



OH WOW! LOOK AT THAT FLY!

By Larry Clarfeld

This is not an uncommon expression from a camper in the “Forest of Mysteries” summer camp, where we explore whatever we find outdoors. But this fly was more than uncommon: it was a once-in-a-lifetime encounter with one of the most bizarre creatures to fly through Vermont’s forests: *Cuterebra emasculator* (the Squirrel Bot Fly).

One of the first things you notice as you closely examine the face of this bumblebee-like fly is that it has no mouth. In fact, the bot fly’s mouth implodes upon emerging from its pupa. Adult flies do not eat, and only live for around a week. Within this short adult life, they quickly go about mating and laying eggs, and are rarely encountered. The bulk of *C. emasculator*’s life is spent in its larval stage, just under the skin of a chipmunk.



Cuterebra emasculator, the Squirrel Bot Fly

Eggs of *C. emasculator* are laid just above the entrance to chipmunk burrows, or above their frequently-traveled trails. As a chipmunk passes under an egg, its body heat causes the egg to hatch and the freshly-emerged larva drops onto the mammal’s back. The larva quickly finds its way into the body (through mouth, nose, etc.) and wanders until eventually settling down (often near the testes). There, the larva drills a snorkel through the skin and the chipmunk’s tissues develop an isolated chamber (warble) for the larva.

The larva often emerges from the chipmunk without causing life-threatening injury. This is to the fly’s advantage. After all, if a parasite kills off its host, it may put itself “out of business”. Allowing the host to survive

helps sustain the species. And thus this parasite and its chipmunk host manage to coexist.



Cuterebra emasculator is an obligate parasite of tree squirrels and chipmunks throughout most of eastern NA

This is just a small taste of why I always look forward to the next time a camper says,

“Oh, wow, look at that!”



Adult bot flies are 16-22 mm in length

[Editor’s Note: Larry took these photos and wrote this article for the North Branch Nature Center blog after finding the bot fly at Little River State Park. Alan Graham confirmed the identification. See <http://northbranchnaturecenter.blogspot.com/2013/07/oh-wow-look-at-that-fly.html>]