

日本産コサラグモ亜科の4新種

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**FOUR NEW ERIGONINE SPIDERS (ARANEAE : LINYPHIIDAE)
FROM JAPAN**

Hiroshi SAITO*

日本産コサラグモ亜科の4新種

斎藤 博*

Synopsis Four new erigonine species of the family Linyphiidae are described from Japan under the names of *Walckenaeria chiyokoae*, *W. keikoae*, *Caracladus tsurusakii* and *Araeoncus longicephalus*. All these spiders were collected from under leaf litter by sifting and pitfall-trapping. *Walckenaeria keikoae* is closely related to the New World species, *W. communis* (EMERTON), while the other three are related to the European ones, namely, *Walckenaeria chiyokoae* to *W. capito* (WESTRING) and *W. polita* (SIMON), *Caracladus tsurusakii* to *C. aviculus* (L. KOCH), and *Araeoncus longicephalus* to *A. anguineus* (L. KOCH), respectively.

In recent years many researchers in the fields of entomology, arachnology and soil zoology have come to collect soil animals, and a large number of litter-dwelling spiders have been found in various places in Japan. Of these collections, small spiders apparently belonging to the family Linyphiidae have been sent to me for identification. A close examination of these specimens showed that there were many interesting species among them, including some undescribed ones. In the previous paper of mine (SAITO, 1986), eight new erigonine species were described from Hokkaido on the basis of the material.

In the present paper, four more new species of the family are described from Hokkaido, Honshu and Kyushu.

The holotypes will be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Before going further, I wish to express my cordial thanks to Dr. T. YAGINUMA, Ohtemon-Gakuin University, for his continual encouragement. I also wish to express my hearty thanks

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Walckenaeria chiyokoae sp. nov.

(Figs. 1-5)

Male. Body length 2.68 mm; cephalothorax 1.18 mm long, 0.93 mm wide.

Colour of cephalothorax light reddish brown, with indistinct darker radiating lines. Carapace with a high cephalic lobe carrying posterior median eyes near the top; the lobe, viewed from above, evenly rounded on the sides, bluntly pointed anteriorly, with a slight constriction nearly in front of posterior median eyes, and in lateral view (Fig. 3), strongly extended forward and upward, roundly overhanging, and with sulci on the basal sides. Anterior eye-row slightly procurved; median eyes separated from each other by a distance a little less than the diameter, and from lateral ones nearly by twice the diameter. Posterior median eyes separated from each other nearly by twice the diameter. Clypeus shorter than length of ocular area, nearly straight, slanting steeply forwards and projecting beyond the base of the chelicerae. Chelicerae reddish brown with four promarginal and two or three retromarginal teeth and also with distinct stridulating organ externally. Sternum yellowish brown suffused with dusky grey, darker at margin, roundly heart-shaped, convex, produced posteriorly into a truncate point between hind coxae which are separated by a space slightly shorter than the long axis. Legs light brown, order of length 4, 1, 2, 3. Tibiae I-II each with two dorsal spines and tibiae III-IV each with one dorsal spine. Metatarsus of each leg with a trichobothrium, Tm I ca. 0.59. Abdomen dark grey to black, with two pairs of impressions on dorsum.

Palp as shown in Fig. 1; ratio of length of femur to that of patella about 3 : 2; tibia longer than patella, dorsally produced into a complicated projection; lateral projection with two pointed or curved apophyses; paracymbium small, rather slender and strongly curved; embolus very long, like a whirlpool in shape, remarkably slender at the distal part.

Female. Body length 3.08 mm; cephalothorax 1.23 mm long, 0.95 mm wide.

