



Network for Arthropods of the Tundra

Outbreak Edition

Welcome all to the **Network for Arthropods on the Tundra** or NeAT as it will be known! This newsletter will appear in your inbox 2 times per year on or about May 1st and October 1st each year. The goal of this newsletter is to keep us all informed about potential collaborations, collections, meeting opportunities pre- and post-activity season and simply to stay connected, as well as, to share our experiences and research programs. We would also like to express our sincere thanks for your responses on the survey and we hope you will continue to help develop NeAT .

Featured arthropod: *Pardosa glacialis* (Thorell, 1872)



Ok, I am just a little bit biased here, but if you think another species should be highlighted next issue, please let me know. *P. glacialis* is described by Leech (1966) as being eurytopic, but at Zackenberg in northeast Greenland it is found more abundantly in mesic heath (pers. obs.) and is holarctic in distribution (World Spider Catalog Version 16). Leech described an individual's behaviour as follows: "Mating was never observed in *P. glacialis*, but one male which had repeatedly been shunned by all females, began courting a large male Chironomid, which was lying on its side almost dead. The male eventually mounted the fly in the usual *Pardosa* manner, it then discovered the mistake and ate the fly." Previous year's snowmelt is a good predictor of body size variation in this species and females are more strongly affected by environmental variation (Høye et al. 2009, Høye and Hammel 2010).

REFS: Leech RE. 1966. The spiders (Araneida) of Hazen Camp 81049' N, 710 18' W. Quaest Entomol 2:153-212 *World Spider Catalog* 2015. World Spider Catalog. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, version 16 Høye TT et al. 2009. Climate change and sexual size dimorphism in an Arctic spider. *Biol Lett* 5:542-544 Høye TT & Hammel JU 2010. Climate change and altitudinal variation in sexual size dimorphism of arctic wolf spiders. *Clim Res* 41:259-265

Upcoming events/opportunities

Upcoming conference

Entomological Society of Canada Meeting – Montréal, Canada, Nov. 8-11, 2015
http://www.seq.qc.ca/activites/reunions/SEQ-ESC_2015/index_eng.asp

Call for participation

While the role of invertebrate herbivory in tundra ecosystems has namely focused on defoliation events during outbreaks, we know relatively little about background (non-outbreak) herbivory levels. The goal of this study is to assess the occurrence and intensity of invertebrate herbivory at different tundra sites. We are looking for participants to collect samples from field sites in the tundra in summer 2015 (approx. time commitment 1 day, 2 people). Anyone who provides data and contributes to analyses and/or writing of the manuscript will be invited to be a co-author of the resulting publication. If interested, please contact Isabel C Barrio (icbarrio@gmail.com). This project is part of the activities of the Herbivory Network (www.herbivory.biology.ualberta.ca).

Summer 2015 Campaigns

- **Northeast Greenland** – This summer from early June to early August Tomas Roslin (University of Helsinki) and his crew will head to their stomping grounds at Zackenberg, Northeast Greenland to collect data for questions related to spatial variation in food web structure along elevational and phenological gradients.
- **Yukon** – Chris Buddle (McGill University) and his PhD student Shaun Turney will be collecting samples along the Dempster highway, Yukon, Canada in July with the goal of describing trophic structure of plant-macroinvertebrate tundra food webs along a north-south gradient.
- **South Greenland** – Toke T. Høye (Aarhus University) and colleagues will head to Narsarsuaq, South Greenland in continuation and expansion of the monitoring program that we established last summer in collaboration with Bo Elberling from the Center for Permafrost at University of Copenhagen, Denmark.

Please contact me (Joe) to announce events, research opportunities, new publications etc....
Joe Bowden jjb@bios.au.dk or joey.bowden@gmail.com

Newsletter

1 May 2015



Graduate corner (for students to share their work):

Rikke R. Hansen, PhD Student, Aarhus University, Denmark

With global climate change come changes to habitats, but the effects on biodiversity largely remain unknown. My research is concerned with understanding variation in arctic arthropod distribution across environmental gradients. In particular, I study the effect of habitat components, such as vegetation, moisture and temperature on arthropods across various scales. My study area is Greenland which makes for an interesting setting for studies on dispersal/colonization barriers due to the massive inland ice sheet, glaciers and other topographic challenges. Our knowledge of arctic arthropod distributions is scarce; my project will also aid in the mapping of arctic arthropod distribution and to identify some of the drivers that structure their diversity and distribution.



Tundra Arthropod Publications (please send new papers to Joe)

- **Barrio IC et al.** 2015. Diet breadth of *Gynaephora groenlandica* (Lepidoptera: Erebidae): is polyphagy greater in alpine versus Arctic populations? *The Canadian Entomologist* 147: 215-221
- **Barrio IC et al.** 2015. Warming the tundra: reciprocal responses of invertebrate herbivores and plants. *Oikos* 10.1111/oik.02190
- **Bolotov IN et al.** 2015. The distribution and biology of *Pararctia subnebulosa* (Dyar, 1899) (Lepidoptera: Erebidae: Arctiinae), the largest tiger moth species in the High Arctic. *Polar Biology* 10.1007/s00300-014-1643-2
- **Bowden JJ et al.** 2015. Habitat-specific effects of climate change on a low-mobility Arctic spider species. *Polar Biology* 38: 559-568
- **Coulson SJ et al.** 2015. Microarthropod communities of industrially disturbed or imported soils in the High Arctic; the abandoned coal mining town of Pyramiden, Svalbard. *Biodiversity and Conservation* 10.1007/s10531-015-0885-9
- **Ernst CM & Buddle CM.** 2015. Drivers and patterns of ground-dwelling beetle biodiversity across Northern Canada. *PLoS ONE* 10: e0122163
- **Kozlov MV et al.** 2015. Abrupt changes in invertebrate herbivory on woody plants at the forest-tundra ecotone. *Polar Biology* 10.1007/s00300-015-1655-6
- **Makarova OL.** 2015. The fauna of free-living mites (Acari) of Greenland. *Entomological Review* 95: 108-125
- **Rochefort S & Wheeler TA.** 2015. Diversity of Piophilidae (Diptera) in northern Canada and description of a new Holarctic species of *Parapiophila* McAlpine. *Zootaxa* 3925: 229-240
- **Wirta, HK et al.** 2015. Extensive niche overlap among the dominant arthropod predators of the High Arctic. *Basic and Applied Ecology* 16: 86-98

On the artist: Tom Lock is an artist from Australia who has traditionally worked in animation with companies such as Hanna Barbera and Walt Disney. He has recently moved into biological/archaeological drawing at various Natural History Museums in Denmark.



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