

## A New Linyphiid Spider from the Ryukyu Islands, Southwest Japan

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**Abstract** A new species of the spider family Linyphiidae is described from the Ryukyu Islands, Southwest Japan. It resembles *Microlinyphia* species, but all the particular features are so unique that it should be placed in an independent genus newly erected. The spider is named *Oilinyphia peculiaris*.

The linyphiid spiders in the subtropical regions of Japan have been very poorly studied. Of about 140 known Japanese linyphiids, only seven species, *Linyphia oidedicata*, *L. longipedella*, *Neolinyphia angulifera*, *N. hortensis*, *N. nigripectoris*, *Cornicularia vulgaris* and *Ostearius melanopygius*, were recorded from the Ryukyu Archipelago south of the Tokara Islands (OI, 1963, and others), while six species were recorded from the Ogasawara Islands (H. SAITO, 1982).

By courtesy of Mr. Akio TANIKAWA, Yokohama, who made arachnological researches in the Ryukyu Islands, the authors obtained some materials of an interesting small linyphiid collected in Amami-ôshima and Iriomotejima Islands. The spider reminds the authors of the genus *Microlinyphia* GERHARDT, 1928, occurring in Europe in the configuration of the male palp and epigynum, but the details of these organs as well as other external features of the Japanese spider utterly differ from those in the European genus. After a careful examination of the materials and a comparison between their characters and those of other known genera in the subfamily Linyphiinae, the authors have come to the conclusion that the spider is not only a new species but also the representative of a new genus. The new genus and species will be described in the present paper.

The authors wish to express their hearty thanks to Prof. Dr. Ryoji OI who passed away in Osaka on 20 May this year (1989) for giving them valuable advice in the study of linyphiid spiders for many years. Sincere thanks are due to Dr. Shun-Ichi UÉNO, National Science Museum, Tokyo, for critical reading of the manuscript of the paper, and to Messrs. Akio TANIKAWA, Noba High School, Kanagawa, and Miyoshi

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*Oilinyphia* gen. nov.

[Japanese name: Kenaga-saragumo-zoku]

Type species. *Oilinyphia peculiaris* sp. nov., by monotypy.

*Diagnosis.* Very small linyphiine spider with body length 1.0–1.6 mm, haplo-tracheate (see BLEST, 1976, and MILLIDGE, 1984); closely standing by *Microlinyphia* GERHARDT, 1928, but different from it at generic level in the following characteristics: body size small, prosoma nearly as long as wide, with two long hairs in the cephalic part; anterior median eyes adjacent to each other and larger than anterior lateral eyes; chelicera normal, with three teeth on the promargin of fang furrow; tibiae I–IV with two dorsal spines respectively, tibia I with a prolateral spine; Tm (position of trichobothrium on metatarsus) I 0.29–0.32; male palp with a long filiform embolus; embolic division with embolic membrane and a spiniform apophysis; terminal apophysis developed, proximally uncinatate; lamella with a long and slender lateral projection; unlike other linyphiids, opisthosoma expanded, globular and high, with long hairs; epigynum with wide openings and a small scape.

*Etymology.* Generic name with a combination of *Oi(i)* and *Linyphia*. It is dedicated to the late Professor Dr. Ryoji OI in memory of his contribution to the study of Japanese linyphiid spiders. The name is feminine.

*Remarks.* The genus resembles *Haplinis* (= *Mynoglenes*) and other genera of the subfamily Mynogleninae, but differs from them by lacking clypeal pits on the prosoma (see BLEST and TAYLOR, 1977, and MILLIDGE, 1984).

