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A SUPPLEMENTARY NOTE ON SPIDERS FROM SOUTHERN SAGHALIEN, WITH DESCRIPTIONS OF TWO NEW SPECIES

BY

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(With ten text-figures)

Since the publication of a preliminary note on the spiders from Southern Saghalien in *The Annotationes Zoologicae Japonenses* in 1932 a considerable number of specimens has been added to the author's collection being presented by Mr. F. FUJITA from Rakuma and by Mr. M. YOSHIKURA from Shiretori. Moreover the specimens collected by Dr. H. Kôno in his journey to that part in 1932 were kindly placed in the hands of the author for examination. Here the author wishes to acknowledge his great indebtedness to the kindness of the above friends.

Of the seven species formerly recorded by the author, three, *Araneus ventricosus* (L. KOCH), *Zilla x-notata* CLERCK and *Zilla montana* C. L. KOCH are not found among the present specimens while, the other four, *Araneus marmoreus* CLERCK, *Araneus patagiatus* CLERCK, *Araneus adiantus* WALCKENAER and *Lycosa T-insignita* FÖS. et STRAND are referable again. In addition to the latter, twenty three more species are newly identified of which twenty one are known and two are new to science. Hence to the present a total of thirty species of spiders have been discovered inhabiting the island.

Upon considering the species it becomes clear that the spider fauna of Saghalien has much uniformity with that of the northern Eurasiatic continent, there being twenty examples representing the continental form. Five of them even distribute to North America beyond the Bering Strait.

The list of known species and descriptions of the new species are given as follows :—

Family THOMISIDAE

Genus *Misumena* LATREILLE, 1804

1. *Misumena vatia* CLERCK

Misumena vatia, T. THORELL :—Rem. on Syn., Upsala, 1870-1873, pp. 258, 573 ; ——— :—Südru-

[Trans. Sapporo Nat. Hist. Soc., Vol. XIII, Pt. 3, 1934]

sischer Spinnen, St. Petersburg, 1875, p. 57.; E. SIMON:—Arachn. de France, Paris, 1875, Tom. 2, p. 273.; L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 96.; E. KEYSERLING:—Spinnen Amerikas, Laterigradae, Nürnberg, 1880, p. 101.; F. CAMBRIDGE:—Biol. Centr. Amer., 1900, Vol. 2, p. 141, pl. 9, fig. 33.; J. H. EMERTON:—Common Spiders, London, 1902, p. 27, figs. 76-78.; W. BÖSENBERG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 366, Taf. 34, Fig. 539.; K. KISHIDA:—Zoological Magazine (in Japanese), Tokyo, Vol. 36, 1924, p. 512.

Misumena calycina, W. BÖSENBERG u. E. STRAND: Japanische Spinnen, Stuttgart, 1905, p. 255, Taf. 10, Fig. 164.

Thomisus citreus, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 88, pl. 4, fig. 53.

Thomisus fartus, N. M. HENTZ:—Spiders U. S., Boston, p. 78, pl. 10, fig. 4.

Locality: Three adult and two immature females from Baguntan (H. KÔNO, Aug. 5, 1932), Shirahama (H. KÔNO, Aug. 5, 1932), Kashiho (H. KÔNO, Aug. 3, 1932), Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Baguntan)	1.20	0.90	1.40	1.25	0.65	0.80
female (Shirahama)	0.85	0.65	1.20	1.10	0.60	0.75
female (Shiretori)	0.90	0.70	1.35	1.25	0.70	0.90

Distribution: U.S.A., Canada, Alaska, Siberia (Krasnojarsk), U.S.S.R., Germany, France, Japan (Kyushu), Northern Saghalien.

Genus *Philodromus* WALCKENAER, 1825

2. *Philodromus rufus* WALCKENAER

Philodromus rufus, E. SIMON:—Arachn. de France, Paris, 1875, Tom. 2, p. 287, pl. 8, fig. 9.; E. KEYSERLING:—Spinnen Amerikas, Laterigradae, Nürnberg, 1880, p. 217, pl. 5, fig. 119.; W. BÖSENBERG:—Zoologica, Stuttgart, 1903, Bd. 14, p. 333, Taf. 31, Fig. 494.; A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 421.

Philodromus obscurus, J. BLACKWALL:—Ann. Mag. Nat. Hist., 4ser., 1871, Vol. 8, p. 431.

Philodromus fictus, J. H. EMERTON:—Common Spiders, London, 1902, p. 37, figs. 108-110.

Locality: A matured female from Randomari (H. KÔNO, July 17, 1932).

Distribution: U.S.A., Germany.

Genus *Tibellus* SIMON, 1875

3. *Tibellus tenellus* (L. KOCH)

(Fig. 1)

Tibellus tenellus, W. BÖSENBERG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 271, Taf. 8, Fig. 112, Taf. 10, Fig. 156.

Locality: Three adult females from Sakaehama (H. KÔNO, July 20, 1932), Kiton (Vicinity of Shisuka, H. KÔNO, July 28, 1932), Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Sakaehama)	1.00	0.70	1.10	1.20	0.90	1.00
female (Kiton)	1.00	0.65	1.30	1.50	1.00	1.35
female (Shiretori)	0.80	0.60	1.00	1.20	0.80	1.00

Distribution: Japan (Honshu, Kyushu).

