

Spiders (Araneae) from Narssaq, southern Greenland

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Spider material collected by the author from Narssaq, the subarctic vegetation zone of Greenland, consisted of 33 species. Three species are reported for the first time from Greenland: *Robertus fuscus* (Emerton), *Porrhomma convexum* (Westring), and *Walckenaera longidens* (Holm). Some ecological and zoogeographical notes on the present spider material are given.

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Introduction and study area

The spider fauna of Greenland has been studied by several authors for a period of over one hundred years. The number of species known hitherto from Greenland is 66 (Holm, 1967; Hillyard, 1979).

Spiders were collected by the author in southernmost Greenland, 1976. The collecting sites were situated in Narssaq, the subarctic vegetation area of Greenland, and the material was collected from the following localities (see Koponen, 1978: Fig. 1):

1. Kangerdluarssuk (60°53'N, 45°50'W), July 20–25
2. Narssarsuaq (61°10'N, 45°25'W), July 16 and July 28 – August 2
3. Narssaq, Dyrnæs (60°57'N, 46°05'W), July 17–19 and 26–27
4. Qagssiarssuk (61°09'N, 45°30'W), August 1

The material was collected from sea level up to 400 m a. s. l. and typical South Greenland habitats were investigated: shores, meadows, stone beds, rocks, shrubs, and a small mire. The main collecting methods were sweep netting, sieving, and hand-picking. In addition, pitfall traps were used in the mire. The weather was rainy during the study period.

Species found and ecological notes

The total spider material comprised about 500 identifiable specimens and 33 species, of which

three are new to Greenland. These three species are known from maritime parts of Alaska (see below).

Robertus fuscus (Emerton) is known from a wide range in the northern Nearctic region, e.g. Newfoundland, Labrador, Ontario, and Alaska (Kaston, 1946; Chamberlin & Ivie, 1947; Hackman, 1954). One immature male was collected by sieving moist *Sphagnum* moss in a mire at Dyrnæs; it matured in August. The species is known to prefer humid places (Hackman, 1954).

Porrhomma convexum (Westring) has a wide range in the Old World, and it has been found on several Alaskan islands (Holm, 1960). One male and one female were found under stones by a brook at Dyrnæs, July 17. This is also a typical habitat for the species in Iceland (Brændegaard, 1958).

Walckenaera longidens (Holm), described from Adak, the Aleutian Islands (Holm, 1960), is known only from the original collecting site. Two females were found under stones by a small river at Kangerdluarssuk, July 25.

The species found are listed in Table 1. The nomenclature is mainly based on Holm (1967), with the exception of the genus *Walckenaera*, which is dealt with according to Wunderlich (1972). The identity of a single *Meioneta* female is somewhat obscure; it seems to belong to *M. levinseni* (cf. Holm, 1967; Wunderlich, 1973; Thaler, 1975). It may be worth mentioning that

the females regarded as *Rhaebothorax paetulus* show some variability in epigyne and position of trichobothrium. The males found fit well with descriptions and drawings given.

The most abundant species caught by the non-quantitative methods used were *Enoplognatha intrepida*, *Pardosa hyperborea*, *Cochlembolus alpinus*, *Pardosa groenlandica*, *Araneus cornutus*, *Dictyna major*, *Hahnna glacialis*, and *Haplodrassus signifer*.

Many species seemed to prefer stone beds and stony meadows; abundant species living under stones were, in particular, *Hahnna glacialis*, *Enoplognatha intrepida*, *Haplodrassus signifer*, *Cochlembolus alpinus*, *Lepthyphantes turbatrrix*, *Hilaira frigida*, *Islandiana princeps*, and adults of *Xysticus durus*. Species found commonly on cliffs were *Araneus cornutus*, *Enoplognatha intrepida*, and *Dictyna major*. Typical species in a *Sphagnum* mire were *Arctosa insignita*, *Latithorax obtusus* and *Diplocentria replicata*. Abundant species on *Salix* and *Betula* shrubs were *Theridion ohlerti lundbecki*, *Araneus cornutus*, *Dictyna major*, and juveniles of *Xysticus durus*. In a very barren habitat, an alpine stone bed without vascular plants at 350 m a.s.l., the following species were found: *Pardosa groenlandica*, *Hahnna glacialis*, *Islandiana princeps*, and *Walckenaera cuspidata*.

Zoogeographical aspects

Southern Greenland has traditionally been divided into two areas: West and East Greenland. The southernmost corner of Greenland together with the present study area belongs to West Greenland (see e.g. Wolff, 1964: Fig. 10). About 63% of species in the present material (when species new to Greenland are excluded) are known both from West and East Greenland and 37% only from West Greenland; no species found hitherto only in East Greenland was among the present species (cf. Holm, 1967).

According to Holm (1967), Holarctic and Nearctic species each comprise about 40% of the Greenland spider fauna, and Palearctic species about 20%. Only small differences in these figures were found between West and East Greenland. The present small material fits rather well with Holm's (1967) data: 45% are Nearctic (including *Meioneta levisenii*), 42% Holarctic (including the probably endemic subspecies of *Theridion ohlerti*), and the rest are Palearctic species. The proportion of Nearctic species

among spiders is high compared with other invertebrate groups, especially with soil-bound ones (Brændegaard, 1946; Lindroth, 1957; Numinen, 1970). This is explained by the capacity of spiders to disperse by ballooning, and therefore the Nearctic element among spiders is nearly as high as in Lepidoptera (cf. Wolff, 1964).

Table 1. Spiders collected at Narssaq, 1976; sites: K = Kangerdluarssuk, N = Narssarssuaq, D = Dyrnæs, Q = Qagssiarssuk.