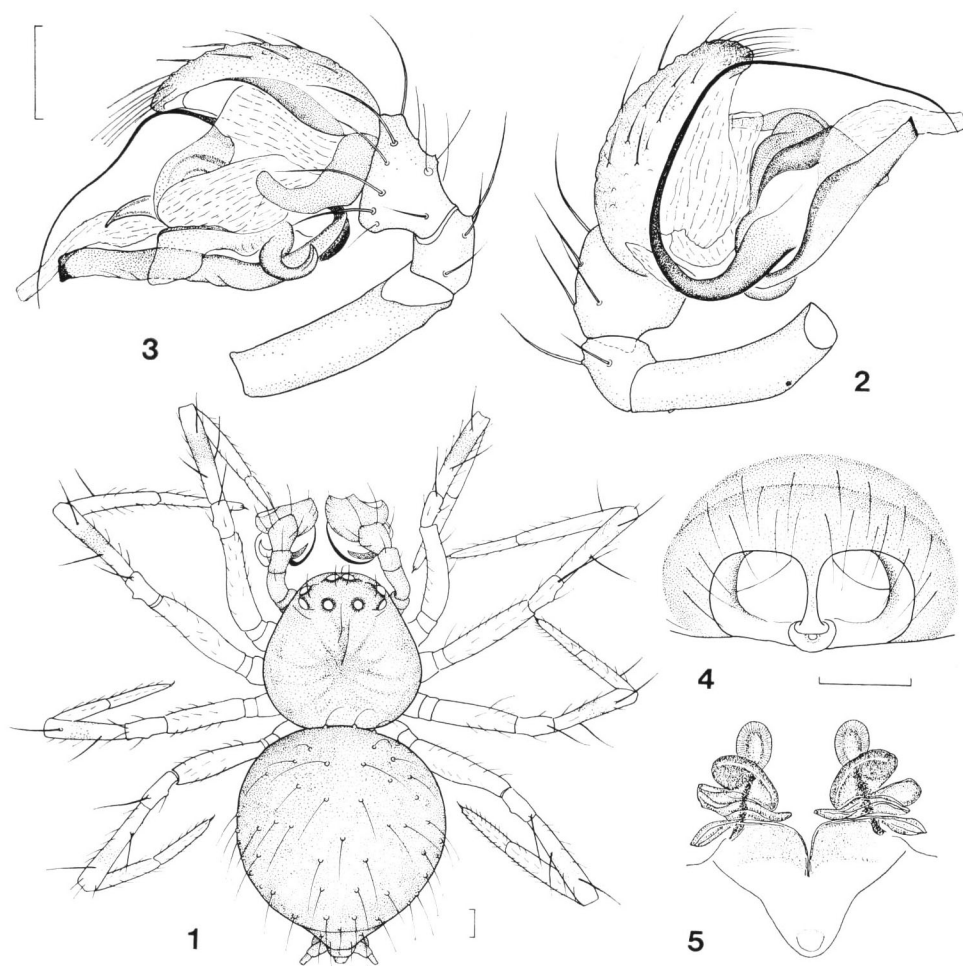
*Oilinyphia peculiaris* sp. nov.

[Japanese name: Kenaga-saragumo]

(Figs. 1–5)

*Description.* Measurement (in mm). Body length ♀ 1.30–1.53, ♂ 1.18–1.34; prosoma length ♀ 0.53–0.59, ♂ 0.58–0.61, width ♀ 0.53–0.55, ♂ 0.54–0.57; opisthosoma length ♀ 0.83–1.18, ♂ 0.68–0.86, width ♀ 0.73–1.00, ♂ 0.63–0.70; lengths of legs of 1 ♀ 1 ♂ selected [total length (femur+patella and tibia+metatarsus+tarsus)]: ♀ I 1.85 (0.50+0.56+0.44+0.35), II 1.85 (0.56+0.60+0.44+0.31), III 1.72 (0.48+0.50+0.38+0.36), IV 1.89 (0.56+0.63+0.39+0.31), ♂ I 1.98 (0.54+0.61+0.46+0.37), II 1.95 (0.51+0.61+0.46+0.37), III 1.56 (0.44+0.44+0.37+0.31), IV 1.98 (0.54+0.61+0.46+0.37).

Prosoma blackish brown with distinct darker radiating lines, median furrow indistinct, two long hairs present behind eye area; eyes with black ring, anterior median eyes adjacent to each other and larger than anterior lateral ones, distance between anterior median eye and anterior lateral eye narrower than the diameter of anterior median eye in female, equal to that diameter in male, anterior eye-row nearly straight;



Figs. 1–5. *Oilinyphia peculiaris* gen. et sp. nov. — 1, Male, dorsal view; 2, male palp, prolateral view; 3, same retrolateral view; 4, epigynum, retroventral view; 5, female genitalia, dorsal view. (Scales: 0.1 mm.)

distance between posterior eyes equal to the diameter of posterior median eye, posterior eye-row straight or slightly recurved; clypeus shorter than the length of median ocular area, without clypeal pits, a long suberect hair present in front of anterior median eyes. Sternum dark brown, cordate and convex, sparsely covered with short curved hairs, wider than long (length : width=3:4). Chelicera yellowish brown, without stridulating organ, promargin of fang furrow with three teeth.

