Editor’s Overview

Another busy spring is underway, along with a newsletter chock full of info. Eric has written an Insect Focus on the Jack Pine Budworm (pg 2). This insect is causing some concern on white pine in the Western Region.

On a weather-related theme, temperature readings from the weather stations are in. How cold wasn’t it? Find out on page 4.

Christmas Tree Growers take note ... it’s time to get out there and look for twig aphid (procedure on page 5).

To keep you up to date on the blackheaded budworm situation, Bob has made a map of the egg survey results. Included with this are maps of results of the overwintering surveys for the whitemarked tussock moth and the hemlock looper. This will give you an idea of the complexity of the situation in the Cape Breton Highlands area.

Jeff has put together updates on the spruce beetle, brown spruce longhorn beetle, and tick surveys. These traps should be placed now.

This is looking like a busy year for insects and IPM staff.

‘Til next issue
Jacqui Gordon
Editor

Say What and Quotes . . .

Words of Wisdom ...

As you slide down the banisters of life, may the splinters never point the wrong way. -An Irish saying.

There’s no need to fear the wind if your haystacks are tied down.

Life is like a cup of tea, it’s all in how you make it!

It’s no use carrying an umbrella if your shoes are leaking.

A child’s greatest period of growth is the month after you’ve purchased new school clothes.

A good time to keep your mouth shut is when you’re in deep water.

A pessimist complains about the noise when opportunity knocks.

Gardening Rule: When weeding, the best way to make sure you are removing a weed and not a valuable plant is to pull on it. If it comes out of the ground easily, it is a valuable plant.

Marketing Miss-Speak ...

Scandinavian vacuum manufacturer Electrolux used the following in an American campaign: "Nothing sucks like an Electrolux."
**Insect Focus**

**The Jack Pine Budworm**  *Choristoneura pinus* Freeman  
Eric Georgeson

It’s always good to know that Mother Nature hasn’t forgotten us and periodically throws a new trick just to keep us sharp. The latest “new trick” is the Jack Pine Budworm (JPB).

This insect is native to Canada and occurs mostly within the range of the jack pine tree. Normally, Ontario, Manitoba, and Saskatchewan report the most damage from JPB. Quebec has reported only scattered infestations and New Brunswick has also had some small scattered populations. Until recently, it has never been found in numbers within Nova Scotia. Most forest pest literature doesn’t consider its range to be further east than New Brunswick. A number of attempts to find jack pine budworms in Nova Scotia were undertaken in the 1980’s by the Federal Insect and Disease Survey. Nothing of note was found in the search area which I think was mostly in Cumberland County; where there are some jack pine stands. However, it has recently shown up in the Western Region of NS, causing damage to mature white pine stands.

The life history, appearance, and behaviour of the jack pine budworm are very similar to the spruce budworm. So much so that until recently the two insects were both thought to be one species: the eastern spruce budworm. Work done by Dr. Freeman found that the jack pine budworm was a different species. We do not know for certain how the JPB will behave in Nova Scotia in regards to rate of spread, population build-up, or how long the population peaks will last. This is information that will have to be worked out over the next few years.

This is what we know from other areas where it does occur. (Information based on a Canadian Forest Service fact sheet found on their national website.) The eggs are laid in July on needles in the upper third of the crown and hatch about 10 days later. The newly hatched larvae do not feed but travel down the branch stem where they make a silken shelter under bark flakes. This is where they spend the winter. Normally in June, the larvae start to feed on old foliage, flowers, or even on the tender bark of twigs. The larvae have seven instars, more than 80% of the defoliation damage is done in the last two instars. They are messy feeders as they chew only on the base of the needle leaving the rest to dry out and die. The larvae will pupate in July and the moths will emerge in July and August to start the cycle all over again.

The outbreaks in other parts of Canada have normally been of short duration: one to two years. It cannot be assumed that this will be the case in Nova Scotia until more work is done in the field to study how the population dynamics will work on white pine. As always, there is a lot of work yet to be done.

![Figure 1. Jack pine budworm defoliation in white pine in the western region of Nova Scotia, 2005.](image-url)
Insectary Notes March/April 2006

The Provincial Entomologist’s Notes and News

Good to have a relatively normal spring ... sort of ... kind of ... I mean it starts off warm and dry, now it’s cool and damp. There are times I think the only pattern I see is no pattern at all. It’s hard enough to predict the weather, but I have a feeling that it will become even harder to predict what the insects are going to do this year. With a soft winter and a non-harsh spring, I doubt there’ll be a shortage of bugs.