Dictynidae	
<i>Dictyna major</i> Menge	K,N,D
Gnaphosidae	
<i>Haplodrassus signifer</i> (C. L. Koch)	K,N,D,Q
Thomisidae	
<i>Xysticus durus</i> (Soerensen)	K,N,D
Philodromidae	
<i>Thanatus arcticus</i> Thorell	K,N
Hahniidae	
<i>Hahnna glacialis</i> Soerensen	K,N,D,Q
Lycosidae	
<i>Arctosa insignita</i> (Thorell)	D
<i>Pardosa furcifera</i> (Thorell)	K,N,D
<i>P. groenlandica</i> (Thorell)	K,D,Q
<i>P. hyperborea</i> (Thorell)	K,N,D
Tetragnathidae	
<i>Tetragnatha extensa</i> (Linnaeus)	K,N
Araneidae	
<i>Araneus cornutus</i> Clerck	K,N,D
<i>A. quadratus</i> Clerck	K
Theridiidae	
<i>Enoplognatha intrepida</i> (Soerensen)	K,N,D,Q
<i>Robertus fuscus</i> (Emerton)	D
<i>Theridion ohlerti lundbecki</i> Soerensen	K,N
Linyphiidae (s. lat.)	
<i>Cochlembolus alpinus</i> (Banks)	N,D,Q
<i>Diplocentria replicata</i> Holm	N,D
<i>Hilaira frigida</i> (Thorell)	K,N,D,Q
<i>Hybocoptus gibbosus</i> (Soerensen)	K,N,D
<i>Islandiana princeps</i> Braendegaard	K,D,Q
<i>Latithorax obtusus</i> (Emerton)	D
<i>Lepthyphantes complicatus</i> (Emerton)	K,N,D
<i>L. turbatrrix</i> (O. P.-Cambridge)	K,N,D,Q
<i>Meioneta levisenii</i> (Soerensen)	D
<i>Oreonetides vaginatus</i> (Thorell)	K,N,Q
<i>Pocadicnemis pumila</i> (Blackwall)	K
<i>Porrhomma convexum</i> (Westring)	D
<i>Rhaebothorax morulus</i> (O. P.-Cambridge)	K,D
<i>R. paetulus</i> (O. P.-Cambridge)	D
<i>R. sphagnicola</i> Holm	K
<i>Walckenaera cuspidata</i> Blackwall	K
<i>W. karpinskii</i> (O. P.-Cambridge)	D,Q
<i>W. longidens</i> (Holm)	K

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References

- Brændegaard, J., 1946: Araneina. The Zoology of East Greenland. – Medd. Grønland 121 (15): 1–128.
- 1958: Araneida. – The Zoology of Iceland III (54): 1–113.
- Chamberlin, R. V. & Ivie, W., 1947: The spiders of Alaska. – Bull. Univ. Utah 37 (10): 1–103.
- Hackman, W., 1954: The spiders of Newfoundland. – Acta Zool. Fenn. 79: 1–99.
- Hillyard, P. D., 1979: Notes on two collections of spiders from Baffin Island and Greenland. – Bull. Br. arachnol. Soc. 4: 296–297.
- Holm, Å., 1960: On a collection of spiders from Alaska. – Zool. Bidr. Uppsala 33: 109–134 + pl. I–IV.
- 1967: Spiders (Araneae) from West Greenland. – Medd. Grønland 184 (1): 1–99.
- Kaston, B. J., 1946: North American spiders of the genus *Ctenium*. – Amer. Mus. Novit. 1306: 1–19.
- Koponen, S., 1978: Notes on herbivorous insects of the birch in southern Greenland. – Rep. Kevo Subarctic Res. Stat. 14: 13–17.
- Lindroth, C. H., 1957: The faunal connections between Europe and North America. Stockholm.
- Nurminen, M., 1970: Records of Enchytraeidae (Oligochaeta) from the west coast of Greenland. – Ann. Zool. Fenn. 7: 199–209.
- Thaler, K., 1975: Über einige Spinnen aus Spitzbergen (Arachnida, Aranei). – Mitt. Schweiz. Ent. Ges. 48: 437–442.
- Wolff, N. L., 1964: The Lepidoptera of Greenland. – Medd. Grønland 159 (11): 1–74 + pl. I–XXI.
- Wunderlich, J., 1972: Zur Kenntnis der Gattung *Walckenaeria* Blackwall 1833 unter besonderer Berücksichtigung der europäischen Subgenera und Arten (Arachnida: Araneae: Linyphiidae). – Zool. Beitr. (N. F.) 18: 371–427.
- 1973: Weitere seltene und bisher unbekannte Arten sowie Anmerkungen zur Taxonomie und Synonymie (Arachnida: Araneae). – Senckenbergiana biol. 54: 405–428.

Sammendrag

Edderkopper fra Narssaq, Sydgrønland

Forfatteren har indsamlet 33 arter af edderkopper (Table 1) i Narssaq i den subarktiske del af Grønland. Tre af arterne er nye for Grønland: *Robertus fuscus*, *Porrhomma convexum* og *Walckenaera longidens*.

Indsamlingerne var ikke kvantitative og foregik ved vegetationskætsning, sigtning, håndplukning og fangglas. De hyppigste arter var *Enoplognatha intrepida*, *Pardosa hyperborea*, *Cochlembolus alpinus*, *Pardosa groenlandica*, *Araneus cornutus*, *Dictyna major*, *Hahnia glacialis* og *Haplodrassus signifer*.

Ca. 45% af de fundne arter er nearktiske, 42% er holarktiske, og resten er palæarktiske. Disse tal stemmer overens med tidligere beregninger over den grønlandske edderkoppefaunas zoogeografiske sammensætning. Sammenlignet med andre invertebratgrupper i Grønland er procenten af nearktiske arter høj hos edderkopperne.