THE RUB POST

GHOST MOOSE

By Dr. Vince Crichton

The month of August is about to close and hunting seasons will follow shortly. When this article appears we will be in the grasp of ol' man winter and moose will be loaded with ticks. However, from about May 1 to early October is the only time of the year when moose are not infested with these obnoxious little critters. Many believe these ticks are the usual wood ticks seen in the west during the summer period. Not so! The moose tick (or winter tick with the scientific name Dermacentor albipictus is different from the common wood tick Dermacentor variabilis). The moose tick is a one-host tick whereas the wood tick requires 2 hosts to complete its life cycle. Moose ticks are found throughout the moose range with the exception being Alaska, however, research has illustrated that they can survive in that environment.

Female ticks engorge themselves on moose blood in late winter and all have dropped off by about the first of May. In mid-May they will have laid 1000's of eggs (which I have demonstrated in containers in our kitchen much to my wife's chagrin), hatch about the end of July and stay inactive until late September or early October when temperatures start to drop. At this time clumps of what are referred to as "seed ticks" concentrate on the tops of vegetation (grasses). As moose and other big game move about their home range and brush against vegetation, the ticks attach themselves and burrow down into their hair coat. In the 70s and early 80s it was mandatory for Manitoba big game hunters to wear whites. During the hunting period many hunt-

ers have asked me about small rust coloured critters crawling on their whites – these are the larval ticks which have become attached as they moved about their hunting area.

Once on moose (or elk, caribou or deer), larvae begin to take a blood meal and in mid-November moult to nymphs. These nymphs begin taking a blood meal in January and in mid-February moult to adults and the females begin to engorge themselves with the host's blood. Once engorged they are large grey coloured and can reach the size of small grapes. During late March and early April these engorged females detach from the host and crawl under old leaves and grasses where they deposit their eggs (in the 1,000s). One spring I sat and observed a moose for about 2 hours and when it got up and moved, I carefully searched the bedding site under the dead leaves and picked up 48 full engorged female ticks.

How many ticks can be on a moose? In the late 80s and early 90s with the co-operation of Dr. Bill Samuel from the University of Alberta the number of ticks on a sample of moose hides supplied by successful Manitoba hunters were counted. In those years in which climatic conditions were good for ticks, the average on calves in early December was about 56,000, 39,000 on bulls and 29,000 on cows. One bull had 96,000. It is speculated that once infested with ticks the animal develops a degree of immunity which would explain why so many are on calves of the year. Dr. Samuel estimated that the average number on moose in British Columbia, Alberta and Manitoba was about 32,500 or about 9 ticks per square inch. He also found that there were significantly fewer ticks on elk (3,400), deer (1,450) and bison (175).

Tick numbers are controlled by weather conditions. Late winters with snow still prevailing well into April results in a significant mortality of female ticks and early heavy snows in October pushes the grasses harbouring seed ticks to the ground and the number on moose drops significantly. When such conditions prevailed in the early 90s in Manitoba we found an average of about 16,000 ticks on moose.

Moose mortality in Manitoba associated with winter ticks has occurred in the Aspen Parkland- western Manitoba. In the spring of 2002, in this area about 40% of the moose population died due to a combination of heavy tick infestation and a long cold wet spring. A similar mortality was observed in Saskatchewan.

A high percentage of moose emerge from winter with varying degrees of tick induced hair loss which in some cases can be well above 50%. This is the result of excessive grooming due to the irritation caused by ticks. These moose are restless, develop chronic anemia, have low serum protein and experience significant loss of body fats. These conditions can lead to infections (e.g. pneumonia) and mortality later in the spring or early summer when one would expect them to have overcome the afflictions picked up earlier, because in spring they essentially are wandering about with a reduced hair coat in adverse climatic conditions.

The moose hair shaft is dark toward the outer part but that near the skin is grey. Therefore with extensive grooming the shaft is broken and moose in the spring appear greyish in colour due to the hair shaft being broken – these are referred to as "ghost moose".

As noted earlier, deer do get 'winter tick' but with much smaller numbers. I have had deer hunters submit hides with patches of hair loss – by shaving the hair around the edges of these sites more ticks have been observed. When ticks attach to deer there is an intense host reaction to them and they groom extensively at the site to rid themselves of these critters thereby removing patches of hair.

I have never observed moose mortality in Manitoba's boreal forest due to winter ticks. My contention is that the ground in the boreal forest stays cooler for a longer period in the spring and in many cases the snow lasts longer all of which are not conducive for high tick survival.

Those hunters who are successful in taking an animal in fall or early winter should be able to see larval ticks at the base of the hair shaft – peel back the hair and closely examine the base of the shaft – they are small, reddish coloured and about the size of a pin head. Are moose safe to eat with ticks? Absolutely!

The presence or absence of engorged female ticks has also been used in poaching cases. Dr. Samuel was asked for an opinion related to a seized moose hide which was loaded with engorged adult female ticks. The contention by the owner was it had been shot in the late fall or early winter – the court accepted Dr. Samuel's testimony that this was extremely remote and a conviction was obtained.

"Remember, it's your game, get involved"