

BOGDIVERSITY THURSDAY



—*from Head Naturalist Clinton*

Springtails

POST #18—February 10, 2022

With a few warm days in the last week, it might be appropriate to consider a group of organisms that is sometimes only seen on warm winter days in the Sax-Zim Bog. This group is also seldom seen by observers due to their size. Today's Biodiversity Thursday post will consider springtails!

Springtails are a microscopic group of leaf-litter loving detritivores. They are part of an incredibly old group of early Hexapods, with fossil records dating back to 400 million years ago. This group of invertebrates is named for a post-like appendage under their bodies that "springs" them into the air when threatened. This appendage, called a furcula, unfurls at great speed allowing springtails to jump 100 times their body length in a single bound.

Not only are their jumping abilities amazing, but springtails are one of, if not the most, abundant group of organisms in the world. Estimates of around 100,000 individuals per square meter of soil is mind boggling! Springtails are very successful and can be found

in any habitat in the world, though they prefer leaf litter and moist conditions. Areas in the tropics may have 100 species or more in a small area, though deciduous woodlands could have 30-40 species roaming below the leaf litter.

In the Sax-Zim Bog, keen observers can get luck to see a special group of springtails during visits in the winter. These springtails are of course Snowfleas!

Snowfleas are not fleas at all, but a couple of species of dark springtails that are active on warm days in the winter (any day around 25-30 degrees or warmer). February can be a great time to look for these springtails, especially along trails like Gray Jay Way or Indian Pipe Bog. Like many winter-active insects, snowfleas bodies contain glycine-rich proteins that acts like anti-freeze, hindering the growth of ice inside their cells.

Due to their size, springtails are not easy to see or to ID, but we have been lucky enough to have documented five species or families of springtail in the Sax-Zim Bog, including two different families of snowfleas! The next time you are visiting the bog, especially on a warm winter day, take a second to investigate that patch of dirty looking snow and you might just get lucky to see some of these amazing invertebrates!

More information is found in the photos below.
(Photos by Head Naturalist Clinton)



Snowfleas are all dark springtails that are active during the winter. This Snowflea is in the family Hypogasturidae and is quite plump compared to the second family of snowflea observed in the Sax-Zim Bog.



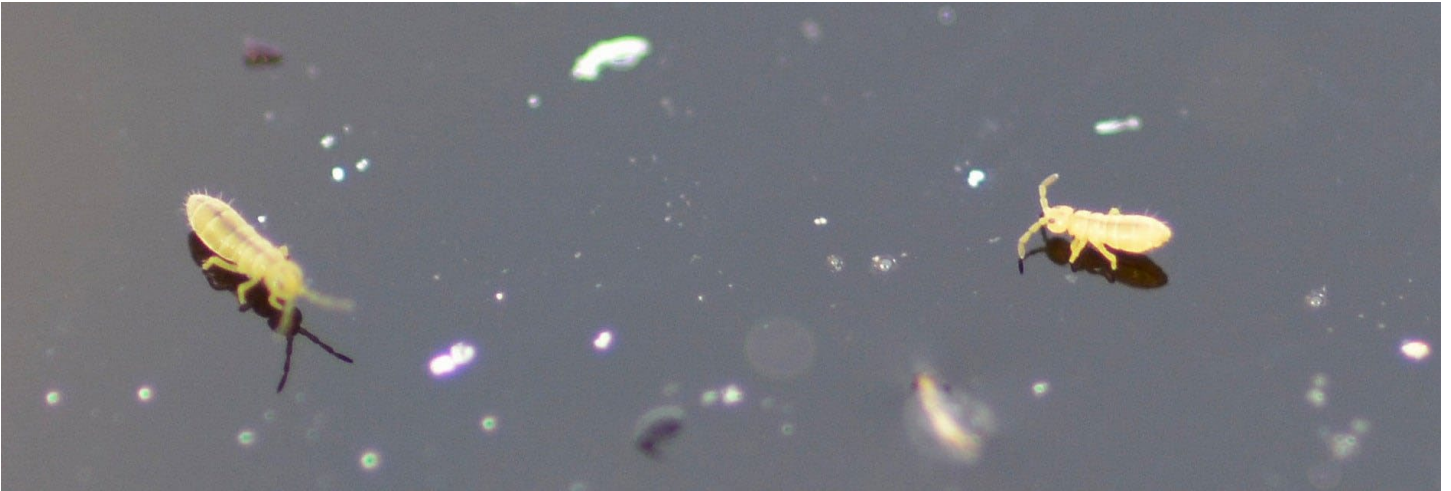
This snowflea is part of the family Isotomidae, or the smooth springtails. Though dark, this group is not a blobby as the Hypogasturid snowfleas. This individual was found off of McDavitt Road.



Globular springtails, like this Garden Springtail, are incredibly abundant during moth-watching sessions. They are rotund invertebrates, that when spooked, can jump and spin at up to 20,000 rpm!



Lepidocryptus paradoxus is a beautiful springtail and showcases yet another body plan in this amazing group of species. They are a fairly large springtail and are distinctly shiny blue in coloration. This one was found along Gray Jay Way during the summer.



The first spring tail added to the Master Species List was this one: *Isotoma viridis*! When looking for Wood Frog eggs behind the Welcome Center, I noticed the duckweed was moving. Upon closer inspection, the duckweed was actually thousands of these green springtails!



When looking for snowfleas, stop to investigate any bits of dirty looking snow. If the pieces of dirt begin to move, they are probably snowfleas! Hand lenses or macrophotography gear is really crucial to truly appreciating these tiny invertebrates.