



## Review of the Nearctic genus *Scyletria* Bishop & Crosby (Araneae, Linyphiidae), with a transfer of *S. jona* to *Mermessus* O. Pickard-Cambridge

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### Abstract

The genus *Scyletria* Bishop & Crosby 1938 is reviewed and reduced to its type species, *Scyletria inflata* Bishop & Crosby 1938, by transfer of the only other species in the genus, *Scyletria jona* Bishop & Crosby 1938, to *Mermessus* O. Pickard-Cambridge 1899. The male of *S. inflata* is re-described, the female of *M. jona* (Bishop & Crosby 1938) **new combination** is described for the first time, and the male is re-described.

**Key words:** *Cephalothus*, distribution, *Eperigone*, Erigoninae, North America, penny spider, *Savignia*, spider taxonomy

### Introduction

Bishop & Crosby (1938) erected the genus *Scyletria* for two erigonine linyphiid spiders, *Scyletria jona* and the type species *S. inflata*. The two species were placed together in the genus *Scyletria* “because of the similarity in the structure of the embolic division of the male palpus” (Bishop & Crosby 1938:89). However, we find that the two species differ significantly and that it is necessary to transfer *S. jona* to the genus *Mermessus* O. Pickard-Cambridge 1899, creating the new combination *Mermessus jona* (Bishop & Crosby 1938). The transfer of this species is based on the generic characterization of *Eperigone* Crosby & Bishop 1928 by Milidge (1987) and of *Mermessus* by Miller (2007), who synonymized *Eperigone* under *Mermessus*.

Paquin & Dupérré (2003) illustrated both sexes of *S. inflata* and Dupérré [*sic*] *et al.* (2006) formally described the female of *S. inflata*, noting that the female paratype of *Savignia birostra* (Chamberlin & Ivie 1947) strongly resembled that of *S. inflata*. We examined the paratype specimen of *S. birostra* and conclude that it was incorrectly identified and is a female specimen of *S. inflata*.

### Methods

Specimens were examined in 95% ethanol under a Leica MZ95 dissection microscope or a Wild Leitz M5A dissection microscope. For illustrations, specimens were examined in 70% ethanol under a SMZ-U Nikon dissection microscope. A Nikon Coolpix 950 digital camera attached to the microscope was used to photograph all the structures to illustrate. The digital photos were used to trace proportions and the illustrations were detailed and shaded by referring to the structure under the microscope. For the study of the embolic division, the male palps were placed for ~10 minutes in warm KOH, washed in 70% alcohol, mounted on a slide in lac-

tic acid and observed under an AmScope XSG Series T-500 compound microscope. Female genitalia were excised using a sharp entomological needle and transferred to lactic acid to clear non-chitinous tissues. A temporary lactic acid mount was used to examine the genitalia under the compound microscope. The structure was photographed and illustrated as explained above. All measurements were made with a micrometer ruler fitted to the eyepiece of the microscope. When possible, we measured at least 5 individuals of each sex. Holding locations for the examined materials are indicated in parenthesis at the end of each record. Specimens examined were from the Canadian National Collection of Insects, Arachnids, and Nematodes, Ottawa, ON, Canada (CNC), the personal collection of the first author (LBP), the American Museum of Natural History, New York, NY, USA (AMNH), the Denver Museum of Nature and Science, Denver, CO, USA (DMNS), the Field Museum of Natural History, Chicago, IL, USA (FMNH), or the United States National Museum, Washington, DC (USNM). For each location, the latitude and longitude (indicated in brackets) are given in decimal degrees and should be considered approximate. Abbreviations used for the terminology of the male and female genitalia follow Hormiga (2000), Miller & Hormiga (2004), and Miller (2007): ARP, anterior radical process; AT, anterior tooth of radix; CD, copulatory duct; DP, dorsal plate of epigynum; DSA, distal suprategular apophysis; E, embolus; EM, embolic membrane; FD, fertilization duct; MT, median tooth of radix; P, paracymbium; PT, protegulum; PTA, palpal tibial apophysis; R, radix; R Out, radix outgrowth; S, spermatheca; SD, sperm duct; SPT, suprategulum; ST, subtegulum; T, tegulum; TmI, position of trichobothrium on tibia I; TmIV, position of trichobothrium on metatarsus IV; TP, tailpiece of radix; VP, ventral plate of epigynum.

## Taxonomy

### Family Linyphiidae Blackwall 1859

#### Genus *Scyletria* Bishop & Crosby 1938

*Scyletria* Bishop & Crosby 1938:89 (*part*); Buckle *et al.* 2001:141 (*part*); Draney & Buckle 2005:127 (*part*); Platnick 2007 (*part*).

