

First record of *Oreoneta eskimopoint* Saaristo & Marusik, 2004 (Araneae, Linyphiidae) from Greenland

JØRGEN LISSNER, TOKE THOMAS HØYE, ANDERS MOSBECH & KASPER LAMBERT JOHANSEN

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The linyphiid spider *Oreoneta eskimopoint* Saaristo & Marusik, 2004 is reported as new to Greenland. A single male was pitfall trapped in northwest Greenland at Savissivik in the summer of 2014 in vegetation below a colony of little auks (*Alle alle* Linnaeus, 1758). Characters that separate this species from its other Greenlandic congener, *Oreoneta frigida* (Thorell, 1872), are presented. *Erigone arctica arctica* (White, 1852) is recorded for the first time in the NW Greenland biogeographic subdivision.

Key words: Araneae, Linyphiidae, *Oreoneta*, Greenland, habitat, Nearctic.

Jørgen Lissner, Natural History Museum Aarhus, Wilhelm Meyers Allé 210, Universitetsparken, 8000 Aarhus C, Denmark. E-mail: lissner@nathist.dk

Tomke Thomas Høye, Department of Bioscience and Arctic Research Centre, Aarhus University, Grenåvej 14, 8410 Rønde, Denmark. E-mail: tth@bios.au.dk

Anders Mosbech, Department of Bioscience and Arctic Research Centre, Aarhus University, Frederiksborgvej 399, 4000 Roskilde, Denmark. E-mail: amo@bios.au.dk

Kasper Lambert Johansen, Department of Bioscience and Arctic Research Centre, Aarhus University, Frederiksborgvej 399, 4000 Roskilde, Denmark. E-mail: kalj@bios.au.dk

Introduction

The holarctic genus *Oreoneta* Kulczyński, 1894 was revised in Saaristo & Marusik (2004). These authors recognized 31 species, each assigned to one of six species groups based on the morphology of the male copulatory organs. One member of the *Oreoneta frigida*-group, *Oreoneta frigida* (Thorell, 1872), is considered one of the most abundant spiders in Greenland and has been found in all biogeographic regions except in the very north (Marusik 2015). Here, we report the first record of *Oreoneta eskimopoint* Saaristo & Marusik, 2004 of the *Oreoneta tatrlica*-group and the second member of the genus known to be present in Greenland. A male specimen was collected from

a pitfall trap. The trapping was done in connection with a project studying the effects of marine-derived nutrients in terrestrial and freshwater ecosystems resulting from the presence of little auk colonies (González-Bergonzoni *et al.* 2017). Previously, *O. eskimopoint* was only known from the eastern Nearctic parts of USA and Canada (Saaristo & Marusik 2004).

Material examined

Oreoneta eskimopoint Saaristo & Marusik, 2004, northwest Greenland, Qaasuitsup municipality, Meteorite Island, Savissivik (UTM zone 20X (WGS84) 444220 8438920), 60 m a.s.l., pitfall

