Editor’s Overview

The last issue of the Insectary Notes was a benchmark. I was finally able to send out copies in digital format to some of our subscribers. And was I glad to be able to check that one off my PA! Why is it that the simplest things can become fraught with disaster when you add a computer to the mix!

So the next step is up to you ... for those of you who did not receive a digital copy and would like to, please send me an email. For those of you who do not like to waste words, just put “Newsletter” in the subject box and I’ll take it from there. My address: gordonjm@gov.ns.ca

This issue is once again packed with lots of insect info (one good thing about insects ... they give you lots to write about). Eric has written a focus on the hemlock borer, another pest attacking our eastern hemlock. Project updates on the Pale Winged Grey, Ticks, Spruce Beetle, and Hylobius are in from Mike, Jeff, and Dan.

It’s looking like another action-packed summer!

Say What and Quotes . . .

The most overlooked advantage to owning a computer is that if they foul up, there’s no law against hacking them around a little. -Porterfield

He flung himself from the room, flung himself upon his horse, and rode madly off in all directions. -S. Leacock

Man should stop fighting among themselves and start fighting insects. -Luther Burbank

Shredded cabbage goes great with shredded carrots and mayonnaise. -Cole’s Law

Inside every small problem is a large problem struggling to get out. -Second Law of Blissful Ignorance

In any collection of data, the figure most obviously correct, beyond all need of checking, is the mistake. -Finagle’s Third Law

An object in motion will be heading in the wrong direction. -Gerrold’s First Law of Infernal Dynamics

An object at rest will be in the wrong place.

-Gerrold’s Second Law of Infernal Dynamics

Not everything that can be counted counts, and not everything that counts can be counted. -Albert Einstein

Never drive faster than your Guardian Angel can fly. -Anon.
The Hemlock Borer - *Melanophila fulvoguttata* (Harris)

**Introduction**

There is nothing boring about a borer especially if it’s in your woodlot. Unfortunately this is the case for a number of woodlot owners in western Nova Scotia this summer. The hemlock borer is attacking stands of eastern hemlock trees and starting to cause mortality of already stressed trees in those stands.

The hemlock borer is a native beetle of the metallic woodborer family (Buprestidae). This whole family is sometimes given the name of the “robot insect” because the adults appear to be covered with metal, especially on the ventral side of the body. The hemlock borer is hard-bodied and compactly built with a characteristic streamlined shape. The beetles fly rapidly and because of their dark colour are hard to see on the stem of trees.

**Hosts**

The number one host for this beetle in Nova Scotia is the eastern hemlock. There are reports in other regions of the beetles being found to a lesser extent on white spruce, black spruce, red spruce, eastern white pine, balsam fir, and larch.

**Life History**

The adult beetles generally fly during June and into August. Adult beetles may live up to two weeks. The female lays eggs in batches in bark crevices of weakened, stressed, or dying trees. Egg hatch occurs in a week. The life cycle of the beetle from egg to egg-laying adult may take from one to two years. And why can it take up to two years? ... Eggs laid in June will hatch, the larva will mature in late summer, and overwinter in a pre-pupal chamber in the outer bark. Pupation will take place early the following spring and the adults will emerge within two to three weeks. If eggs are laid late in the summer (July and August), the immature larvae will overwinter in the inner bark. They will mature during the next summer, spend the second winter in a pre-pupal chamber in the outer bark, and then pupate the following spring. In all cases, the mature larvae need to be exposed to winter temperatures before pupating.

**Life Stages**

**Eggs**

The eggs are very small only about 0.8 mm long, white and oval in shape. Often darn hard to find.

**Larva**

The larva is clear white in all stages with the second thoracic segment much wider than the head. The last mature stage of the larva is about 25mm long.

**Pupa**

The white pupa is formed in a pupa chamber just under the bark.

**Adult**

The adult is a black, flat, arrowhead-shaped beetle about 10 mm long. It has a metallic sheen more notable on the underside of the insect. Each wing cover usually has three yellow spots.

