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# Parasites of Caribou: Fly Larvae Infestations



## Introduction

All wild animals carry diseases. In some cases, these might be of concern if they can spread to humans or domestic animals. In other cases, they might be of interest if they impact on the health of our wild herds, or simply because the signs of the disease have been noticed and you want to know more.

This pamphlet is one of a series produced on the common diseases of caribou, and it covers the larval form of two different flies commonly seen in this province. Neither of these are a cause of public health concern.

## Fly Larvae Infestations

Warbles and throat bots are common names for the larvae of two types of flies that can be found in the carcasses of caribou in this province. Many people who hunt these animals may be familiar with their appearance.

## Warbles

Warbles are the larvae of the warble fly (*Hypoderma tarandi*), which lays its eggs on the hair of the caribou's legs and lower body in mid-summer. Once the eggs hatch, the larvae (maggots) penetrate the skin of the caribou and start a long migration towards the animal's back.

Hunters may see signs of these migrating larvae in the fall when skinning out an animal. At this early part of the

larvae's life, they are about the size of a small grain of rice and are almost transparent. They may be seen on the surface of the muscles or under the skin.

Through the winter and into the spring, they continue their migration up to the spine and rump of the animal where they cut a breathing hole through the skin.

By early summer, the warbles are about 1 inch (2.5 cm) long and are ready to emerge from the back. They then fall to the ground and pupate. From the pupae emerges the adult fly that only lives long enough to mate and lay its eggs on another caribou. The adult lives such a short time that it doesn't even have mouth parts to feed.

The growth and emergence of the larvae and the buzzing of the adults around the caribou as they try to lay their eggs can be very annoying to the animal. At this time of year, they may appear agitated and are sometimes seen jumping around to avoid the irritation.



Figure 1: Warble fly pupa and adult.

The infestation usually does no harm to them other than annoyance and is not considered to have any public health significance. The hides of animals that have been affected can often have 100's of holes or scars in them from the emerging larvae and therefore have minimal value for leather.

This infestation is not considered to affect other animals. Cattle often have warble flies of their own, but these are of a different species.



Figure 2: Warble fly larvae emerging from back.



Figure 3: Bots in the throat of a caribou.

## Throat Bots

The second larvae of interest is the throat or nose bot (*Cephenemyia trompe*). Its life cycle starts with the female fly laying larvae on the face of the caribou around the nostrils. Unlike the warble fly, in the case of the bot, there is no egg laid, it is actually a larvae (maggot) that leaves the female. These larvae then crawl into the mouth and into the caribou's nasal sinuses and back of the throat where they spend the winter. In heavy infections, there may be well over 50 of these larvae occupying these cavities. This can cause suffocation of the animal in extreme cases, as well as varying degrees of local reaction and pneumonia.

In the spring, the larvae detach themselves from their host and leave through the nostrils where they fall to the ground. This can cause a lot of distress to the caribou, including snorting and sneezing as they block and irritate the nostrils. Once on the ground, the larvae pupate and develop into an adult. In the fall, the adults again swarm around the caribou to lay more larvae on their faces. This swarming accompanied by loud buzzing can be very disturbing to the caribou, causing them to run around and at times lose condition if they stop feeding.