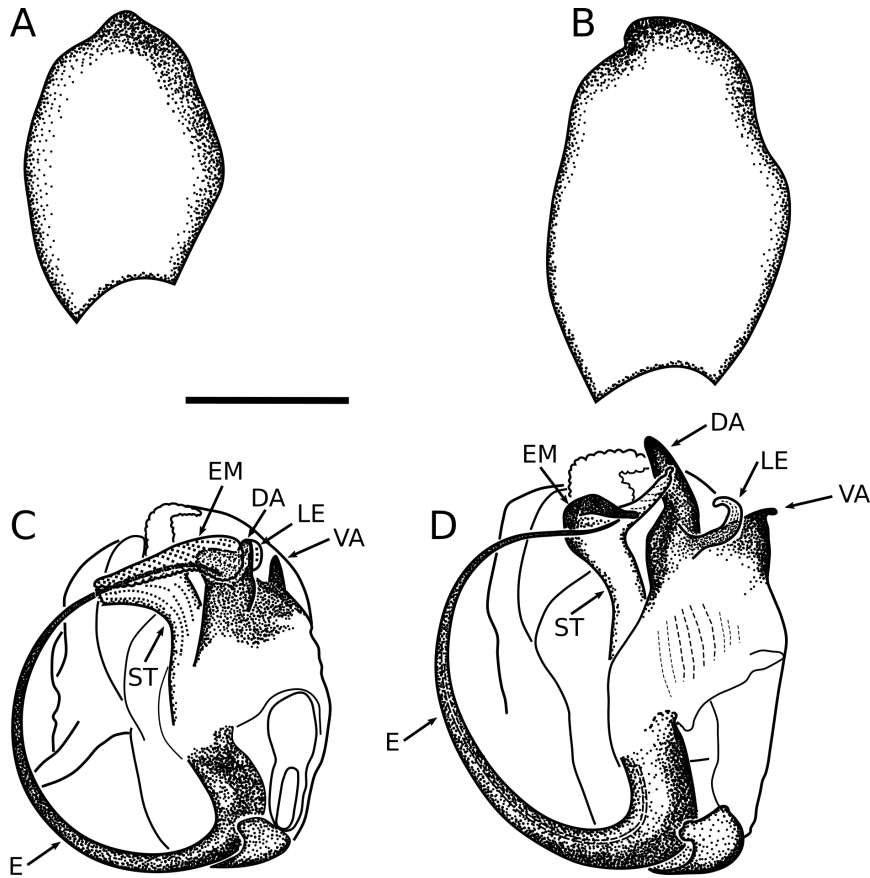


FIGURE 1. Comparison of palpal structures of the two Greenlandic species of *Oreoneta* Kulczyński, 1894. **A, C:** *Oreoneta eskimopoint* Saaristo & Marusik, 2004 (specimen from Savissivik, northwest Greenland); **B, D:** *Oreoneta frigida* (Thorell, 1872) (specimen from Qassinguit, Nuuk, southwest Greenland). **A, B:** Male tibial apophysis in dorsal view. **C, D:** Bulb of male palp viewed from the inside, approximately in plane with looped embolus. E = embolus, EM = embolic membrane, ST = stem of embolic membrane, DA = dorsal apophysis of median plate, LE = lamellar extension of dorsal apophysis, VA = ventral apophysis of median plate. Scale bar 0.2 mm. Drawing: J. Lissner.

trapped during 29 July–06 August 2014, 1♂, leg. Anders Mosbech and Kasper Lambert Johansen, coll. Department of Bioscience, Aarhus University. Measurements (n=1, mm): body length 3.0, carapace length 1.5, width 1.2, opisthosoma 1.7. The male tibial apophysis is depicted in Figure 1a, the bulb in Figure 1c, and the palp in retrolateral view in Figure 2.

Additional spider species pitfall trapped at the locality: *Hilaira vexatrix* (O. Pickard-Cambridge, 1877) 9♂♂9♀♀, *Erigone arctica arctica* (White, 1852) 6♂♂4♀♀, *Erigone psychrophila* Thorell,

1871 2♂♂, *Collinsia holmgreni* (Thorell, 1871) 5♂♂5♀♀, *Pardosa glacialis* (Thorell, 1872) 1♂. Other material examined: *Oreoneta frigida*, south-western Greenland, Nuuk municipality, Kobbefjord, 2½ km west of Qassinguit peak (UTM zone 22W (WGS84) 482260 7116600), 300 m a.s.l., pitfall trapped during 12 August–26 August 2015, 1♂, leg. Ejgil Gravesen, coll. Department of Bioscience, Aarhus University. The male tibial apophysis is depicted in Figure 1b, the bulb in Figure 1d.



FIGURE 2. *Oreoneta eskimopoint* Saaristo & Marusik, 2004, specimen from Savissivik, northwest Greenland. Right male palp in retrolateral view. Scale bar 0.2 mm. Photo: J. Lissner.



