

WHITE AS A GHOST: WINTER TICKS AND MOOSE

BILL SAMUEL. 2004. University of Alberta. Federation of Alberta Naturalists, Volume 1, Natural History Series. v + 100 pp. Hardbound, 22 cm x 28 cm.

There are a number of books on ticks and tick-related issues, most of which are packed with scientific facts and detail, which make them excellent resource books but not the sort of book you might consider as bedtime reading. By contrast, this book is one that will appeal to a wide audience: the natural history buffs, hunters, livestock producers, scientists, anyone who has been curious about ticks. This is a story about the relationship between one species of tick, the winter tick or moose tick, and its primary host, the moose.

The fact that this book is about just one species of tick is unusual enough; I can't think of another book like it in that regard. In addition, much of Bill Samuel's treatment of the winter tick is a first-hand account of what he and his students, as well as others, have found during decades of exploring the intricacies of the winter tick/moose interaction. For that reason, I specifically appreciated some of the hypotheses presented. Interactions between parasite and host are complex and not all of the answers are known.

The book begins with an introductory chapter on ticks and specifically on the winter tick and moose. The following five chapters explore the nature of the winter tick, including a history of outbreaks, intimate details on its life history, adaptations to acquiring its hosts, factors affecting their success in infestation and ultimate survival, and the impact on moose. The tick-moose interaction is a two-sided struggle, however, and in the next two chapters the author elaborates the defensive strategies of moose in the face of this extraordinary challenge of infestation. He even

explores interactions with other important parasites of moose, including meningeal worm and liver flukes. For game managers, there is a chapter on some of the approaches to reducing impact of winter ticks. There is also a short appendix that presents methods used to calculate the impact of these ticks. All citations are fully referenced at the end of the book, for those who wish to explore the subject in greater detail.

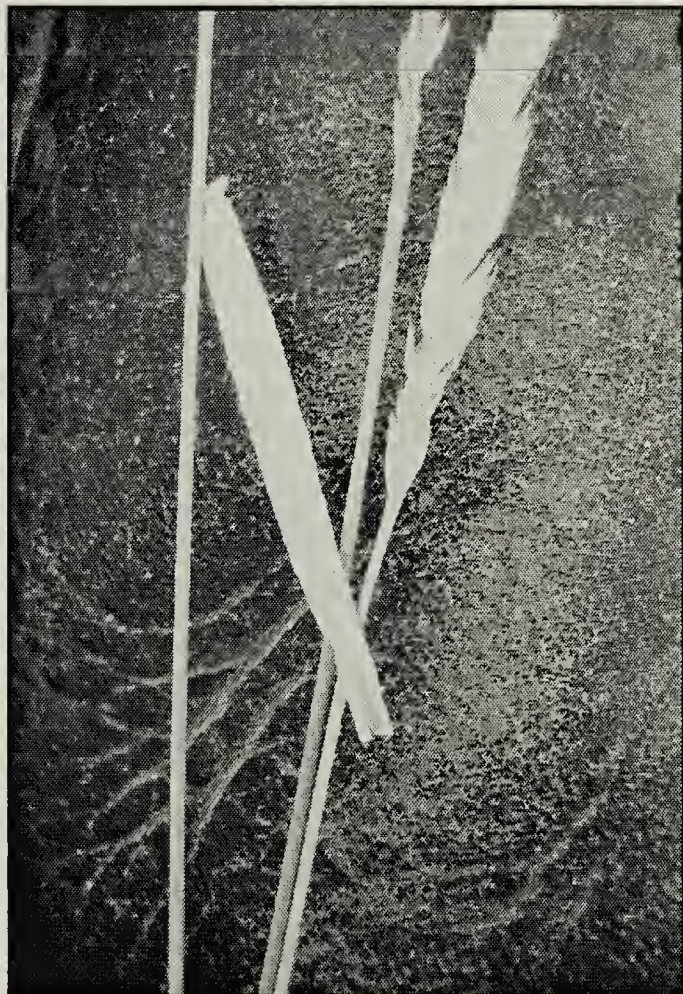
This relatively large format, handsomely-bound book is filled with colour photographs and illustrations. The massive clump of tick larvae assembled on the tip of a grass blade shown at the beginning of Chapter 4 leaves little doubt about how moose can acquire an infestation of tens of thousands and even more than 100,000 ticks. The close-ups of ticks and the impact that they cause in moose are some of the best photos I have seen of these topics. Only occasionally is a photograph enlarged beyond its resolution resulting in a moderately grainy appearance, for example, the full-page figure of a dense aggregation of feeding ticks on page 32. The text itself is well balanced, clearly written, and informative, without being overly technical. For the person who longs for specific data on this relationship, there are numerous tables and figures in which the author has substantiated his observations as presented in the text. The author has offered readers a broad palette of information that is factual, contains historical perspective, and is fascinating.

Reviewed by Terry D. Galloway, Department of Entomology, Faculty of Agricultural and Food Sciences, University of Manitoba, Winnipeg, Manitoba R3T 2N2

MYSTERY PHOTO

JUNE MYSTERY PHOTO

The animal that made these tracks is about three inches long. What is it and what was it doing?



ANSWER TO THE MARCH MYSTERY PHOTO

Blue Jay was not flooded with answers about the March mystery object. Perhaps this is another one of those odd things seen by field biologists when they are looking for something else (as mentioned in the tadpole shrimp article), but otherwise not generally encountered. That the object might be the case of a case-bearing moth was first suggested to us by Don Buckle and following that lead, with help from the on-line entomological community, we contacted Jean-François Landry, Curator, Canadian National Collection of Insects and Arachnids in Ottawa, who provided the information presented below. We would like to thank all those who guided this inquiry, and Dr. Landry for identifying the mystery object

and for the information about this group of moths. We'd also like to thank Michelle Lanoie for taking the photograph and making it available to *Blue Jay*. - Eds.

This is a *Coleophora* larval case. *Coleophora* is a genus of small moths known as the case-bearers. The larva constructs a case, such as the one shown here, to live inside and feed from. Most species are leafminers, that is the larva eats out a small circular hole underside a leaf where it attaches its case and from there eats out a small blotch mine. Also many species are specialized seed feeders, cutting out a hole in the seed of their host plant and emptying out its contents, often using hollowed seed hulls as building bases for their case. The cases may afford some degree of protection, from the weather certainly, but not from parasites because they are heavily parasitized by hymenopterous parasitoids. The mature larva attaches the case to a fixed object such as a nearby plant

and pupates inside it. The adult moth emerges a few weeks to several months after the case has settled. Many species overwinter as mature larvae in their case and adults emerge the following summer

The species of *Coleophora* cannot be identified based on this photograph. In the West there are a number of undescribed species that make this kind of case, the larvae are usually on composites (Asteraceae) and feed when the plants are young in the spring until about late May to mid-June. Adults fly in July or early August. I have reared a couple of them from Golden-Aster (*Chrysopsis*) and Snakeweed (*Gutierrezia*). Another potential good host for these is gumweed.

Coleophora is one of the largest genera of Lepidoptera with a current species count at nearly 1500 in the world and numerous undescribed species awaiting naming and cataloguing by taxonomists.



What bird is this? This photo was taken at Last Mountain Bird Observatory, May 30, 2005 by Robert Wapple. The answer will appear in the September issue.