Family CLUBIONIDAE

Genus *Clubiona* LATREILLE, 1804

4. *Clubiona coerulescens* L. KOCH

(Fig. 2)

Clubiona coerulescens, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 224.; L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 89.; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 268, Taf. 25, Fig. 388.; R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 31, 33, Taf. 5, Fig. 338, Taf. 6, Fig. 355.

Locality: One adult male, three adult and several immature females from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
male (Shiretori)	0.60	0.45	0.80	0.70	0.60	0.90
female (Shiretori)	0.90	0.50	1.20	1.10	0.90	1.20
female (Shiretori)	0.80	0.50	1.10	1.00	0.70	1.10
female (Shiretori)	0.80	0.50	1.00	0.90	0.80	1.00

Distribution: Europe, Siberia (Krasnojarsk).

5. *Clubiona lutescens* WESTRING

(Fig. 3)

Clubiona lutescens, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 225.; ———:—Südrussischer Spinnen, St. Petersburg, 1875, p. 40.; W. BÜSENBURG:—Zoologica, Stuttgart, 1903, Bd. 14, p. 276, Taf. 26, Fig. 405.; W. BÜSENBURG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 283, Taf. 16, Fig. 485.; R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 32, 33, Taf. 5, Fig. 352, Taf. 6, Fig. 365.

Locality: An adult male from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:— total length 0.50, abdomen 0.35, leg I 1.15, leg II 1.20, leg III 0.90, leg IV 1.00.

Distribution: Germany, U.S.S.R., Japan (Kyushu).

Genus *Chiracanthium* C. L. KOCH, 18796. *Chiracanthium lascivum* KARSCH

(Fig. 4, a, b)

Chiracanthium lascivum, F. KARSCH:—Verhandl. d. N. V., Jahrg. 36, p. 91.; W. BÖSENBERG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 287, Taf. 16, Fig. 502.

Locality: An adult male from Shiretori (M. YOSHIKURA, 1933).

Distribution: Japan (Honshu or Kyushu ?).¹⁾

Family THERIDIIDAE

Genus *Theridion* WALCKENAER, 18057. *Theridion tepidariorum* C. L. KOCH

Theridion tepidariorum, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 180, pl. 13, fig. 114; ———:—Ann. Mag. Nat. Hist., 5ser., Vol. 1, 1878, p. 155.; E. SIMON:—Arachn. de France, Paris, Tom. 5, 1881, p. 93.; T. THORELL:—Descriptive Catalogue of Spiders of Burma, British Mus., 1895, p. 95.; E. SIMON:—Fauna Hawaiiensis, Cambridge, Vol. 2, 1900, p. 449.; J. ALLEN:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 207.; J. H. COMSTOCK:—Spider Book, New York, 1913, pp. 210, 299, 330, 345, 421, figs. 321, 323, 340–343.; R. V. CHAMBERLIN:—Proc. U. S. Nat. Mus., Vol. 63, 1924, p. 5.; ———:—Proc. California Academy Science, 4ser., Vol. 12, 1924, p. 638.; C. R. CROSBY and S. C. BISHOP:—Memoir Cornell Univ. Agr. Exper. Station, Vol. 101, 1926, p. 1042.; R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 57, 59, Taf. 9, Fig. 647, Taf. 10, Fig. 662.; S. YUHARA:—Study of spiders (in Japanese), Tokyo, 1931, pp. 96, 97, figs. 25, 26.; S. SAITO:—Proc. Imper. Academy, Vol. 9, 1933, p. 273.; ———:—Trans. Sapporo Nat. Hist., Vol. 13, 1933, p. 42.

Theridion tepidariorum, E. KEYSERLING:—Spinnen Amerikas, Nürnberg, Theridiidae, 1884, Bd. 1, p. 9, Tab. 1, Fig. 1.

Theridion vulgare, N. M. HENTZ:—Spiders U. S., Boston, 1875, p. 142, pl. 16, fig. 1.

Theridium tepidariorum, T. THORELL:—Rem. on Syn., Upsala, 1870–1873, p. 80.; ———:—Horae Societatis Entomologicae Rossicae, Vol. 11, 1875, p. 29.; O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, Bd. 3, 1879, p. 83.; G. MARX:—Proc. U. S. Nat. Mus., Vol. 10, 1890, p. 520.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 2, 1894, p. 35.; ———:—T. THORELL:—Estratto dagli Annali del Musco Civico di Storia Naturale di Genova, 2ser., Vol. 19, 1898, p. 45.; ———:—Bihang Till K. Svenska Vet.-Akad. Handlingar, Bd. 25, 1899, p. 25.; T. P. von BAYERN:—Zool. Anz., Bd. 23, 1900, p. 283.; W. BÖSENBERG:—Zoologica, Stuttgart, 1903, Bd. 14, p. 96, Taf. 8, Fig. 115.; J. H. EMERTON:—Common Spiders, London, 1902, p. 111, figs. 255–260.; W. BÖSENBERG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 148.; E. STRAND:—Zool. Anz., Bd. 32, 1908, p. 219.; N. BANKS:—Bull. Smithsonian Institution U. S. Nat. Mus., Vol. 72, 1910, p. 20.

