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SHORT COMMUNICATION

Reestablishment of the species *Poeciloneta bellona* (Araneae: Linyphiidae)

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Abstract. *Poeciloneta bellona* Chamberlin and Ivie 1943 is removed from synonymy established by Saaristo and Tanasevitch (2000) and re-described using new and existing specimens from the Rocky Mountains. *Incestophantes calcaratus* (Emerton 1909) is re-described and transfered to *Poeciloneta* Kulczyński 1894 and a lectotype is designated.

Keywords: Synonomy, *Poeciloneta*, *Incestophantes*, lectotype

The genus *Poeciloneta* Kulczyński 1894 is an uncommonly collected genus represented by 16 species worldwide, of which 12 species, including the two discussed in this paper, occur in North America (Platnick 2009). The spiders are found throughout Canada, in the northeastern United States, and in the mountains of the western United States. The spiders are usually collected from low branches and shrubs in coniferous forests.

Tanasevitch (1989) reviewed the palaearctic species in the genus and noted that *Poeciloneta bellona* Chamberlin and Ivie 1943 & *P. canionis* Chamberlin and Ivie 1943, based on the original descriptions, no longer belonged to *Poeciloneta*, but made no further note as to the placement of the two species. Later Saaristo and Tanasevitch (2000) redefined the *Bolyphantes-Poeciloneta* genus group and synonymized *P. bellona* with *I. calcaratus* (Emerton 1909) transferring the two the species to *Incestophantes* based on non-type specimens held at the Museum of Comparative Zoology (MCZ), Harvard University, Cambridge, Massachusetts.

Fresh specimens of *P. bellona* deposited at the Denver Museum of Nature and Science were collected from the Rocky Mountains of Colorado that closely matched Chamberlin and Ivie's (1943) original description and showed clear differences from existing descriptions of *P. calcaratus*. All applicable specimens were examined from the MCZ collection and it was found that no *P. bellona* were in the collection, which may account for the mistaken synonymy made by Saaristo and Tanasevitch. Additional specimens used for descriptions and comparisons came from the arachnid collection of the Denver Museum of Nature and Science, Denver, Colorado (DMNS); the Canadian National Collection, Ottowa, Canada (CNC); and the personal collection of Don Buckle, Saskatoon, Saskatchewan, Canada (DB). Inquiries were made as to the location of type material at the American Museum of Natural History, New York (AMNH); MCZ; University of Utah Natural History Museum, Salt Lake City, Utah; and the United States National Natural History Museum, Washington, DC. No declared type specimens for either species could be located, but specimens used by R. Emerton to describe *Bathyphantes (= Incestophantes) calcaratus* (Emerton 1909) were examined and lectotype and paralectotype specimens were designated. No specimens identified as *P. bellona* by either R. Chamberlin or W. Ivie could be located.

Illustrations were made from digital photographs taken using an Olympus U-CMAD3 digital camera mounted on an Olympus SZX12 stereomicroscope. Label information is transcribed as written on the label; therefore, no additional information was added. Embolus illustrations were made by first soaking the palp in 10% KOH solution for 30 minutes, then immersing the palp in clove oil, which allowed for the removal of various parts of the embolus. Embolic illustrations are provided for the purpose of generic placement of the species. Because of the difficulty of the dissection and the high magnification required, the usefulness of the dissection in species identification is limited and other characters are provided for identification purposes.

Abbreviations: Tm = metatarsus trichobothria, followed by the leg number; e = embolus; l = lamella; TA = terminal apophysis; sa = superategular apophysis; ds = dorsal scape; st = stretcher. Chaetotaxy as defined in Tanasevitch 1989, patterned as dorsal-prolateral-retrolateral-ventral.

TAXONOMY

Poeciloneta Chyzer & Kulczyński 1894

Poeciloneta bellona Chamberlin & Ivie 1943

Incestophantes calcaratus (Emerton 1909) Saaristo & Tanasevitch 2000: 260. **Synonymy rejected**