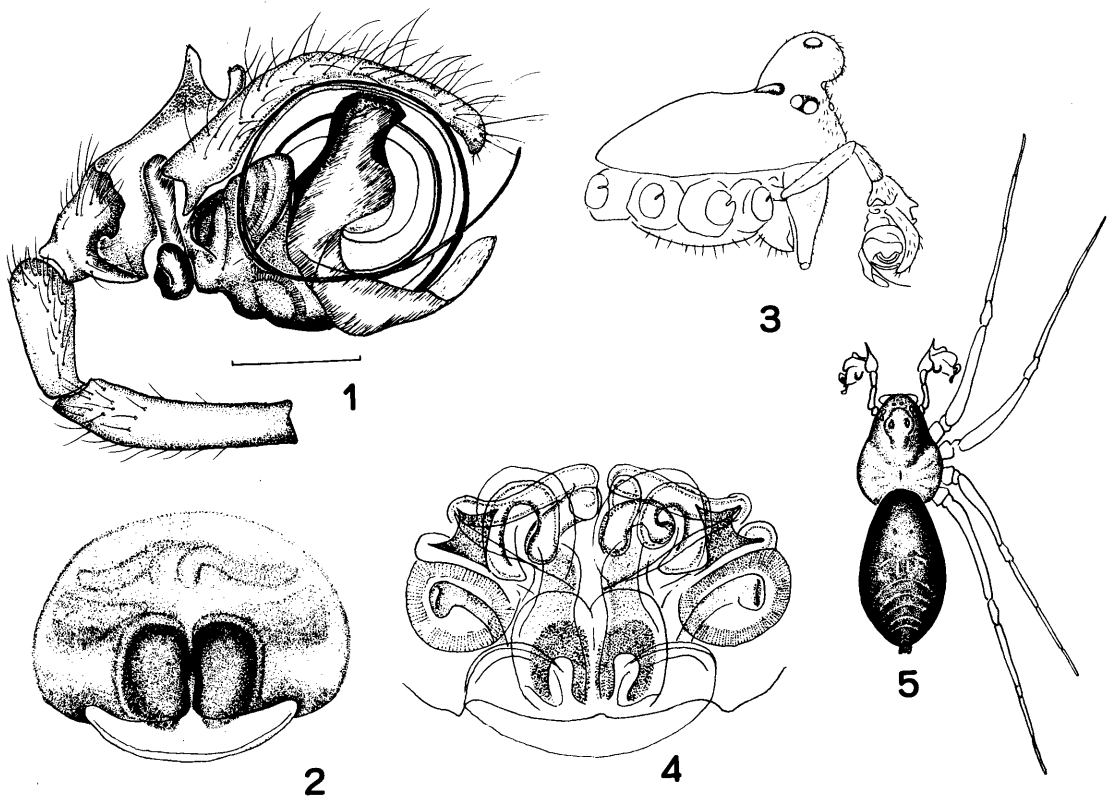
Similar to male in many respects. Cephalic lobe absent. Anterior eye-row nearly straight; median eyes separated from each other by about the length of radius, and from lateral ones by the diameter. Posterior eye-row slightly recurved; median eyes separated from each other by a distance a little shorter than the radius, and from lateral ones by about the radius. Chelicerae with four promarginal and three retromarginal teeth. Epigynum consists of a round convex plate which shows a pair of receptacula and two sinuous ducts of spermatheca through the integument. Internal structure as shown in Fig. 4.

Holotype: ♂, 13~16-III-1960, Mt. Hikosan, Fukuoka Pref., C. OKUMA leg. Paratypes: 1 ♀, 29-XI-1978, Hondo, Kumamoto Pref., N. KIKUYA leg.; 1 ♂, 19-XI-1979, Oita, Oita Pref., do.

Remarks. Recently the genera *Walckenaeria*, *Wideria*, *Trachynella*, *Prosopotheca*, *Conicularia* and *Tigellinys* have been merged in a genus, *Walckenaeria*, based on the structure of

their reproductive organs. Meanwhile, the original spelling of this generic name as stated by BLACKWALL (1833) has been employed as mentioned by MILLIDGE (1983). From this viewpoint, the present and the following species are treated under the genus *Walckenaeria*, and the treatment of three *Walckenaeria* species in the previous paper (SAITO, 1986) was in the same viewpoint. And further, three species, *Wideria kamakuraensis*, *Cornicularia mira* and *C. vulgaris*, described from Japan by OI (1960) should also be transferred into *Walckenaeria* automatically.

The present new species is similar to *W. capito* (WESTRING, 1861) and *W. polita* (SIMON, 1881) from Europe, but differs from them by the following characters: male with a peculiar cephalic lobe possessing a sulcus on each basal side and a long embolus like a whirlpool in shape. The specific name is dedicated to Dr. Chiyoko OKUMA, who is one of the eminent Japanese arachnologists.