Steatola tepidariorum, O. P. CAMBRIDGE:—Biol. Cent. Amer., Vol. 2, 1897–1905, p. 382, Taf. 36, figs. 1, 2.

1) The original papers by W. BÖSENBERG, E. STRAND and F. KARSCH do not give the localities.

Locality: An adult female from Rakuma (F. FUJITA, 1932).

Distribution: Cosmopolitan.

8. *Theridion nivalium* n. sp.

Jap. name. (*Yuki-himegumo*)

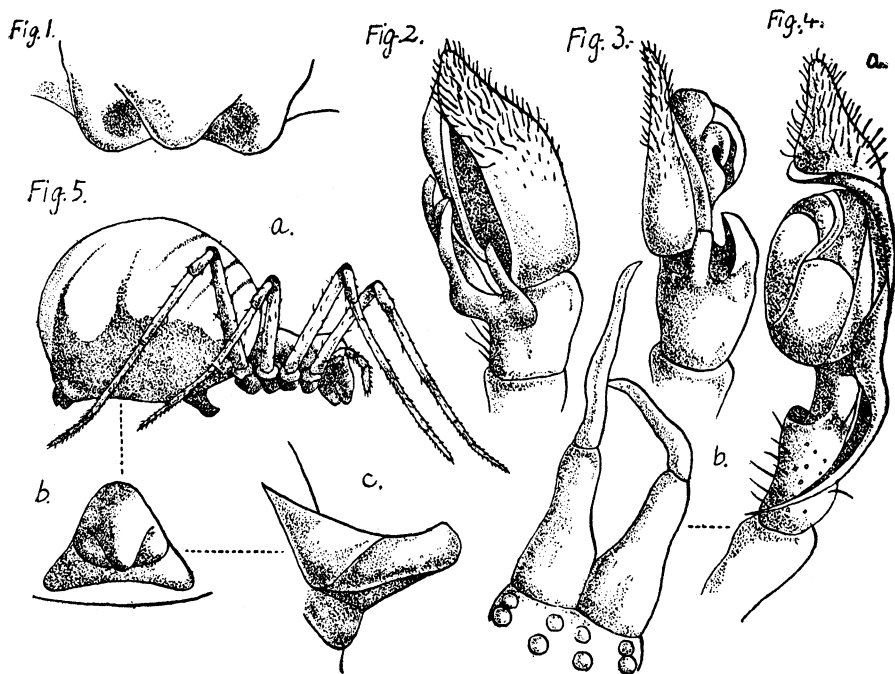
(Fig. 5, a, b, c)

An adult female was collected by Dr. H. KÔNO at Tarandomari on the west coast of Karafuto, on July 17, 1932. Total length 0.30 cm. Cephalothorax 0.15 cm. long, 0.12 cm. wide between second and third coxae, 0.05 cm. wide in the eye-region, gradually rounded in front. A shallow depression of an indefinite shape in place of the thoracic groove. First row of eyes recurved, second row procurved. Anterior median eyes alone diurnal. Eyes of the first row equidistant, separated by almost their diameter. Eyes of second row slightly larger than those of the first row, equidistant, separated by about $\frac{3}{4}$ of their diameter. Lateral eyes of both rows contiguous. Quadrangle wider behind than in front in ratio 5 : 4, more wide than long in ratio 4.5 : 4. Clypeus equal to length of quadrangle. Chelicerae longer than clypeus, slender, parallel, without boss, with a very short, stout fang. Maxillae more long than wide, covered with hairs. Labium triangular, rounded anteriorly, articulated to maxillae with distinct sternal suture. Sternum convex, triangular, with straight anterior edge, as wide as long. First coxae wide apart, fourth coxae separated by their width. Posterior end of sternum pointed. Legs slender and long, their length, I 0.55 cm., II 0.50 cm., III 0.40 cm., IV 0.60 cm. Comb poorly developed, composed of eleven serrated bristles. Abdomen 0.20 cm. long, elliptic, without hairs. Spinnerets six, first pair close together. Colulus wanting.

Colour in alcohol: Cephalothorax grabrous, except a few bristles, and perfectly lemon yellow. Sternum brownish yellow. Chelicerae, maxillae and labium slightly darker than the cephalothorax. Palpi and legs slightly paler than the cephalothorax but ends of the fourth femora almost black. Abdomen snowy white. Belly and spinnerets dark yellowish brown.

The male of this species has not been examined.

Remarks: The species is closely allied to *Theridion fordum* KEYSERLING which inhabits America, but it is distinguished from the American species by the form of epigynum.



- Fig. 1. *Tibellus tenellus* (L. KOCH); Epigynum.
 Fig. 2. *Clubiona coerulescens* L. KOCH; Palpus of male.
 Fig. 3. *Culbiona lutescens* WESTRING; Palpus of male.
 Fig. 4. *Chiracanthium lascivum* KARSCH; a, Palpus of male,
 b, Chelicerae of male.
 Fig. 5. *Theridion nivatum* n. sp.; a, Sideview of female,
 b, Epigynum from above, c, Sideview of epigynum.