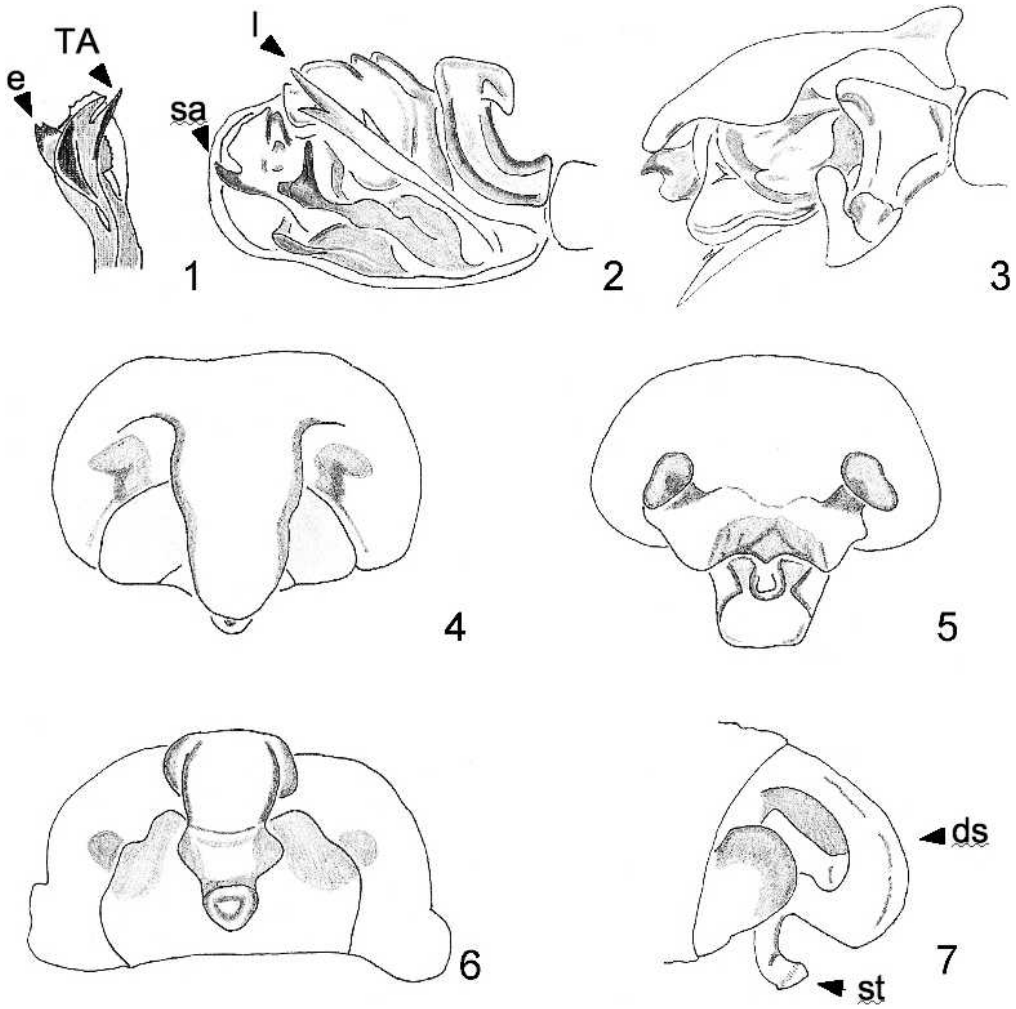
Type material.—Holotype female, USA: *Utah*: Dechesne County, Mirror Lake, 40°N, 110°W, 22 September 1932, Coll: Wilton Ivie. Unable to locate.

Other material.—3 males, 6 females. USA: *Colorado*: Clear Creek County, 1M, Hwy. 40 & Jones Pass Rd., 39°46′12″N, 105°49′31″W, 3266 m, 1 Jul 2002, beat sheet, B. Morrison (DMNS); 1F, Hwy. 40 Berthoud Pass, E/SE side, 39°47′48″N, 105°46′33″W, 3723 m, 2 July 2002, beat sheet, B. Morrison (DMNS); 1F, Squaw Mountain, 39°40′46″N, 105°30′15″W, 3305 m, 3 Sep 2005, beat sheet, P.E. Cushing (DMNS); 1F, Squaw Mountain, 39°40′55″N, 105°30′11W, 3356 m, 4 Oct 2005, beat sheet, J. Slowik (DMNS); 1F, Squaw Mountain, 39°41′05″N, 105°31′33″W, 3344 m, 3 Sep 2005, beat sheet, P.E. Cushing (DMNS); 1M, same locality, 8 Jul–5 Aug 2005, pitfall traps, J. Slowik (DMNS); Jefferson County: 1F, Jefferson County Open School, Lakewood, 39°43′59″N, 105°04′55″W, Sep 1999, C. Cummins (DMNS); Summit County: 1M, 1F, Eagles Nest near lower Boulder Lake, 8 Aug. 1999, S. Shiner (DMNS).

