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First records of *Zercon andrei* Sellnick, 1958 and *Zerconopsis muestairi* (Schweizer, 1949) (Acari, Mesostigmata) from Bjørnøya, Svalbard

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This paper presents two mesostigmatid mite species that are new to Svalbard's fauna. *Zercon andrei* Sellnick, 1958 and *Zerconopsis muestairi* (Schweizer, 1949) were found in soils close to bird nests on Bjørnøya. Localities and occurrence in microhabitats according to literature are given.

Key words: Svalbard, Spitsbergen, Bear Island, Bjørnøya, Ascidae, *Zerconopsis muestairi*, *Zercon andrei*, Mesostigmata

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Introduction

Svalbard is an archipelago with the largest island, Spitsbergen, located approximately 700 km north of mainland Norway and consists of a landmass of some 61,000 km^2. Bjørnøya forms the most southerly island in the archipelago, lying around 400km north of the Norwegian mainland. Air temperatures on Bjørnøya are less extreme than on Spitsbergen due to the more southerly latitude and maritime climate. Mean February air temperature on Bear Island being -7.7ºC compared to -16.2 at Svalbard airport on Spitsbergen while the warmest month, July, at a mean of 4.4ºC is some 1.5ºC colder than the equivalent period on Spitsbergen with a July temperature of 5.9ºC (DNMI).

There are few records of the mesostigmatid mite community of Svalbard with only 22 species known (Coulson & Refseth 2004, Gwiazdowicz & Gulvik 2008) and two additional records identified only to genus level, *Melichares* sp. and *Zerconopsis* sp. (Byzova et al. 1995) and from Bjørnøya and only one species of *Mesostigmata* is recorded (Summerhayes & Elton 1923). Here we report two additional species of *Mesostigmata* from Bjørnøya, *Zercon andrei* Sellnick, 1958 and *Zerconopsis muestairi* (Schweizer, 1949). In addition to being new to Bjørnøya, they are also not previously recorded from the remaining islands in the Svalbard archipelago. These represent the first records of these species from an Arctic region and bring the total known *Mesostigmata* fauna from Bjørnøya to three and from Svalbard as a whole to 24.

Records and discussion

Soil core samples were taken from the vicinity of bird nests at Teltvika (NW Bjørnøya, 74°28.1'N 18°46.2'E) in August 2008. The soil samples were extracted on site into 96% ethanol by using Berlese-Tullgren funnels.

***Zercon andrei* Sellnick, 1958**

13 female specimens were recorded from soil sampled in the vicinity of the nests of the great skua nests (*Stercorarius skua* (Brunnich, 1764)). *Z. andrei* was first recorded from Europe and is a rare species which occurs amongst litter in mountain regions e.g. Matra Mountains (Vinche, 1965, Petrova 1977, Karg 1993).

The idiosoma of female is oval, 460 µm long; anterior margin of ventri-anal shield with 2 pairs of setae (Vm1 and Vi1 present); pores Po3 with position between Z4 and J4 (Figure 1); setae J1-J5 nearly equal in length; setae Z1-Z2 short, needle-like and smooth, setae Z3 prolonged (more than twice as long as Z2) and thickened, apically slightly broadened and barbed with hyaline ending; setae S1-S2 short, setae S3 apically broadened, barbed with paddle-like hyaline ending; falsifoveate ornamentation on opisthonotal shield.

***Zerconopsis muestairi* (Schweizer, 1949)**

Two individuals of *Z. muestairi* (Schweizer, 1949) (one female and one male) were recorded from the vicinity of glaucous gull (*Larus hyperboreaus* Gunnerus, 1767) and great skua (*S. skua*) nests. This represents the first record of the species on high Arctic islands and the northernmost known population of the species. To date, 10 species of the genus *Zerconopsis* have been reported worldwide. In Europe *Z. muestairi* is a rare species which occurs in most litter, moss and damp sods of grass (Bregetova 1977, Karg

