

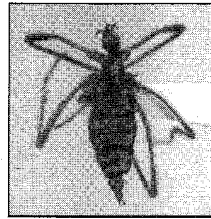
Life on Snow, the Mini World of Critters that Live on the Snow Surface

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Early in March I was heading up a favorite Gore Range tour when I happened to look down at my skis. What I saw made me stop dead in my tracks. Thousands of little black dots were hopping all over the snow. The things, as tiny as the head on a pin, were everywhere. Either someone in a tree above me just spilled their pepper shaker, or the snow was springing to life. We had always called them snow fleas. They aren't the kind of flea that drives your dog nuts with scratching, but a different kind of insect all together. These fleas are actually called springtails, or the scientific name, Collembola. These guys have two really tiny tails that wrap and hook under their abdomens. When released these tails cause the little guys to spring into the air, looking like the cartoons of the flea circus we saw when we were growing up. These snow fleas, as we'll still call them, live on the soil all year long, but they can make it to the snow surface on warm spring days, especially around trees. They feed on decaying plants and actually help form better soil in our mountains. For some reason they sometimes migrate to the snow surface as temperatures begin to rise. Look for them if you are heading into the backcountry this spring.

Another insect you can find on the top of the snow pretty much all winter is the wingless fly. I've seen these stilted creatures on tours for many years. At first I thought they were spiders, but upon closer inspection they have only 6 legs. These snow flies are members of the Crane Fly family, or *Chinoea nigra*. Most of us have seen the big mosquito looking fly during the summer months, that gangly insect is also a member of the Crane Fly family. Several years ago I called Billy Barr with the Rocky Mountain Biological Labs in Gothic to see what he could tell me about Crane Flies. At that time he had little information on them (this was many years before the advent of the world-wide-web and Google searches). Billy really couldn't tell me much about them, only a minor effort had been put into their research. As of

2006, both the University of Colorado and the University of Kansas have done research on these winter enigmas. It seems that these snow flies have an antifreeze-like substance in their blood, which allows them to survive frigid winter temperatures. When temperatures really drop, these flies find routes back under the snow surface. Back to the warmer ground surface, just like we would when seeking shelter in a snow cave. These flies are most often found from 8,500 feet to timberline in Colorado. They



(Photo: Courtesy
CU Museum, ©2004)

seem to be most active when the temperature hovers around 25 to 30 degrees. Snow fly larvae, like snow fleas, also appear to feed on decaying plant matter, though adults have never been seen feeding. It is thought since adult flies may not eat, there would also be no internal plant material to act as nuclei to start the freezing process, which would rupture cell membranes with the sharp edged ice crystals.

Like snow fleas, the snow fly has little to worry about from predators. The winter climate keeps most enemies at bay through the long cold days and nights.

Another oddity recently discovered about these flies is an even smaller life form, called nematodes, or very small roundworms. It seems that nematodes build a ring, or necklace around the neck of some snow flies, using them as a means of transportation. It is thought that these nematodes eat feces, probably from mice. So the snow flies carry the nematodes from mouse burrow to mouse burrow. As you can imagine, not much research has been done on any of these strange creatures, but it is certain that odd creatures are living under foot. I'm still trying to find the elusive snow-snake my parents always blamed for the crashes we had as kids while skiing at the Basin. For more info on snow flies you can go to http://cumuseum.colorado.edu/Research/Objects/dec04_snowfly.html or <http://www.emporia.edu/ksn/v38n2-may1992/KSNVOL38-2.htm>. For more on snow fleas, try <http://www.collembola.org>. There are some great photos and more information than you can probably take in. *