**Type species.** *Scyletria inflata* Bishop & Crosby 1938, by original designation.

**Included species.** *S. inflata* Bishop & Crosby 1938. The only other species originally included was *S. jona* Bishop & Crosby 1938, which is here transferred to *Mermessus* (see below).

**Diagnosis.** See the below species diagnosis of *S. inflata*.

#### *Scyletria inflata* Bishop & Crosby 1938

(Figs. 1–4, 12)

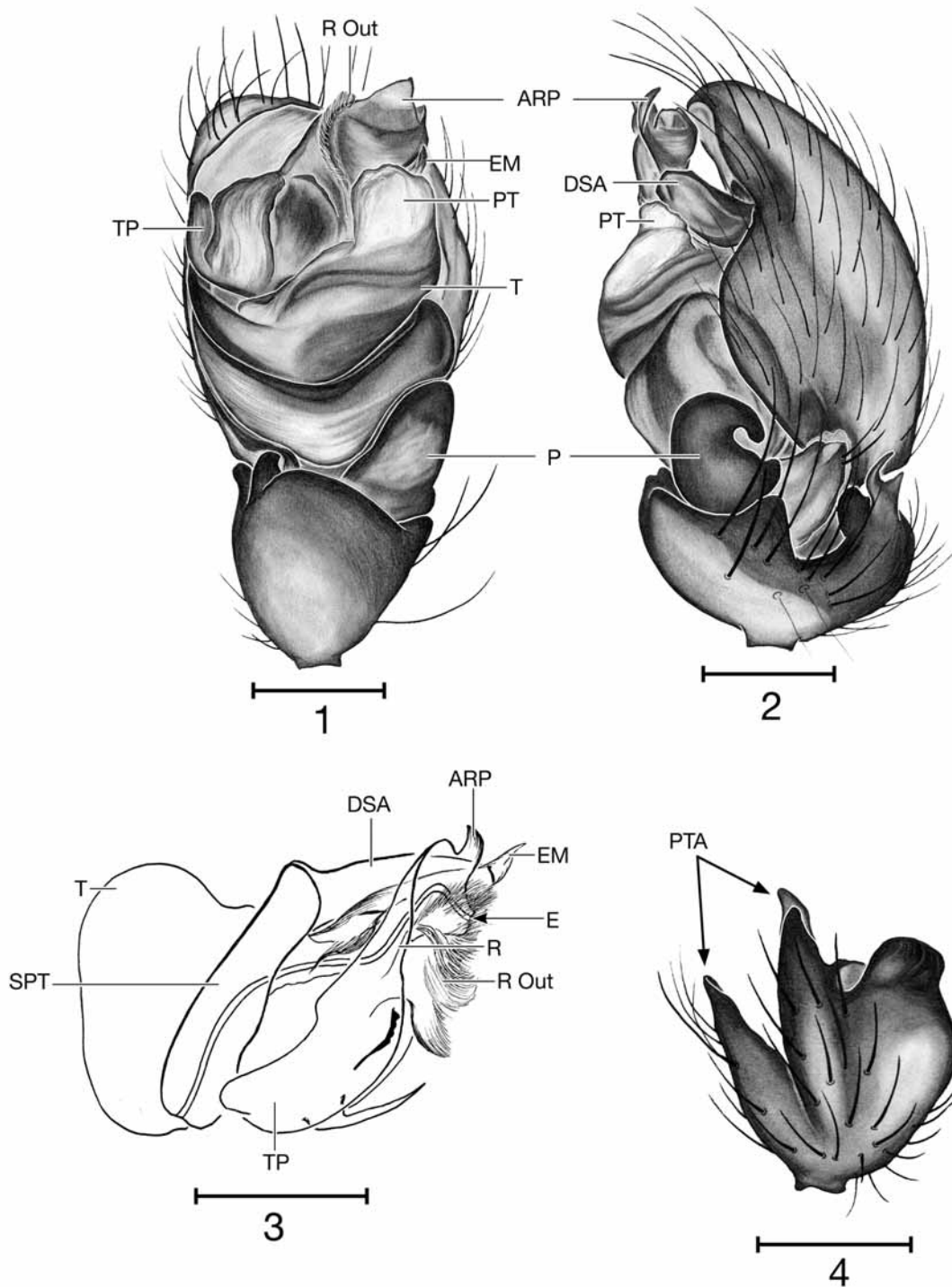
*Scyletria inflata* Bishop & Crosby 1938:89, Pl. 7, Figs. 72–74 (male); Bélanger & Hutchinson 1992:38; Aitchison-Benell & Dondale 1992:224; Paquin *et al.* 2001:19; Paquin & Dupérré 2003:118, Figs. 1233–1235 (male, female); Draney & Buckle 2005:155, Figs. 35.276, 35.308 (male); Dupérré [*sic*] *et al.* 2006:152, Figs. 20, 21 (female).