Family ARGIOPIDAE

Genus *Meta* C. L. KOCH, 1836

9. *Meta yunohamaensis* BÜS. et STRAND

Meta yunohamaensis, W. BÜSEBERG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 183, Taf. 11, Figg. 225, 229.; T. KAMBE:—Jour. Chosen Nat. Hist. (in Japanese), No. 15, 1933, p. 44.; S. SAITO:—Transact. Sapporo Nat. Hist., Vol. 13, 1933, p. 48, pl. 3, fig. 12.; —:—Proc. Imper. Academy, Vol. 9, 1933, p. 237.

Locality: An adult female from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—total length 0.80, abdomen 0.50, leg I 1.90, leg II 1.50, leg III 0.90, leg IV 1.30.

Distribution: Japan (Kyushu, Formosa, Korea, Hokkaido).

Genus *Argiope* AUDOIN, 182510. *Argiope sachalinensis* n. sp.Jap. name. (*Karafuto-Koganegumo*)

(Fig. 6, a, b, c, d)

One female was captured by Dr. H. KÔNO at Kashiho on the east coast on August 3, 1932. Total length 0.85 cm. Cephalothorax 0.40 cm. long, 0.25 cm. wide between second and third coxae, 0.15 cm. wide in the eye-region, furnished with white hairs. Viewed from above, both rows of eyes slightly recurved, first row more so than the second, slightly shorter. Anterior median eyes separated from each other by their diameter, and from anterior lateral eyes by 1.5 times their diameter. Posterior median eyes separated from each other by $\frac{2}{3}$ of their diameter, from posterior lateral eyes by 2 times their diameter. Lateral eyes of both rows contiguous. Quadrangle as wide behind as in front, slightly more wide than long. Clypeus equal to the diameter of anterior median eyes. Chelicerae strong, with boss, furnished with three teeth at lower margin. Labium triangular, more wide than long. Maxillae longer than wide at end in ratio 1.5 : 1. Sternum convex, shield-shaped, as wide as long, pointed between hind coxae. Length of legs, I 1.00 cm., II 0.90 cm., III 0.50 cm., IV 0.80 cm. Abdomen 0.60 cm. long, somewhat pressed, without shoulder tubercles.

Colour in alcohol: Cephalothorax dull yellow with brownish black lines at radial and cervical grooves. Chelicerae brownish yellow slightly dusky, with brown fang. Labium and maxillae black with white ends. Sternum black uniformly. Legs pale yellow, annulated with deep black and furnished with black hairs and bristles. Abdomen white above, mottled with black. Venter yellow with black at the median field and with a pair of white spots at postero-lateral angles of black field. Spinnerets black.

Remarks: This species is peculiar in the form of epigynum differing from the other species of *Argiope*.

Genus *Araneus* LINNAEUS, 175911. *Araneus inconspicua* SIMON

Aranea inconspicua, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 112, 115, Taf. 23, Fig. 1263, Taf. 24, Fig. 1293.

Epeira inconspicua, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 24.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, 1892, Tom. 1, p. 131.; W. BÖSENBERG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 29, Taf. 1, Fig. 12.

Locality: Two females from Shiretori (M. YOSHIKURA, 1933), Randomari (H. KÔNO, July 17, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	0.70	0.60	0.90	0.70	0.60	0.80
female (Randomari)	0.70	0.50	0.70	0.60	0.50	0.65

Distribution: Germany, Hungary, France.

12. *Araneus omoeda* THORELL

Aranea omoeda, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 111, 114, Taf. 23, Fig. 1255, Taf. 24, Fig. 1281.

Epeira omoeda, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1974, p. 66.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 129.; W. BÖSENBERG:—Zoologica, Stuttgart, 1905, Bd. 14, p. 27, Taf. 1, Fig. 9.

Epeira bicornis, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 19.

Locality: One female and one male from Shiretori (M. YOSHIKURA, 1933), vicinity of Shisuka (H. KÔNO, July 27, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	1.00	0.80	1.50	1.20	0.80	1.20
male (Shisuka)	0.70	0.40	1.40	1.20	0.70	1.20

Distribution: Sweden, Hungary, Germany, France.

13. *Araneus nordmanni* THORELL

(Fig. 7)

Araneus nordmanni, A. PETRUNKEVITCH:—Bull. Amer. Nat. Hist., Vol. 29, 1911, p. 307.; C. R. CROSBY and S. C. BISHOP:—Memoir Cornell Univ. Agr. Exper. Station, 1926, p. 1053.

Aranea nordmanni, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 110, 114, Taf. 24, Fig. 1280.

Epeira nordmanni, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 3.; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 55.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 128.; J. H. EMERTON:—Common Spiders, London, 1902, p. 163, figs. 387, 388.; W. BÖSENBERG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 27, Taf. 1, Fig. 8.

Epeira angulata, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 47, pl. 2, fig. 2.

