

Spiders of the genus *Otacilia* (Araneae: Corinnidae) from Japan

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Abstract — Six species of the genus *Otacilia* are reported from Japan. A new species is described from Okinoerabu-jima Island, Kagoshima Prefecture, southwest Japan under the name of *Otacilia stella*. Three species, *Otacilia komurai* (Yaginuma 1952), *O. taiwanica* (Hayashi & Yoshida 1993) and *O. vulpes* (Kamura 2001) are transferred from the genus *Phrurolithus*. Although the genus *Otacilia* has been placed under Liocranidae, it is treated under Corinnidae in this study.

Key words — Corinnidae, *Otacilia*, new species, new combination, Japan.

The genus *Otacilia* was established by Thorell (1897) based on a single species from Burma (Myanmar). Since the original description there was no study on this genus until a work by Deeleman-Reinhold (2001). She redescribed this genus and cleared that it is related to the genus *Phrurolithus*. Furthermore she transferred two Japanese species of *Phrurolithus*, *P. luna* Kamura 1994 and *P. lynx* Kamura 1994, to *Otacilia*.

After reviewing Japanese species of *Phrurolithus*, I confirmed that Deeleman-Reinhold's treatment of the two species is acceptable and recognized that additional three species, *P. komurai* Yaginuma 1952, *P. taiwanicus* Hayashi & Yoshida 1993 and *P. vulpes* Kamura 2001, also belong to *Otacilia*. Moreover I found that an undescribed species of *Otacilia* occurs in Okinoerabu-jima Island, Kagoshima Prefecture, south west Japan.

The type specimens of the new species described in this paper are deposited in the collection of the Department of Zoology, National Science Museum, Tokyo (NSMT).

The abbreviations used in this paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; d, dorsal; MOA, median ocular area; pl, prolateral; PLE, posterior lateral eye; PME, posterior median eye; pv, proventral; rv, retroventral; TK, Takahide Kamura leg. Eye size means length of long axis of an eye, but measurement of posterior median eye was made at horizontal level.

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Family Corinnidae

Genus *Otacilia* Thorell 1897

[Japanese name: Nangoku-urashimagumo-zoku]

Otacilia Thorell 1897, p. 243. Type species: *O. armatissima* Thorell 1897.

Diagnosis. This genus resembles *Phrurolithus*, but is separated from the latter by the following points. In this genus femora I–II each has some spines on prolateral side, while in *Phrurolithus* femur I has usually only one spine and femur II has no spine on prolateral side respectively.

Description based on Japanese species. Posterior eye row slightly recurved or straight. Posterior median eyes usually separated from each other by about the eye size or more. Chelicera with two spines on anterior side; promargin of fang furrow with well separated three teeth and retromargin with two or more teeth close to each other. Thoracic groove longitudinal, distinct. Femora I–II each with spines on prolateral side (number of spines: femur I 2–7; femur II 2–4, rarely 1). Dorsal sides of femora I–IV each with one or more spines, or without spine. Tibiae I–II and metatarsi I–II each with long ventral spines (number of spines: tibia I pv 5–10, rv 5–11; tibia II pv 6–9, rv 5–9; metatarsus I pv 4–6, rv 3–5; metatarsus II pv 3–5, rv 2–4). The other segments of legs with no spine. Abdomen sometimes with short stiff bristles on postero-ventral end. Male abdomen with a dorsal scutum narrow, anteriorly situated, or large, covering almost whole abdomen. Female abdomen rarely with a small scutum on antero-dorsal part. Female posterior median spinneret swollen, and with many spigots usually in two rows (Deeleman-Reinhold 2001, fig. 662). Male palp with retrolateral tibial apophysis distinct, but

relatively small. Male palpal femur with a hump on ventral side. Female internal genitalia with a pair of soft bursae anteriorly situated.