FIGURE 4. Microhabitat with *Oreoneta eskimopoint* Saaristo & Marusik, 2004 at Savissivik, northwest Greenland. Pitfall trap with specimen. Photo: Kasper Lambert Johansen.

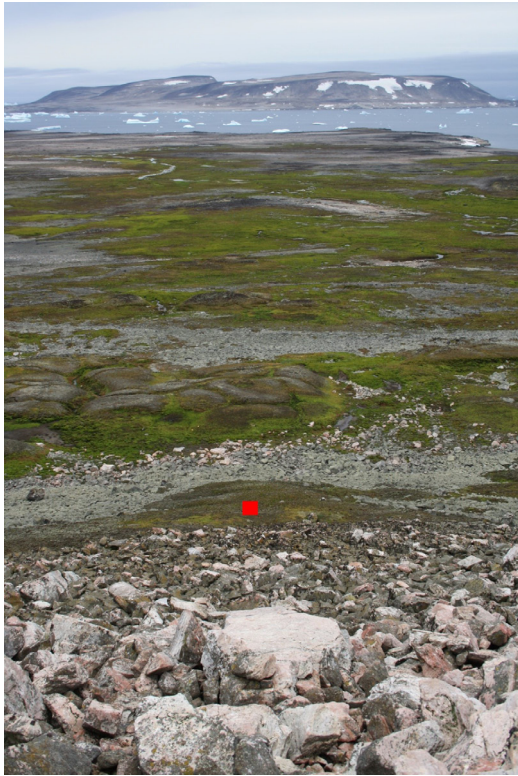


FIGURE 3. Habitat with *Oreoneta eskimopoint* Saaristo & Marusik, 2004 at Savissivik, northwest Greenland. The photo is taken towards south from a scree slope with breeding little auks. In the background Sallegg (Bushnan Island). The pitfall traps were placed below the scree at the location of the red square. This area receives vast amounts marine derived nutrients from little auk droppings. Photo: Kasper Lambert Johansen.

Comments

Oreoneta eskimopoint is the second member of the genus recorded from Greenland. The genitalia are rather similar among all members of the genus, particularly within species groups. According to Saaristo & Marusik (2004) the shapes of the embolic membrane and of the dorsal and ventral apophyses on the radix are very important characters for distinguishing species and species groups. Accordingly, the differences between the two Greenlandic species stand out when the palpal bulb is detached (Figures 1c, d).

In *O. eskimopoint*, a considerable distal section of the embolus is ensheathed by a T-shaped embolar membrane while this membrane is beak shaped with a posterior extension in *O. frigida*. The shape of the lamellar extension of the dorsal apophysis also differs between the two species being flat and large in *O. eskimopoint* (Figure 1c, large size is not visible in the drawing since lamella is perpendicular to plane of drawing). The lamellar extension is hooked in *O. frigida* and situated more basally on the dorsal apophysis. Some species of *Oreoneta* are also discriminated by the shape and size of the tibial apophysis (Saaristo & Marusik 2004). In *O. eskimopoint* this apophysis is smaller and with a different shape compared to *O. frigida* (compare Figures 1a and 1b). According to Saaristo & Marusik (2004) the body lengths of two males from Mt. Washington, New Hampshire range from 3.25–3.70 mm (one male was collected at the summit at 1900 m a.s.l.). The male specimen found at Savissivik is smaller (3.0 mm). It is possible that specimens of higher latitudes are smaller than specimens of lower latitudes due to shorter season and colder temperatures resulting in lower prey availability. However, the size ranges of the sexes are not well assessed yet and more measurements are needed to detect a possible effect of latitude on body size. *Oreoneta eskimopoint* was previously reported from the eastern Nearctic, from the highlands of northern New York and New Hampshire to the Polar Circle (Saaristo & Marusik 2004). The new locality at Savissivik extends the known distribution considerable to the north (Figure 5). The collection of *Erigone arctica arctica* specimens constitutes the first record of this species from the NW Greenland biogeographic subdivision (for a map with Greenlandic biogeographic subdivisions see Marusik *et al.* (2006)). The species range encompasses the Nearctic and NE Siberia. In Greenland, it was previously known from the N, NE, and northern SE subdivisions making the geographical distribution disjunct. However, the new record from NW Greenland bridges the Greenlandic population with the rest of the Nearctic populations. In S and SW Greenland a second subspecies, *E. a. soerensemi*, is found. The two

