshima Is.

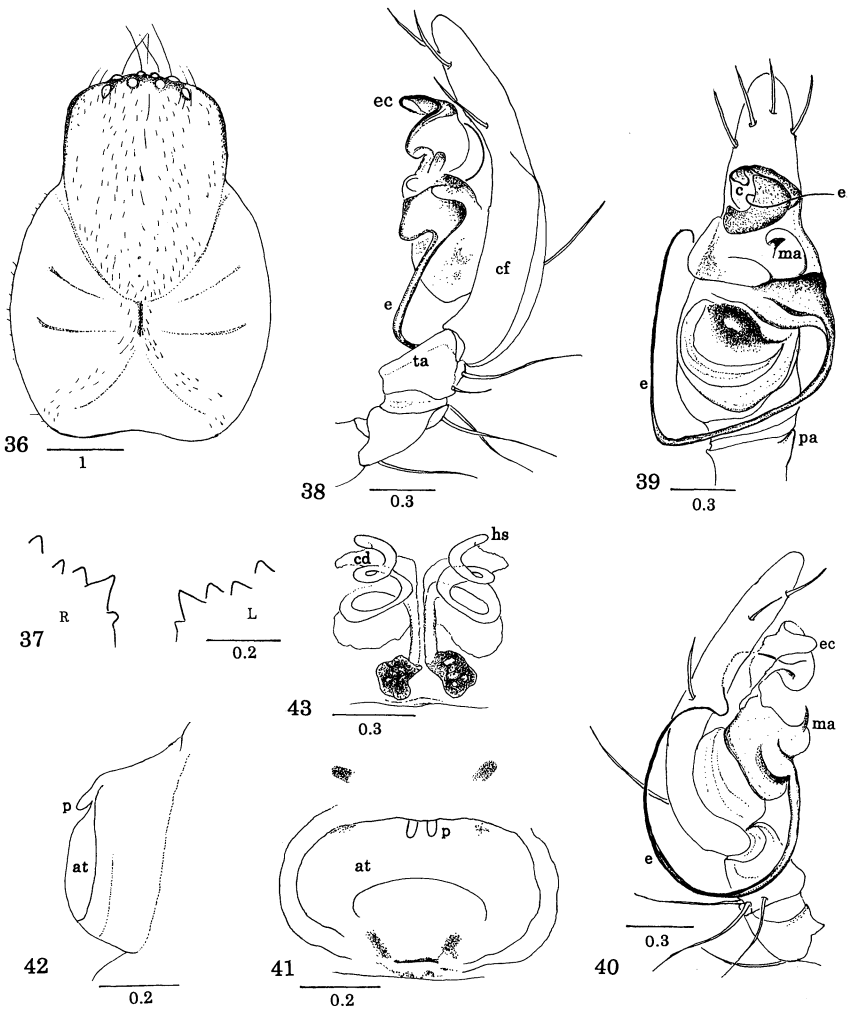
Coelotes akakinaensis n. sp.
[Japanese name: Akakina-yachigumo]
(Figs. 36-43)

Etymology. Named after the type locality.

Types. Male holotype and female allotype, Akakina, Amami-oshima Is. 14 Oct. 1997, deposited in NSMT.

Diagnosis. The range of body length of this species 8.2-10.00 (n=6, $\bar{x}=9.8\pm1.6$ SD) in females. Palpal apophysis on patella and tibia small, undeveloped (Figs. 38-39); distal portion of conductor slightly spiralled, embolus long (Figs. 39-40), cymbial furrow large and dorsally extremely concaved (Fig. 38). *Coelotes akakinaensis* n. sp. can be distinguished by the shape of male palpal organ (Figs. 38-40), epigynum and spiralled internal genitalia (Figs. 41-43).