Remarks. Bosselaers & Jocqué (2002) transferred Phrurolithinae from Liocranidae to Corinnidae based on cladistic analysis of many corinnid and liocranid genera. Although they stated that *Otacilia* should no longer be listed under Liocranidae, they did not deal with this genus in their analysis and showed no conclusion on familial position of this genus. *Otacilia* and *Phrurolithus* are similar to each other in some characters: chelicera with at least one spine (usually two spines) on anterior side; tibiae I–II and metatarsi I–II each with some pairs of long ventral spines; male palpal femur more or less swollen ventrally; female posterior median spinneret swollen, and with many spigots usually being in two rows. Therefore there is little reason to doubt close relationship between these two genera. I propose that *Otacilia* is also treated under Corinnidae.

Japanese species of *Otacilia*

Key to the Japanese species

1. Abdomen with short stiff bristles on postero-ventral end 2
— Abdomen without such bristles 3
2. Male palpal embolar base with a small projection on retrolateral side; female genitalia with spermathecae posteriorly converging to each other *O. taiwanica*
— Male palpal embolar base without a projection; female genitalia with spermathecae nearly parallel to each other *O. lynx*
3. Carapace with a longitudinal wide band in median part *O. komurai*
— Carapace without distinct marking 4
4. Male palpal bulb without a projection on prolateral side, embolus remarkably twisted; female abdomen with a small scutum on antero-dorsal part *O. luna*
— Male palpal bulb with a pointed projection on prolateral side, embolus weakly curved; female abdomen without a dorsal scutum 5
5. Male palpal tibia with two distinct apophyses on retrolateral side; female genitalia with spermathecae nearly parallel to each other *O. stella*
— Male palpal tibia with one distinct apophysis and a tubercle on retrolateral side; female genitalia with spermathecae posteriorly diverging from each other *O. vulpes*

Otacilia stella n. sp.

[Japanese name: Erabu-urashimagumo]

(Figs. 1–6)

Type series. Holotype: ♂, Ôyama, Serikaku, China-cho, Okinoerabu-jima Island, Kagoshima Pref., Japan, 13. III. 2003, Takahide & Takae Kamura leg. (NSMT-Ar 5555).

Paratypes: 2♀, same data as for the holotype (NSMT-Ar 5556 & 5557).

Other specimens examined. 10♀, same data as for the holotype. 10♀, same locality and collectors as for the holotype, 11. III. 2003. 4♀, Koshiyama, Neori, Wadamari-cho, Okinoerabu-jima Is., Kagoshima Pref., Japan, 12. III. 2003, T. & T. Kamura leg.

Diagnosis. This new species resembles *Otacilia vulpes* (Kamura 2001), but is distinguished from the latter by the following points. Male palpal tibia of this species has two distinct apophyses on retrolateral side (Figs. 1–3), while in *O. vulpes* palpal tibia has one distinct apophysis and a tubercle (see Kamura 2001, figs. 3–5); female genitalia of this species has spermathecae nearly parallel to each other (Fig. 6), while in *O. vulpes* spermathecae posteriorly diverging from each other (see Kamura 2001, fig. 7).