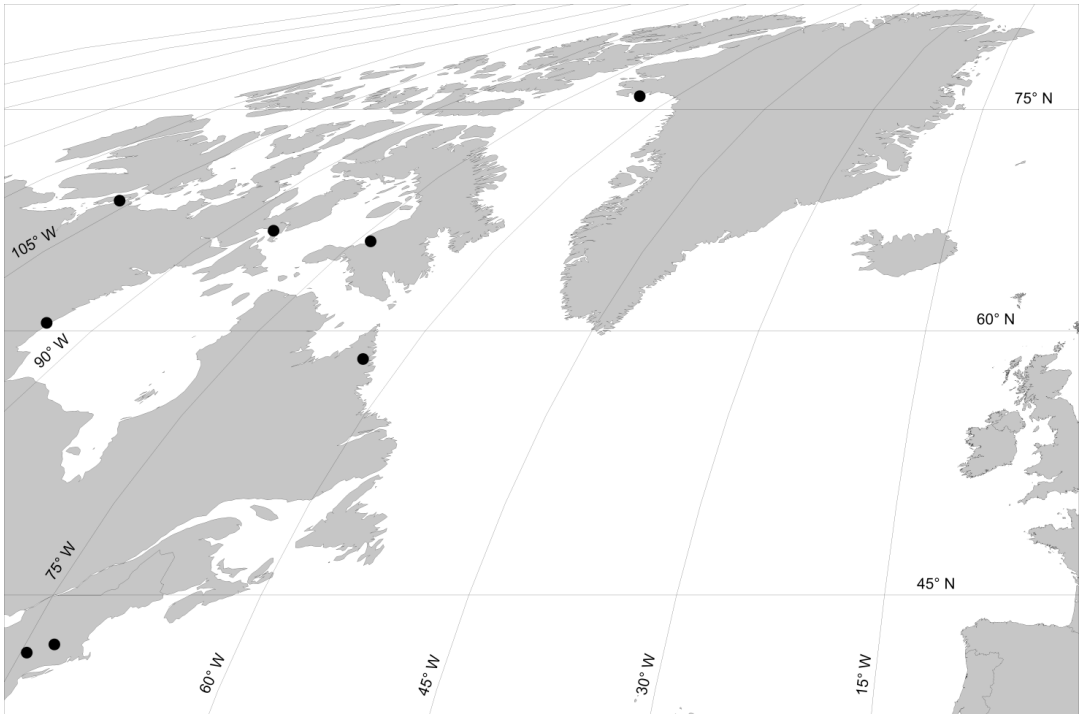


FIGURE 5. Map with published records of *Oreoneta eskimopoint* Saaristo & Marusik, 2004 (adapted from Saaristo & Marusik (2004), also showing the new Greenlandic record. The species is currently known from the northeastern parts of the Nearctic realm. Map: J. Lissner.

subspecies are not known to overlap in distribution. The most recent checklist of the spider fauna of Greenland was provided by Marusik *et al.* (2006). This publication lists 75 species, also counting two species, *Salticus scenicus* (Clerck, 1757) and *Tegenaria domestica* (Clerck, 1757), considered accidental imports that did not establish breeding populations. Recently, three additional species have been recorded from Greenland, *Centromerus arcanus* (O. Pickard-Cambridge, 1873), *Pelecopis mengei* (Simon, 1884), and *Wabasso cacuminatus* Millidge, 1984 (Hansen *et al.* 2016a,b; Lissner & Gravesen 2017). The number of spider species cited from Greenland now totals 77 species, including our find and excluding accidental imports.

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