Description. Male holotype. Total body length 8.9. carapace 4.7 long, 3.4 wide. Sternum 2.5 long, 1.9 wide. Labium 0.6 long, 0.6 wide, wedge-shaped. Clypeus 0.2 high. Chelicera with 3 promarginal, and 2 retromarginal teeth. Cervical groove,



Figs. 36–43. *Coelotes akakinaensis* n.sp. —— 36–40, Male holotype, Carapace (36); Cheliceral teeth (37). 38–40, Left palp, lateral (38); ventral (39); retrolateral (40). 41–43, Female allotype, 41–42, Epigynum: ventral (41); lateral (42); dorsal (43) views of genitalia.

median and radial furrows distinct (Fig. 36). AER procurved, PER strongly procurved seen from upper; AER weakly procurved, PER straight in frontal view. Order of eye sizes ALE=PLE>AME=PME. Interdistances of eyes: AME-AME 0.04, AME-ALE 0.04, PME-PME 0.08, PME-PLE 0.14, ALE-PLE 0.02; MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 4.1/1.6/3.5/3.7/2.2/15.1//10(10)/3/7; Leg II 3.7/1.6/2.9/3.5/2.1/13.8//8(9)/4/8; Leg III 3.4/1.4/2.5/3.5/1.9/12.7//9(9)/3/7; Leg IV 4.6/1.6/3.8/5.2/2.4/17.6//10(10)/5/7.

Spiniformation of legs. Dorsal: Fe 1, 2, 4 1-0-1-2-1, 3 1-2-1-2-2; Pa 1-4 1-0-1; Ti 3, 4 1-0-1; Mt 3 1-1-1, 4 2-2-2. Ventral. Ti 1-4 2-2-2; Mt 1-3 2-2-2, 4 1-2-(2)-1;

Ta 3, 4 0-1-0. Prolateral. Pa 3, 4 0-1-0; Ti 3 1-1-0, 4 0-1-1; Mt 3 0-1-1, 4 1-1-1; Ta 3 0-1-1, 4 1-1-1; Ta 3 0-1-0, 4 0-1-1. Retrolateral: Fe 1 0-1-0; Pa 2-4 0-1-0; Ti 1-4 0-1-1; Mt 1, 4 0-0-1, 2 1-0-1, 3 1-1-1; Ta 3, 4 0-1-0.

Male palp (Figs. 38-40). Patellar and tibial apophysis small, less developed (Figs. 38-39); embolus relatively long (Figs. 39-40), distal portion of conductor slightly spiralled seen from above (Figs. 38, 40), cymbial furrow large and very deep (Fig. 38).

Markings and coloration: Carapace and legs light yellowish brown, none flecks; dorsum of opisthosoma with some lightish grey flecks; ventral side of opisthosoma without any marks.

Female allotype: Total body length 9.8. Carapace 4.3 long, 2.8 wide. Sternum 2.2 long, 1.7 wide. Labium 0.7 long, 0.7 wide. Clypeus 0.2 high; chelicera with 3 promarginal, and 2 retromarginal teeth. Order of eye sizes: ALE=PLE>PME>AME. Interdistances of eyes: AME-AME 0.06, AME-ALE 0.06, PME-PME 0.10, PME-PLE 0.14, ALE-PLE 0.04; MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 3.4/1.4/2.8/2.7/1.6/11.9//13(12)/4/7; Leg II 3.1/1.3/2.2/2.4/1.5/10.5//11(11)/4/7; Leg III 2.8/1.2/2.0/2.7/1.4/10.1//12(11)/4/7; Leg IV 3.9/1.4/3.2/4.0/1.8/14.3//14(13)/6/8.

Spiniformation of left legs. Dorsal: Fe 1, 2, 4 1-0-1-2-1, 3 1-2-1-2-1; Pa 1-4 1-0-1; Ti 3, 4 1-0-1; Mt 3 0-1-1, 4 3-2-2. Ventral: Ti 1 2-2-1, 2-4 2-2-2; Mt 1-4 2-2-3; Ta 3 0-1-0, 4 0-1-1. Prolateral: Pa 3, 4 0-1-0; Ti 3, 4 1-1-0; Mt 3, 4 1-1-1; Ta 3 0-1-0, 4 0-1-1. Retrolateral: Fe 1 0-1-0; Pa 3, 4 0-1-0; Ti 1 0-0-1, 2 0-1-1, 3, 4 1-1-0; Mt 2, 4 0-1-1, 3 1-1-1; Ta 3, 4 0-1-1.

Female genitalia (Figs. 41-43): Atrium elliptic-shaped, extremely protruded; epigynal projections situated at anteriorly of the atrium, very short and blunt; outlines of spermathecal bases and spermathecal heads visible through the cuticle; copulatory openings invisible in ventral view (Fig. 41). Copulatory ducts membranous, spiralled; spermathecal heads apparent, spermathecal bases, separated from each other (Fig. 43).