**Tree Symptoms of Borer Attack**

Trees under borer attack for several years show symptoms of attack. These are reduced growth, foliar thinning, and yellowing of shoot tips and foliage in general. Within two or three years of an attack, the tree will flame red and die.

When the borer population is heavy, woodpeckers looking for larvae will strip away the outer bark leaving the reddish inner bark exposed. Check the surface of the bark for adult exit holes (about 3mm in diameter). Check under the bark and look for frass filled tunnels and white, flat-headed borers just under the surface. Finding this means that the hemlock borer is established.

A website with pictures of the adult & larva as well as damage is found at: http://www.fs.fed.us/na/morgantown/fhp/palerts/hborer/hborer.htm
Factors Causing Stressed Hemlock Trees

1. Periods of drought.
2. Recent disturbance on the ground affecting roots of hemlocks: such as thinning or other silvicultural methods.
3. Opening up stands for housing or recreational developments.
4. Opening up stands caused by wind and ice storms.
5. Heavy feeding by defoliators will stress trees.

Management

The management of this pest, as with all borers, is not easy. The attacks always occur on stressed trees that have been weakened by one or any combination of the above-mentioned factors. All that can be done is to try to maintain a healthy tree stand. This is done by salvaging all declining hemlock trees to prevent a buildup of the borer population. All infested trees should be removed before the end of May to prevent the beetles from emerging and attacking other trees in the stand. If possible, try to limit the movement of heavy equipment over the roots. It seems that the root systems of the eastern hemlock trees are very vulnerable to this. If the infested trees cannot be removed from the woodlot, cut them down and remove the bark. This will speed drying which will eliminate the host condition that allows for larval development. Above all check your woodlot on a regular basis.

The Provincial Entomologist’s Notes and News

Ah well, do what we can - summer will have its flies. Even though it has been a slow, cool start, the insects are now coming into their own. Ants seem to be causing a lot of problems across the province. The large carpenter ants have started their mating flights with great gusto. Boiling out of old trees, boards, stumps ... wherever they have their nests. One report came in of hundreds of large flying ants emerged out from under a kitchen counter and swarmed through the home. To say that the homeowners were somewhat distressed would be an understatement.

The population of biting flies in many locations is not as high as I had predicated early on in the spring. Don’t get me wrong, I am not disappointed. Actually I am happy to be wrong in this prediction. The bad news is that in other locations, the biting flies are very numerous and very annoying. To say the least, the distribution of biting flies across the province this year is very patchy.

The insect focus is about the hemlock borer. This insect is a secondary pest that attacks the eastern hemlock. It can be thought of as “the last straw” that takes out those trees that are under stress due to other factors.

These other factors fall generally into three groups:
1. heavy defoliation,
2. root damage caused by heavy equipment or natural events such as tree rocking in high wind,
3. Drought periods that occur over several years.

The Pale Winged Grey project and experiments have been working out very well, so well in fact that I’m starting to feel that Patrick’s Theorem is kicking in. The theorem is as follows:
“If the experiment works, you must be using the wrong equipment.”

’Til next time,

Eric

Eric Georgeson
Provincial Entomologist
**Bits and Pieces**

**In the News ... from The Globe and Mail, 04-06-05**
submitted by Bob Guscott

The Royal Society for the Protection of Birds in Britain is asking drivers to cover their license plates with a “splatmeter” to record the number of bugs hitting their cars. What the society hopes to do is see how changes in insect levels affect the bird population.

**A Shubie Retirement**

Jacqui Gordon

Shubie’s loss is a gain to the golf courses and gardens of Meagher’s Grant. Gloria Caborn, who kept the accounts running smoothly in Shubie for more years than she would care to have me mention, retired at the end of June. On 23 June we held a retirement party to celebrate and repay Gloria for the mischief she has wrought throughout the years. When you boil down all the words spoken over that afternoon, one theme remains, “We’re Going to Miss You.” Happy Retirement Gloria, and remember just because you’re retired doesn’t mean you have to stop baking cookies, squares, cheesecakes, etc. and drop in anytime!