Locality: One female and an immature male from Shiretori (M. YOSHIKURA, 1933), vicinity of Shisuka (H. KÔNO, July 26, 1932).

The measurements (in centimeters) of the female are as follows:—total length 1.00, abdomen 0.80, leg I 1.50, leg II 0.75, leg III 1.50, leg IV 1.30.

Distribution: U.S.A., Canada, France, Germany, Hungary.

14. *Araneus patagiatus* CLERCK

- Araneus patagiatus*, A. PETRUNKEVITCH:—Bull. Amer. Nat. Hist., Vol. 29, 1911, p. 808; W. RABER:—Zeitschr. f. Morph. u. Oekol. d. Tiere, Bd. 21, 1931, p. 198.
- Aranea patagiata*, L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 7; W. BÖSENBERG:—Zoologica, Stuttgart, 1903, Bd. 14, p. 36, Taf. 2, Fig. 22; T. THORELL:—Rem. on Syn., Upsala, 1870–1873, p. 16; C. R. CROSBY and S. C. BISHOP:—Memoir Cornell Univ. Agr. Exper. Station, 1926, p. 1053; S. SAITO:—Ann. Zool. Jap., Vol. 13, 1932, p. 380, fig. 2; M. L. PEELLE and S. SAITO:—Jour. Science Hokkaido Imper. Univ., 6ser., Vol. 2, 1932, p. 92; S. SAITO:—Pro. Imper. Academy, Vol. 9, 1933, p. 273.
- Epeira patagiata*, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 329, pl. 24, fig. 229; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 110; T. THORELL:—Südrussischer Spinnen, St. Petersburg, 1875, p. 16; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 113, Taf. 5, fig. 10; J. H. EMERTON:—Common Spiders, London, 1902, p. 160, fig. 384.

Locality: One female and one male from Sakaehama (H. KÔNO, July 20, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Sakaehama)	0.85	0.50	1.30	1.10	0.85	1.10
male (Sakaehama)	0.70	0.50	1.50	1.30	0.90	1.10

Distribution:—Siberia (Krasnojarsk), Germany, Hungary, France, U.S.S.R., U.S.A., Alaska, Japan (Iterup, Hokkaido).

15. *Araneus cornutus* CLERCK

- Araneus cornutus*, A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 742.
- Araneus frondosa*, J. H. COMSTOCK:—Spider Book, New York, 1913, p. 489.
- Araneus foliatus*, S. SAITO:—Proc. Imper. Academy, Vol. 9, 1933, p. 273.
- Aranea cornuta*, W. BÖSENBERG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 236.
- Aranea foliata*, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 111, 115, Taf. 23, Fig. 1253, Taf. 24, Fig. 1299.
- Epeira cornuta*, T. THORELL:—Rem. on Syn., Upsala, 1870–1873, p. 15; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 108; T. THORELL:—Südrussischer Spinnen, 1875, p. 16.
- L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 5; O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, 1879, Bd. 3, p. 17; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1891, p. 133, Taf. 5, fig. 9.
- Epeira strix*, N. M. HENTZ:—Spiders U.S., Boston, 1875, p. 112, pl. 13, fig. 5; J. H. EMERTON:—Common Spiders, London, 1902, p. 160, fig. 385.
- Epeira affinis*, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 325, pl. 23, fig. 237.

Locality: An adult male and three immature females from Shiretori (M. YOSHIKURA, 1933), vicinity of Shisuka (H. KÔNO, July 26, 1932), Sakaehama (H. KÔNO, July 20, 1932),

1) They failed in the collection of this species and their description depends upon a report by F. KARSCH.

The measurements (in centimeters) of the male are as follows:—total length 0.85, abdomen 0.65 leg I 1.30, leg II 1.00, leg III 0.70, leg IV 0.95.

Distribution: U.S.A., Canada, Germany, Hungary, France, U.S.S.R., Siberia, Japan (Hokkaido).