*Cephaethus birostrum* Chamberlin & Ivie 1947:30, Fig. 21. Female paratype only, misidentified.

*Savignia birostra*: Buckle *et al.* 2001:139 (*part*); Platnick 2007 (*part*).

**Type specimens.** Holotype ♂, EXAMINED. **UNITED STATES OF AMERICA: New York:** Raquette Lake, [43.9°N, 74.6°W], June 11, 1927, coll. C.R. Crosby (AMNH). Specimen in poor condition, with all legs from femur to tarsus missing, left palpus missing, and cephalothorax separated from abdomen.

Paratype ♀, *Cephaethus birostrum*. EXAMINED. **Alaska:** Matanuska [61°N, 149°W], 23 May, 1945, colls. J.C. Chamberlin & Alan Linn (AMNH).



**FIGURES 1–4.** *Scyletria inflata* Bishop & Crosby 1938. 1. Male palpus, ventral view; 2. Male palpus, retrolateral view; 3. Expanded male palpus, schematic illustration; 4. Male palpal tibia, dorsal view. Scale bars = 0.1 mm.

**Other material examined. UNITED STATES OF AMERICA: North Carolina:** Summit of Mt. Mitchell [35.77°N, 82.26°W], 12 October 1923, 3 ♂♂ (AMNH). **CANADA: Alberta:** Elkwater Lake, Cypress Hills Provincial Park [49.65°N, 110.30°W], 7 August 1978, Sedges, coll. E.E. Lindquist, 1 ♀ (CNC); Elkwater Lake, Cypress Hills Provincial Park [49.65°N, 110.30°W], 5–15 August 1978, coll. E.E. Lindquist, 1 ♀ (CNC). **Manitoba:** Cowan Creek, Duck Mountain Provincial Park [52.02°N, 100.65°W], 2 June 1980, emergence trap, coll. Flanagan, 1 ♀ (CNC); Riding Mountain National Park: Swanson Spring [50.68°N, 99.82°W], 20 June 1979, coll. D.B. Lyons, 1 ♂ (CNC); Riding Mountain National Park: Jackfish Creek

[50.75°N, 100.82°W], 15 August 1979, sedges, colls. J & M Redner, 1 ♀ (CNC); Riding Mountain National Park: Bison enclosure [55.47°N, 98.45°W], 30 May–19 June 1979, coll. D.B. Lyons, 1 ♂ (CNC); Riding Mountain National Park: North Shore Drive [50.65°N, 99.97°W], 2 August 1979, coll. S.J. Miller, 2 ♂♂ (CNC); Riding Mountain National Park: Wasagaming [50.65°N, 102.62°W], 29 August 1979, moss, colls. J. & M. Redner, 1 ♂ 1 ♀ (CNC). **New Brunswick:** 25 km SW of Bathurst [47.62°N, 65.68°W], 19–30 June 1984, Balsam Fir foliage, coll. B.L. Cadogan, 1 ♀ (CNC); Green River, 30 miles N of Edmunston [47.32°N, 68.15°W], 2–9 July 1963, litter, coll. T.R. Renault, 3 ♂♂ (CNC); Priceville, 12 miles N of Boiestown [46.52°N, 66.28°W], 22 August 1968, under stone, coll. T.R. Renault, 1 ♀ (CNC); Green River, 30 miles N of Edmunston [47.32°N, 68.15°W], 26 June 1968, coll. T.R. Renault, 1 ♀ (CNC); Fredericton [45.97°N, 65.45°W], 9–12 July 1970, Balsam Fir foliage, coll. T.R. Renault, 1 ♂ (CNC). **Newfoundland:** The Arches [50.12°N, 57.65°W], 7 August 1984, in grass and moss, coll. G. Costello, 1 ♀ (CNC). **Northwest Territories:** Fort Simpson [61.82°N, 121.35°W], 15 June 1972, litter, coll. A. Smetana, 1 ♂ 1 ♀ (CNC). **Nova Scotia:** Cape Breton Highlands National Park: Lone Shieling [46.82°N, 60.80°W], pan trap, 18 June–11 July 1983, coll. R. Vockeroth, 1 ♂ (CNC); Cape Breton Highlands National Park: sandy beach [46.82°N, 60.80°W], 22 June 1983, coll. Y. Bousquet, 1 ♀ (CNC); Cape Breton Highlands National Park: Pleasant Bay [46.82°N, 60.80°W], 6–17 June 1984, coll. L. Masner, 1 ♂ (CNC); Coldbrook, Kings County [45.07°N, 64.58°W], 8 July 1958, apple foliage, coll. C.D. Dondale, 1 ♀ (CNC). **Ontario:** Spruce River, 42 miles N of Hurkett [49.28°N, 88.85°W], 17 August 1972, moss, coll. E.E. Lindquist, 1 ♀ (CNC). **Québec:** St. Méthode, near Lac St. Jean [48.73°N, 72.42°W], 13 July 1982, litter, colls. C.D. Dondale & J. Redner, 1 ♀ (CNC); St. Hippolyte [45.93°N, 79.02°W], 10 June 1975, coll. R. Rochon, 1 ♀ (CNC); St. Hippolyte [45.93°N, 79.02°W], 25 June 1975, coll. R. Rochon, 1 ♂ (CNC); Îles de la Madeleine: Grosse Île [47.5°N, 61.67°W], 1 July 1985, sedges, coll. L. LeSage, 1 ♀ (CNC).

