



Insectary Notes

INSECTARY

NS Dept. of Natural Resources

May/June 2009

From the Editor

The month of July has slipped away and the newsletter is "better late than never." The first part of the issue *Focus* has a very useful photo of the four more common ticks found in NS. The second part deals with a very inventive way to detect the presence of an invasive forest pest.

Also included are an update on the jack pine budworm project and a reprint of the directions on how to remove a tick.

'Til next time,

Jacqui

Editing . . . a Rewording Activity

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Say What and Quotes . . .

A perfect summer day is when the sun is shining, the breeze is blowing, the birds are singing, and the lawn mower is broken. -J. Dent

Being a child at home alone in the summer is a high-risk occupation. If you call your mother at work thirteen times an hour, she can hurt you.

-E. Bombeck

If all else fails, immortality can always be assured by spectacular error. -J. K. Galbraith

Cheese . . . milk's leap toward immortality.

-C. Fadiman

If you don't know where you are going, you will wind up somewhere else! -Yogi Berra

The shortest distance between two points is under construction. -Noelie Altito

The trouble with being punctual is that nobody's there to appreciate it. -Franklin P. Jones

All my life, I always wanted to be somebody. Now I see that I should have been more specific. -Jane Wagner

When you ask "A penny for your thoughts?", you get what you pay for. -Anon.

Focus

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There are two creatures featured in this issue's **Focus** . . . called simply "Focus" because one is an insect and the other is not.

The first because there has been a lot of interest in it and the second because it is just plain interesting!

Which Tick is Which?

Jeff Ogden

I am often asked for pictures of ticks that can be found in Nova Scotia. Forest Health is currently in the process of producing (with a great deal of help from Wayne Burt and his counterparts) new tick posters and a colour fact sheet. In the mean time, we hope that the photos below will aid in the identification of a few of the more common ticks in the province.

A. Groundhog tick (*Ixodes cookei*)

Adults are common during the summer on small to medium sized mammals: including cats, dogs, foxes, skunks and of course groundhogs.

B. Blacklegged tick (*Ixodes scapularis*)

Adults are common in late summer through to early spring on larger mammals: including dogs, deer and humans. Nymphs are common in summer primarily on birds and small to medium sized mammals.

C. American Dog tick or Wood Tick (*Dermacentor variabilis*)

Adults are common from early spring to midsummer on medium to larger mammals: including dogs and humans.

D. Snowshoe Hare tick (*Haemaphysalis leporispalustris*)

Adults are common during summer months on snowshoe hare.



Fig. 1 Images of adult ticks commonly found in Nova Scotia. **A.** Groundhog Tick; **B.** Blacklegged Tick; **C.** American Dog Tick; **D.** Snowshoe Hare Tick. (All enlarged)

Photo credit: J. Ogden, NSDNR

Cerceris fumipennis - a solitary ground-nesting wasp - and so much more!

Jeff Ogden, Jacqui Gordon

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Where to begin . . . hmmm . . . The emerald ash borer (I know, this is supposed to be about a wasp but we need some groundwork first) is a beetle that has devastated native ash trees in ten states and two provinces.

The emerald ash borer (EAB) is an invasive alien species native to eastern Asia. It is spreading to various sites within northeast Canada and the US leaving dead stands of native ash trees in its wake. For most beetle pests, the only early monitoring tools currently employed are a variety of intercept

traps baited with either pheromones or lure attractants. These traditional forest pest monitoring techniques have not been successful in detecting the emerald ash borer. Enter *Cerceris fumipennis* . . . a new type of biomonitoring method currently being used in many provinces and states.

Definitions:



Flight intercept trap: a passive device that relies on instinctive insect behaviour. A flying insect is attracted to the trap, collides with the trap, and (in the case of a beetle) drops into the collection container. Other insects (flies, wasps) may respond to an intercept trap by flying up.

Biomonitoring/ Biosurveillance: using another species to survey for a pest species.

Researchers are utilizing a native, beetle-hunting wasp to discover new EAB populations. *Cerceris fumipennis* is a solitary, predatory wasp. It preys on the adult emerald ash borer, as well as related native beetle species (metallic woodboring beetles - Buprestidae). The wasp stings the beetle, injects a paralytic venom, and then carries the paralyzed beetles back to its underground burrow to feed to its larva. Currently there are nine species of *Cerceris* thought to occur in our region. All species prefer dry, sandy habitats. Each lone female constructs an underground nest. There is no formal colony structure but nests are often found close together, forming a neighbourhood or informal colony, if the habitat is large enough to support multiple females.

To sample for EAB, adult *Cerceris* wasps are captured upon returning to their nest, their beetle prey is identified, and the wasp is released. In an effort to be proactive against the threat of EAB in Nova Scotia, Forest Health is undertaking a survey of potential *C. fumipennis* populations in sandy barren areas of western NS this summer. Staff will visit as many sites as time allows and will actively search for

potential suitable wasp habitats or if any evidence of burrowing is present, the wasps themselves. Samples of all wasps species will be collected via aerial nets and yellow pantraps. Specimens will be processed and identified back at the lab. It is hoped that wasp populations will be found in NS, giving us yet another useful tool in our battle against the ongoing threat of alien invasive pests.