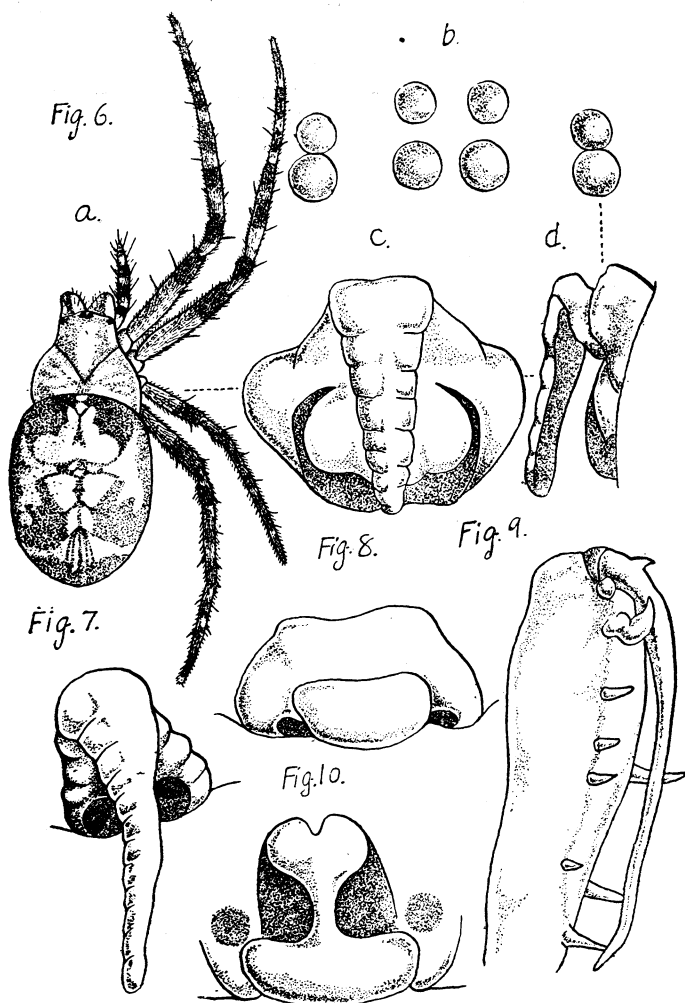


Fig. 6. *Argiope sachalinensis* n. sp.; a, Dorsal view of female, b, Eye-group, c, Epigynum from above, d, Sideview of epigynum.

Fig. 7. *Araneus nordmanni* THORELL; Epigynum.

Fig. 8. *Zilla atrica* L. KOCH; Epigynum.

Fig. 9. *Tetragnatha squamata* KARSCH; Chelicera of male.

Fig. 10. *Trochosa terricola* THORELL; Epigynum.

16. *Araneus marmoreus* CLERCK

- Araneus marmoreus*, O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, Bd. 3, 1879, p. 15; A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 301; W. RABELER:—Zeitschr. f. Morph. u. Oekol. d. Tiere, Bd. 21, 1931, p. 198.
- Araneus marmorea*, C. R. CROSBY and S. C. BISHOP:—Memori Cornell Univ. Agr. Exper. Station, 1926, p. 1053; S. Saito:—Annot. Zool. Jap., Vol. 13, 1932, p. 379, fig. 1.
- Aranea marmorea*, J. C. FABRICIUS:—Ent. Syst., Tom. 2, 1793, p. 415.
- Aranea marmorea* (*Aranea Rajii*), T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 9.
- Aranea Radii*, W. BÜSENBURG u. E. STRAND¹⁾:—Japanische Spinnen, Stuttgart, 1905, p. 236.
- Epeira marmorea*, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 76; L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 5; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 130, Taf. 5, fig. 15; J. H. EMERTON:—Common Spiders, London, 1902, p. 169, figs. 398, 399; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 24, Taf. 1, Fig. 4.
- Epeira scalaris*, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 331, pl. 24, fig. 240.
- Epeira insularis*, E. KEYSERLING:—Spinnen Amerikas, Epeiridae, 1892, p. 170, pl. 8, fig. 126; N. M. HENTZ:—Spiders U.S., Boston, 1875, p. 109.
- Epeira Radii*, T. THORELL:—Südrussischer Spinnen, St. Petersburg, 1875, p. 15.

Locality: Four females and two males from Shiretori (M. YOSHIKURA, 1933), Sakaehama (H. KÔNO, July 20, 1932), Baguntan (H. KÔNO, Aug. 5, 1932), Kashiho (H. KÔNO, Aug. 3, 1932).

Distribution: U.S.A., Canada, Siberia, U.S.S.R., Germany, France, Hungary, Japan (Hokkaido).

17. *Araneus triguttatus* FABRICIUS

- Aranea triguttata*, J. C. FABRICIUS:—Ent. Syst., Tom. 2, 1793, p. 416.
- Aranea guttata*, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 113, 114, Taf. 23, Fig. 1270, Taf. 24, Fig. 1285.
- Epeira triguttata*, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 83; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 131, Taf. 5, Fig. 6; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 38, Taf. 2, Fig. 25.
- Epeira triguttata* var. *agalena*, T. THORELL:—Südrussischer Spinnen, St. Petersburg, 1875, p. 16.

Locality: Four females from Kiton (H. KÔNO, July 28, 1932) and Tarandomari (H. KÔNO, July 17, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Kiton)	0.50	0.40	0.70	0.60	0.45	0.55
female (Kiton)	0.60	0.45	0.75	0.65	0.50	0.65
female (Tarandomari)	0.70	0.50	0.80	0.60	0.45	0.65
female (Tarandomari)	0.50	0.40	0.70	0.65	0.50	0.65

Distribution: Germany, France, Hungary, U.S.S.R.

1) They did not have the species from Japan.

18. *Araneus adiantus* WALCKENAE

- Araneus adiantus*, W. RABER:—Zeitsch. f. Morph. u. Oekol. d. Tiere, Bd. 21, 1931, p. 198.
Araneus adianta, S. SAITO:—Annot. Zool. Jap., Vol. 13, 1932, p. 381, fig. 3.
Aranea adianta, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 23.; R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 112, 115, Taf. 23, Fig. 1265, Taf. 24, Fig. 1291.
Epeira adianta, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 348, pl. 25, fig. 251.; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 111.; T. THORELL:—Südrussischer Spinnen, St. Petersburg, 1875, p. 18.; C. P. CAMBRIDGE:—Ann. Mag. Nat. Hist., Vol. 1, 1878, p. 120.; L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 7.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 133.
 Locality: An adult female from Shiretori (M. YOSHIKURA, 1933).
 Distribution: Siberia, Hungary, France, Germany, U.S.S.R.