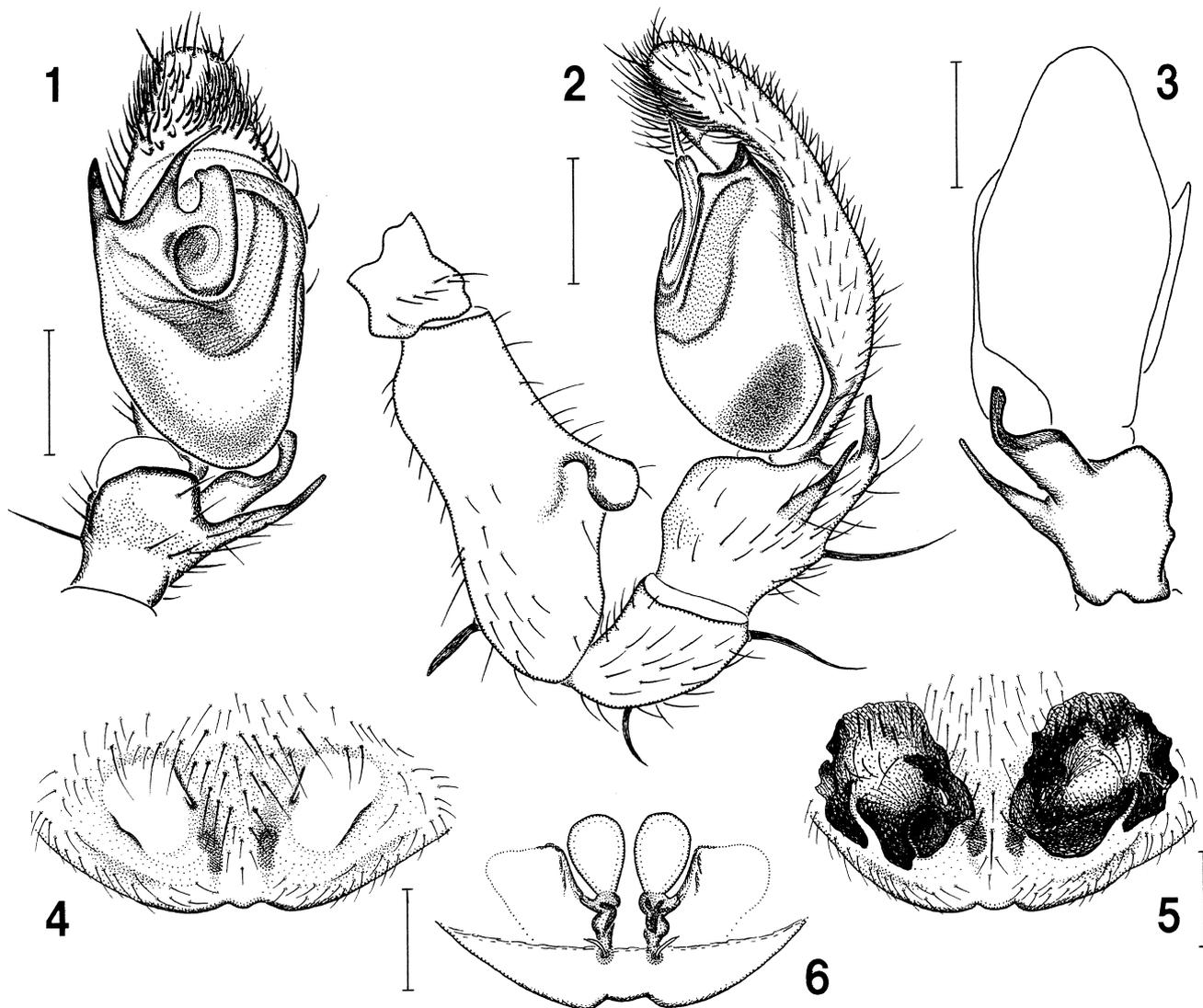
Description. Measurements [based on the male holotype and one of the female paratypes (NSMT-Ar 5556), in mm]. Body length ♂3.28, ♀4.29. Carapace length ♂1.70, ♀1.76; width ♂1.44, ♀1.52. Abdomen length ♂1.58, ♀2.53; width ♂1.00, ♀1.72. Eye sizes: AME ♂0.11, ♀0.11; ALE ♂0.12, ♀0.12; PME ♂0.09, ♀0.09; PLE ♂0.10, ♀0.10. Distances between eyes: AME-AME ♂0.06, ♀0.06; AME-ALE ♂0.02, ♀0.02; PME-PME ♂0.10, ♀0.08; PME-PLE ♂0.06, ♀0.06; ALE-PLE ♂0.08, ♀0.08. MOA anterior width ♂0.26, ♀0.26; posterior width ♂0.28, ♀0.26; length ♂0.28, ♀0.28. Clypeus height ♂0.13, ♀0.13. Length of legs as in Table 1.

Variation (♀, in mm). Body length 3.14–4.97. Carapace length 1.47–1.90; width 1.23–1.63. Abdomen length 1.67–3.07; width 1.07–2.07.

Number of spines on legs. ♂: femora I–IV d 1; femur I pl 4; femur II pl 2; tibia I pv 7, rv 7; tibia II pv 6, rv 7; metatarsus I pv 4, rv 4; metatarsus II pv 4, rv 3. ♀: femora I–IV d 1; femur I pl 4 or 5 (rarely 3); femur II pl 2 or 3; tibia I pv 7 or 8, rv 7 or 8; tibia II pv 7 or 8, rv 6 or 7; metatarsus I pv 4 (rarely 5), rv 4 (rarely 3); metatarsus II pv 4 (rarely 5), rv 3 or 4.