Markings and coloration: Marks and color on carapace and legs same as in holotype male.

Material examined. Takino-hanayama, Amami-oshima Is. 3 females, 30 Jan. 1982; Motocha-toge, Amami-oshima Is. 1 female, 4 Feb. 1982; Nase-city, Amami-oshima; 2 females, 5 Feb. 1982; Takara-jima Is. in the Tokara Islands, 2 females, 12 Oct. 1997.

Biology. The materials were collected from cliffy habitats in the bush and wood, life cycle entirely unknown.

Distribution. Amami-oshima Is. and Takara-jima Is. in the Ryukyu Islands.

Coelotes kakeromaensis n. sp.

[Japanese name: Kakeroma-yachigumo]

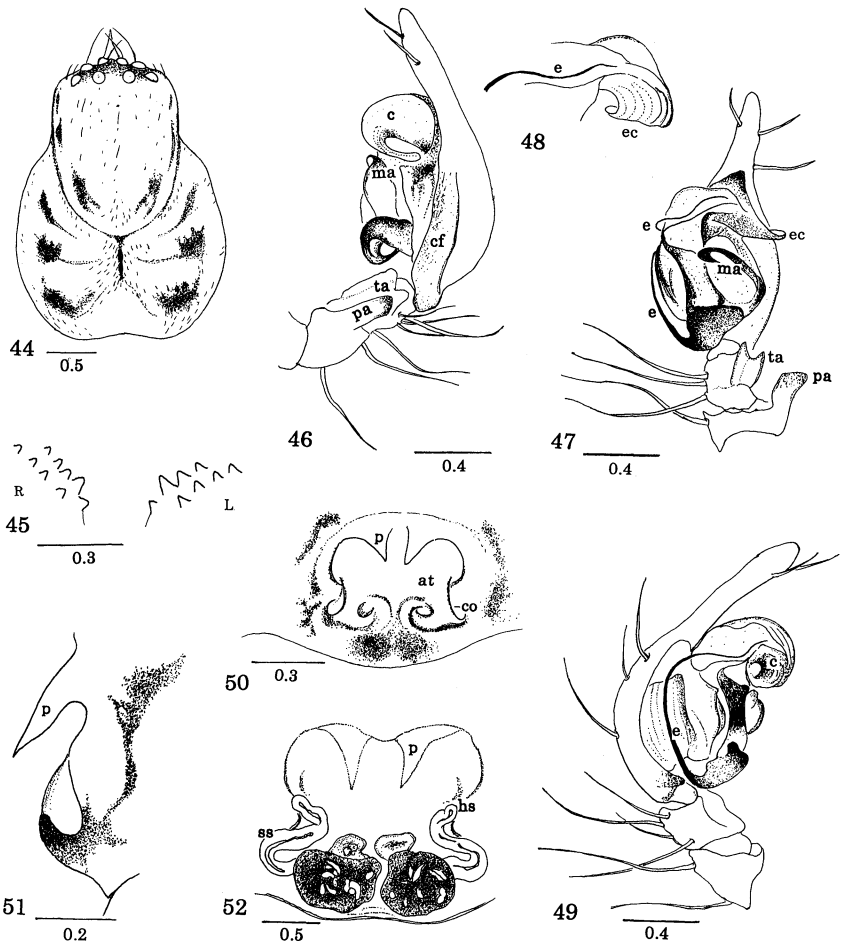
(Figs. 44-52)

Etymology. Named after the type locality.

Types. Female holotype and male allotype, Kakeroma-jima Is. of the Amami Islands, 6 March 1998; deposited in NSMT.

Diagnosis. The range of total body length of *Coelotes kakeromaensis* n. sp. is 6.1-7.3 (n=4, $\bar{x}=6.6\pm0.50$ SD) in females. This species resembles *Coelotes amamiensis* but can easily be distinguished from the latter by its unique shape of epigynum, genital organ in females (Figs. 50-52), and distal shape of conductor in male (Figs. 46-48).