19. *Araneus diadematus* CLERCK

- Araneus diadematus*, O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, Bd. 3, 1879, p. 13.; A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 289.
Aranea diadema, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 110, 114, Taf. 23, Fig. 1243, Taf. 24, Fig. 1287.
Epeira diademata, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 72.; T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 8.; ———:—Südrussischer Spinnen, St. Petersburg, 1875, p. 15.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1897, p. 129, Taf. 5, fig. 14.; W. BÖSENBERG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 24, Taf. 1, Fig. 2.
Epeira diadema, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 358, pl. 24, fig. 258.
 Locality: An adult female from Shiretori (M. YOSHIKURA, 1933).
 The measurements (in centimeters) of the female are as follows:—total length 1.40, abdomen 1.20, leg I 2.00, leg II 1.70, leg III 1.10, leg IV 1.80.
 Distribution: U.S.A., Chile, Hungary, France, Germany, U.S.S.R.

20. *Araneus quadratus* CLERCK

- Araneus quadratus*, O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, Bd. 3, 1879, p. 16.; A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 311.
Epeira quadrata, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 80.; J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 324, pl. 23, fig. 236.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 130, Taf. 5, fig. 12.; W. BÖSENBERG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 23, Taf. 1, Fig. 3.

Locality: Two adult females from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	1.80	1.50	2.20	1.80	1.30	2.00
female (Shiretori)	1.80	1.20	2.10	2.10	1.40	2.30

Distribution: Greenland, Hungary, Germany, France.

Genus *Zilla* L. KOCH, 183421. *Zilla atrica* L. KOCH

(Fig. 8)

Zilla atrica, T. THORELL:—Rem. on Syn., Upsala, 1870-1873, p. 31.; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1892, p. 138.; C. CHYZER. et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 137, Taf. 5, fig. 34.; J. H. Emerton:—Common Spiders, London, 1902, p. 185, figs. 432-434.; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 46, Taf. 3, Fig. 36.

Araneus atricus, A. PETRUNKEVITCH:—Bull. Amer. Nat. Hist., Vol. 29, 1911, p. 28.

Aranea atrica, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, pp. 116, 117, Taf. 25, Fig. 1311, Taf. 24, Fig. 1319.

Epeira calophylla, J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 338, pl. 25, fig. 245.

Locality: One female from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows:—total length 0.65, abdomen 0.40, leg I 0.85, leg II 0.65, leg III 0.50, leg IV 0.75.

Distribution: U.S.A., Germany, France, Hungary.

Family *TETRAGNATHIDAE*Genus *Tetragnatha* LATREILLE, 180422. *Tetragnatha squamata* KARSCH

(Fig. 9)

Tetragnatha squamata, F. KARSCH:—Verhandl. d. N. V., Jahrg. 36, 1879, p. 65, Taf. 1, Fig. 3.; W. BÜSENBURG u. E. STRAND:—Japanische Spinnen, Stuttgart, 1905, p. 176, Taf. 3, Fig. 5, Taf. 15, Fig. 405.

Locality: Two adult and one immature females and an adult male from Tarandomari (H. KÔNO, July 17, 1932), Sakaehama (H. KÔNO, July 20, 1932), vicinity of Shisuka (H. KÔNO, July 26, 1932), Kashiho (H. KÔNO, Aug. 3, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
male (Tarandomari)	0.65	0.40	1.50	1.20	0.70	1.00
female (Sakaehama)	0.60	0.40	1.40	1.00	0.60	0.90
female (Shisuka)	0.70	0.50	1.10	0.75	0.50	0.80

Distribution: Japan (Kyushu, Hokkaido).

23. *Tetragnatha Solandrii* (SCOPOLI)

Tetragnatha Solandrii, C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, Tom. 1, 1892, p. 145, Taf. 6, fig. 9.; R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, p. 118, Taf. 25, Fig. 1329.

Tetragnatha Solandrii, L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 7.

Tetragnatha montana, E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 157.; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 58, Taf. 4, Fig. 54.

Locality: Three adult females and two immature males from the vicinity of Shisuka (H. KÔNO, July 26, 1932).

The measurements (in centimeters) are as follows:—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shisuka)	1.00	0.60	1.90	1.30	0.70	1.15
female (Shisuka)	0.90	0.65	1.60	1.00	0.70	1.15
female (Shisuka)	0.80	0.50	1.40	0.85	0.50	0.90

Distribution: Germany, France, Hungary, Siberia.