Diagnosis.—Male *Poeciloneta bellona* can be differentiated from all other *Incestophantes* and all *Poeciloneta* except *P. calcaratus* by the two-part, pointed, beak-shaped terminal apophysis (Fig. 1) and the narrow lamella (Fig. 2). They may be distinguished from *P. calcaratus* males by the longer more narrowed ventral terminal apophysis tip and the shape of the lamella, with the lamella of *P. bellona* forking later than *P. calcaratus* (0.85 of its total length). Females can be separated by the shape of the dorsal scape (Fig. 4) and the proximity of the stretcher when viewed laterally (Fig. 7).

Description.—*Male* (n = 3): total length, 2.40–2.90 mm; carapace length, 1.10–1.20 mm; carapace width, 0.90–1.00 mm. Tm I, 0.90–0.95; Tm IV, present. Chaetotaxy: F I, 0-1-0-0; F II–IV, 0-0-0-0; Pt I–IV, 1-0-0-0; Ti I, 2-1-1-0; Ti II, 2-0-1-0; Ti, III–IV,2-0-0-0; Mt I: 0-0-0-0.

Carapace smooth yellow, with dusky shield-shaped area located on the fovea with dark lines extending to the PLE. Carapace edge dusky, with darker areas extending mesially at each coxa. Sternum dusky, edges dark, chelicerae brown, labium and endites yellow with dark



Figures 1–7.—*Poeciloneta bellona* Chamberlin & Ivie 1943. 1. Terminal apophysis and embolus. 2, 3. Palp: 2. ventral view, 3. lateral view. 4–7. Epigynum: 4. ventral view, 5. dorsal view, 6. posterior view, 7. lateral view. e = embolus; TA = terminal apophysis; l = lamella; ds = dorsal scape; st = stretcher.

bases. Dorsal abdominal pattern consists of 9–10 dark chevrons with first 3 usually united on a white background. Laterally a dark line runs side to side from mid-abdominal length anteriorly above the pedicle. Lateral line followed posteriorly by two hash marks. Venter light yellow brown with a dark area around the epigastric plate, suffused with white spots. Legs light, with dark rings mid-length and at the end of the femur, patella, and tibia. Metatarsi with a dark ring at the distal end, tarsi without rings.

Lamella straight in ventral view, splitting into two spurs at 0.85 of total lamella length, dorsal fork equal to 0.08 of total lamella length, ventral fork equal to 0.20 of total lamella length (Fig. 2). Occasionally a third spur will exist, restricted to ventral side of lamella located below fork of other two major spurs; if present, 0.09 of total lamella length. Terminal apophysis two-part, pointed, long, beak shaped, tips as long as embolus thumb, directed at the lamella (Fig 1). Suprategular apophysis a broad hooked shape. Ventral edge or paracymbium hooked, bifurcate, both parts rounded (Fig. 3). Spur at base of cymbium broad, extending to or slightly beyond base of cymbium. Embolus proper terminal two-pointed, thumb large, embolus attached to terminal apophysis (Fig. 1).

Female ($n = 6$): total length, 2.40–2.90 mm; carapace length, 0.98–1.48 mm; carapace width, 0.77–0.88 mm. Tm I, 0.93–0.97; Tm IV, present. Chaetotaxy: same as male.

Body color and pattern similar to male.

