

## Two New Species of the Spider Genus *Falcileptoneta* (Araneae, Leptonetidae) from Gifu and Mie Prefectures, Honshu, Japan

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**Abstract** Two new species of the spider genus *Falcileptoneta* Komatsu, 1970 are described from Honshu, Japan, under the names, *Falcileptoneta tajimiensis* sp. nov. (type locality: Higashi-machi, Tajimi-shi, Gifu Prefecture) and *F. inagakii* sp. nov. (type locality: Haigama-no-ana Cave, Erihara, Isobe-cho, Shima-shi, Mie Prefecture). The former new species was collected from under dead leaves and rocks on the ground in forest, while the latter one was found in a limestone cave. Both the new species are regarded as epigeal spiders.

**Key words:** Taxonomy, new species, Japan, Araneae, Leptonetidae, *Falcileptoneta*.

Spiders of the family Leptonetidae are frequently found in caves, abandoned mines and old mounds as well as under stones and dead leaves on the forest floor. The leptonetid fauna is rich in Japan except for Hokkaido, and about 40 species were described under two genera, *Falcileptoneta* Komatsu, 1970 and *Masirana* Komatsu, 1942 (Komatsu, 1957, 1961; Irie and Ono, 2005, 2007, 2009, 2010). However, many undescribed species are remaining in Honshu and Shikoku, although the spiders of the family have been relatively well studied in Kyushu (Irie, 2007; Irie and Ono, 2009, 2010).

In the present paper, we will describe two new species of the genus *Falcileptoneta* Komatsu, 1970 [type species: *Falcileptoneta striata* (Oi, 1952) sensu Irie (2007)] from Chubu and Kinki Districts, Central Honshu, Japan. One of the new species was collected by Mr. K. Ogata from under dead leaves and rocks on the forest floor in the Ceramics Park MINO of Tajimi-shi, Gifu Prefecture, while the other new one was found by Dr. M. Inagaki in Haigama-no-ana, a limestone cave at Isobe-cho, Mie Prefecture. Both the new

species have characteristic structure of male palp and are readily separated from all the known species of the genus in Japan.

The abbreviations used in this paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; PE, posterior eye; OA, ocular area; Cp, length of clypeus.

All the type specimens used for this study are deposited in the arachnid collection of the National Museum of Nature and Science, Tokyo (NSMT-Ar).

### Family Leptonetidae

*Falcileptoneta tajimiensis* Irie et Ono, sp. nov.

[Japanese name: Tajimi-mashiragumo]

(Figs. 1–5)

