

The tip of an iceberg: Four new fungus gnat species from the Scandinavian north

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Finnish fungus gnat species *Boletina valteri*, holotype male, preserved in alcohol.
Credit: Dr. Jukka Salmela

One may think that the extreme north of Europe is low in insect life, except for the notorious blood-sucking flies. However, while it is a generally accepted truth that both plant and animal species' count is higher the closer one gets to the Equator, some insects display anomalous diversity gradient. Such is the case for European fungus gnats, for example, a highly diverse group of true flies. No less than about 1000 species are known to occur in the Scandinavian Peninsula, representing about 83% of the continent's total. Furthermore, undescribed fly species are continuously being discovered from North Europe.

In a recent paper published in *Biodiversity Data Journal*, four new species are described. These species have been collected from mires and old-growth forests of Finnish Lapland between 2012 and 2014. One of the species has a wider range, known from Sweden, Norway and Canada.

'I must admit that it was a pleasure to give names to these species' says Dr. Jukka Salmela, conservation biologist at Parks & Wildlife Finland (*Metsähallitus*). 'These four species are really interesting, because they are rather distant to other known members of the genus *Boletina*. I am also confident that these species are very rare and may be dependent on old-growth forests or small water bodies such as springs and wetlands.'

The names of the new species all reflect northern nature in one way or another. *Boletina valteri* is named after Professor Valter Keltikangas, a forest researcher who made very demanding and physically tough field excursions to Finnish Lapland in the 1920's and the '30's.

Boletina kullervo derives from Kalevala, a Finnish national epic. It tells

the story of an orphan, called [Kullervo](#), who eventually kills his foster father and commits suicide. The violent story of Kullervo has also inspired composer Jean Sibelius for his first symphony, "Kullervo".



Malaise trap at Värriö Strict Nature Reserve, Finnish Lapland, a home of dozens rare and poorly known fly species. Credit: Dr. Jukka Salmela

Boletina hyperborea is self-explanatory, meaning far north. The species occurs in Yukon and in northern Scandinavia. Similarly, *Boletina nuortti* is named after the River Nuortti. In north Sami language nuorti means east. The gorgeous and wild River Nuortti flows from Finland to Russia.

No less than 100 Fennoscandian (Scandinavian) fungus gnat species await their formal description. 'The boreal and Arctic nature still holds many secrets. Entomologists with simple gear such as sweep nets,

Malaise traps and microscopes can still make notable discoveries even in rather well-studied regions such as Finland and Sweden. Samples collected from northern mires and boreal forests are never boring if one studies neglected groups such as small flies,' says Jukka Salmela. "These four newly described taxa just represent a small fraction of the numerous undescribed northern fly [species](#), so they are like a tip of an iceberg."

More information: Jukka Salmela et al. New and poorly known Holarctic species of *Boletina* Staeger, 1840 (Diptera, Mycetophilidae), *Biodiversity Data Journal* (2016). [DOI: 10.3897/BDJ.4.e7218](https://doi.org/10.3897/BDJ.4.e7218)

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