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***Ancistrocerus waldenii waldenii* (Viereck 1906) (Hymenoptera: Vespidae, Eumeninae), a new addition to the fauna of Greenland**

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Abstract

Ancistrocerus waldenii waldenii (Viereck 1906) is newly recorded from West Greenland. This is a new northern limit for the species.

Key words: Arctic, range expansion, migration, introduced species, wasps

Introduction

Greenland has an almost exclusively arctic climate with average temperatures in the warmest month not exceeding 10°C except for the interior parts of the southern fiords where subarctic conditions may be prevalent (Born & Böcher 2001). Compared with arctic Canada, the Greenland insect fauna is remarkably poor with less than 1000 species recorded (Henriksen 1939; Böcher & Kristensen, in preparation). In Greenland, the insect fauna is dominated by Diptera with some 340 species, and the Hymenoptera are second with about 200 species (Böcher & Kristensen, in preparation). Aculeate Hymenoptera are poorly represented in Greenland—as elsewhere in the arctic—and were represented exclusively by two species of high arctic bumblebees and one species in the family Dryinidae (Henriksen 1939; Pape 1983; Andersen & Nielsen 1987; Vilhelmsen, in preparation), until an unidentified species of potter wasp, *Ancistrocerus* sp. (Eumeninae), was reported from the inner parts of Kangerlussuaq/Sdr Strømfjord by Böcher (2001), although with no further details.

The Vespidae are a cosmopolitan family of relatively large, robust wasps with either social or solitary lifestyle. They are familiar to most entomologists and readily recognizable by the fore wings being longitudinally folded when in resting position, with the exception of species in the subfamilies Masarinae and Stenogastrinae. Most species are predators and hunt other insects to feed their larvae, although species in the subfamily Masarinae rely on nectar and pollen (Evans 1966). Although a fair number of vespids are found in North America, with several species recorded from the Canadian provinces Yukon, Northwest Territories and Newfoundland (Buck *et al.* 2008), only a few species are known from the province Nunavut, and Greenland was for long considered as entirely without vespids (Henriksen 1939, Krombein 1979, Buck *et al.* 2008).

Material and methods

During a PhD-course in arctic terrestrial arthropods in Greenland July 2013, arranged by the Norwegian Research