24. *Tetragnatha extensa* LINNAEUS

Tetragnatha extensa, R. BREMEN:—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, p. 118, Taf. 25, Fig. 1332.; T. THORELL:—Oefver. af K. Vet.-Akad. Förh. Bd. 17, 1858, p. 174.; J. BLACKWALL:—Spid. Gr. Brit. & Ir., 1864, p. 337, pl. 28, fig. 265.; ———:—Ann. Mag. Nat. Hist., Vol. 5, 1870, p. 404.; T. THORELL:—Rem. on Syn., Upsala, 1870–1873, p. 40.; E. SIMON:—Arachn. de France, Paris, Tom. 1, 1874, p. 115.; T. THORELL:—Südrussischer Spinnen, St. Petersburg, 1875, p. 20.; O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, Bd. 3, 1879, p. 46.; L. KOCH:—Arachn. Sibirien Novaja Semlja, Stockholm, 1879, p. 7.; H. LUDWIG:—Tierkunde, Bd. 2, 1886, p. 588.; G. MARX:—Proc. Nat. Mus., Washington, 1889, Vol. 12, p. 552.; J. H. EMERTON:—Common Spiders, London, 1902, p. 201, figs. 462, 466.; W. BÜSENBURG:—Zoologica, Stuttgart, Bd. 14, 1903, p. 59, Taf. 4, 5, Fig. 55.; N. BANKS:—Proc. Nat. Mus., Vol. 25, 1903, p. 215.; ———:—Bull. U. S. Nat. Mus., Vol. 72, 1910, p. 37.; A. PETRUNKEVITCH:—Bull. Amer. Mus. Nat. Hist., Vol. 29, 1911, p. 390.; J. H. COMSTOCK:—Spider Book, New York, 1913, p. 411.; C. R. CROSBY and S. C. BISHOP:—Mém. Cornell Univ. Agr. Exper. Station, 1926, p. 1057.; M. L. PELLE and S. SAITO:—Jour. Faculty Science Hokkaido Imper. Univ., 6ser., Vol. 2, 1932, p. 95, fig. 8.

Aranea extensa, J. C. FABRICIUS:—Ent. Sys., Tom. 2, 1793, p. 407.

Locality: An adult male from Kashiho (H. KÔNO, Aug. 3, 1932).

The measurements (in centimeters) are as follows:—total length 0.80, abdomen 0.50, leg I 1.80, leg II 1.40, leg III 0.70, leg IV 1.50.

Distribution: Tropical, temperate and subarctic countries; Europe, Siberia, U.S.A., Canada, Alaska.

Family LYCOSIDAE

Genus *Trochosa* C. L. KOCH, 1846

25. *Trochosa terricola* THORELL

(Fig. 10)

Trochosa terricola, O. HERMAN:—Ungarns Spinnen-Fauna, Budapest, 1879, p. 279.; C. CHYZER et L. KULCZYNSKI:—Araneae Hungariae, Budapest, 1892, p. 73, Taf. 3, fig. 6.; W. BÜSEN-

BERG :—Zoologica, Stuttgart, Bd. 14, 1903, p. 399, Taf. 37, Fig. 587. ; R. BREMEN :—Tierwelt Mitteleuropas, Leipzig, Bd. 3, Lief. 2, p. 130, Taf. 27, Figs. 1466, 1469.

Lycosa terricola, T. THORELL :—Rem. on Syn., Upsala, 1870-1873, p. 339.

Lycosa agretyca, J. BLACKWALL :—Spid. Gr. Brit. & Ir., 1864, p. 17, pl. 1, fig. 2.

Locality: Two females from Shiretori (M. YOSHIKURA, 1933), Kiton (H. HÔNO, July 18, 1932).

The measurements (in centimeters) are as follows :—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	1.00	0.70	1.00	0.80	0.90	1.20
female (Kiton)	0.90	0.60	1.30	1.00	1.00	1.20

Distribution: Germany, Hungary.

Genus *Lycosa* LATREILLE, 1804

26. *Lycosa T-insignita* BÖS. et STRAND

Lycosa T-insignita, W. BÖSENBERG u. E. STRAND :—Japanische Spinnen, Stuttgart, 1905, p. 324, Taf. 8, Fig. 109, Taf. 13, Figg. 337, 344. ; S. SAITO :—Trans. Sapporo Nat. Hist., Vol. 11, 1930, p. 149. ; ——— :—Annot. Zool. Jap., Vol. 13, 1932, p. 385.

Locality: Two females from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows :—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	0.80	0.50	1.10	1.20	1.10	1.50
female (Shiretori)	0.70	0.50	1.15	1.10	1.00	1.40

Distribution: Japan (Kyushu, Honshu, Hokkaido).

27. *Lycosa Doenitzi* BÖS. et STRAND

Lycosa Doenitzi, W. BÖSENBERG u. E. STRAND :—Japanische Spinnen, Stuttgart, 1905, p. 325, Taf. 13, Fig. 345.

Locality: Three females from Shiretori (M. YOSHIKURA, 1933).

The measurements (in centimeters) are as follows :—

	total length	abdomen	leg I	leg II	leg III	leg IV
female (Shiretori)	0.70	0.40	1.10	1.00	0.70	1.30
female (Shiretori)	0.70	0.50	0.90	0.80	0.70	1.10
female (Shiretori)	0.80	0.50	1.10	1.00	0.80	1.20

Distribution: Japan (Kyushu).

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