Calls are starting to come in regarding ants getting into homes but not as many as I first expected. Normally the first ants to become active in the spring are the ones with their nests closest to the house foundation. This is especially true for nests on the south facing side which heats up and the surrounding ground thaws out faster. Since the ground away from this zone is still frozen and with little food, the ants start to forage inside the house. This causes all kinds of excitement with homeowners! However, this year everything seemed to thaw out at once, as there wasn’t much frost in the ground to start with. This meant that the ants didn’t go into houses as much this year because was enough food outside.

There seem to be more true paper wasps around this year. They’re a bit larger than the hornets but not as aggressive. One should always be thankful for small mercies!

The first wave of blackflies haven’t arrived yet but the bad news is they are coming soon. There are province-wide reports of male black flies starting to swarm around, just waiting to pick up a date. Looks like the wave will hit just in time for the Mother’s Day Picnic. Bad time to go fishing in shorts and a short sleeved shirt.

I came across this quote which sums up the one thing we must remember while working within the government:

At the end of every intellectual journey lies common sense.

‘Til next time,

Eric
Eric Georgeson, Provincial Entomologist

Bits and Pieces

There was once a young man who, in his youth, professed his desire to become a great writer.

When asked to define "great" he said, "I want to write stuff that the whole world will read, stuff that people will react to on a truly emotional level, stuff that will make them scream, cry, howl in pain and anger!"

He now writes error messages for Microsoft Corporation.

Sniffer Wasps
Eric Georgeson

According to Discover Magazine, the antennae of common wasps are as sensitive to smell as the nose of drug-sniffing dogs used by the Drug Enforcement Agency. Scientists at the University of Georgia have invented a gadget that takes advantage of the wasps ability to sniff out odors such as those emitted by corpses, drugs, bombs or toxins. It’s called The Wasp Hound: a canister the size of an ordinary soda can, containing insects trained via classical conditioning to associate a certain odor with food (a simple sugar syrup). When the wasps in the Wasp Hound canister detect the chemical odor they are trained for, they cluster around the source. A minicam inside detects the wasps’ movements and transmits the results to a laptop computer.

The scientists point out the advantages of insect sniffers over our canine pals: The wasps are small and portable, and the training only takes 5 - 10 minutes. They don’t eat much, and nobody gets attached to the darned things. They die after 48 hours, but they just insert a new batch and the device is again ready for action. They claim the wasps can be trained to recognize most chemicals.
**Bits and Pieces (contd.)**

**How Cold Was It?**
Jacqui Gordon

In short, it wasn’t. IPM has access to information from the NS Dept. of Transportation and Public Works weather recorders, located with the highway cameras. These weather stations record the maximum and minimum temperatures on a daily basis. This is how things shaped up in the winter of 2005-06.

Note ...

The majority of the maximum temperatures were recorded in mid-January. The majority of the minimum temperatures were recorded the last week of February and the first week of March.

**Table 1. MINIMUM AND MAXIMUM TEMPERATURES (DEGREES CELSIUS) AS RECORDED AT SELECTED TPW WEATHER STATIONS FOR THE WINTER 2005/06.**