**Diagnosis.** It is difficult to diagnose *Scyletria* properly until its nearest relatives are known. The data available in older original descriptions are often insufficient and do not provide enough details with regard to the embolic division configuration and sclerites. Furthermore, as Miller & Hormiga (2004:425) remarked, "Identification of sclerites in the linyphiid embolic division appears to be more difficult than first thought." As such, the diagnosis and the description of the genus *Scyletria* are represented by the type species characteristics provided below.

*Scyletria inflata* is distinguished from other erigonine species by the following characters: male palpal tibia with two apophyses separated by a deep fissure (Fig. 4); embolic division with long tailpiece bearing a sharp, transparent spine basally (Fig. 3), radix folded, bearing a large outgrowth (R Out) with fringed edges (Figs. 1, 3). Epigynum characterized by a pair of blunt prominences separated by a deep indentation (Dupéré [sic] et al. 2006: Figs. 20–21).

**Description.** *Male:* Male from Cape Breton Highlands National Park, Nova Scotia, Canada: total length 1.91 mm; carapace 0.91 mm long, 0.62 mm wide. Carapace dark orange, evenly convex at sides, steeply ascending from posterior margin to dorsal groove, then convex to posterior eye row, lacking lobes and pits; clypeus somewhat protruding. Posterior eye row procurved; anterior eye row recurved; eyes subequal in diameter; anterior lateral eyes and posterior lateral eyes touching. Chelicerae yellow, with about 18 stridulatory ridges; promargin with 5 small teeth, and retromargin with 3 denticles. Sternum mid-brown, shiny. Abdomen dark grey. Legs yellowish; tibial dorsal macrosetae 2221; TmI circa 0.40; TmIV absent; coxa IV with stridulatory pick. Palpal tibia black, with 2 dorsal apophyses of about equal length (Fig. 4); mesal of these apophyses bifid at tip; apophyses separated by deep fissure (Fig. 4). Paracymbium broad, flat, with distal hook, proximal end bearing two setae (Fig. 2); embolic division with radix and tailpiece without break (Fig. 3); radix long and folded, with large outgrowth (R out) with fringed edges (Fig. 3); tailpiece long, sac-shaped, with shallow excavation on mesal margin, bearing a long, sharp, transparent spine basally (Fig. 3); embolus short and flat; anterior radical process and embolic membrane present (Figs. 1, 2).

*Female:* Female from Ste. Méthode, Québec, Canada: total length 1.83 mm; carapace 0.87 mm long, 0.46

mm wide. Carapace, sternum, abdomen and legs essentially as in male. Cheliceral retromargin with 10 minute denticles. A full description with illustrations of the female is given in Dupéré [*sic*] *et al.* (2006: Figs. 20–21).

**Variation.** *Males:* Six males gave the following (mean  $\pm$  1 SD): total length  $1.64 \pm 0.16$  mm; carapace  $0.81 \pm 0.06$  mm long,  $0.60 \pm 0.03$  mm wide. Carapace dull yellow to dark yellow, dull reddish in some specimens. Sternum often suffused with dark grey. Abdomen usually dark. Legs yellow to pale orange.

*Females:* Five females gave the following (mean  $\pm$  1 SD): total length  $1.65 \pm 0.16$  mm; carapace  $0.68 \pm 0.05$  mm long,  $0.48 \pm 0.05$  mm wide (from Dupéré [*sic*] *et al.* 2006). See Dupéré [*sic*] *et al.* 2006 for additional details.

**Natural history.** Captured in a variety of habitats (summarized in Dupéré [*sic*] *et al.* 2006), the species is an epigeal spider from the boreal region of North America with extension southward in the Appalachian Mountains. Little else is known of its natural history.

**Distribution.** Fig. 12. **USA:** Alaska, North Carolina, New York. **CANADA:** Alberta, Manitoba, New Brunswick, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Québec, Saskatchewan.

