NS Dept. of Natural Resources
Forest Health

Insectary Notes

October / November 2012

From the Editor

In this issue, the Insect Focus is on the fall cankerworm, one of the last moths we see flying around before winter sets in.

Tanya has written an article on the new Forest Health Information System that we are now using to collect data.

Jeff is still busy on the ID desk. He has written an article on an interesting pest - the conifer root aphid. It's relatively new to the area and he's just received the first sample.

Next issue will be chock full of maps and results as we finish up our overwintering surveys.

'Til next time,

Jacqui

Editing . . . a Rewording Activity

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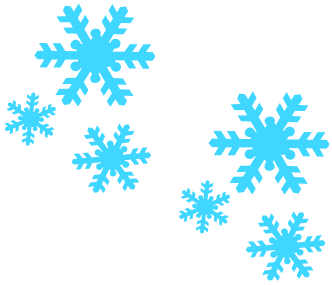

Say What and Quotes

Possible Universal Truths?

The severity of the itch is inversely proportional to the ability to reach it.

A clear conscience is usually the sign of a bad memory.

I just let my mind wander, and it didn't come back.

It's been Monday all week.

Gravity always gets me down.

It's bad luck to be superstitious.

Life is too complicated in the morning.

The hardness of butter is directly proportional to the softness of the bread.

A flashlight is a case for holding dead batteries.

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NOVA SCOTIA

Insect Focus

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Fall Cankerworm - *Alsophila pometaria* (Harris)

Jacqui Gordon

Just before it turned cold in November, these little guys were flying to my porch light. The moths of the fall cankerworm fly from around the time of the first frost until it turns cold in the fall.

Hosts

The larvae of the fall canker worm feed on hardwood leaves, preferring Manitoba maple, red oak, and American elm. They will also feed on crabapple, ash, bur oak, Siberian elm, aspen, white birch, basswood, beech, hawthorne, and other maple and oak species.

Life History

In the fall, the adult moths emerge from the pupae. The males are small (about 30 mm) with greyish brown wings. The females are wingless, greyish brown and about 12 mm long. The females climb the host tree, mate, and continue to the outer branches of the tree. Here she lays eggs in a mass, sometimes in a band surrounding a twig. The adult moths die and the eggs overwinter.

In the spring when the leaves begin to flush (usually late May), the eggs hatch and the larvae feed causing small holes in the leaves. As the larvae grow, they gradually consume the entire leaf so that only the larger veins and midribs remain. By the end of June, the majority of the larvae are fully mature. They drop to the ground, spin a cocoon, and pupate. Pupation lasts until October when the adults emerge.

Damage

The larvae feed on the leaves and can cause mild to severe defoliation, depending on population levels.

Since defoliation occurs early in the season, the tree usually has enough time and energy to re-leaf. Three or more years of severe defoliation may cause dieback and lead to tree mortality. On average, outbreaks last 1 to 4 years. This insect has typically been a problem in urban areas of Nova Scotia where trees can also face stress from poor site conditions and environmental factors that can increase the impact of feeding damage.

Fig. 1 Fall cankerworm moth (male), November 2012.

Control

The most common control strategy used for this insect is tree banding. Since the female is wingless, she must crawl up the tree to mate and lay eggs. A sticky band applied around the tree will stop her in her tracks and prevent her from laying eggs. These bands should be applied in early October and removed in December. Instructions can be found on various websites.

References

2011. Natural Resources Canada. Fall Cankerworm. http://tidcf.nrcan.gc.ca/insects/factsheet/1000137

2010. Toronto Forest Health Care. Fall Cankerworm. http://www.toronto.ca/trees/pdfs/factsheets/Fall_Cankerworm_fs.pdf

Provincial Forest Entomologist's Overview . . . . . What's the Buzzz?

Tanya Borgal

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The Forest Health Information system (FHIS)

The Forest Health Section of the Department of Natural Resources started using the Forest Health Information System (FHIS) in the spring of 2012. The FHIS is an insect and disease information and data management system that was created and designed under the National Forest Pest Strategy Initiative. The FHIS will help eliminate internal duplication of effort, streamline data collection, and improve data storage, retrieval and our capacity for analysis.

Some of the other advantages include:

- the replacement of handwritten field sheets with touchscreen notebook computers capable of collecting data electronically in the field
- organized and stored data in a format that will support pest risk analysis guidelines and data sharing at the national level
- increased capacity for data analysis and the ability to make pest management recommendations to various forest stakeholders

All the information on the annual detection and monitoring surveys completed by Forest Health, all information is entered into the FHIS (Fig. 2). During the field season, Forest Health staff can monitor the progress of their work by color coded survey points within the FHIS (Figs. 3 & 4.) When all survey results are collected and entered in the FHIS, reports can be created summarizing the results for the year. This is the first year using the FHIS, retiring our field sheets, and we're welcoming the change.