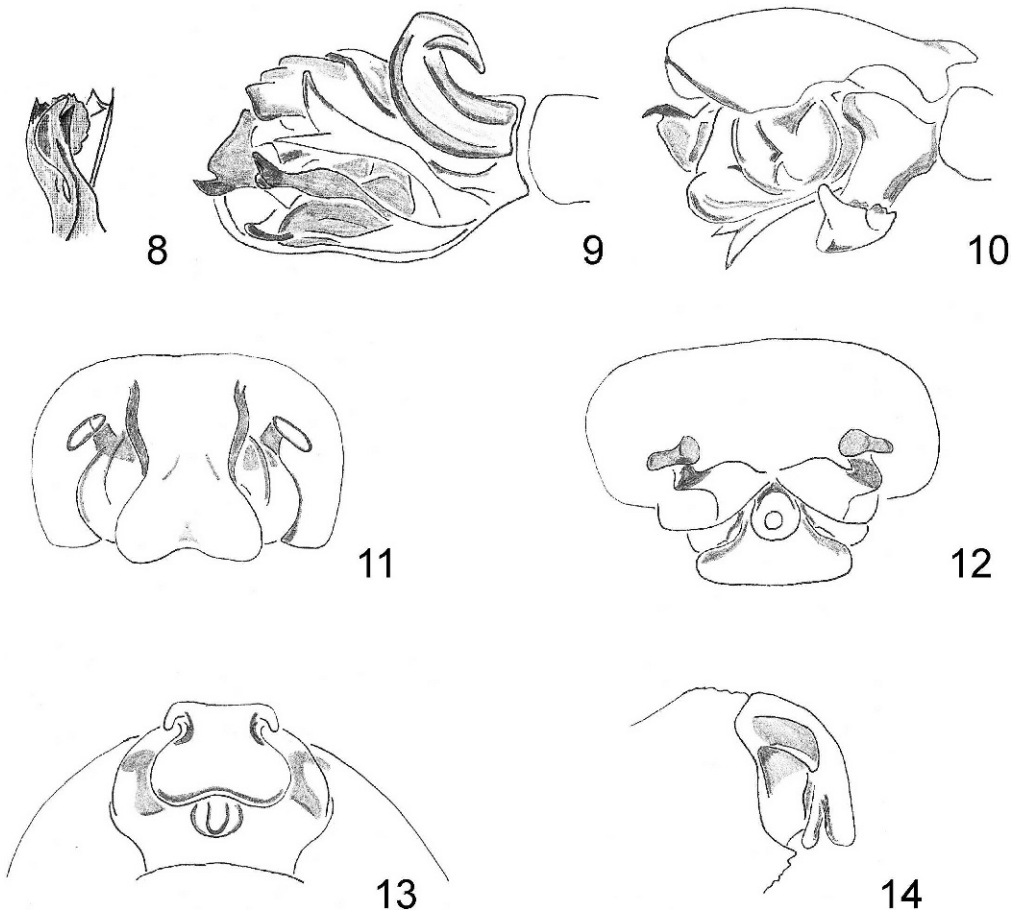
Epigynal plate oval, wider than long. Dorsal scape longer than wide, with one set of lateral bumps located proximal to mid-point (Fig. 4). Dorsal scape tip no wider than widest point of scape, smoothly curved. Stretcher separated from dorsal scape in lateral view (Fig. 7), visible in ventral view (Figs. 4, 6). Spermatheca kidney-bean-shaped, directed diagonally (Fig. 5).

Distribution.—USA, central Rocky Mountains, currently known only from Utah and Colorado (Fig. 15).

Habitat.—Spiders have been collected by beating conifers or in pitfall traps at about 3200 m in Colorado.

Discussion.—Upon examination of fresh specimens from the Rocky Mountains and comparisons of museum specimens, genitalic differences indicate that *P. bellona* is a distinct species. Furthermore, it is recommended that *P. bellona* be returned to *Poeciloneta* based on coloration, embolic shape and chaetotaxy as defined in Saaristo and Tanasevitch (2000). This species lacks a broad lamella and toothed paracymbium, and its chaetotaxy and coloration does not match that of *Incestophantes* as defined by Tanasevitch (1992).

Poeciloneta calcaratus (Emerton 1909) **New combination**
Bathyphantes calcaratus Emerton 1909:197
Lepthyphantes calcarata (Emerton 1909) Zorch 1937:874



Figures 8–14.—*Poeciloneta calcaratus* (Emerton 1909). 1. Terminal apophysis and embolus. 2, 3. Palp: 2. ventral view, 3. lateral view. 4–7. Epigynum: 4. ventral view, 5. dorsal view, 6. posterior view, 7. lateral view.

Incestophantes calcaratus (Emerton 1909) Saaristo & Tanasevitch 2000:260

Lepthyphantes calcaratus (Emerton 1909) Paquin & Duperre 2003:141

Type material.—*Lectotype*: male here designated—USA: *Maine*: Cumberland County, Portland, Long Island, 28 Aug 1906, J.H. Emerton (MCZ 20641). *Paralectotype*: male–*Piscataquis County*, Moosehead Lake, 7 Aug 1904, J.H. Emerton (MCZ 6 & MCZ 77053).