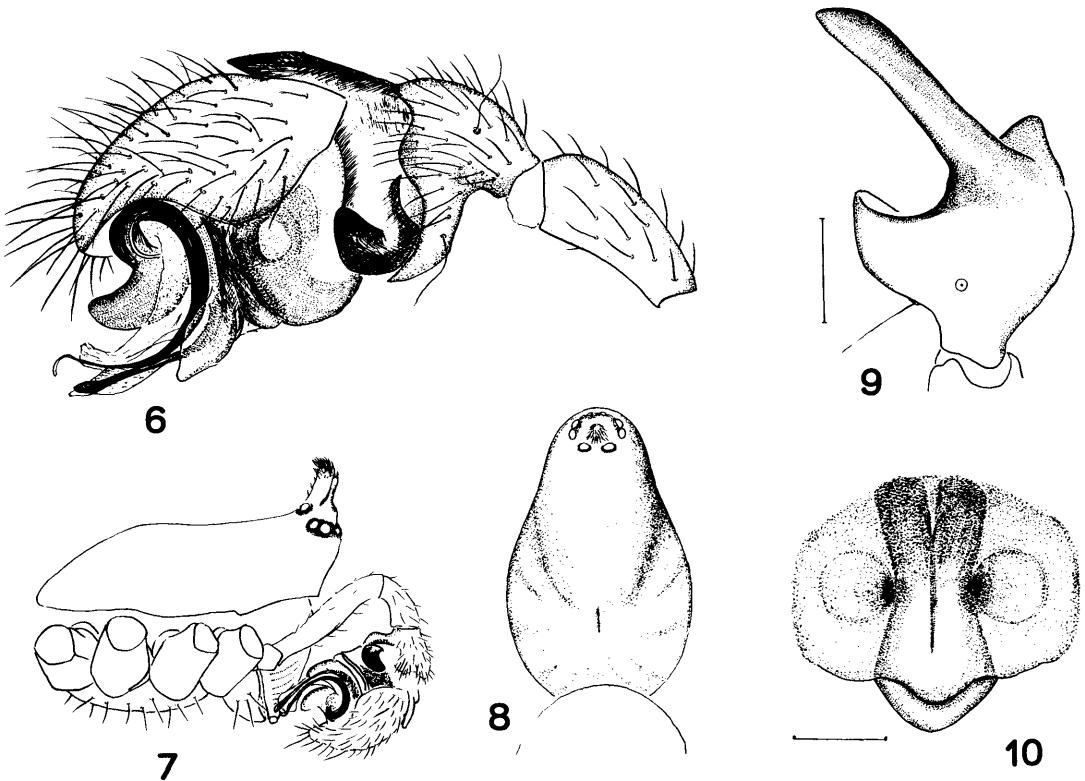
Figs. 1-5. *Walckenaeria chiyokoae* sp. nov. — 1. Male palp, ectal view. 2. Epigynum. 3. Male cephalothorax, lateral view. 4. Female genitalia. 5. Male, dorsal view. (Scale line: 0.2 mm in Fig. 1.)

Walckenaeria keikoe sp. nov.

(Figs. 6-10)

Male. Body length 2.30 mm; cephalothorax 1.13 mm long, 0.70 mm wide.

Carapace reddish brown with slightly darker radiating lines. Head with a double horn-like process arising from the median ocular area. The process projecting upward and slightly warped, clothed on the top with short, reflexed hairs; lower horn of the process small, thin and closely applied to the upper one. Eyes with black rings. Anterior eye-row procurved; eyes separated at nearly equal intervals a little shorter than radius of median eye and lateral ones about two times of median eye in size. Posterior eye-row strongly procurved; median eyes separated from each other by a distance a little less than radius, and from lateral ones by about the diameter. Clypeus a little longer than length of ocular area, somewhat convex just below the eyes. Chelicerae reddish brown shaded with dusky grey, laterally with a distinct stridulating organ; fang groove with five promarginal and four retromarginal teeth. Sternum light yellowish brown, darker at margin, wider than long. Hind coxae separated by a space a little shorter than the diameter. Legs yellowish brown. Tibiae I-II each with two dorsal spines and tibiae III-IV each with one dorsal spine. Metatarsus of each leg with a trichobothrium, Tm I ca. 0.47. Abdomen dark grey with two pairs of impressions on dorsum.