Thanks to the CFIA for allowing us to use information found in the booklet: *Cerceris fumipennis* - A Biosurveillance Tool for Emerald Ash Borer. 2009. Prepared by Philip D. Careless, Stephen A. Marshall, Bruce D. Gill, Erin Appleton, Robert Favrin, and Troy Kimoto. You can order copies of this publication (no cost) at (613) 773-5265. And to Colleen Teerling, Entomologist with the Maine Forest Service for the use of the pamphlet: Wasp Watcher. If you are interested in learning more about these helpful native wasps or searching for them in Nova Scotia, please visit www.cerceris.info. Consider becoming a "citizen scientist" to help find and watch the native wasps working in and around your communities.

Provincial Entomologist's Overview . . . What's the Buzz?

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Funded by the National Forest Pest Strategy, Forest Pest Management staff from the New Brunswick Department of Natural Resources (NBDNR) arrived in Nova Scotia in early July for a Brown Spruce Longhorn Beetle (BSLB) training session. This invasive beetle has yet to be found in New Brunswick. However, this collaboration and proactive approach of obtaining information and survey methodology is fantastic. The training session was a cooperative adventure involving

NSDNR Forest Protection staff, the Canadian Food Inspection Agency (CFIA), and the Canadian Forest Service (CFS). The training session included presentations ranging from a history of the beetle in Nova Scotia to regulations defined by the CFIA to new developments in science and research by the CFS. Various field sites were visited to observe trapping methods, signs and symptoms of beetle attack, and several research and mating suppression projects.

During the 3-day training session, we also introduced our New Brunswick counterparts to some of the current NS forest pest issues (although in some cases very little introduction was needed). We travelled to the western region to examine pale winged grey larvae and their damage. In Lunenburg, we visited a red pine stand infected with the fungus that causes Sirococcus shoot blight and a spruce stand where the spruce beetle caused tree mortality. We highlighted the differences between the signs and symptoms of our native spruce beetle and the invasive BSLB.

The visit was a wonderful chance for our department to collaborate with our neighbors. It was a fantastic way to transfer information, knowledge, and specialities. We thank New Brunswick for the visit and look forward to another such chance in the future.

Until Next Time,

Chrissy

Chrissy Campbell
Science Officer, Pest Management

And as the exams have all been corrected here are some "Funny Test Answers from Children" . . .



When people run around and around in circles we say they are crazy. When planets do it we say they are orbiting.

We say the cause of perfume disappearing is evaporation. Evaporation gets blamed for a lot of things people forget to put the top on.

Germinate: To become a naturalized German.

Vacuums are nothings. We only mention them to let them know we know they're there.

Bits and Pieces

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Removing ticks: not the old-fashioned way!

L. Robbin Lindsay, Public Health Agency of Canada, Winnipeg, MB

Ticks suck, blood that is and they are well suited to do so. Ticks are slow feeding ectoparasites that have evolved specialized mouthparts to anchor them into their feeding site and some species even secrete a cement like substance to ensure that they remain attached to their host. They need to have this type of feeding machinery because they take as long as seven days to complete each blood meal. Ticks require blood in order to develop (or moult) to the next developmental stage (most ticks have three active stages namely: larvae, nymph and adult male and female) and females need blood in order to develop eggs. Ticks take blood meals from a variety of animal hosts and unfortunately some species will

Readily feed upon humans. In Nova Scotia, the most widespread species of tick that will bite people is the American dog tick, *Dermacentor variabilis*. However, a number of other species will also bite people and the most important species with respect to potential disease transmission is the blacklegged tick, *Ixodes scapularis*. Blacklegged ticks can transmit the agent of Lyme disease, *Borrelia burgdorferi*; however, blacklegged ticks need to be attached for 24 to 36 hours before the bacterium begins to be transferred from the tick to the animal or person it is attached to. As a result, finding and promptly removing them is one of the keys to disease prevention.

There are a number of traditional or "folk" remedies for removing ticks and these include: applying a hot match to the tick, or "smothering" the tick with a number of substances, the most common one used being, petroleum jelly. The Public Health Agency of Canada does not advocate the use of these methods because experimental infestations of animals has shown that these methods either fail to produce the decided effect (i.e., the tick "backs out" or drops off) or the method, like using a hot match, can actually damage or rupture the tick resulting in a greater potential for exposure to any microorganism that might be in the body fluids of the tick. Hot objects might also cause an accidental burn and may even induce the tick to salivate or regurgitate infected fluids into the feeding site. The most effective and fastest method for removing a tick is to use tweezers (or protected fingers) and grasp the tick as close to the skin as possible and pull straight up with steady even pressure. If cement or parts of mouthparts remain, then extract these, if that is practical. As the mouthparts are composed of chitin, they will eventually grow out of the feeding site if they happen to break off during tick removal. The bite site should be disinfected with soap and water (or antiseptic lotions) before and especially after tick removal. Suspected blacklegged ticks can be submitted to Forest Health in Shubenacadie for identification and possible testing for Lyme disease at the National Microbiology lab in Winnipeg.