### ***Mermessus jona* (Bishop & Crosby 1938) new combination**

(Figs. 5–12)

*Scyletria jona* Bishop & Crosby 1938:90, pl. 7, figs. 75, 76 (male); Kaston 1976:25 (male, not female); Buckle *et al.* 2001:141; Draney & Buckle 2005:153, fig. 35.293 (male); Platnick 2007.

**Type specimen.** Holotype  $\sigma$ , TYPE SPECIMEN LOST. **UNITED STATES OF AMERICA: New York:** Ithaca, [42.4°N, 76.5°W], 17 May 1924, coll. “in stomach of brook trout by H. J. Pack” (AMNH). Missing from type vial and presumed lost and/or destroyed.

**Other material examined.** **UNITED STATES OF AMERICA: Connecticut:** Middlesex, CT [41.52°N, 72.71°W], 7 Feb. 1951, coll. PFB [P. F. Bellinger], det. Kaston 1951, 1  $\sigma$  (USNM). **Illinois:** Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 30 May–12 June 1996, carrion trap (squid), elev. 215 m, colls. “M. Thayer *et al.*,” det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 12–26 June 1996, mini-FIT, elev. 215 m, colls. “M. Thayer *et al.*,” det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 3–17 April 1997, pitfall trap, elev. 215 m, colls. P. Parrillo & J. Pulizzi, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 17 April–1 May 1997, pitfall trap, elev. 215 m, coll. P. Parrillo, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, north site [41.68°N, 87.87°W], 16–30 May 1997, mini-FIT, elev. 215 m, colls. M. Thayer, A. Varsek, & J. Louderman, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, north site [41.68°N, 87.87°W], 17 April–1 May 1997, mini-FIT, elev. 215 m, colls. M. Thayer, A. Varsek, & J. Louderman, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, north site [41.68°N, 87.87°W], 17 April–1 May 1997, pitfall trap, elev. 215 m, coll. P. Parrillo, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, north site [41.68°N, 87.87°W], 1 May 1997, Berlese funnel, log & leaf litter, elev. 215 m, colls. M. Thayer, A. Varsek, & J. Louderman, det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Cherry Hill Woods (W of), NW of Palos Park, north site [41.68°N, 87.88°W], 27 June–10 July 1997, pitfall trap, elev. 210 m, coll. P. Parrillo, det. M. Draney, 2  $\sigma\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 26 May–9 June 1998, pitfall trap, elev. 215 m, colls. “M. Thayer *et al.*,” det. M. Draney, 1  $\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 31 March–14 April 1999, pitfall trap, elev. 215 m, colls. J. Louderman & A. Antov, det. M. Draney, 2  $\sigma\sigma$  (FMNH); Cook Co., Swallow Cliff Woods, NW of Palos Park, south site [41.68°N, 87.86°W], 31 March–14 April 1999, pitfall trap, elev. 215 m, colls. J. Louderman & A. Antov, det. M. Draney, 24  $\sigma\sigma$  (FMNH); Cook Co., Cherry Hill Woods (W of), NW of Palos Park, north site [41.68°N, 87.88°W], 14 April 1999, Berlese funnel, log & leaf litter, elev. 210 m, colls. M. Thayer