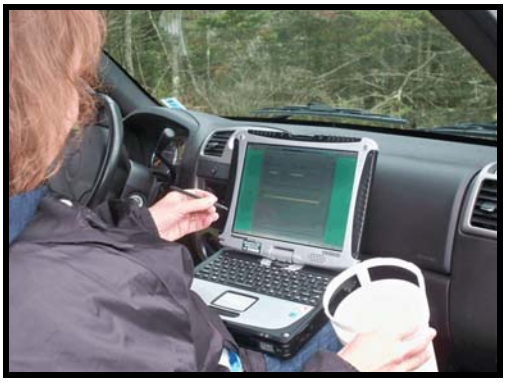

Fig. 2 Using the Toughbook in the field.

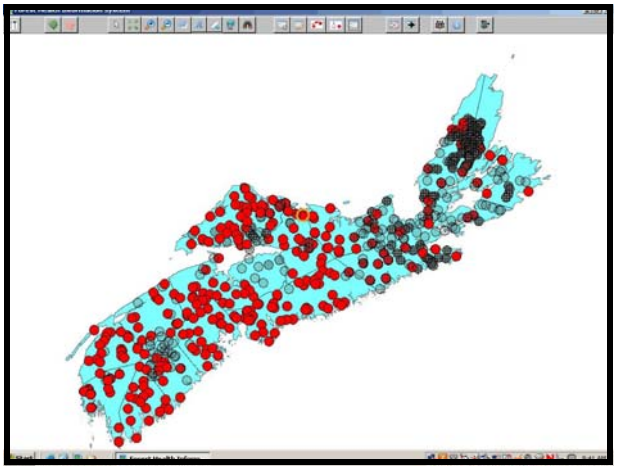

Fig. 3 Map showing locations where work is ongoing.

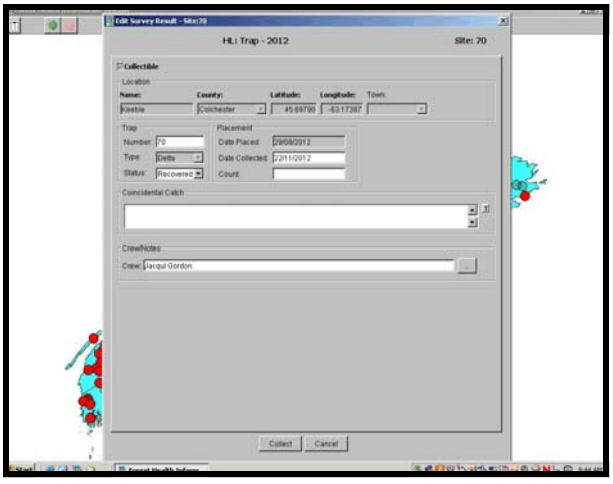

Fig. 4 The digital field sheet.

Bits and Pieces

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Glossy Buckthorn (*Frangula alnus*, also called *Rhamnus frangula*)

Jeff Ogden

Although glossy buckthorn is neither a bug nor a disease it should be considered a serious pest to our Nova Scotian forest. Native to Europe, western Asia and North Africa, this plant was introduced to North America prior to the 19th century, probably in ballast of sailing ships. It became widespread near the end of the 19th century, largely due to its popularity as a garden plant. It was first seen in Nova Scotia in the 1990s, and can also be found in Québec, Manitoba, New Brunswick, southern Ontario.

Glossy buckthorn prefers wetlands and water-saturated soils, like that found in many old field, thicket and forest habitats. It adapts well to various types of soil and is spread widely by birds feeding on the berries, and by flood waters along rivers. The seeds can survive in the soil for up to five years. Once they do take root, glossy buckthorn can shade and impede the growth of indigenous species. If gone unnoticed, it can grow to more than 12 metres, crowding out native species like pines and maples. This species is considered by many botanists as the greatest threat to native plant species among all current Canadian invasive species (Blaney 2004).

The most effective control is manual removal of plants before they fruit. Controlled burning can be used when a large number of buckthorn seedlings are present. Late fall is the ideal time for chemical control because most native plants are dormant at that time and the chemicals are easily drawn toward the roots with the natural sap flow.

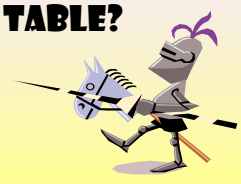
Note: The Common Buckthorn (*Rhamnus cathartica*) which prefers drier habitats is also invasive and locally established in the Maritimes, and can have similar devastating impacts on our native forest flora.