**Pine Shoot Beetle Traps**

Jim Rudderham

Just a reminder to the PDO’s that the Pine Shoot Beetle traps can come in any time now. If you have questions on how to get the traps back to us please give me a call (902.758.7070). So far we’ve had no confirmed positive beetles and we’ll hope this continues. Thanks for your help with this survey.

**Odd Rules**

Eric Georgeson

I read recently a book entitled *Many Happy Returns: The Art and Sport of Boomeranging* by Benjamin Ruhe. Indeed, it is an interesting book if one is desperate and it’s raining. I did come across this gem called the “Official Rules of The Mudgeeraba Creek Emu-Riding and Boomerang-Throwing Association.” (And I thought I was desperate for something to do). The rules state the following:

Decisions of the judges will be final unless shouted down by really overwhelming majority of the crowd present. Abusive and obscene language may not be used by contestants when addressing members of the judging panel, or conversely, by members of the judging panel when addressing contestants unless the judge has been struck by a boomerang or overrun by a crazed emu.

If nothing else I would love to see their Health and Safety binder ...

**Whitemarked Tussock Traps**

Jacqui Gordon

The lures for the whitemarked tussock traps will be arriving shortly. These traps were handed out at the PDO meeting in April. We will be placing a different kind of trap this year but other than that the field procedure and choice of site remains the same. Please try to use the same location as last year if it hasn’t been flattened by Hurricane Juan. Questions? Contact me at (902.758.7014).

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**Signs you may have hired the wrong kid to mow your lawn ...**

He shows up with a pair of nail clippers and a Ziploc bag.

On the side of his mower you notice the stenciled silhouettes of thirteen cats.

Stops frequently to nap inside the grass-catcher.

He’s fascinated by the details of you home security system.

Stops every couple of minutes to smoke some clippings.

Somehow manages to mow the hood ornament off your Lexus.
Gypsy Moth Traps
Jim Rudderham

The lures are on their way and the traps can be placed as soon you receive the lures. If you have any questions, please contact me at (902.758.7070).

Smokey’s Competition???
From the Reader’s Digest, June 2003, Submitted by Mark A. Delong

A community of friars were behind on their mortgage payment, so they opened a small flower shop to raise funds. Because everyone felt good about buying flowers from the men of God, a rival florist thought the competition had an unfair advantage.

He asked the good friars to close down, but they wouldn’t. He begged them to close. They ignored him. So, the rival florist hired Hugh MacTaggart, the toughest man in town, to persuade the friars to close.

Hugh threatened the friars and trashed their store, saying he’d be back if they didn’t close up shop. Terrified, they did so, proving only Hugh can prevent florist friars.

Keeping Your Home Safe from Wildfire
Jacqui Gordon

The Fire Management Group has produced a pamphlet entitled “How to protect your home and property from Wildfire.”

In this pamphlet, you will find a chart to determine the vulnerability of your home, what to do if a wildfire occurs, and a step by step guide to protecting your home and property.

This pamphlet is available from your local Natural Resources office or on the Internet at http://www.gov.ns.ca/natr/protection/default.htm

Mixed Messages …?

You've had too much coffee when …

Juan Valdez named his donkey after you.
You ski uphill.
You haven't blinked since the last lunar eclipse.
You grind your coffee beans in your mouth.
You sleep with your eyes open.
You have to watch videos in fast-forward.
You can take a picture of yourself from ten feet away without using the timer.
You lick your coffeepot clean.
You can type sixty words per minute with your feet.

When you find a penny, you say, "Find a penny, pick it up. Sixty-three more, I'll have a cup."

The Taster's Choice couple wants to adopt you.
More Mixed Messages ... ?

Did you know ... the Energizer Bunny was recently arrested and charged with battery.

Project Updates

Pale Winged Grey (PWG)
Mike LeBlanc

Eric and I have been working near the Kejimkujik Park area of Queens and Annapolis Counties to gather much needed information on the status of this newly identified pest of Eastern Hemlock.