Other material.—25 males and 12 females. CANADA: *Alberta*: 1F, 25 km SW Rock Mountain House, 52°14′N, 115°10′W, Jun 1996, H. Carcamo (DB); 1F, 25 km SW Rock Mountain House, 52°14′N, 115°10′W, 3–23 Aug 1995, pine forest, H. Carcamo (DB); 1F, 25 km SW Rock Mountain House, 52°16′N, 115°09′W, 23 Aug–23 Sep 1995, pine forest, H. Carcamo (DB); 1F, Lake Louise, 10 Sep 1982, B. Erickson & M. Dykes (DB); *British Columbia*: 4M, Alaska Hwy, 37 km West of Fort Nelson, 12 Jun–5 Sep 1984, aspen-spruce, S. & J. Peck (CNC); *Labrador*: 1M 1F, So. Labrador, Shefentika to Blanc Sablon, Jul 1915, C.W. Townsend (MCZ); *Nova Scotia*: 3M, Weymouth, Aug 1924, F. J. H. Emerton (MCZ); 1M, Barrington, Sep 1923, F. J.H. Emerton (MCZ); *Ontario*: 2M 1F, Canisbay Lake, Algonquin Provincial Park, 16–20 Aug 1972, Woodpile, C.D. Dondale (CNC); *Quebec*: 1F, 95 km N LaSarre, 49°36′23″N, 79°18′03″W, 21–28 Sep 1997, FIT (Flight interception trap), old growth black spruce, P. Paquin & N. Duperre (DB); *Saskatchewan*: 1F, Anglin Lake, 53°44′N, 105°56′W, 30 Jul 1996, wall of buildings, D.J. Buckle (DB); *Yukon*: 1M, Tatchun Lake, 62°17′N, 136°08′W, 7 Jul 2003, F. Levi (MCZ); USA: *Alaska*: 1M, Mile 64.3 Tok Cutoff, 62°43′N, 143°52′W, Jul 2003, F. Levi (MCZ); *Colorado*: Clear Creek County: 1F, Squaw Mountain, Canopy Site 3, 39°41′05″N, 105°31′32″W, 3289 m, 4–28 Oct 2005, pit traps, J. Slowik (DMNS); Eagle County: 1F, Gore Creek, Gore Mountains, 2591 m, 19 Aug 1962, Levi (MCZ); Las Animas County: 1F, Apilasa Tunnel dyke, 37.339°N, 104.998°W, 3109 m, 30 Aug 2006, 20:45–21:15 h, headlamp, J. Slowik (DMNS); Rio Grande County: 1M, Beaver Creek, San Juan Mountains, 2438 m, 13 Jul 1952, Levi (MCZ); *Michigan*: Keweenaw County: 1M, Keweenaw County, 8 May 1953, R.R. Dreisbach (MCZ); *Montana*: Glacier County: 1M, Glacier National Park, Cut Bank Creek, 1555 m, 15 Aug 1953, Levi (MCZ); *New Hampshire*: Grafton County: 1M, North Woodstock, Sep 1911, W. H. Fox (MCZ); Coos County: 4M, Mt. Washington, Glen Rd and Great Gulf, Aug 1910, J. H. Emerton (MCZ); Carroll County: 2M, Intervale, Jul–Aug 1910, Emerton (MCZ); *Utah*: Dechesne County: 1F, Mirror Lake, 40.708°N, 110.886°W, 2743 m, 17 Sep 2007, 09:30–10:30 h, beat conifers, J. Slowik (DMNS); *Vermont*: Chittenden County: 1M, Mt. Mansfield, 10 Jul 1911, Emerton (MCZ).

Diagnosis.—Male *Poeciloneta calcaratus* can be differentiated from other *Incestophantes* and *Poeciloneta* species except *P. bellona*, as described under diagnosis for *P. bellona* above. *P. calcaratus* males can be separated from *P. bellona* males by the fork of the lamella occurring earlier than in *P. bellona* (compare Figs. 2, 9) and tips of the terminal apophysis being shorter (Fig. 8). Females can be separated from other species of *Poeciloneta* by the shape of the scape (Fig. 11), in which posterior edge expands out into a bone shape. The stretcher, which lies up against the dorsal scape in lateral view (Fig. 14), can also be used to separate *P. calcaratus* from *P. bellona*.

Description.—Lectotype male: total length, 2.31 mm; carapace length, 1.10 mm; carapace width, 0.99 mm. All tibiae and metatarsi