References

2009. Great Lakes United, Invasive Plant Watch Network.
http://rspee.glu.org/recherche_espece/fiche_espece.php?recordID=3&lan=en

2004. Blaney, S. Exotic and Invasive Plants in Maritime Canada.
http://www.elements.nb.ca/theme/invasive_species/sean/blaney.htm

WHO WAS THE ROUNDEST KNIGHT AT KING ARTHUR'S TABLE?
SIR CUMFRENCE



Bits and Pieces (contd.)

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Conifer Root Aphid (*Prociphilus americanus*)

Jeff Ogden

Fig. 5 Conifer root aphid.

Last month I received my first sample of a conifer root aphid from a balsam fir Christmas tree lot in the eastern portion of the province. It was an interesting little thing . . . my initial thought was that they looked just like a woolly alder aphid, blue tinged in color with the white waxy "wool," but living in the ground as opposed to on the stems.

Like some other aphid species, conifer root aphids have a life history that includes an alternate host plant, in this case the primary host is ash (Fraxinus sp.). During the summer a winged form of the aphid leaves the ash and searches out its secondary host, which in Nova Scotia is balsam fir. Once on the fir the aphid feeds on the roots. It reproduces asexually during the summer and autumn months. While feeding on the roots, aphids may also inject toxins, plant growth regulators or pathogens along with saliva to aid feeding. If aphid numbers get high enough, damage may become evident in younger trees, including reduced root development, yellowing of the foliage and stunted growth. The following spring a winged form leaves the fir and returns to ash as the "woolly ash aphid" to continue the sexual cycle. In some instances the aphid may continue to develop on fir throughout the year and not go to the ash. As a general rule, when insects develop on two hosts, eliminating one host will provide some control by breaking the cycle. If the root aphid remains on the fir throughout it's life cycle, removing the ash or even controlling the winged aphid is not likely to be effective.

There is currently no chemical control registered in Canada for this pest. An application has been made forth for a type of chemical drench, which is successfully working its way through the registration system.

References

1998. DeAngelis, J. A Conifer Root Aphid. http://www.livingwithbugs.com/PDFiles/root_aphid.PDF

2012. Wright, M. and Cowles, R. Personal communication.

The Last Laugh . . .

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A sign was hung in an office window. It read:

Help wanted. Must type 70 words a minute. Must be computer literate.

Must be bilingual. An equal opportunity employer.

A dog was ambling down the street and saw the sign. He looked at it for a moment, pulled it down with his mouth, and walked into the manager's office, making it clear he wished to apply for the job.

The office manager laughed and said, "I can't hire a dog for this job."

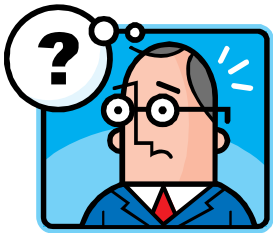
The dog pointed to the line: "An equal opportunity employer."

So the manager said, "OK, take this letter and type it." The dog went off to the word processor and returned a minute later with the finished letter, perfectly formatted.

The manager said, "All right, here's a problem. Write a computer program for it and run it." Fifteen minutes later, the dog came back with the correct answer.

The manager still wasn't convinced. "I still can't hire you for this position. You've got to be bilingual."

The dog looked up at the manager and said, "Meow."



A fellow computer programmer for a consulting group had designed some software for one of our largest accounts. He asked my help in putting it into operation.

At first, he handled most of the work. Eventually, though, he asked me to help with the last phase of the training. When I sat down with one woman and told her I would be showing her how to make changes to the files, she sighed with relief. "I'm so glad you're teaching me instead of him."

Surprised, I said that my colleague was far more experienced than I was.

"Yes," she said, "but I feel much more comfortable with you. I get nervous around really smart people."

An American magazine held a competition, inviting its readers to submit new scientific theories on ANY subject. Below are some of the winners:

Subject: Bio-Mechanics. Why Yawning Is Contagious: You yawn to equalize the pressure on your eardrums. This pressure change outside your head unbalances other people's ear pressures, so they then yawn to even it out.

Subject: Newtonian Mechanics. Deforestation may cause earthquakes, tidal waves, or even the total destruction of our planet. Just as a figure-skater's rate of spin increases when the arms are brought in close to the body, the cutting down of tall trees may cause the Earth to spin dangerously fast on its axis with disastrous results.

Winner (Subject: Perpetual Motion) When a cat is dropped, it always lands on its feet, and when toast is dropped, it always lands buttered side down. Therefore, if a slice of toast is strapped to a cat's back, buttered side up, and the animal is then dropped, the two opposing forces will cause it to hover, spinning inches above the ground. If enough toast-laden felines were used, they could form the basis of a high-speed monorail system.