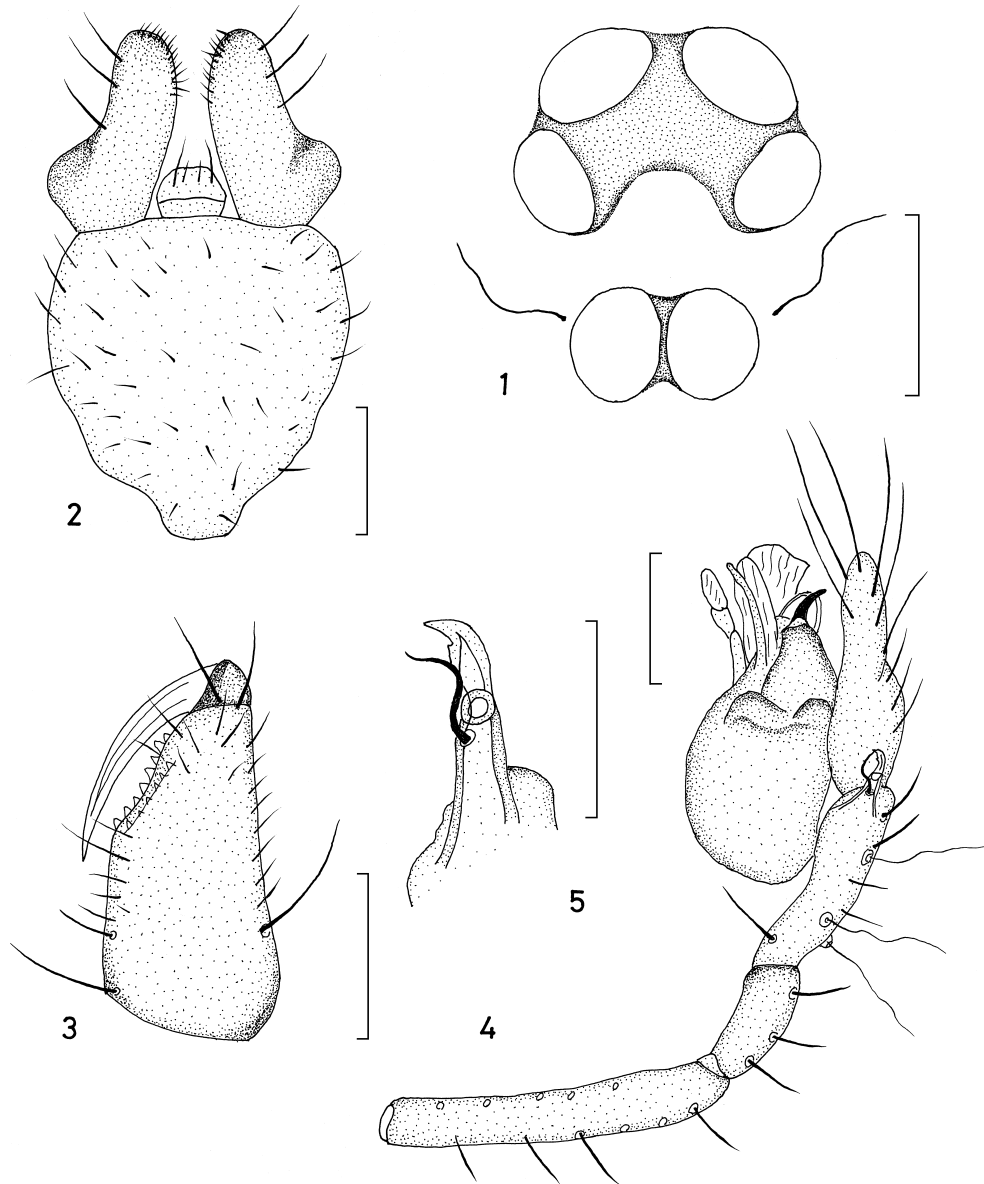
*Type specimen.* Holotype: ♂, Higashi-machi, Ceramics Park MINO, Tajimi-shi, Gifu Pref., Honshu, Japan, 4-XI-2000, K. Ogata leg. (NSMT-Ar 9561).

*Description.* Male (holotype). Measurements (in mm): Body length 1.73, carapace length 0.76,

width 0.63, abdomen length 0.97, width 0.60. Lengths of palp and legs as shown in Table 1. Eyes: AME 0.07, ALE 0.06, PE 0.06, distances between eyes: ALE-ALE 0.08, ALE-PE 0.02. OA length 0.20, width 0.16, Cp 0.10.

Carapace light brown, both sides dark gray, hairless. Median furrow brown and linear. Cervical grooves and radial furrows distinct and

brown. All the eyes nearly same in size; major axes of ALEs convergent behind; PEs touching each other, their axes parallel (Fig. 1). Maxillae dark yellowish brown, narrowing at the anterior part; labium dark yellowish brown, almost as long as wide; sternum yellowish brown, shield-shaped and slightly longer than wide (Fig. 2). Chelicera light brown, with eight teeth on pro-



Figs. 1–5. *Falcileptoneta tajimiensis* Irie et Ono, sp. nov., male, holotype (NSMT-Ar 9561).—1, Ocular area, dorsal view; 2, maxillae, labium and sternum, ventral view; 3, left chelicera, ventral view; 4, left male palp, retrolateral view; 5, tibial apophysis of male palp, retrolateral view. [Scales: 1, 5, 0.1 mm; 2–4, 0.2 mm.]



Supplementary figure. *Falcileptoneta tajimiensis* Irie et Ono, sp. nov., male, dorsal view (body length: 1.73 mm).  
[Photograph: Kiyoto Ogata.]

Table 1. Measurements of palp and legs of *Falcileptoneta tajimiensis* sp. nov. (♂ holotype: in mm).