Chelicera with two spines on anterior side; promargin of fang furrow with three teeth and retromargin with two teeth. Abdomen without stiff bristles on postero-ventral end. Male abdomen with a dorsal scutum covering almost whole abdomen. Female abdomen without a dorsal scutum. Male palp (Figs. 1–3): embolus narrow; embolar base with a large pointed projection on prolateral side; tibia with two distinct apophyses, one apophysis narrow, the other one wide at base and narrow distally. Epigynum with a pair of shallow concavities (Fig. 4); in many specimens examined the concavities covered with mating plugs (Fig. 5). Female genitalia with spermathecae nearly parallel to each other (Fig. 6).

Color. Carapace and chelicerae dark brown. Endites, labium and sternum brown. Palps and legs yellowish brown to light reddish brown; coxae and trochanters whitish yellow; femora and tibiae each with distal part somewhat darker. Dorsum of abdomen dark brown and with a yellowish white marking on posterior end. Venter of abdomen



Figs. 1-6. *Otacilia stella* n. sp. [male holotype and female paratypes (4, 6: NSMT-Ar 5557; 5: NSMT-Ar 5556)]— 1. Male palp, ventral view; 2. same, retrolateral view; 3. same, dorsal view; 4. epigynum, ventral view; 5. same (with mating plugs), ventral view; 6. female genitalia, dorsal view. (Scales: 0.2 mm)

Table 1. Measurements of legs of *Otacilia stella* n. sp. [male holotype/female paratype (NSMT-Ar 5556), in mm].

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.69/1.70	0.64/0.67	1.67/1.73	1.48/1.58	0.72/0.76	6.20/6.44
II	1.40/1.44	0.58/0.60	1.26/1.34	1.20/1.28	0.71/0.74	5.15/5.40
III	1.19/1.26	0.53/0.56	0.90/0.95	1.14/1.20	0.64/0.72	4.40/4.69
IV	1.69/1.82	0.56/0.64	1.41/1.54	1.70/1.86	0.82/0.94	6.18/6.80

yellowish white and with a pair of longitudinal dark stripes on central part. Spinnerets yellowish white.

Etymology. The specific name meaning a star is a noun in apposition.

Otacilia komurai (Yaginuma 1952) **n. comb.**
(Figs. 7-11)

Phrurolithus komurai Yaginuma 1952, p. 13, figs. 7-9; Yagi-

numa 1960, p. 115, figs. 93(5), 94; Komatsu 1961, p. 26, figs. A-F; Yaginuma 1986, p. 185, pl. 50 (fig. 3), fig. 102(4); Chikuni 1989, pp. 127 (fig. 24), 258; Chen & Zhang 1991, p. 255, fig. 268; Song, Zhu & Chen 1999, p. 411, figs. 239K-L.

Specimens examined. 1♂3♀, Shizuichi-Ichihara-cho, Sakyo-ku, Kyoto-shi, Kyoto Pref., 140-160 m alt., 10. X. 1992, TK. 9 ♂1♀, 8. IV-5. V. 1982; 2♀, 25.V-9. VI. 1982; 4♂1♀, 8. X-8. XI. 1982; 12♂1♀, 2-18. IV. 1983, E of Midorogaike, Matsugasaki,