References

- Andersen, M. & Nielsen, P. (1987) *Gonatopus brooksi* Olmi, 1984 found in Greenland (Hymenoptera, Dryinidae). *Entomologiske Meddelelser*, 55, 21–22.
- Bequaert, J. (1943–1944) The North American species of *Ancistrocerus*, proper (Hymenoptera, Vespidae). *Entomologica Americana*, N.S., 23, 225–286.
- Böcher, J. (2001) *Insekter og andre smådyr— i Grønlands fjeld og ferskvand* [Insects and other bugs— in Greenland's fell and fresh water]. Vojens, Denmark; Atuagkat. [In Danish].
- Böcher, J. & Kristensen, N.P. (Eds.) (2014) *The Greenland entomofauna, an identification manual of insects, spiders and their allies*. [In preparation].
- Born, E.W. & Böcher, J. (Eds.) (2001) *The Ecology of Greenland*. Atuakkiorkfik Education. Ilinniuisorkfik, Nuuk, 429 pp.
- Bruun, L., Kristensen, R.M., Nielsen, N., Pedersen, G.K. & Pedersen, P.M. (Eds.) (2006) *Arktisk Station 1906–2006*. Copenhagen University & Rhodos, Copenhagen, 470 pp. [In Danish].
- Buck, M., Marshall, S.A. & Cheung, D.K.B. (2008) Identification atlas of the Vespidae (Hymenoptera, Aculeata) of the northeastern Nearctic region. *Canadian Journal of Arthropod Identification*, 5, 1–492.
<http://dx.doi.org/10.3752/cjai.2008.05>
- Downes, J.A. (1965) Adaptations of insects in the Arctic. *Annual Review of Entomology*, 10, 257–274.
<http://dx.doi.org/10.1146/annurev.en.10.010165.001353>
- Downes, J.A. (1966) The Lepidoptera of Greenland, some geographic considerations. *The Canadian Entomologist*, 98, 1135–1144.
<http://dx.doi.org/10.4039/ent981135-11>
- Environment Canada (2013) 1971 to 2000 Canadian climate normals station data: OLD CROW A, Yukon Territory. Available from: http://climate.weather.gc.ca/climate_normals/station_metadata_e.html?StnId=1582 (accessed 8 August 2013)
- Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong) & the GIS User Community. (2013) National Geographic World Map. ArcGIS Online. Available from: <http://www.arcgis.com/home/webmap/viewer.html?webmap=d94dcdbe78e141c2b2d3a91d5ca8b9c9> (accessed 14 June 2014)
- Evans, H.E. (1966) The behavior patterns of solitary wasps. *Annual Review of Entomology*, 11, 123–154.
<http://dx.doi.org/10.1146/annurev.en.11.010166.001011>
- Finnamore, A.T. (1997) Aculeate wasps (Hymenoptera: Aculeata) of the Yukon, other than Formicidae. In: Danks, H.V. & Downes, J.A. (Eds.), *Insects of the Yukon. Biological Survey of Canada Monograph*, Series 2, pp. 867–900.
- Henriksen, K.L. (1939) A revised index of the insects of Grønland. *Meddelelser om Grønland*, 119 (10), 1–112.
- Hijmans, R.J., Cameron, S.E., Parra, J.L., Jones, P.G. & Jarvis, A. (2005) Very high resolution interpolated climate surfaces for global land areas. *International Journal of Climatology*, 25, 1965–1978.
<http://dx.doi.org/10.1002/joc.1276>
- Hickling, R., Roy, D.B., Hill, J.K., Fox, R. & Thomas, C.D. (2006) The distributions of a wide range of taxonomic groups are expanding polewards. *Global Change Biology*, 12, 450–455.
<http://dx.doi.org/10.1111/j.1365-2486.2006.01116.x>
- Høye, T.T. & Forchhammer, M. (2008) The influence of weather conditions on the activity of high-arctic arthropods inferred from long-term observations. *BMC Ecology*, 8, 8.
<http://dx.doi.org/10.1186/1472-6785-8-8>
- Hughes, L. (2000) Biological consequences of global warming: is the signal already apparent? *Trends in Ecology and Evolution*, 15, 56–61.
[http://dx.doi.org/10.1016/S0169-5347\(99\)01764-4](http://dx.doi.org/10.1016/S0169-5347(99)01764-4)
- Johannessen, P. (1990) Observations on Lepidoptera in south and southwest Greenland. *Entomologiske Meddelelser*, 1, 1–8.
- Kristensen, R.M. (2006) De varme kilder [The hot springs]. In: Bruun, L., Kristensen, R.M., Nielsen, N., Pedersen, G.K. & Pedersen, P.M. (Eds.), *Arktisk Station 1906–2006*. Copenhagen University & Rhodos, Copenhagen, pp. 310–315. [In Danish].
- Krombein, K.V. (1967) *Trap-Nesting Wasps and Bees. Life Histories, Nests, and Associates*. Smithsonian Press, Washington, D.C., 576 pp.
- Krombein, K.V. (1979) Superfamily Vespoidea. In: Krombein, K.V., Hurd, P.D., Smith, D.R. & Burks, B.D. (Eds.), *Catalog of Hymenoptera in America north of Mexico. Vol. 2. Apocrita (Aculeata)*. Smithsonian Institution Press, Washington. pp. 1469–1522.
- Morris, R.F. (1959) Note on Occurrence and Nesting Habits of *Ancistrocerus waldenii waldenii* (Vier.) (Hymenoptera: Vespidae) in Newfoundland. *The Canadian Entomologist*, 91, 500–500.
<http://dx.doi.org/10.4039/ent91500-8>
- Pape, T. (1983) Observations on nests of *Bombus polaris* Curtis and *Bombus hyperboreus* Schönherr in Greenland (Hymenoptera: Apidae). *Entomologiske Meddelelser*, 50, 145–150.
- Saussure, H. de (1852–1853) *Études sur la famille des Vespides 1: Monographie des Guêpes solitaires ou de la tribu des Eumeniens*. J. Cherbuliez, Genève & V. Masson, Paris, i–xlx + 1–286 pp. + 22 pls. (1852) 1–128 + pl. 2–5, 7, 10, 14; (1853) i–xlx + 129–286 + pl. 1, 6, 8, 9, 11–13, 15–22.

- Saussure, H. de. (1854–1856) *Études de la famille des Vespides* 3. Masson, Paris, and J. Cherbuliez, Genève, xii + 352 pp.
<http://dx.doi.org/10.5962/bhl.title.39973>
- Spradbery, J.P. (1973) *Wasps—an account of the biology and natural history of solitary and social wasps*. University of Washington Press, Seattle, 408 pp.
- Vilhelmsen, L.B. (2014) Vespidae. In: Böcher, J. & Kristensen, N.P. (Eds.), *The Greenland entomofauna, an identification manual of insects, spiders and their allies*. [In preparation.]
- Viereck, H.L. (1906a) New species of Vespoidea from Connecticut. *Entomological news*, 17, 302–305.
- Viereck, H.L. (1906b) Corrections VOL. XVII. *Entomological news*, 17, 350.
- World Meteorological Organization (2010) Available from: <http://unstats.un.org> (accessed 8 August 2013)