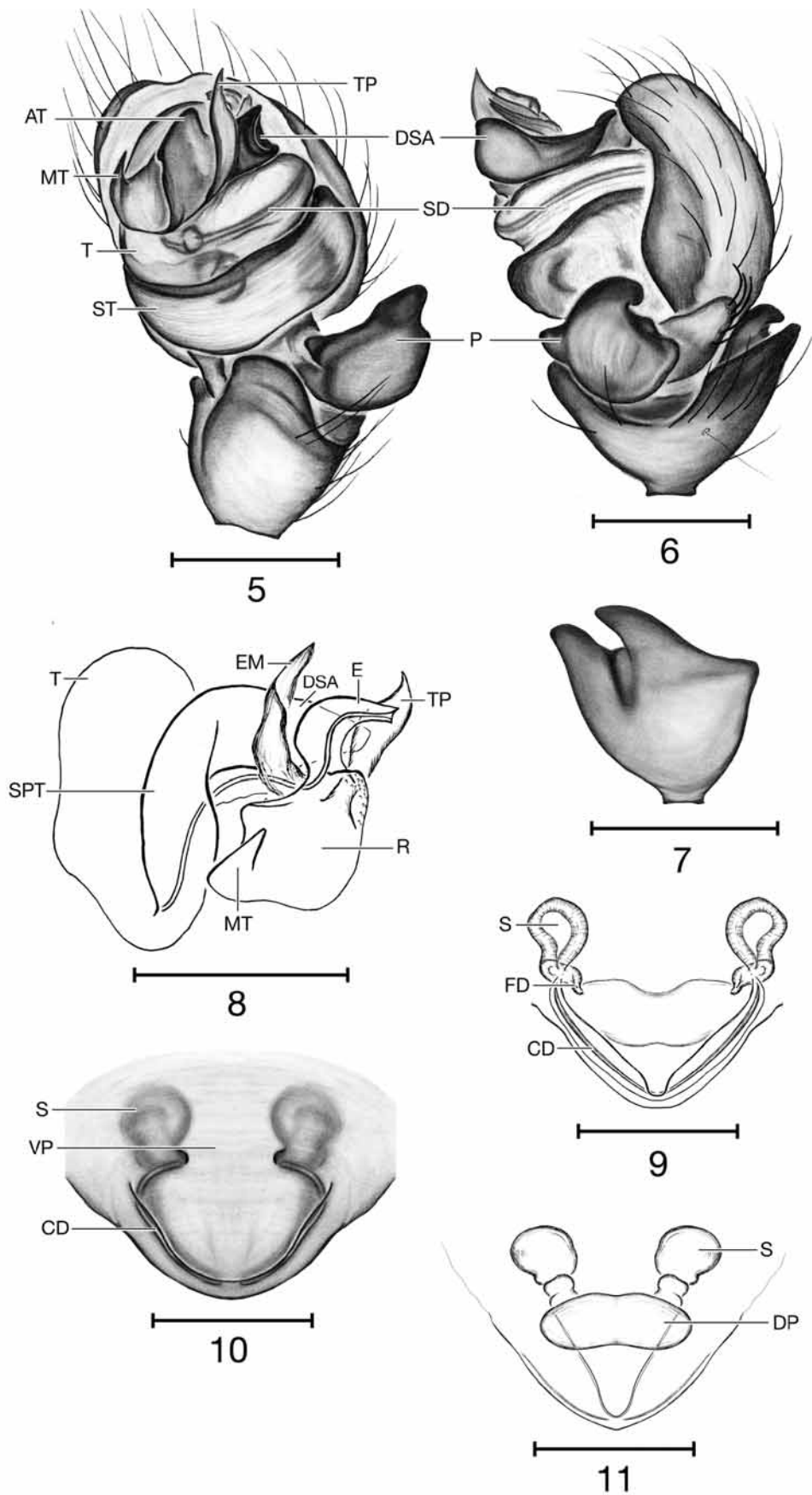
& A. Varsek, det. M. Draney, 1 ♂ (FMNH). **New York:** Jamesville, Onondaga Co., 3 miles N of Route 173 [42.98°N, 76.07°W], 9 May 1981, old field, coll. D. Sillman, 4 ♂♂ 3 ♀♀ (CNC). **Ohio:** Bath Nature Preserve, north of Akron [41.18°N, 81.65°W], 14–28 May 2003, plot B1 trap 3, from pitfall in grassland, coll. L.B. Patrick, det. C.D. Dondale & L.B. Patrick, 1 ♂ 1 ♀ (CNC); Bath Nature Preserve, Bath Township, Summit Co. [41.18°N, 81.65°W], 14–28 May 2003, plot B2 trap 4, from pitfall in grassland, coll./det. L.B. Patrick, 1 ♂ (LBP); Bath Nature Preserve, Bath Township, Summit Co. [41.18°N, 81.65°W], 30 June–14 July 2005, plot B1 trap 2, pitfall trap, upland old-field grassland, coll./det. L.B. Patrick, 2 ♂♂ (LBP); Bath Nature Preserve, Bath Township, Summit Co. [41.18°N, 81.65°W], 14–28 May 2003, plot B4 trap 1, pitfall trap, upland old-field grassland, coll./det. L.B. Patrick, 1 ♀ (LBP); Bath Nature Preserve, Bath Township, Summit Co. [41.18°N, 81.65°W], 13–27 July 2004, pitfall trap, upland old-field grassland, coll./det. L.B. Patrick, 3 ♂♂ (DMNS); Bath Nature Preserve, Bath Township, Summit Co. [41.18°N, 81.65°W], 14–28 May 2003, pitfall trap, upland old-field grassland, coll./det. L.B. Patrick, 3 ♂♂ (AMNH). **CANADA: Ontario:** 18 km E of Gananoque [44.33°N, 76.17°W], 12 May–9 June 1977, pitfall trap in old field, colls. C.D. Dondale & J. Redner, 5 ♂♂ (CNC); Wainfleet Marsh, 8 km S of Welland [42.92°N, 79.3°W], 14–20 June 1988, coll. A. Stirling, 1 ♂ (CNC).

**Etymology.** The type specimen was found in the stomach of a brook trout. The specific epithet is a biblical reference to the tale of Jonah and the whale, making it a proper name in apposition. Thus, the apparent feminine gender of the specific epithet does not change with the masculine genus *Mermessus*.