Figs. 6-10. *Walckenaeria keikoe* sp. nov. — 6. Male palp, ectal view. 7. Male cephalothorax, lateral view. 8. Male cephalothorax, dorsal view. 9. Male left palpal tibia, dorsal view. 10. Epigynum. (Scale lines: 0.1 mm in Figs. 9-10.)

Palp as shown in Fig. 6; ratio of length of femur to that of patella as 2 : 1; tibia with two trichobothria on dorsum, shorter ventrally than patella, dorsally produced into a long, straight and strongly chitinized apophysis which is separated by a deep evenly rounded notch from shorter and blunter dorso-lateral apophysis; paracymbium stout at base, strongly curved distally; embolus long, curved in an irregular spiral, remarkably slender at the distal part.

Female. Body length 2.30 mm; cephalothorax 1.00 mm long, 0.80 mm wide.

Colour and general features as in the male but the height of carapace slightly lower, median ocular area without any process. Anterior eye-row slightly procurved; median eyes about a half of lateral ones in size, almost close to each other. Posterior eye-row slightly procurved; median eyes separated from each other by a distance a little less than the radius and from lateral ones nearly by the radius. Epigynum as shown in Fig. 10.

Holotype: ♂, 8-XI-1979, Nikko, Tochigi Pref., K. NIIJIMA leg. Paratypes: 1♀, 5-XII-1982, Sendai, Miyagi Pref., K. SASAKI leg.; 1♂, 1♀, 26-II-1983, Inokashira Park, Tokyo, S. MATSUMOTO leg.; 1♀, 28-IX-1984, Mt. Iwate-san, Iwate Pref., N. TSURUSAKI leg.

Remarks. This new species is distinctly different from any of the other known congeneric species from North America in the shape of male palpal tibia and peculiar epigynum. This species is named in honor of Dr. Keiko NIIJIMA.

Caracladus tsurusakii sp. nov.

(Figs. 11-15)

Male. Body length 2.50 mm; cephalothorax 1.25 mm long, 0.83 mm wide.

Colour of cephalothorax chestnut brown with darker radiating lines; cervical grooves marked by a black line. Head with a peculiar lobe strongly projecting forward; the lobe, viewed from above, thick at base, sharply pointed at tip, with short and stout hairs sparsely at the distal part, and carrying posterior median eyes near the middle. Eyes with a black ring. Anterior eye-row slightly procurved; median eyes separated from each other by about the radius, and separated from lateral ones by a distance a little less than the radius. Posterior median eyes separated from each other by a distance a little less than 1.5 times of the diameter, and adjacent to the lateral ones. Clypeus wide, slightly convex below the eyes. Chelicerae dark brown with a stridulating organ laterally; fang groove with five promarginal and six retromarginal teeth. Sternum yellowish brown, strongly darker at the margin, roundly heart-shape, evenly convex, produced posteriorly into a truncate point between the hind coxae which are separated by a space slightly shorter than the long axis. Legs brown, order of length 4, 1, 2, 3. Tibiae of each leg with a short spine dorsally. Metatarsus IV without a trichobothrium. Tm I ca. 0.63. Abdomen black with four impressions dorsally.

Palp as shown in Figs. 12 and 14; ratio of length of femur to that of patella 16 : 9; tibia longer than patella, with two trichobothria on dorsum, and produced dorsally into two apophyses as shown in Fig. 12; paracymbium rather small and strongly curved; embolus long, whip-shaped, and strongly incurved at the distal part.