In early May, we began by collecting branch and bark samples to determine if PWG eggs can be collected and counted when processed through a wash procedure in our lab. This will also indicate where the female moth prefers to lay her eggs so we can determine their population level. As is the case with many insects, predicting their population numbers is usually done when they are in their overwintering stage: with this insect, the egg. After collaboration with Dr. Dan Quiring, professor at UNB, we met with success when we focussed on the bark of the tree. This information will be valuable when experiments with the egg survey begin again this Fall.

During one of our weekly visits, on the 26th of May, we began collecting larvae on our beating sheets. They were extremely small, and barely visible to the naked eye. Since then, we have been collecting and counting larvae weekly, and larva numbers have been as high as 95 on a 60-cm branch.

I would like all those that travel, work, or play in areas containing Eastern Hemlock to call us here in Shubie if they see any of these “loopers” (inchworms), defoliation, or trees turning red.

Tick Update
Jeff Ogden

Between 16-22 May 2004, I was again joined by Dr. Robbin Lindsay (Health Canada, Winnipeg) in the forests and fields of Lunenburg. The goal was to reassess the population of the deer/black-legged tick, I. scapularis, and determine any population spread. The results of a week of extensive trapping showed no evidence of any change in population or distribution within the areas of Lunenburg Town/ Blue Rocks/ 1st Peninsula.

The population is being monitored throughout the 2004 season using biweekly drags and additional visits from my Winnipeg counterpart.

Inquiries of other species of ticks continue to come into the lab with the dog/wood tick being the predominant species. From these inquiries, a new distribution map will be created with cooperation from Andrew Hebda of the Museum of Natural History Halifax. All deer ticks sent in for identification will be forwarded onto Winnipeg for disease testing.

Newsletter
Jacqui Gordon

As the newsletter progresses into the digital age, our subscribers will be able to access the newsletter in digital format. I still hope to be able to maintain service to our subscribers who want to receive a paper copy.

Since the file is a bit sluggish to download for those of us on dial-up, I recommend this procedure for opening the file ... 1. Open email account and do the “Dance of Joy” upon receiving the newsletter 2. Click on the link in the email to take you to the PDF file. Now you have 5 or so minutes to kill: get a coffee, check the weather outdoors, stretch, plot to take over the world, etc. 3. Print or save your copy.
**Project Updates** (contd.)

**Spruce Beetle (SB) Survey and Hurricane Juan Damage**
Dan MacDonald/Bob Guscott

The native spruce beetle (*Dendroctonus rufipennis* Kirby) is the most significant natural mortality agent of mature spruce. Spruce Beetle activity in Nova Scotia has been both chronic and widespread. The literature states that wind throw is a primary cause of spruce beetle population build up. Thus, the endemic population of SB in Hurricane Juan's damage swath is predicted to rise, increasing the vulnerability of nearby healthy spruce stands.

The IPM group is partnering with the Nova Forest Alliance and Canadian Forest Service to investigate the long term effects of Hurricane Juan blowdown and changes in spruce beetle populations and damage. At 18 locations throughout central Nova Scotia, sample plots and traps have been established in mature white and red spruce stands. These will be monitored over the next few years for changes in damage levels and beetle populations.

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*Fig. 2. Locations of spruce beetle survey plots and traps, June 2004.*
**Project Updates (contd.)**

**Hylobius Update**  
Mike LeBlanc

Adult weevils are being collected nearly every day, with two noteworthy catches, one on May 16 when 48 were collected from the nine traps, the other on June 10 when 38 were collected. Compared to last year, total weevils collected as of June 22 this year is 300, whereas the total for the same period last year was 498. This difference is likely due to the many cold nights we have had this spring.

I hope everyone using hylobius traps to do their pre-planting site assessment. Remember that hylobius weevils aren’t likely to move around much when nighttime temperatures are below 5°Celsius. Those nights are not to be included when calculating the weevil index for the site.

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