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.50	0.20	0.28	—	0.33	1.31
Leg I	1.50	0.23	1.73	1.16	0.90	5.52
Leg II	1.13	0.20	1.33	0.86	0.70	4.22
Leg III	1.00	0.23	1.00	0.80	0.63	3.66
Leg IV	1.40	0.26	1.50	1.16	0.80	5.12

margin of fang furrow and six teeth on retromargin (Fig. 3). Legs dark brown; leg formula 1, 4, 2, 3.

Male palp (Figs. 4–5): Femur>tarsus>tibia>patella in length. Tibia with three long trichobothria on the dorsal surface and the retrolateral apophysis furnished with a rostriform apophysis apically and a strong curved spine (Fig. 5). Projections and embolus of bulb as shown in Fig. 4.

Abdomen haired, light yellowish gray, with light yellowish brown spots which resemble the shape of fern leaf, oval in shape and longer than wide.

Coloration and markings of the living spider as in the supplementary figure.

*Distribution.* Japan, Honshu (Gifu Prefecture).

*Etymology.* The specific name is derived from the name of the city, to which the type locality belongs.

*Remarks.* This new species is closely similar to *Falcileptoneta japonica* (Simon, 1893) known from Kanto District, Honshu and *Falcileptoneta aichiensis* Irie et Ono, 2007 recorded from Aichi and Mie Prefectures, in the structure of male palpal organ, but can be distinguished from the two known species by the shape of tibial apophysis. The only specimen of this new species was collected from under dead leaves on the ground in a forest and the species is regarded as an epigeal spider. The female is unknown.

***Falcileptoneta inagakii*** Irie et Ono, sp. nov.

[Japanese name: Shima-mashiragumo]

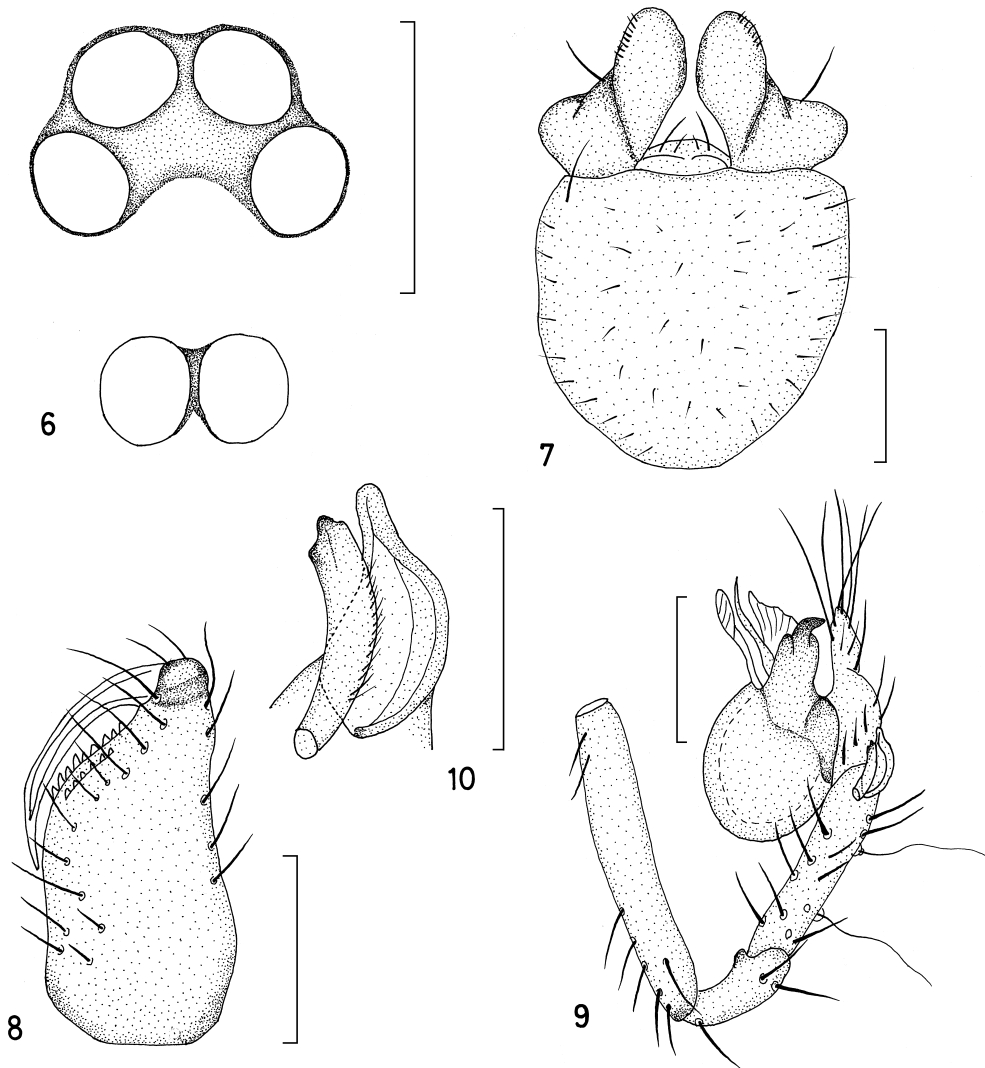
(Figs. 6–10)