**Diagnosis.** This species is properly transferred to the genus *Mermessus* based on the generic diagnosis by Miller (2007), wherein males have a prolateral excavation of the radix and a free ventrally recurved tailpiece (Figs. 5, 8), an embolic division that is as tall as it is long, a median tooth of the radix (Fig. 8), the absence of anterior radical process, lack of a series of teeth around the margin of the carapace common to the closely related genus *Erigone*, and no palpal patellar tooth. Females do not have the terminally divided ventral plate of the epigynum (Fig. 10) typical of most species of *Mermessus* (Millidge, 1987; Miller, 2007), but do share an undivided ventral plate with other, atypical epigyna within the genus (e.g., *M. entomologicus* (Emerton 1911), *M. index* (Emerton 1914), and *M. indicabilis* (Crosby & Bishop 1928); see Miller, 2007 and Millidge, 1987).

Distinguishing this species from other species of *Mermessus* are the deep groove of the tibial apophysis that potentially gives the appearance of two apophyses (Fig. 7), the large and quadrate paracymbium (Figs. 5, 6), the long copulatory ducts creating a “U” shape and terminating at the spermathecae in a short lateral turn towards the midline of the epigynum (Fig. 10), and the extremely small size.

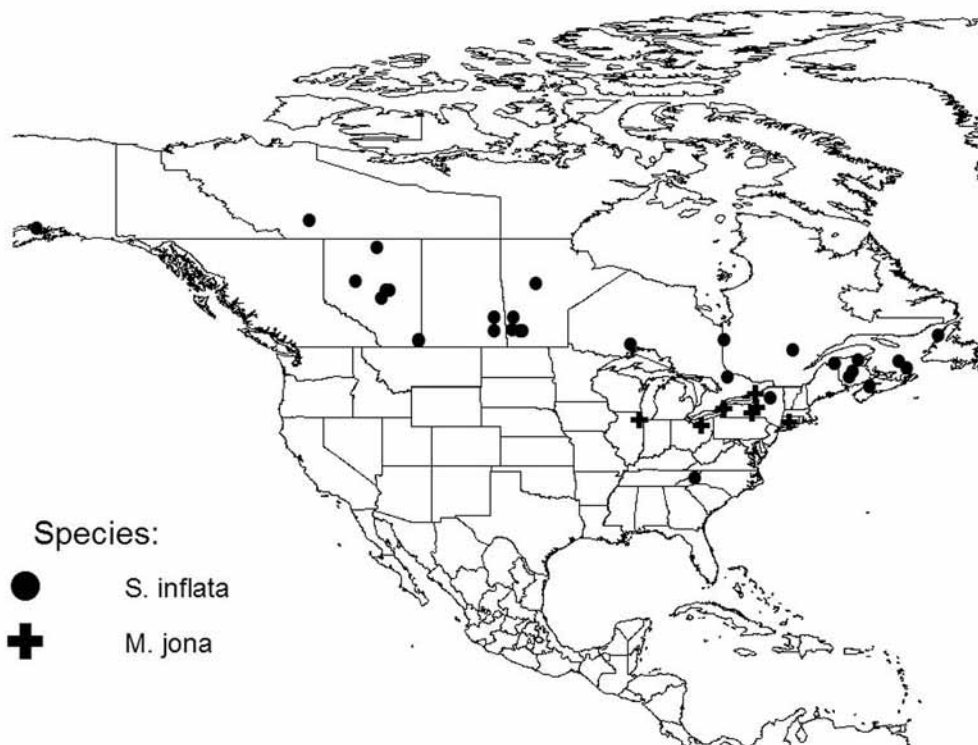
**Description.** *Male:* from the Bath Nature Preserve, Summit Co., Ohio, USA: total length 1.08 mm; carapace 0.48 mm long, 0.33 mm wide; carapace smooth, shiny, lacking pits and lobes, dull yellow with diffuse pattern of very light orange radiating from midline; anterior portion around eye region and clypeus slightly darker than remaining carapace; 3 erect setae along midline; sternum strongly concave and light yellow with sparse setae; endites with sparse setae on ventral surface, and blunt and lightly sclerotized along anterior margin. In lateral view, carapace level in anterior two-thirds, then gently sloping to pedicel in posterior third; carapace margin whitish along posterior half. Anterior eye row procurved, with eyes closely situated together; anterior median eyes small, just less than half the diameter of anterior lateral eyes. Anterior lateral eyes and posterior lateral eyes with reflective tapetum, while anterior median eyes and posterior median eyes apparently lack a tapetum. Posterior eye row slightly procurved; posterior median eyes large, oval, and separated by at least the diameter of anterior median eyes; anterior lateral eyes and posterior lateral eyes nearly touching. Clypeus with small, erect seta just below anterior median eyes. Chelicerae light orange with sparse setae, each with a single lightly sclerotized spur on antero-prolateral face in distal fourth of the chelicera, and with 5–8 stridulatory ridges; cheliceral promargin and retromargin each with five denticles. Abdomen unicolor, nearly white, with short sparse setae; colulus one quarter the length of anterior spinnerets; posterior lateral spinnerets and anterior lateral spinnerets conical, with posterior lateral spinnerets subequal in length to anterior lateral spinnerets. Legs dull yellow, slightly darkening distally; coxa IV with stridulatory pick situated distally on retrolateral side; TmI 0.45; TmIV absent; dorsal tibial macrosetae 2221.