Tribute?

Today we would like to thank Albert for his service to our company. Albert is someone who does not know the meaning of impossible task, who does not know the meaning of lunch break, who does not understand the meaning of the word no.

So we have clubbed together and bought Albert a dictionary.

From the email bag . . .

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Oystershell Scale

This picture was sent to us by Nelson Poirier with the accompanying question "what is this?" He found it on a young apple tree (Transparent/ August Apple) in Moncton, New Brunswick.

Oystershell Scale is a species of insect in the armoured scale family, Diaspididae (order Homoptera), that is found on woody plants. It secretes a hard, tough protective covering that resembles a miniature oystershell. Despite its small size, the oystershell scale can inflict great damage on the trees and shrubs on which it lives.

Control is by dormant, or horticultural, oil spray and natural enemies such as birds, mites, and parasitic wasps.

Information from:

<http://www.britannica.com/EBchecked/topic/437118/oystershell-scale>

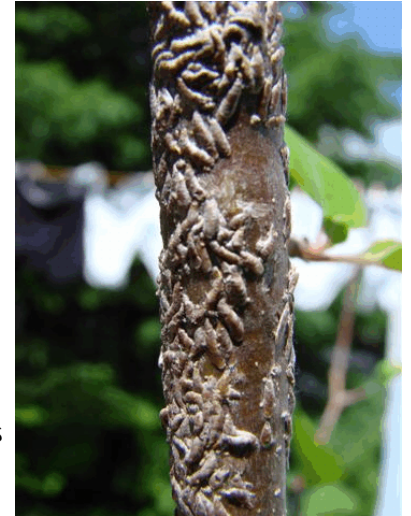


Fig. 3 Mysterious insects on apple. Photo Credit: N. Poirier

Project Updates

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Jack Pine Budworm (JPBW)

Mike LeBlanc

Although native to this area, JPBW is a new forest pest in Nova Scotia. In other parts of Canada, JPBW feeds on jack pine. In Nova Scotia, it feeds on mature white pine so it is important to assess any behaviour or life stage timing differences that are associated with this new host tree.

Since 25 May, Forest Health staff have been conducting weekly site visits to one of our current JPBW infestations at 4th Lake Flowage, Digby Co. Larvae were sampled from white pine foliage in order to determine their development stage and better understand JPBW biology as it exists in Nova Scotia. From this information we can determine the approximate calendar dates along with the heat unit data as it goes through each stage of its life from egg, larva, pupa, and adult. This information is invaluable when deciding monitoring, assessment, and management options before, during and after an outbreak.



Fig. 4 Jack pine budworm defoliation in mature white pine. Photo credit: M. LeBlanc, NSDNR

What we've observed so far . . .

- June- 1 - 8: larvae began dispersing from their overwintering sites to the shoots and male flowers. The trees in the study area are heavy with male flowers, which is considered by some to be one of the most important factors to the survival of the larvae and the longevity of an outbreak. So, it's likely that trees in this area will be heavily defoliated again this year.

THE LAST LAUGH ...

Little Johnny's Summer

Summer was over and the teacher was asking the class about their holidays. She turned to little Johnny and asked what he did over the summer.

"We visited my grandmother in Minneapolis, Minnesota," he said.

"That sounds like an excellent vocabulary word," the teacher said, "Can you tell the class how you spell that?"

Little Johnny thought about it and said, "Come to think of it, we went to Iowa."



Little Johnny's Field Trip



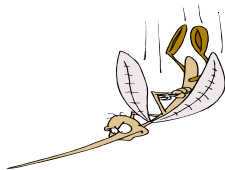
Little Johnny's kindergarten class was on a field trip to their local police station where they saw pictures, tacked to a bulletin board, of the 10 most wanted men.

One of the youngsters pointed to a picture and asked if it really was the photo of a wanted person.

"Yes," said the policeman. "The detectives want him very badly."

So Little Johnny asked, "Why didn't you keep him when you took his picture?"

HOW DO YOU KNOW IF YOU'VE BEEN BITTEN BY A TOUGH MOSQUITO?



YOU SLAP HER AND SHE SLAPS YOU BACK!



Once a captain on his ship was disturbed by his assistant telling him, "Sir! Sir! There are five enemy ships on the horizon."

The captain tells the man, "Get my red coat and prepare for battle!"

The assistant runs without question to get the captain's red coat and prepares for battle. After their victory the assistant asks the captain why he wanted his red coat.

The captain tells the assistant "If I was shot you would not be able to tell I'm bleeding and you would keep fighting."

The assistant thought this was a great idea. The next day the assistant came to the captain, "Sir! Sir! There are twenty enemy ships on the horizon!"

The captain was stunned. He looked at the assistant and told him "Get me my brown pants!"