<table>
<thead>
<tr>
<th>Location</th>
<th>Minimum Temp.</th>
<th>Maximum Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedford</td>
<td>-16.2</td>
<td>13.9</td>
</tr>
<tr>
<td>Coldbrook</td>
<td>-19.1</td>
<td>15.2</td>
</tr>
<tr>
<td>Cornwallis</td>
<td>-16.6</td>
<td>16.1</td>
</tr>
<tr>
<td>Hubbards</td>
<td>-17.7</td>
<td>12.1</td>
</tr>
<tr>
<td>Kingston</td>
<td>-19.6</td>
<td>15.8</td>
</tr>
<tr>
<td>Lequille</td>
<td>-18.4</td>
<td>14.9</td>
</tr>
<tr>
<td>Marshy Hope</td>
<td>-23.6</td>
<td>14.7</td>
</tr>
<tr>
<td>Milford</td>
<td>-20.4</td>
<td>14.0</td>
</tr>
<tr>
<td>Monastery</td>
<td>-17.6</td>
<td>16.4</td>
</tr>
<tr>
<td>Mt. Thom</td>
<td>-21.1</td>
<td>14.7</td>
</tr>
<tr>
<td>North Sydney</td>
<td>-17.7</td>
<td>15.9</td>
</tr>
<tr>
<td>Pictou Causeway</td>
<td>-4.2</td>
<td>15.2</td>
</tr>
<tr>
<td>Springhill</td>
<td>-24.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Trunk 12 Blue Mtn.</td>
<td>-20.3</td>
<td>13.1</td>
</tr>
<tr>
<td>Viewmont</td>
<td>-18.0</td>
<td>13.8</td>
</tr>
<tr>
<td>Westchester</td>
<td>-20.2</td>
<td>13.3</td>
</tr>
<tr>
<td>Weymouth</td>
<td>-14.1</td>
<td>16.9</td>
</tr>
<tr>
<td>Yarmouth</td>
<td>-14.3</td>
<td>15.8</td>
</tr>
</tbody>
</table>

So what does this all mean? Insects that need cold to complete their life cycle may not do well. On the other hand, insects like the balsam woolly adelgid experience high winter mortality when the temperature goes below -25C. For them, the warmer winter means more of the population is able to survive. But, we also didn’t have much snow cover. Snow cover provides a layer of insulation from the extreme cold. Without that insulation, some insects may experience winter kill.

What we can count on is the adaptability of insects to make the best of any situation. The following table compares the minimum temperatures from several weather stations.

**Table 2. COMPARISON OF MINIMUM TEMPERATURES (DEGREES CELSIUS) AS RECORDED AT SELECTED TPW WEATHER STATIONS.**

<table>
<thead>
<tr>
<th>Location</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Springhill</td>
<td>-38.8</td>
<td>-35.6</td>
<td>-24.7</td>
</tr>
<tr>
<td>Mt. Thom</td>
<td>-28.2</td>
<td>-23.3</td>
<td>-21.1</td>
</tr>
<tr>
<td>Marshy Hope</td>
<td>-25.7</td>
<td>-25.0</td>
<td>-23.6</td>
</tr>
<tr>
<td>Sydney</td>
<td>-19.3</td>
<td>-17.6</td>
<td>-17.7</td>
</tr>
<tr>
<td>Yarmouth</td>
<td>-20.1</td>
<td>-18.0</td>
<td>-14.3</td>
</tr>
<tr>
<td>Bedford</td>
<td>-30.5</td>
<td>-27.5</td>
<td>-16.2</td>
</tr>
<tr>
<td>Trunk 12</td>
<td>-25.3</td>
<td>-25.4</td>
<td>-20.3</td>
</tr>
</tbody>
</table>

Yes, we had a warm winter and an early spring. If you have a woodlot, Christmas tree lot, or a vegetable garden, keep an eye on it, this could be an interesting year.
Balsam Twig Aphid
Action Strategy 2005
by Scott MacEwan

Based on what we have experienced and learned from 2004, the following is recommended for spring 2005:

→ Begin sampling with a 12" x 12" sample board when buds first become active (early May) and increase the intensity of sampling when first generation aphids appear.

→ When numbers level out (e.g., all eggs have hatched) the first window for treatment opens.

→ When making management decisions refer to the Canadian Forestry Service twig aphid damage hazard rating for damage level to be expected:

- 1 - 8 light damage
- 9 - 15 medium damage
- 16+ heavy damage

WINDOWS

PHASE 1  First and Best Window for treatment ...
Begins when approx. 20% of your Christmas Trees have buds showing green (caps are off) until approx. 1" of new growth is present with needles still tightly bound. At this point all the eggs have hatched to first generation aphids that cause no damage, feeding only on the old growth, and are open & vulnerable to control treatments.

PHASE 2  From approx. 1" until flaring of early flushers. Avoid this period, as first & second generation aphids crawl in among the loosening needles and are protected from treatment (each 1st generation produces approximately 50 live 2nd generation individuals that feed on the new growth causing most of the damage.)

PHASE 3  Second Window ...
occurs after flaring has taken place and the aphids may once again be susceptible to treatment. However, damage will be sustained, especially on heavily infested trees. Most other trees will benefit from treatment.