**FIGURES 5–11.** *Mermessus jona* (Bishop & Crosby 1938) **new combination**. 5. Male palpus, ventral view; 6. Male palpus, retrolateral view; 7. Male palpal tibia, dorsal view; 8. Expanded male palpus, schematic illustration; 9. Spermathecae, ventral view; 10. Epigynum, ventral view; 11. Spermathecae, dorsal view. Scale bars = 0.1 mm.

Femur and patella of palpus normal and light yellow with stridulatory pick at base of femur; tibia darker than patella; tibia (Fig. 7), cup-shaped, with dorsal portion rising to a heavily sclerotized apophysis that terminates in two blunt teeth (prolateral view) subequal in length. In mesal view, tibia with a deep groove which runs from the separation between the two blunt teeth of the tibial apophysis to the base of the cymbium. Paracymbium large, quadrate, smooth, with distinct spur on dorsal margin, with blunt hook on ventral margin, and with proximal end bearing five setae (Figs. 5, 6). Embolus lightly sclerotized, with its blackened tip protected by a translucent embolic membrane (Fig. 8). Embolus situated distally on radix (Fig. 8; the “embolic division” in Bishop & Crosby, 1938), radix with mesal tooth (“ventral projection” of Millidge, 1987), and with large hooked tailpiece (“median projection” of Millidge, 1987) (Fig. 5, 8). Lateral to the hooked tailpiece is the heavily sclerotized, spoon-shaped distal suprategular apophysis (Figs. 5, 6), which may easily be confused for a portion of radix.

*Female:* from 18 km E of Gananoque, Ontario, Canada: total length 1.08 mm; carapace 0.42 mm long, 0.35 mm wide. Description is as for the male with the following deviations: chelicerae lacking spurs; cheliceral retromargin with 7 denticles.



**FIGURE 12.** Geographic distribution of *Scyletria inflata* Bishop & Crosby 1938 (filled circles) and *Mermessus jona* (Bishop & Crosby 1938) **new combination** (crosses).

Epigynum (Fig. 10) weakly sclerotized, with copulatory openings situated side-by-side at base of epigynum and barely covered by the undivided ventral plate of epigynum; copulatory ducts well sclerotized and laterally arching away from copulatory openings towards the spermathecae (Figs. 9, 10), terminating at the spermathecae in a short, lateral turn towards midline of the epigynum (Fig. 10). Spermathecae broadly separated and situated anterior to anterior margin of ventral plate (Figs. 9, 10); fertilization ducts oriented mesally. Epigynal dorsal plate small and weakly developed (Fig. 11).

**Variation. Males:** Six males gave the following (mean  $\pm$  1 SD): total length  $1.03 \pm 0.10$  mm; carapace  $0.52 \pm 0.06$  mm long,  $0.39 \pm 0.06$  mm wide. Carapace dull yellow or whitish to light orange; sternum light yellow to whitish with sparse setae.

*Females:* Three females gave the following (mean  $\pm$  1 SD): total length  $1.05 \pm 0.09$  mm; carapace  $0.43 \pm$



0.05 mm long,  $0.33 \pm 0.05$  mm wide.

**Natural history.** Little is known of the natural history of this species. Other than the lost holotype specimen and a few specimens from Illinois, specimens of this species have been caught largely in pitfall traps, generally in open habitats such as grasslands, though the Illinois specimens were caught in a degraded oak savannah. Thus, *M. jona* is likely an epigeal spider of grassland and oak savannah habitats. Nearly all documented specimens are males, leading us to conclude that males are relatively mobile.

**Remarks.** In Draney & Buckle (2005), this species replaces *Scyletria* at couplet 179. *Mermessus jona* keys to "*Eperigone*" index in Millidge's (1987) key. Kaston (1976) reported also capturing female specimens of *M. jona*, which we examined and determined not to be female *M. jona* specimens.

**Distribution.** Fig. 12. Until recently, the species was only known from the type locality in New York, as well as Connecticut (Kaston 1976) and possibly Maryland (Muma 1944), though Muma's material could not be found for verification. Specimens have since been collected in Ohio and Illinois in the USA, as well as in Ontario in Canada.

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