

A COMB-FOOTED SPIDER, *ACHAEARANEA TABULATA*, NEW TO THE FAUNA OF CANADA (ARANEAE: THERIDIIDAE)

Among the nearly 100 species of comb-footed spiders recorded in Canada (Hackman 1954; Dondale 1979; West et al. 1984, 1988; Aitchison-Benell & Dondale 1990; Bélanger & Hutchinson 1992; L. Hollett, unpublished data) several are regarded as introductions from overseas. These include *Achaearanea tepidariorum* (C. L. Koch), *Enoplognatha ovata* (Clerck), *Steatoda bipunctata* (L.), *S. castanea* (Clerck), *S. triangularis* (Walckenaer), and *Theridion bimaculatum* (L.). *Enoplognatha ovata* lives mainly in deciduous shrubs and trees, and *T. bimaculatum* occupies the herb layer of fields, marshes and bogs. The others are found mainly or entirely in association with buildings.

The purpose of this paper is to report yet another introduced theridiid spider, *Achaearanea tabulata* Levi, in Canada based on the following specimens deposited in the Canadian National Collection of Arachnids, Ottawa: 1 ♂, Ottawa, Ontario (45°25'N, 75°42'W), August 1987, at rear of suburban house (C. D. Dondale); 5 ♂ 3 ♀, Carleton Place, Ontario (45°08'N, 76°09'W), June-August 1993, in garage or in log pile in field (C. D. Dondale); 3 ♂ 3 ♀, Nepean, Ontario (45°20'N, 75°52'W), July 1993, in garage (J. H. Redner); 5 ♂ 8 ♀, Aylmer, Québec (45°24'N, 75°51'W), July 1990-September 1992, in or on house and shed, or in pitfall traps placed in lawn near house (L. LeSage); 2 ♀, Fredericton, New Brunswick (45°58'N, 66°39'W), September 1993, on house (C. D. Dondale). The above are the first specimens of *A. tabulata* from North America since the publication of Levi's (1980) description of the species.

Levi's (1980) description of *A. tabulata* was based on a single female collected in late August 1976 on an outdoor table at Richmond Hill, Long Island, New York. More recently, Yoshida (1983) described *A. nipponica* from a series of three males and six females collected in Yamagata Prefecture, Japan, between June and August 1971-78. Yoshida also noted the "long tubular retreat (its entrance opens downwards) which is covered with pieces of twig, grass, stone or earth". Paik (1986) recorded *A. nipponica* from Dagelet Island, Korea. Paik & Kang (1988) subsequently proposed

A. nipponica as a junior synonym of *A. tabulata*, a synonymy with which we are in full agreement after studying the published descriptions and illustrations. Moritz et al. (1988) and Knoflach (1991) reported *A. tabulata* from urban areas of Berlin, Germany, and Innsbruck, Austria, respectively; both these authors included data on the retreats of juvenile and mature individuals, and on the food captured. Excellent illustrations of both sexes of *A. tabulata* are found in the papers by Yoshida (1983), Paik (1986), Moritz et al. (1988), and Knoflach (1991).

Adults of *A. tabulata* closely resemble those of *A. tepidariorum* in general shape, choice of web site, and orientation within the web, and they run to *tepidariorum* in Levi's (1963) key to American species of *Achaearanea*. They differ from the latter in being smaller and darker, and in the external genitalia. In samples of 11 females, none of the measured characters except total body length overlapped in range (Table 1). In similar samples of males, only length of basitarsus I showed no overlap, but the other characters were statistically different at the 0.1 level of significance. In *tabulata* males, the terminal part of the palpal conductor is slender, and the embolus base encircles a membranous area on the ventral side of the tegulum. In *tepidariorum* males, on the other hand, the conductor is distinctively broadened toward its tip, and the embolus base encircles a sclerotized area. In *tabulata* females, the epigynal atrium is shallow, is angular in outline, and has low diverging ridges; the spermathecae are double. In *tepidariorum* on the other hand, the atrium is deeper and transversely elliptical, the ridges are higher and narrower, and the spermathecae single.

The collection of adults of both sexes in pitfall traps at Aylmer, Québec suggests considerable movement along the ground. Adults of *tepidariorum* are seldom if ever caught by this collecting method. We have observed the peculiar retreat made by large juveniles and by females of *tabulata* and described by Yoshida (1983), Moritz et al. (1988), and Knoflach (1991). It is made of bits of debris and prey remains, and is suspended near the middle of the web. The female

Table 1.—Measurements (in mm) of body parts in *Achaearanea tabulata* and *A. tepidariorum* in Ontario and Québec. Sample size for each character and sex = 11.

	Total length	Length of carapace	Width of carapace	Length of femur I	Length of patella-tibia I	Length of basitarsus I	Length of distitarsus I
<i>A. tabulata</i>							
Males							
Range	2.60–3.64	1.28–1.64	1.04–1.36	2.44–3.28	2.40–3.32	2.36–3.24	0.84–1.12
Mean ± SD	3.02 ± 0.31	1.44 ± 0.11	1.27 ± 0.08	2.89 ± 0.32	2.88 ± 0.31	2.79 ± 0.32	0.97 ± 0.09
Females							
Range	3.28–5.28	1.24–1.76	1.16–1.60	2.28–3.24	2.12–3.08	2.00–3.20	0.80–1.04
Mean ± SD	4.18 ± 0.63	1.53 ± 0.16	1.39 ± 0.15	2.73 ± 0.35	2.58 ± 0.34	2.54 ± 0.40	0.91 ± 0.07
<i>A. tepidariorum</i>							
Males							
Range	3.40–4.60	1.52–2.20	1.32–1.68	3.20–4.72	3.20–4.76	3.48 ± 4.96	0.92–1.40
Mean ± SD	4.00 ± 0.43	1.80 ± 0.21	1.49 ± 0.13	3.89 ± 0.57	3.89 ± 0.55	4.23 ± 0.56	1.20 ± 0.13
Females							
Range	4.96–7.92	1.84–2.36	1.64–2.28	4.00–5.64	3.84–4.60	4.04–5.24	1.16–1.44
Mean ± SD	6.06 ± 0.81	2.10 ± 0.18	1.87 ± 0.23	4.47 ± 0.50	4.16 ± 0.30	4.56 ± 0.40	1.32 ± 0.10

is often found inside the retreat, sometimes with one or more males in close proximity. Later, the egg sac or sacs are placed there. No such retreat has been reported for *tepidariorum*. The “tubular” shape mentioned by Yoshida (1983) was not seen by Moritz et al. (1988), nor by us. The original source of *A. tabulata* is unknown. The spider is almost certainly introduced into both North America and Europe, given the state of knowledge of the Theridiidae in both continents. Japan and Korea are possibilities, but the source could be some other country or countries in southeast Asia. It is likewise difficult to predict the actual range of *A. tabulata*; the spider may occur more widely than we know, owing to its similarity to *A. tepidariorum*. Collectors and curators should examine their material of the latter species for actual specimens of *tabulata*. Searches in garages, tool sheds, and similar places may also yield specimens, and pitfall traps placed near buildings may be fruitful.

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