And Guess What ...  
The twig aphid are out and about early this year so you can start looking as soon as you get this newsletter.
Most Unwanted List (May 2006)

- black flies (soon to be followed by mosquitoes)
- gypsy moth larvae (hatching as of 10 May)
- balsam woolly adelgid
- balsam twig aphid
- blacklegged tick
- dog ticks
- millipedes
- spiderlings (baby spiders hatching from egg masses)
- flying ants (mostly carpenters ants - reports of them arriving with hammers and saws 😊)

Blackheaded Budworm
Bob Guscott

The expanded 2005 blackheaded budworm egg survey shows a reduced population of blackheaded budworm on the Highlands plateau. Although the research is ongoing, a fungus found in the population is likely the primary reason for the decline, although parasites were also identified. The survey also revealed a low population of BHB in the rest of Cape Breton and the Eastern mainland which will be monitored closely in 2006. Surveys conducted concurrently for hemlock looper and whitemarked tussock moth in 2005/2006 revealed a continued light population for both insects in the Highlands. The Canadian Forest Service has a number of ongoing BHB research projects they are conducting for DNR this field season. These include field testing a pheromone lure for BHB; ongoing ecological/growth/yield studies; as well as developing long term management options. To protect the integrity of the research sites this year, several of the CFS research blocks may require Btk protection from hemlock looper and whitemarked tussock moth.

Project Updates

Figure 2. Blackheaded budworm egg survey results, 2005.
Figure 3. Hemlock looper egg survey results, 2005.

Figure 4. Whitemarked tussock moth egg survey results, 2005.
Reasons to Fear an Interview
Eric Georgeson

I have never thrown a book out. There was one time when I moved from Montreal back to Nova Scotia, I had 16 boxes of books and the clothes on my back. Yes, mother wasn’t pleased, but one of the books I brought with me was “The Coward’s Almanac or the yellow pages” by Marvin Kitman. It is, in fact, the only book I own that is written entirely on yellow paper. Here is a section from it called Newspaper Fears:

• Fear of being quoted incorrectly.
• Fear of your name being spelled wrong.
• Fear of your name being put under someone else’s picture.
• Fear of your picture being put over someone else’s name.
• Fear of being quoting correctly, but it’s not what you wanted to say.
• Fear that they will print lies about you.
• Fear that they will print the truth about you.
• Fear of typographical errors that can change the course of your life.

I would like to add Fear of Misspellings that would make people think I am a poor reader.

Spruce Beetle
Jeff Ogden

This year IPM is cooperating with the Nova Forest Alliance and the Canadian Forest Service (Newfoundland) in a comparative lure study in hopes of identifying a more effective spruce beetle lure. Previously used lures appear to be less attractive to our east coast spruce beetle species. Five to-be-determined sites will be selected within areas of known spruce beetle populations. Six traps, containing six different trials will be placed at each site. With any luck the spruce beetles will show us a clear preference for one of the trials enabling us to better predict and monitor present and future infestations.

Ticks
Jeff Ogden

As the weather warms up, the ticks come out … joy! I have already received a steady stream of ticks, including dog, blacklegged, groundhog and rabbit ticks. Active surveillance for 2006 will also begin soon in Lunenburg, Queens, and Halifax counties. Work will include small mammal trapping and drag sampling in all three areas. This monitoring survey is designed to better understand the tick populations, and disease prevalence within these populations and the populations of small mammals. This part of the NS Tick Survey should last approximately a week beginning in the middle of May.

Project Updates (contd.)

Brown Spruce Longhorn Beetle
Jeff Ogden

BSLB trapping is about to begin for the 2006 season. PDO’s with traps will soon receive their lures and solution from one of us here at Forest Health/IPM. A total of 55 traps will be monitored from across Nova Scotia, 29 monitored biweekly by Regional staff and 26 monitored by IPM staff. Please remember to label the containers properly and ensure they are securely sealed. For those of you who do not have a collection protocol, please contact IPM and one will be sent immediately.

Signs showing you might be from Canada …

You understand the phrase "Could you pass me a serviette, I just dropped my poutine, on the chesterfield."

You know that a Mickey and 2-4’s mean, "party at the camp!!"

You have Canadian Tire money in your kitchen drawers.

You froze your tongue to something metal and survived to tell about it.