AMERICAN SPIDER GENERA *THERIDULA* AND *PARATHERIDULA* (ARANEAE: THERIDIIDAE)¹

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Since my revision (1954) of the genus *Theridula* in North America, no additional species have been found. In the meanwhile, however, I have been able to examine the types of South American species (except that of *Theridula polita*, which appears to be lost). Additional records of *Paratheridula perniciosus* have been obtained since I described the genus (1957), but no additional species. That *Paratheridula perniciosus* is a pantropical species is suggested not only by its wide distribution in the Americas, but also by the absence of related species. Its small size, inconspicuous appearance, and the fact that its epigynum is always covered by a secretion (which has to be removed to examine it), suggest that it may have been overlooked in collections.

I would like to thank Dr. G. Owen Evans and his staff at the British Museum (Natural History) for making the Keyserling types available for study. A National Science Foundation grant (G-4317) permitted initial examination of theridiid types in European museums. The further researches were supported in part by Public Health Service Research Grant AI-01944 from the National Institute of Allergy and Infectious Diseases.

MISPLACED SPECIES: *Theridula polita* Mello-Leitão, 1947, Papéis Avulsos, Dept. Zool., São Paulo, 8(11): 127, fig. 1, ♀. Female holotype from Santa Cruz, Est. Paraná, Brazil, apparently lost, is probably a *Dipoena* judging by coloration, shape, and proportions of the species. The black stripe on the legs and the illustration of the epigynum suggest that it is *D. militaris* Chickering. The holotype of *Theridula polita* is not in the Mello-Leitão collection in Rio de Janeiro nor in São Paulo. Some Mello-Leitão types are alleged to be in the Museum Paranaense, but according to Mr. P. de Biasi it is not there either. The illustration of Mello-Leitão has been copied (Fig. 6).

Theridula Emerton

Theridula Emerton, 1882, Trans. Connecticut Acad. Sci. 6:25. Type species *Theridion sphaerula* Hentz, 1850 [= *T. opulenta* (Walckenaer)], however Emerton misidentified the specimens which he examined; they belong to *T. emertoni*.

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Map 1. Distribution of *Theridula emertoni* Levi and *Theridula opulenta* (Walckenaer).

Carapace as in *Theridion*, not modified. Chelicerae with two teeth on anterior margin, none posterior. First leg longest with patella and tibia 1.2 to 1.5 times carapace length. Abdomen wider than long in females, and lacking a colulus. Male palpus very simple, without conductor, median apophysis or radix. Haematodocha fastens both ends of tegulum to cymbium.

Key to *Theridula* species in the Americas

References to "figures" in lower case signify illustrations in Levi 1954, to "Figures" in upper case signify the ones in this paper.

- 1a. Females.....2
- 1b. Males.....9
- 2a. Epigynum with two distinct circular openings (Figs. 2, 5).....3
- 2b. Epigynum with humps or otherwise no distinct opening visible.....5
- 3a. Connecting duct with one loop (fig. 19)..... *gonygaster*
- 3b. Connecting ducts not looped (Figs. 1, 4).....4
- 4a. Openings connected by a posterior lip (Fig. 2).... *multiguttata*
- 4b. Openings on a hump not connected by a lip (Fig. 5).....
..... *nigerrima*

- 5a. Canada, United States.....6
 5b. Latin America.....7
 6a. Epigynum with a dark anterior semicircle (fig. 3).....*emertoni*
 6b. Epigynum with a dark posterior transverse area (fig. 11).....*opulenta*
 7a. Epigynum with two projecting bars (fig. 8).....*casas*
 7b. Epigynum with humps.....8
 8a. Abdomen brown, usually with a black dorsal spot.....*faceta*
 8b. Abdomen black with white spots.....*puebla*
 9a. Palpal embolus as long as tegulum is high.....10
 9b. Palpal embolus shorter than tegulum high.....11
 10a. Embolus tightly coiled (Fig. 3).....*nigerrima*
 10b. Embolus loosely coiled (fig. 18).....*gonygaster*
 11a. Canada, United States.....12
 11b. Latin America.....13
 12a. Palpal embolus straight with a notch on tip (fig. 9).....*opulenta*
 12b. Palpal embolus undulating (fig. 1).....*emertoni*
 13a. Embolus as wide as long (fig. 23).....*puebla*
 13b. Embolus longer than wide.....14
 14a. Total length 1.4 to 1.9 mm.....*faceta*
 14b. Total length about 2.5 mm.....*casas*

Map 2. Distribution of *Theridula faceta* (O. P. - Cambridge) and *Theridula gonygaster* (Simon).

Theridula emertoni Levi

Map 1

Additional record. Newfoundland. Junction Pond, Notre Dame Camp, 13 July 1961, ♀ (C. P. Alexander).

Theridula opulenta (Walckenaer)

Map 1

Additional record. United States. Oregon: Crater Lake Natl. Park, 15 June 1947, ♀ (B. Malkin and S. Sargent).

Theridula faceta (O. P. - Cambridge)

Map 2

Additional record. Mexico. Tabasco: 3.2 km NE of Comalcalo.

Theridula puebla Levi

Map 3

Additional records. Panama. Canal Zone: Madden Dam, 8 Aug. 1939 (A. M. Chickering); Barro Colorado Island, several records (A. M. Chickering). Boquete, several records (A. M. Chickering).

Figs. 1, 2. *Theridula multiguttata* Keyserling. 1. Female genitalia, dorsal view. 2. Epigynum.