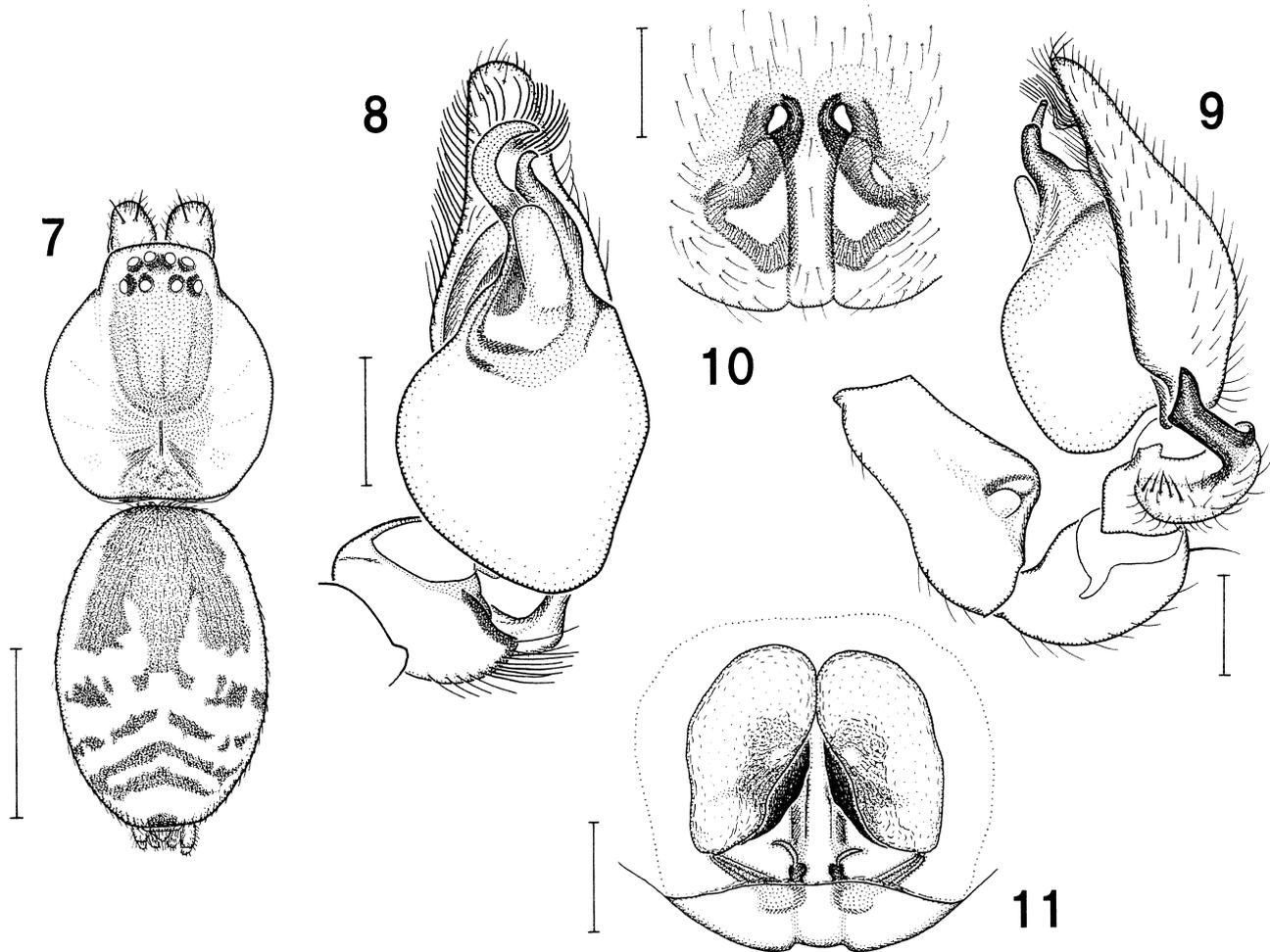
Sakyo-ku, Kyoto-shi, Kyoto Pref., 80 m alt., TK. 1♀, Manganji, Nishi-Betsuin-cho, Kameoka-shi, Kyoto Pref., 340–400 m alt., 14. XI. 1992, TK. 12♂6♀, NE of Mt. Ryuo-zan, Ibaraki-shi, Osaka Pref., 300–370 m alt., 17. X. 1992, TK. 2♀, Kurumatsukuri, Ibaraki-shi, Osaka Pref., 110–160 m alt., 19. XII. 1992, TK. 1♀, Shoubo, Ibaraki-shi, Osaka Pref., 70–150 m alt., 17. X. 1992, TK. 2♂1♀, Minoo Park, Minoo-shi, Osaka Pref., 150–170 m alt., 21. IX. 2003, TK. 2♂4♀(female holotype and paratypes), Minoo, Osaka Pref., 20. XI. 1948, T. Komura leg., deposited in Arachnological Society of Japan, Otemon Gakuin Univ., Osaka (ASJ); according to the original description, collecting date is “20. XI. 1947”, but is “20. XI. 1948” in the label of the specimens. 1♀(paratype), Hirakata, Osaka Pref., latter part of II.1952,