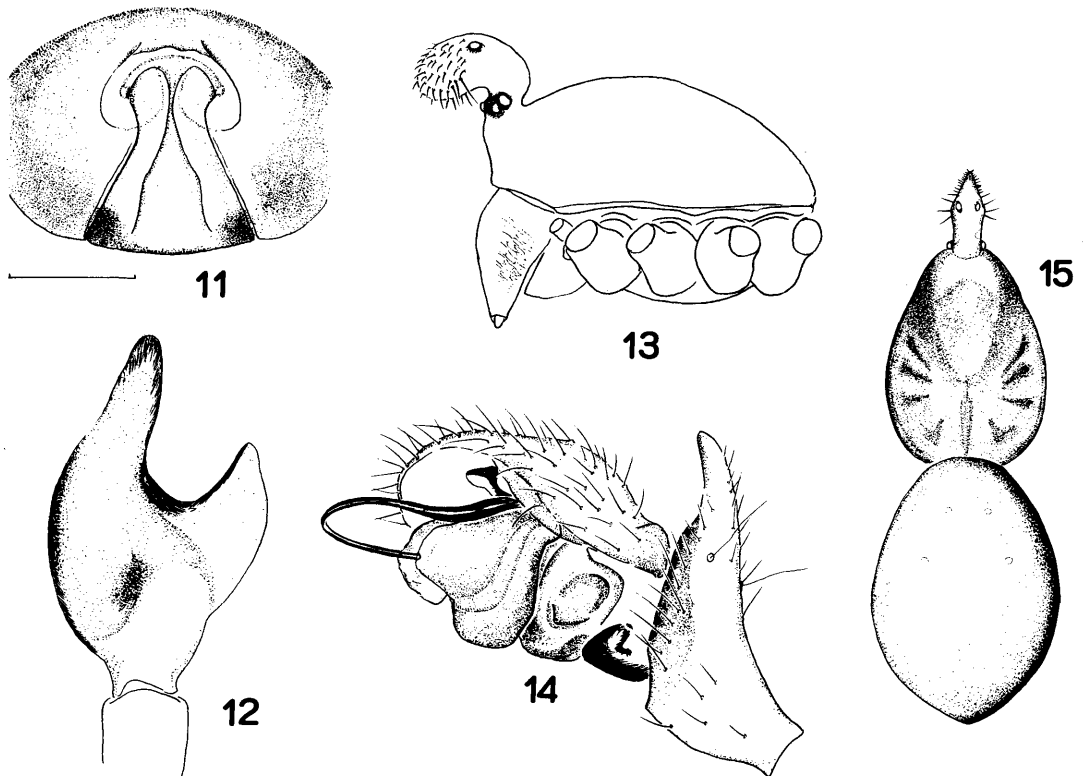
Female. Body length 2.58 mm; cephalothorax 1.08 mm long, 0.83 mm wide.

General appearance essentially as in male, but lacks the cephalic lobe. Head without a pair of stout hairs like that of *C. pauperulus*. Anterior eye-row slightly recurved; eyes

separated at intervals nearly equal to a radius of median eye. Posterior eye-row procurved; median eyes separated from each other by the diameter, and from lateral ones by a distance a little longer than the diameter. Clypeus almost vertical and a little narrower than the length of median ocular area. Epigynum as shown in Fig. 11.

Holotype: ♂, Mt. Youtei-zan, Kuttyuan-cho, Abuta-gun, Hokkaido, 25-IX-1981, N. TSURUSAKI, S. NAKANO and S. SASAKI leg. Paratypes: 1♂, 1♀, same data as holotype.

Remarks. This new species is most similar to *C. aviculus* (L. KOCH, 1869), but the former can be separated from the latter by the structures of male palp and epigynum. This species is named after Dr. Nobuo TSURUSAKI who collected many of the specimens used in this study.