*Type specimen.* Holotype: ♂, Haigama-no-ana Cave, Erihara, Isobe-cho, Shima-shi, Mie Pref., Honshu, Japan, 2-IV-2009, M. Inagaki leg. (NSMT-Ar 9562).

*Description.* Male (holotype). Measurements (in mm): Body length 1.49, carapace length 0.73, width 0.56, abdomen length 0.76, width 0.56.

Lengths of palp and legs as shown in Table 2. Eyes: AME 0.04, ALE 0.04, PE 0.04; distances between eyes: ALE-ALE 0.06, ALE-PE 0.03; OA length 0.15, width 0.12, Cp 0.12.

Carapace dark whitish yellow, without hairs. Median furrow light yellowish gray, very fine like a thread. Cervical grooves and radial furrow evident and yellowish gray. All the eyes nearly same in size; major axes of ALEs convergent behind; PEs touching each other, their axes parallel (Fig. 6). Chelicera light yellowish brown, with



Figs. 6–10. *Falcileptoneta inagakii* Irie et Ono, sp. nov., male, holotype (NSMT-Ar 9562).—6, Ocular area, dorsal view; 7, maxillae, labium and sternum, ventral view; 8, left chelicera, ventral view; 9, left male palp, retrolateral view; 10, tibial apophyses of male palp, retrolateral view. [Scales: 6, 10, 0.1 mm; 7–9, 0.2 mm.]

Table 2. Measurements of palp and legs of *Falcileptoneta inagakii* sp. nov. (♂ holotype: in mm).

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palp	0.45	0.18	0.30	—	0.21	1.14
Leg I	1.50	0.26	1.83	1.33	0.83	5.75
Leg II	1.26	0.20	1.60	1.16	0.70	4.92
Leg III	1.00	0.21	0.93	0.88	0.56	3.58
Leg IV	1.36	0.23	1.60	1.13	0.73	5.05

nine teeth on promargin of fang furrow and six teeth on retromargin (Fig. 8). Maxillae light yellowish brown, narrowing at the anterior part; labium light yellowish brown, as long as wide; sternum whitish yellow, shield-shaped and almost as long as wide (Fig. 7). Legs light whitish yellow, leg formula 1, 4, 2, 3.

Male palp (Figs. 9–10): Femur > tarsus > tibia > patella in length. Tibia with two long trichobothria on the dorsal surface and two developed apophyses on the apical part; the main apophysis spatheous, like the shape of flowers' bract of *Symplocarpus foetidus* and the second one simple and banana-shape with a lone of minute spines (Fig. 10). Projections and embolus of bulb as shown in Fig. 9.

Abdomen haired, light whitish yellow, oval in shape and longer than wide.

*Distribution.* Japan, Honshu (Mie Prefecture).

*Etymology.* This new species is dedicated to Dr. Masashi Inagaki, Mie, the collector of the type specimen.

*Remarks.* This new species resembles *Falcileptoneta inabaensis* (Nishikawa, 1982) from Toyama Prefecture, *F. ogatai* Irie et Ono, 2007 from Aichi Prefecture, Honshu, and *F. melanocomata* (Komatsu, 1961) from Kochi Prefecture, Shikoku, in the structure of male palp, but differs from these known species in having the peculiar structure of tibial apophyses. Although this new species was collected in a limestone cave, it is regarded as an epigeal spider. The female is unknown.

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