Male palp (Figs. 2–3). Lengths of femur and patella in ratio 9:4; tibia longer than patella, dorsally with two trichobothria, the distal part dorsally expanded; para-

cymbium flattened, wide U-shaped, embolic division (including radix) complicated: lamella with a lateral projection long and slender, terminal apophysis developed, with a proximal hook, visible in retrolateral view or covered by tegulum and paracymbium according to individuals, embolic membrane and spiniform embolic apophysis present, embolus filiform and very long.

Legs. Coxae IV separated from each other by the length; tibiae I–IV with two dorsal spines respectively, tibia I with a prolateral spine; metatarsi I–II with two dorsal spines, III–IV with one, metatarsus IV without trichobothrium, Tm: ♀ I 0.29, II 0.31, III 0.30, ♂ I 0.32, II 0.32, III 0.30.

Opisthosoma blackish grey, sparsely covered with long hairs; haplotracheate.

Female genitalia (Figs. 4–5). Epigynum with a small scape and wide openings. Internal structure as in Fig. 5.

*Type series.* Holotype: ♂, allotype: ♀, Hoshitate, Iriomotejima Island, Ryukyu Islands, Southwest Japan, 28–III–1988, A. TANIKAWA leg. (NSMT–Ar 2069–2070); paratypes: 3 ♀♀, Urauchi, same island, same date and collector (NSMT–Ar 2071). All the type specimens are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

*Other specimens examined.* 2 ♀♀ 2 ♂♂ 2 juv., same data as for the holotype; 1 ♂ juv., Mt. Yuwan-dake, 630 m alt., Amami-ōshima Island, Ryukyu Islands, SW Japan, 24–VIII–1989, A. TANIKAWA leg.; 2 ♀♀ 1 ♂ 1 juv., Koniya, same island, 26–VIII–1989, A. TANIKAWA, M. SADAMOTO and H. ONO leg.

*Remarks.* So far as known to the authors, no species related to this peculiar new one has been reported. It is so unique in the form of its body that it can be readily recognized. The spider makes a small sack-like sheet web on the ground.

## References

- BLEST, A. D., 1976. The tracheal arrangement and the classification of linyphiid spiders. *J. Zool., London*, **180**: 185–195.
- 1979. Linyphiidae—Mynogleninae. In FORSTER, R. R., & A. D. BLEST, *The Spiders of New Zealand, Part V*, pp. 95–173. Otago Museum, Dunedin.
- & H. H. TAYLOR, 1977. The clypeal glands of *Mynoglenes* and of some other linyphiid spiders. *J. Zool., London*, **183**: 473–493.
- HELSDINGEN, P. J. VAN, 1969. A reclassification of the species of *Linyphia* LATREILLE based on the functioning of the genitalia (Araneida, Linyphiidae), I. *Zool. Verh.*, (105): 1–303, pls. 1–2.
- MILLIDGE, A. F., 1984. The taxonomy of the Linyphiidae, based chiefly on the epigynal and tracheal characters (Araneae: Linyphiidae). *Bull. Brit. arachnol. Soc.*, **6**: 229–267.
- OI, R., 1963. List of spiders collected in the Ryukyu Archipelago by the Exploration Club of Osaka City University. In *Reports of the Scientific Expedition to Yaeyama Islands*, pp. 201–203. Osaka City University.
- SAITO, H., 1982. Soil dwelling linyphiine and erigonine spiders from Ogasawara Islands, Japan. *Edaphologia, Kitakyushu*, (25/26): 33–39.
- WIEHLE, H., 1956. Die Tierwelt Deutschlands und der angrenzenden Meeresteile nach ihren Merkmalen und ihrer Lebensweise. 44. Teil. Spinnentiere oder Arachnoidea (Araneae). 28. Familie Linyphiidae—Baldachinspinnen. VIII+337 pp. Gustav Fischer, Jena.