collector unknown, deposited in ASJ. 2♂, Takikura, Sakurai-shi, Nara Pref., 450 m alt., 11. X. 1993, Y. Nishikawa leg. 10♂10♀, Mt. Katsuragi-san, Gose-shi, Nara Pref., 730–900 m alt., 6. X. 1996, TK. 6♂8♀, same locality and date, Y. Nishikawa leg. 3♂1♀, Sakaidani, Iwade-cho, Naga-gun, Wakayama Pref., 4. X. 1998, TK. 1♀, Ginzan, Inagawa-cho, Kawabe-gun, Hyogo Pref., 14. X. 1990, TK.

Description. Measurements (based on one male and one female from Shizuichi-Ichihara-cho, Kyoto Pref.; in mm). Body length ♂3.08, ♀3.78. Carapace length ♂1.48, ♀1.48; width ♂1.25, ♀1.25. Abdomen length ♂1.60, ♀2.30; width ♂1.00, ♀1.45. Eye sizes: AME ♂0.08, ♀0.09; ALE ♂0.10, ♀0.10; PME ♂0.08, ♀0.08; PLE ♂0.09, ♀0.08. Distances

Table 2. Measurements of legs of *Otacia komurai* (Yaginuma 1952) from Shizuichi-Ichihara-cho, Kyoto Pref. (♂/♀, in mm).

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.48/1.36	0.54/0.51	1.64/1.45	1.34/1.27	0.63/0.58	5.63/5.17
II	1.23/1.19	0.48/0.51	1.19/1.18	1.07/1.06	0.60/0.59	4.57/4.53
III	1.04/1.01	0.44/0.46	0.83/0.82	1.03/1.02	0.56/0.56	3.90/3.87
IV	1.66/1.59	0.52/0.54	1.46/1.44	1.70/1.69	0.78/0.80	6.12/6.06



Figs. 7–11. *Otacia komurai* (Yaginuma 1952) (Shizuichi-Ichihara-cho, Kyoto Pref.)— 7. Female body, dorsal view; 8. male palp, ventral view; 9. same, retrolateral view; 10. epigynum, ventral view; 11. female genitalia, dorsal view. (Scales: 7, 1.0 mm; 8–11, 0.2 mm)

between eyes: AME-AME ♂0.05, ♀0.04; AME-ALE ♂0.01, ♀0.01; PME-PME ♂0.11, ♀0.09; PME-PLE ♂0.05, ♀0.06; ALE-PLE ♂0.08, ♀0.08. MOA anterior width ♂0.21, ♀0.20; posterior width ♂0.27, ♀0.25; length ♂0.22, ♀0.24. Clypeus height ♂0.14, ♀0.10. Length of legs as in Table 2.

Variation (in mm). Body length ♂2.80–3.50, ♀3.20–4.85. Carapace length ♂1.38–1.60, ♀1.15–1.80; width ♂1.18–1.40, ♀0.98–1.75. Abdomen length ♂1.40–1.90, ♀1.60–3.00; width ♂0.85–1.15, ♀0.95–1.85.

Number of spines on legs. ♂: femora I–IV d 1; femur I pl 4 or 5; femur II pl 2 or 3; tibia I pv 7 or 8, rv 8 or 9; tibia II pv 7 or 8, rv 7 or 8; metatarsus I pv 4 or 5, rv 4; metatarsus II pv 4, rv 3. ♀: femora I–IV d 1; femur I pl 3, 4 or 5; femur II pl 2 or 3; tibia I pv 7, 8 or 9, rv 7, 8 or 9; tibia II pv 7, 8 or 9, rv 7 or 8; metatarsus I pv 4, 5 or 6, rv 4 or 5; metatarsus II pv 4, rv 3.

