

THREE NEW SPIDERS COLLECTED BY THE
SCIENTIFIC EXPEDITIONS OF THE OSAKA
MUSEUM OF NATURAL HISTORY
(*TETRAGNATHA*, *CYCLOSA* & *TITANOECA*)*

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The present paper gives descriptions of three new species of spiders. The type specimens were obtained by the members of scientific expeditions, made during past eight years, promoted by the Osaka Museum of Natural History.

Each Holotype, which is recorded in this paper is preserved in the collection of this museum.

***Tetragnatha lauta* sp. nov.**

(Japanese name: Kinu Ashinagagumo)

Plate 6, Figs. 1-7

Holotype (male): Cephalothorax about twice as long as its width. Cervical grooves deep and distinct, not converging. Eight eyes in two rows as usual; both rows recurved, especially anterior more recurved. Anterior median eyes largest, adjacent laterals smallest. Anterior median eyes separated from each other by less than their diameter, from laterals by their diameter. Posterior eyes equidistant. Lateral eyes of both rows on tubercles, separated from each other by less than their diameter. Median ocular area slightly wider behind than in front, longer than wide at base. Clypeus extremely narrow, less than the radius of anterior median eye. Chelicera with a simple prolateral spur which is not bifid distally. Promargin of fang furrow with seven teeth, retromargin with five teeth. Fang slightly sinuate, without excrescence. Maxillae nearly parallel, about a little more than twice as long as labium. Lateral margin concave in the middle. Labium as long as wide, slightly concave at both sides. Palpal tibia slightly longer than patella. Paracymbium wide and dull at the tip. Embolus and conductor attenuated distally. Sternum triangular in shape, widely truncated anteriorly, pointed posteriorly, but the end connected with carapace. Legs 1. 2. 4. 3, without spine. Each femur bears a row of 4-5 trichobothria near the base. Abdomen slender and cylindrical, not extending over the carapace or the spinnerets.

Colour in alcohol: Cephalothorax yellowish brown with deep brown cervical grooves. Legs, labium, maxillae and sternum yellow. Chelicerae yellow but fang brown. Carapace with marginal stripes consisting of silver spangles. Abdomen covered with many silver spangles except a grey longitudinal cardiac pattern in the middle.

Allotype (female): Slightly larger than male, but almost similar to male in shape and colour. Promargin of fang furrow with five teeth, retromargin with six (of which distal two large). Genital fold trapezoidal as shown in fig. 3, not so extending posteriorly.

Measurements (mm): Holotype (♂); Total length excluding chelicera 4.9. Leg I 18.7, II 8.8, III 3.8, IV 7.7, Chelicera 1.1, Allotype (♀); Total length excluding chelicera 5.2.

Type locality: The foot of Mt. Obitodaira, Mie Prefecture (Upper course of the Kitayama River) 2-VIII-1954, Takeo YAGINUMA, (O.M.N.H.-ARN 16).

Remarks: Present species is allied to *T. squamata* KARSCH and *T. yesoensis* SAITO in appearance, but it is distinguished from them by the existence of silver spangles on the sides of carapace, the arrangement of eyes and cheliceral teeth, the structure of male palp, and the shape of genital fold of female. The most remarkable characteristic is that the legs have no spines.

This species is found at the foot of the mountain and it weaves a vertical orbweb consisting of very wide meshes.

***Cyclosa ginnaga* sp. nov.**

(Japanese name: Ginnaga Gomigumo)

Plate 6, Figs. 8-13

Holotype (female): Cephalothorax longer than wide in ratio 3:2. Head region sharply distinct from thoracic part by the deep U-like cervical depressions. Radial furrows present. Anterior row of eyes strongly recurved and posterior slightly recurved. Eight eyes subequal. Anterior median eyes nearer to each other than to anterior laterals, but the distance between anterior median eyes larger than their diameter. Posterior median eyes extremely close to each other but not touching. Posterior lateral eyes separated from posterior median eyes by a little more than twice the diameter of posterior median eye. Median ocular area longer than wide, wider in front than behind. Clypeus narrow, less than the radius of anterior median eye. Promargin and retromargin of fang furrow with three teeth on each. Maxillae as long as wide, truncated in front. Inner sides parallel. Labium triangular in shape, wider at base than long. Sternum pentagonal with parallel sides. Anterior margin slightly procurved, posterior end not inserting into 4th coxae. Abdomen long, extending over the spinnerets, ending taperingly and bluntly. A pair of protuberances of

abdomen situated near the caudal end, but indefinite. Epigynum as shown in figs. 12-13.

Colour in alcohol: Head brown. Thorax yellow with brown middle and marginal stripes combined at posterior margin. Chelicerae reddish brown. Labium, maxillae and sternum brown. Legs yellow, annulated with brown flecks on each segment. Abdomen with greyish black flecks on the silver ground. Venter of abdomen with irregular greyish black flecks.