Description. Female holotype: Body length 6.7. Carapace 2.9 long, 2.2 wide. Sternum shield-shaped, undulated, 1.4 long, 1.2 wide. Labium 0.4 long, 0.5 wide. Clypeus 0.2 high, with 8 long bristles. Number of promarginal teeth 6 (l) and 5 (r);



Figs. 44–52. *Coelotes kakeromaensis* n. sp. —— 44–49, Male holotype, Carapace (44); Cheliceral teeth(45). 46–49, Left palp, lateral (46), and ventral (47), conductor seen from above (48); retrolateral (49) view. 50–52. Female allotype. 50–51, Epigynum: ventral (50); lateral (51); and dorsal (52) views of genitalia.

retromarginal teeth 4 (l) and 5 (r). Cervical groove, median furrow and radial furrows apparent (Fig. 44). AER strongly procurved, PER weakly recurved seen from above; AER procurved, PER strongly procurved in frontal view. Order of eye sizes ALE= PLE>PME>AME; interdistances of eyes: AME-AME 0.06, AME-ALE 0.06, PME-PME 0.08, PME-PLE 0.12, ALE-PLE 0.02. MOAW>MOAH. Leg formula 4, 1, 2, 3. Leg I 2.8/1.0/2.4/2.4/1.4/10.0//12(12)/4/6; Leg II 2.6/1.0/2.0/2.2/1.2/9.0//12(13)/4/6; Leg III 2.3/0.9/1.7/2.0/0.9/7.8//10(10)/4/5; Leg IV 3.0/1.0/2.6/3.0/1.3/10.9//11(11)/4/16.

Spiniformation of left legs. Dorsal: Fe 1, 3 1-0-1-2-1, 2 1-2-1-2-1, 4 1-1-0-2-1; Pa 1-4 1-0-1; Ti 2, 4 1-1-0, 3 1-1-0; Mt 3 2-1-2, 4 0-1-2. Ventral: Ti 1 2-2-0, 2, 3 2-2-1, 4 1-2-2; Mt 1 2-2-3, 2 2-1-3, 3, 4 2-2-1. Prolateral: Pa 3 0-1-0; Ti 3, 4 0-1-

1; Mt 3, 4 0-1-1. Retrolateral: Ti 3, 4 0-1-1; Mt 3, 4 1-1-1; Ta 0-1-0.

Female genitalia (Figs. 50-52): Epigynal projections situated at anteriorly of atrium, long and sharp-ended (Figs. 50-51); copulatory openings apparent; spermathecal stalks extremely curved, spermathecal heads distinct; spermathecal bases relatively large, slightly separated from each other. (Fig. 52).

Markings and coloration: Carapace and opisthosoma, dorsally with well developed greyish black flecks. Dorsum of posterior part of opisthosoma with chevron marks; anterior part of opisthosoma with two greyish black transverse band; eye area black ; femur and tibia of each leg with two blackish ring bands.

Male allotype. Total length 7.0. Carapace 3.6 long, 2.7 wide. Sternum 1.5 long, 1.3 wide. Labium 0.4 long, 0.5 wide. Clypeus 0.24 high, chelicera with 4 (l) or 5 (r) promarginal teeth; with 4 retromarginal teeth. Cervical groove, median furrow and radial furrows distinct. AER strongly procurved, PER weakly recurved seen from above; AER and PER procurved in frontal view; order of eye sizes: ALE=PLE> AME=PME; interdistances of eyes: AME-AME 0.06, AME-ALE 0.04, PME-PME 0.10, PME-PLE 0.12, ALE-PLE 0.02. Leg formula 4, 1, 2, 3. Leg I 3.5/1.3/3.4/3.4/1.8/ 13.4//7(8)/3/7; Leg II 3.3/1.2/2.8/3.0/1.6/11.9//8(8)/3/7; Leg III 3.0/1.1/2.3/3.0/1.3/ 10.7//7(7)/3/7; Leg IV 3.9/1.2/3.5/4.2/1.6/14.4//7(7)/3/8.