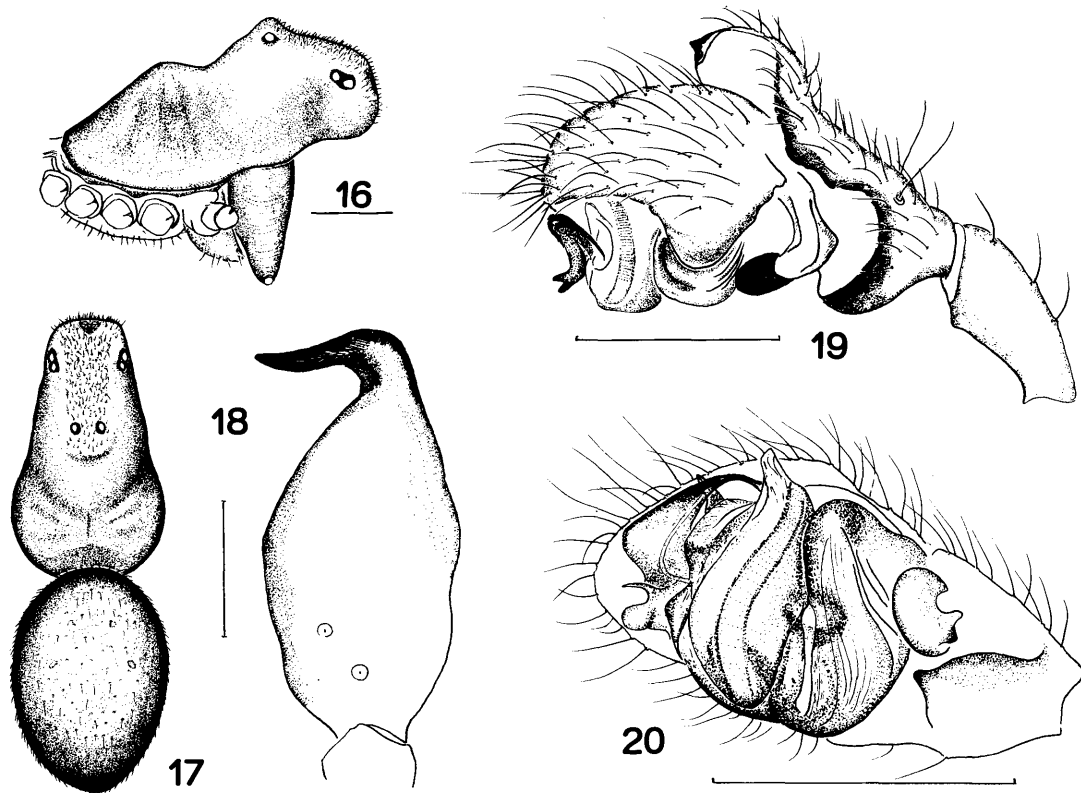
Figs. 11-15. *Caracladus tsurusakii* sp. nov. — 11. Epigynum. 12. Male left palpal tibia, dorsal view. 13. Male cephalothorax, lateral view. 14. Male palp, ectal view. 15. Male cephalothorax and abdomen, dorsal view. (Scale line: 0.1 mm in Fig. 11.)

Araeoncus longicephalus sp. nov.

(Figs. 16-20)

Male. Body length 1.60 mm; cephalothorax 0.85 mm long, 0.50 mm wide.

Carapace brown with darker and slightly impressed radial striae. Head rather high, strongly extended forward as shown in Figs. 16-17. Median ocular area much longer than wide, densely clothed with short hairs directed upwards. Eyes with a black ring. Anterior



Figs. 16-20. *Araeoncus longicephalus* sp. nov. — 16. Male cephalothorax, lateral view. 17. Male cephalothorax and abdomen, dorsal view. 18. Male left palpal tibia, dorsal view. 19. Male palp, ectal view. 20. Male palp, ventral view (Scale lines: 0.1 mm in Fig. 18; 0.2 mm in Figs. 19-20.)

eye-row recurved; median eyes separated from each other by the radius and from lateral ones by about three times of the diameter. Posterior eye-row strongly procurved; median eyes separated from each other by about twice the diameter. Clypeus very wide, perpendicular below the eyes and slightly concave near the base. Chelicerae reddish brown shaded with dusky grey, and with a indistinct stridulating organ laterally; fang groove with five promarginal and five retromarginal teeth.

Palp as shown in Figs. 18-20; ratio of the length of femur to that of patella as 2 to 1; tibia longer than patella, curved at right angle, sharply pointed distally, strongly chitinized, and with two trichobothria nearly on the base; paracymbium fairly slender and strongly curved.

Female. Unknown.

Holotype: ♂, 13~14-III-1960, Mt. Hikosan, Fukuoka Pref., C. OKUMA leg. Paratypes: 1 ♂, same data as holotype: 1♂, 4-V-1981, Itsuki-mura, Kuma-gun, Kumamoto Pref., T. IRIE leg.

Remarks. This new species is readily separated from any other species of *Araeoncus* by the shape of cephalothorax and the difference in the details of the shape of palpi. The specific name is derived from the shape of male cephalothorax.

摘 要

落葉中から採集された標本に基づき、日本産コサラグモ亜科の次の4新種を記載した。

Walckenaeria chiyokoae (オオクマコブヌカグモ)

W. keikoeae (フタエツノヌカグモ)

Caracladus tsurusakii (ヤマトクビナガコサラグモ)

Araeoncus longicephalus (ズナガコヌカグモ)

W. keikoeae は北米産の本属の種に、他の3種はヨーロッパ産の種にそれぞれ近縁種をもつ。

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