Figs. 3-5. *T. nigerrima* (Petrunkévitch). 3. Left palpus. 4. Female genitalia, dorsal view. 5. Epigynum.

Fig. 6. *T. polita* Mello-Leitao, epigynum after Mello-Leitão.

Theridula gonygaster (Simon)

Map 2

Theridium gonygaster Simon, 1873, Mém. Soc. Roy. Sci. Liège, (2) 5:109.

Male lectotype designated by Levi, 1954, in the Muséum National d'Histoire Naturelle, Paris.

Theridula gonygaster, — Levi, 1954, Trans. Amer. Microscop. Soc., 73:340, figs. 18-22, ♀ ♂.

Distribution. Worldwide tropical. In America from Arizona, southern Florida, eastern Mexico, West Indies to Rio de Janeiro, Brazil.

Additional records. *United States.* *Arizona:* Cochise Co. Cave Creek Canyon. *Columbia. Valle:* Buenaventura, 4 Nov. 1950 (E. I. Schlinger, E. S. Ross). *Ecuador. Guayas:* Milagro (H. E., D. L. Frizzell); Guayaquil (Landes, H. E., D. L. Frizzell). *El Oro:* 5 km above Pasaje (R. Walls). *Peru. Piura:* Sulana, banana grove (H. E., D. L. Frizzell); Higuerón, Las Lomas (H. E., D. L. Frizzell). *Lima:* San Antonio (E. I. Schlinger, E. S. Ross).

Theridula nigerrima (Petrunkévitch)

Figures 3-5, Map 3

Dipocna nigra Keyserling, 1886, Die Spinnen Amerikas, Theridiidae, 2(2): 43, pl. 12, fig. 158, ♀ ♂. Female lectotype here designated from Pumamarca [?Pumamanta, Junin], Peru, in the Polish Academy of Sciences, Warsaw; examined. Name preoccupied by *D. nigra* Emerton, 1882.

Dipocna nigerrima Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., 29: 174. New name for *D. nigra* Keyserling, preoccupied.

Diagnosis. The openings of the epigynum are on the anterior edge of a sclerotized plate (Fig. 5), quite different from *T. gonygaster* which lacks this plate. The connecting canals seem straight and short (Fig. 4). The shape of the narrow pointed embolus (Fig. 3) separates *T. nigerrima* from *T. gonygaster*.

Records. *Ecuador. Azuay:* Cuenca, 3 Apr. 1942, ♀ (H. E., D. L. Frizzell). *Peru. Cuzco:* Machu Picchu, 3000 m elev., 6 Mar. 1947, 2 ♂ (J. C. Pallister).

Theridula multiguttata Keyserling

Figures 1, 2. Map 3

Theridula multiguttata Keyserling, 1886, Die Spinnen Amerikas, Theridiidae, 2: 258, pl. 21, fig. 306, ♀. Female holotype from Blumenau, [Santa Catarina], Brazil, in the British Museum (Natural History); examined.

The shorter straight connecting ducts (Fig. 4) separate this species from *T. gonygaster*.

Map 3. Distribution of *Theridula puebla* Levi, *T. casas* Levi, *T. nigerrima* (Petrunkévitch), and *T. multiguttata* Keyserling.

Record. Brazil. Pernambuco: Recife (in the Senckenberg Museum).

Paratheridula Levi

Paratheridula Levi, 1957, Trans. Amer. Microscop. Soc., 76:105. Type species by original designation, *Mysmena quadrimaculata* Banks [= *Paratheridula perniciosus* (Keyserling)].

Carapace as in *Theridion*, not modified. Chelicerae with two teeth on anterior margin, a small tooth on posterior of female. First leg longest, patella and tibia 1.3 to 1.4 times carapace length. Abdomen subspherical and without colulus. Male palpus very simple without conductor, median apophysis or radix, and having only a basal hematocha.

The single species known is widely distributed; it is suspected that it is introduced.

Paratheridula perniciosus (Keyserling)

Map 4

Theridium perniciosum Keyserling, 1886, Die Spinnen Amerikas, Theridiidae, 2(2): 233, pl. 20, fig. 288, ♀. Female type from Blumenau, [Est. Santa Catarina], Brazil, in the British Museum (Natural History); examined.

Map 4. Distribution of *Paratheridula perniciosus* (Keyserling).

Mysmena quadrimaculata Banks, 1896, Trans. Amer. Entomol. Soc., 23: 66.
Female holotype from Punta Gorda, Florida, in the Museum of Comparative Zoology.

Paratheridula quadrimaculata,—Levi, 1957, Trans. Amer. Microscop. Soc., 74: 106, figs. 1-6, map.

Distribution. Gulf states, Mexico, Central America, West Indies, South America to Chile, possibly pantropical.

Additional records. *Mexico.* *San Luis Potosí:* Valles, July 1956 (W. J. Gertsch, V. Roth). *Cuba.* *Villas:* Soledad. *Bahama Island.* New Providence (J. Greenway). *Ecuador.* *Napo-Pastaza:* Río Topo, June 1943 (H. E., D. L. Frizzell). *Peru.* *Junín:* San Ramón, 800 m (H. W. Levi). *Brazil.* *Pernambuco:* Recife. *Chile.* *Osorno:* Valley Forest, 18 km W of Purrarque, Jan. 1951 (E. S. Ross, A. E. Schlinger); 10 km E of Puyehue, Jan. 1951 (E. S. Ross, A. E. Schlinger).

REFERENCES CITED

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