Spiniformation of right legs. Dorsal: Fe 1, 2 1-0-1-2-1, 3 1-1-1-2-1, 4 1-1-0-2-1; Pa 1-4 1(w)-0-1(w); Ti 3, 4 1-1-0; Mt 3 2-1-2, 4 2-2-2. Ventral: Ti 1-3 2-2-2, 4 2-1-1-2; Mt 1-3 2-2-3, 4 2-1-1-2. Prolateral: Pa 4 0-1-0; Ti 3, 4 0-1-1; Mt 3 1-0-1, 4 1-1-1. Retrolateral: Fe 1 0-0-1; Pa 3 0-1-0; Ti 2 1-0-0, 3, 4 1-1-0; Mt 2 0-1-1, 3 1-1-1, 4 0-0-1.

Male palp (Figs. 46-49): Patellar apophysis long and stout, tibial apophysis short in lateral view; distal part of conductor thin and wide, imcomplete trumpet-shaped (Figs. 46, 49); length of embolus normal, filiform (Figs. 47, 49); cymbial furrow narrow and shallow (Fig. 46).

Markings and coloration: Generally same as in holotype female.

Biology. Unknown.

Distribution. Kakeroma-jima Is. of the Amami Islands.

Acknowledgments

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なお，*Aphantaulax* ホソミトンビグモ属（新称）のクモが日本から記録されたのは初めてである．

琉球列島産ヤチグモ属 11 新種（pp. 165–189）
下謝名松榮（〒903-0129 沖縄県西原町千原 1 番地 琉球大学教育学部）

尖閣列島，宮古諸島および沖縄諸島から採集した標本に基づき，次の 11 新種を記載した．これらの種はすべて琉球列島固有のものである．*Coelotes senkakuensis* センカクヤチグモ，*C. miyakoensis* ミヤコヤチグモ，*C. keramaensis* ケラマヤチグモ，*C. kumejimanus* オオタケヤチグモ，*C. aguniensis* アグニヤチグモ，*C. tonakiensis* トナキヤチグモ，*C. motobuensis* モトブヤチグモ，*C. shimajiriensis* シマジリヤチグモ，*C. yambaruensis* ヤンバルヤチグモ，*C. izenaensis* イゼナヤチグモ，*C. iheyaensis* イヘヤヤチグモ．

奄美諸島とトカラ列島産ヤチグモ属 7 新種（pp. 191–204）
下謝名松榮（〒903-0129 沖縄県西原町千原 1 番地 琉球大学教育学部）

奄美諸島とトカラ列島産のヤチグモ属の下記の 7 新種について記載した．*Coelotes oshimaensis* オオシマヤチグモ，*C. tokunoshimaensis* トクノシマヤチグモ，*C. tokaraensis* トカラヤチグモ，*C. insulanus* シマヤチグモ，*C. nasensis* ナセヤチグモ，*C. akakinaensis* アカキナヤチグモ，*C. kakeromaensis* カケロマヤチグモ．全種とも琉球列島の固有種であり，各種の分布域はきわめて狭い範囲に限られている．

***Larinia bonneti* ボネコガネグモダマシ（新称）の日本からの新記録**（pp. 205–207）
谷川明男（〒 248-0025 神奈川県鎌倉市七里ガ浜東 2-3-1 神奈川県立七里ガ浜高等学校）

Larinia bonneti Spassky 1939 ボネコガネグモダマシ（新称）を日本新記録として報告し，図示し，再記載した．本種は体が小さいこと，外雌器の垂体が薄くて丸みを帯びていること，雄触肢の指示器が細長くとがっていること，盾に大きくて薄い突起があることによって容易に日本産の同属の他種と見分けることができる．

書 評

クモの生物学

宮下 直（編）（2000）
東京大学出版会，A5 判，267pp.
ISBN 4-13-060207-1，5,200 円（税別）

編者の前文にもあるとおり，本書は，クモという動物がいかに魅力的な研究対象であるかを多くの人に理解してもらうために，専門の研究者が意欲的に取り組んでいる研究内容を最新の知見を交えながら紹介することを意図して刊行された．まずこの姿勢はすばらしく，本書はその役目を果たしていると思われる．

同じ「クモの生物学」という題名の本に吉倉真（学会出版センター，1987）のものがあるが，それを意識した上で，内容が専門外の人には読みにくい点を改め，吉倉の出版後今日までに蓄積された新知見を補った．

本書は系統と進化（鶴崎展巨，田中一裕，中嶋暉躬），糸と網（吉田真，大崎茂芳，宮下直），