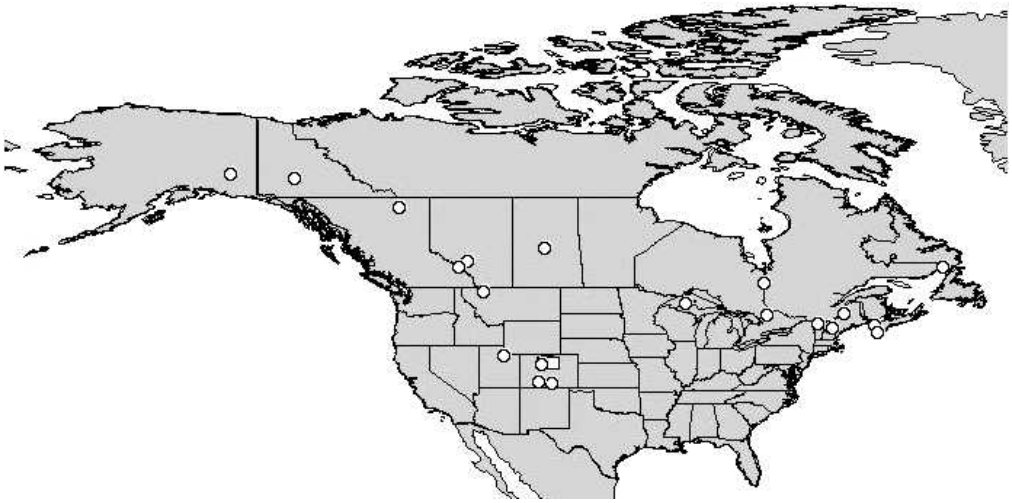


Figure 15.—Map of specimen localities for *Poeciloneta bellona* Chamberlin & Ivie 1943 (squares) and *P. calcaratus* (Emerton 1909) (circles).

missing. Chaetotaxy: F I, 0-1-0-0; F II, 0-0-0-0; Pt I–IV, 1-0-0-0. Specimen light yellow, coloration and patterns light. Faint shield mark on carapace extending from fovea to PLE. Abdomen wrinkled due to dehydration. Eight chevrons on dorsum of abdomen. Venter light. Very faint rings on ends of femurs.

Variation.—Male (n = 10). Total length, 2.36–2.78 mm; carapace length, 1.13–1.33 mm; carapace width, 0.96–1.02 mm. Tm I, 0.84 (Tm I could be located on only one male specimen); Tm IV, present. Chaetotaxy: F I, 0-1-0-0; F II–IV, 0-0-0-0; Pt I–IV, 1-0-0-0; Ti I, 2-1-1-0; Ti II, 2-0-1-0; Ti III–IV, 2-0-0-0; Mt I, 0-0-0-0.

Coloration similar to *P. bellona* mentioned above.

Lamella with slight curve in ventral view, splitting into two spurs at 0.76 of total lamella length, dorsal fork 0.28 of total lamella length, ventral fork 0.20 of total lamella length (Fig. 9). Occasionally third spur will exist, restricted to ventral side below the fork for other two major spurs; if present, 0.10 of total lamella length. Terminal apophysis tip two-part, pointed; tip extends about half width of embolus thumb, directed at the lamella (Fig. 8). Suprategular apophysis hook-shaped. Ventral edge of paracymbium hooked, bifurcate, both spurs somewhat spatulate (Fig. 10). Embolus proper two-pointed, thumb large, embolus attached to terminal apophysis (Fig. 8).

Female (n = 10): total length, 2.42–3.14 mm; carapace length, 0.97–1.29 mm; carapace width, 0.81–0.97 mm. Tm I, 0.96 (Tm I could be located on only one female specimen); Tm IV, present. Chaetotaxy: Same as male except two females had Ti II, 2-1-1-0.

Color and pattern same as male.

Epigynal plate oval, wider than long. Dorsal scape almost as long as tip is wide, with one set of lateral bumps located toward end (Figs. 11, 13). Dorsal scape tip widest point of scape, smoothly curved, bone shaped. Stretcher slightly separated from dorsal scape in lateral view (Fig. 14), not visible in ventral view. Spermatheca oblong, directed laterally (Fig. 12).

Distribution.—North America north of 43°N, extending south along a finger into the Rocky Mountains to Colorado to 38°N (Fig. 15).

Habitat.—Spiders have been collected by beating conifers or in pitfall traps located in conifer forests. Rocky Mountain specimens were collected from conifer forests above 3200 m.

Discussion.—Emerton mentions the species being found from "Portland, Maine, Moosehead Lake, and the lower part of Mt. Washington" in the original species description. The specimen designated as the lectotype was found to precede the species description, was from one of the mentioned localities, and was identified by R. Emerton. The specimen had been held in the type holdings of the MCZ, but it had never previously held any type designation. Based on coloration, embolic shape and chaetotaxy as defined by Saaristo and Tanasevitch (2000) the species is moved to the genus *Poeciloneta*. As noted for *P. bellona*, this species shows incorrect lamella shape, paracymbium shape and chaetotaxy to be included in the genus *Incestophantes*.

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