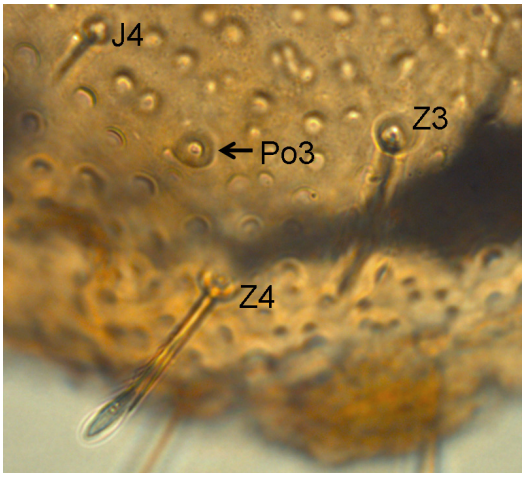

Figure 1. Dorsal view of *Zercon andrei* Sellnick, 1958 (female) indicating the position of the pore Po3 in relation to the Z3, Z4 and J4 setae.

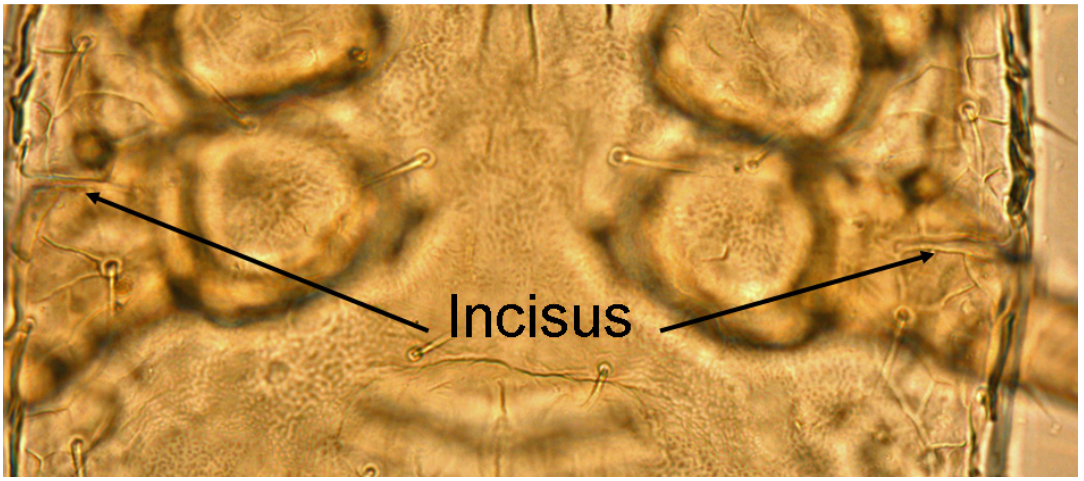

Figure 2. Dorsal view of *Zerconopsis muestairi* (Schweizer, 1949) (female) indicating the position of the incisions on schizodorsal shield.

1993, Gwiazdowicz 2007). Byzova et al. (1995) recorded a *Zerconopsis* sp. from tundra soils collected in the vicinity of the Polish research station at Hornsund (76°58.3'N 15°43.1'E) but did not identify the specimens to species level.

The idiosoma of female is oval, 630 µm long; dorsal idiosoma with schizodorsal shield possessing two deep incisions (Fig 2.); 14 pairs of setae in posterior region and setae Z3 and Z5 spatulate; ventri-anal shield with 5 pairs of setae and 3 circum-anal setae; two metapodal shields below peritrematal shield; six sclerites located between genital and ventri-anal shields.

On Bjørnøya, both *Z. andrei* and *Z. muestairi* were found in soils close to bird nests. Moreover, much of the soils of Bjørnøya are influenced by the input of organic nitrogen from the large seabird colonies on the island. Byzova et al. (1995) studied a gradient of increasing nutrient input close to a bird colony at Hornsund and, while it is unclear from where on this gradient the Hornsund specimens were collected, it may be that in Svalbard *Zerconopsis* is associated with ornithogenic soils. *Z. andrei* was recorded from France and Hungary (Vincze 1965, Petrova 1977, Karg 1993) and *Z. muestairi* from central Europe (Schweizer 1961, Bregetova 1977, Karg 1993).

There are now three recorded species of Gamasida (Mesostigmata) from Bjørnøya and 24 from Svalbard. This highlights how poorly the gamasid fauna of Svalbard is known and that further study is required, especially in less well sampled regions such as Bjørnøya, the east coast of the archipelago and species rich hot spots such as ornithogenic soils.

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