Measurements(mm): Total length: 7.6, Leg I 6.7, II 5.9, III 4.7, IV 5.6.

Type locality: Ogawaguchi-Tado, Wakayama Prefecture. 30-VIII-1951, Osamu SATO and Takeo YAGINUMA, (O.M.N.H.-ARN 17)

Other collecting records: Mt. Koya (Wakayama Pref.) 22-VIII-1952, T. YAGINUMA; Kajigamori (Shikoku), 16-VII-1953, Setsuko TAKAHASHI and Michiko ASAGAI; Mt. Buna (Shiga Pref.), 4-VIII-1954, T. YAGINUMA; Yoshihara (Kochi Pref.), 10-VIII-1954, Kiyoshi NAKAHIRA and T. YAGINUMA; Hiwacho (Hiroshima Pref.), 5-VIII-1958, Makoto FUZIWARA; Mikazuki (Kochi Pref.), 9-VIII-1958, T. YAGINUMA. (Only females)

Remarks; This species has a resemblance to *Cyclosa insulana* (COSTA) or *Cyclosa argenteo-alba* BOESENBERG et STRAND, but it is easily distinguished from them by the shape of the abdomen which is long and always bluntly ended, and the shape of the scape of epigynum. In author's collection, there are some which lack the scape. Colour and pattern of this species vary individually.

***Titanoeca nipponica* sp. nov.**

(Japanese name: Yahazu Gakejigumo)

Plate 6, Figs. 14-17

Holotype (male): Cephalothorax longer than wide. Head broad and raised, parallel in both sides. The sides of thorax rounded. Median furrow longitudinal. The border between head and thorax clear by distinct cervical grooves. Thorax flat, lower than head. Radial furrow distinct. Clypeus narrow, about a half of median ocular area in length, and 1.5 times the diameter of anterior median eye. Anterior row of eyes recurved, while posterior procurved. Middle eyes of each row smaller than adjacent laterals. Median ocular area as long as broad, narrower in front than behind. Anterior median eyes separated from each other by more than their diameter, and from laterals by 1.5 times their diameter. Posterior median eyes separated from each other by twice the diameter, and from laterals by 3 times their diameter. Chelicerae long, armed with many denticles on the outer sides. Promargin of fang furrow with three teeth, retromargin with small two. Lateral condyle well developed. Maxillae parallel, but inner sides slightly converging over the labium. Labium longer than wide, beyond the middle of maxillae. Sternum egg-shaped, slightly recurved

anteriorly, pointed posteriorly and extending into 4th coxae. Legs 1. 4. 2. 3. Metatarsus 4 with a single row of calamistrum on entire joint. Claw tufts wanting. Three claws bear several teeth on each. Cribellum divided.

Colour in alcohol: Cephalothorax, sternum, chelicerae and labium black. Anterior median eyes alone black, and the rest brown. Abdomen black with white patterns as shown in fig. 14. Venter of abdomen also black. Femur and patella black, and the rest joint brown.

Measurements (mm): Total length 5.6, Leg I 8.2, II 6.8, III 5.9, IV 9.1

Type locality: Shodoshima Island, Kagawa-Prefecture, June, 1955, T. YAGINUMA [O.M.N.H.-ARN 18]

Other collecting records:

Osaka City, 1 ♀ sub. 1 ♂, June, 1937, T. YAGINUMA; Wakayama Pref. 3 ♀ sub. Oct. 1951, T. ONO & T. KOMURA; Hyogo Pref. 1 ♂ T. YAGINUMA.

Remarks: Present species bears a resemblance to *Titanoeca albomaculata* (H. LUCAS) or *T. obscura* (WALCK.) found in Europe, but it is distinguished from them by the shape and structure of palpal organ of male. This species dwells under loose stones or dead leaves. In the author's collection, there is an individual which lacks the white patterns on abdomen.

Explanation of Plate

1-7 *Tetragnatha lauta* sp. nov.

1. Carapace (♂)
2. Eye area (♂)
3. Genital fold (♀)
4. Left palp (♀)
5. Embolus and conductor (♂)
6. Chelicera from inner side (♀)
7. Chelicera from outer side (♂)

8-13 *Cyclosa ginnaga* sp. nov.

8. Dorsal aspect (♀)
9. Variety of pattern (♀)
10. Ditto (♀)
11. Lateral aspect of abdomen (♀)
12. Epigynum (♀)
13. Lateral aspect of epigynum (♀)

14-17 *Titanoeca nipponica* sp. nov.

14. Dorsal aspect (♂)
15. Eye area and chelicerae (♂)
16. Left palp (♂)
17. Ditto (♂)