Chelicera with two spines on anterior side; promargin of fang furrow with three teeth and retromargin with one large tooth and three or four small teeth close to each other. Abdomen without stiff bristles on postero-ventral end. Male abdomen with a narrow dorsal scutum on anterior part. Female abdomen without a dorsal scutum. Male palp (Figs. 8–9): embolus thick; femur ventrally swollen and with a small depression on retrolateral side. Epigynum with a longitudinal low ridge on median part (Fig. 10). Female genitalia with a pair of bursae massive (Fig. 11).

Color. Cephalothorax and appendages yellowish brown to light reddish brown. Carapace with longitudinal wide brown band, but in male central part lighter. Abdomen grayish yellow with brown markings as shown in Fig. 7.

Distribution. Japan [Honshu, Kyushu; all the specimens examined in this study were collected from Honshu, but this species was also recorded from Kyushu (Irie 2002).] and China (Chen & Zhang 1991; Song, Zhu & Chen 1999).

Otcilia taiwanica (Hayashi & Yoshida 1993) **n. comb.**

Phrurolithus taiwanicus Hayashi & Yoshida 1993, p. 49, figs. 8–11; Kamura 2001, p. 52, figs. 14–19.

Description was made by Hayashi & Yoshida (1993) and by Kamura (2001). Abdomen with short stiff bristles on postero-ventral end. Male abdominal dorsal scutum narrow, anteriorly situated. Female abdomen without a dorsal scutum.

Distribution. Japan (Iriomote-jima Island, Yonaguni-jima Island) and Taiwan.

Otcilia vulpes (Kamura 2001) **n. comb.**

Phrurolithus vulpes Kamura 2001, p. 50, figs. 1–7.

Specimens examined other than those listed in Kamura (2001). 1♀, Hachioji-joshi, Hachioji-shi, Tokyo, 21. V. 1989, K. Kumada leg. 1♀, Kumomi, Matsuzaki-cho, Kamo-gun, Shizuoka Pref., 27. VII. 1992, S. Inaba leg. 2♂, Mt. Kadoyama,

Amakusa-machi, Amakusa-gun, Kumamoto Pref., 30. IV. 2003, T. Irie leg.

Description was made by Kamura (2001). Abdomen with only normal hairs on postero-ventral end. Male abdominal dorsal scutum large, covering almost whole abdomen. Female abdomen without a dorsal scutum.

Distribution. Japan (Honshu, Kyushu).

Otcilia luna (Kamura 1994)

Phrurolithus luna Kamura 1994, p. 163, figs. 1–7.

Otcilia luna: Deeleman-Reinhold, 2001, p. 505.

Description was made by Kamura (1994). Abdomen with only normal hairs on postero-ventral end. Male abdomen with a dorsal scutum large, covering almost whole abdomen, and also female abdomen with a small scutum on antero-dorsal part.

Distribution. Japan (Iriomote-jima Island).

Otcilia lynx (Kamura 1994)

Phrurolithus lynx Kamura 1994, p. 165, figs. 8–13; Kamura 2001, p. 55.

Otcilia lynx: Deeleman-Reinhold, 2001, p. 505.

Specimens examined other than those listed in Kamura (1994, 2001). 1♀, found among contents of stomach of a frog, *Rana amamiensis*, between Ichi and Aoku, Sumiyo-son, Amami-oshima Island, Kagoshima Pref., 29. VI. 2004, Y. Watari leg. 1♂1♀, NE of Shitooke, Kikai-jima Island, Kagoshima Pref., 5 m alt., 6. VIII. 2004, Takahide & Takae Kamura leg. 3♂5♀, E of Nishime, 110 m alt., same island, date and collectors. 4♂7♀, northern part of Tarama-jima Island, Okinawa Pref., 10–20 m alt., 10 & 12. III. 2002, T. & T. Kamura leg.

Description was made by Kamura (1994). Abdomen with short stiff bristles on postero-ventral end. Male abdominal scutum narrow, anteriorly situated. Female abdomen without a dorsal scutum.

Distribution. Japan (Nansei Islands) and Taiwan.

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