



# Insectary Notes

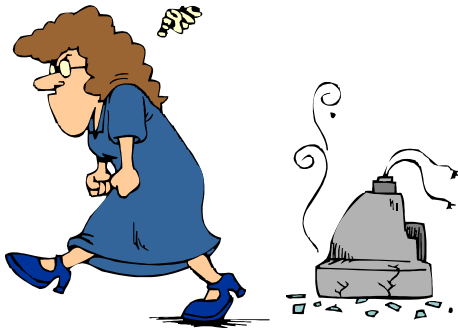
January / February 2008

## From the Editor

Jacqui Gordon

You're right, this issue looks different.

In keeping with the newsletter's move to an all electronic distribution, I've been working on a format that is easier to read on the computer screen. I'm sure it will take me a few issues to "get the bugs out" (I know someone made up that phrase just for me!), so bear with the continuing growing pains.



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## Say What and Quotes . . .

### Signs, Signs, Everywhere a Sign . . .

In a Nonsmoking area: "If we see you smoking we will assume you are on fire and take appropriate action."

At an Optometrist's Office: "If you don't see what you're looking for, you've come to the right place."

Outside a Muffler Shop: "No appointment necessary. We'll hear you coming."

In a Dry Cleaner's Emporium: "Drop your pants here."

### More Church Bulletin Blunders . . .

The ladies of the Church have cast off clothing of every kind. They may be seen in the basement on Friday afternoon.

The pastor would appreciate it if the ladies of the congregation would lend him their electric girdles for the pancake breakfast next Sunday.

The Associate Minister unveiled the church's new tithing campaign slogan last Sunday: "I Upped My Pledge - Up Yours."

## REMINDER

This is the last issue of the newsletter that will be printed as a paper copy. Please send in your email addresses so we can continue to provide you with information.

Jacqui Gordon: [gordonjm@gov.ns.ca](mailto:gordonjm@gov.ns.ca)

## Insect Focus

Jacqui Gordon

Over the winter, we've had reports of Fungus Gnats and Indianmeal Moths making nuisances of themselves in houses. Although mainly an annoyance in homes, when they invade green houses and stored grain facilities, they are a serious pest. We'll deal with identification and control measures in the home.

### Indianmeal Moth (*Plodia interpunctella*) aka Flour Moths or Pantry Moths

#### What they look like . . .

These moths are often confused with the clothes moth. The outer 2/3's of the forewings are a coppery colour and the upper 1/3's are yellowish grey with a dark band at the interface between the two. The wingspan is 16-20 mm. The mature larva is off-white with a brown head and about 12 mm long.

The moths fly mainly at night and are attracted to light.

#### What they eat . . .

Not Clothes!! The larvae feed on most grain and stored food products. A partial list includes: cereal, bread, pasta, rice, dried fruits, flour, powdered milk, cornmeal, nuts, bird seed, cracked corn, and dog/cat/fish food. (I think an easier list might be what they don't eat!)

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#### How they get into a home . . .

Sometimes, in the summer months, the moths can fly in from outside and lay eggs causing an infestation. The most common way for an infestation to occur is by bringing in life stages in food, usually pet food or bird seed but occasionally from store bought packaged food. Once in the house, the moths will lay eggs on the food source and before you know it, you're wondering why you have moths fluttering to the TV in the evening.

#### Control

The key is perseverance. Find where the moths are coming from. Throw out any contaminated human food and store the rest in sealed airtight containers, plastic bags aren't thick enough. Store all pet food and bird seed in sealed containers or store in an unheated garage or shed. The birds may enjoy a few extra tidbits but make sure to keep the feed out of the house.

Clean the cupboards where the infested food was found. Vacuum corners and wipe out any crumbs. Do not use insecticides where you store, prepare, or eat human food or pet food.

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**References** (These were used to provide information on biology, life cycle, and non-insecticidal control. Do not use insecticides where you store, prepare, or eat human food or pet food.)

Ohio State University Extension. Fact Sheet. <http://ohioline.osu.edu/hyg-fact/2000/2089.html>

The Bug Clinic. Indian Meal Moth and Their Control. <http://www.bugclinic.com/IndianMealMoth.htm>

Oregon State University. Meal Moths. [http://www.ent.orst.edu/urban/indian\\_meal\\_moth.html](http://www.ent.orst.edu/urban/indian_meal_moth.html)

## Provincial Entomologist's Overview

I know it doesn't feel like it, but spring **IS** on its way. Soon temperatures will rise, snow will melt and pest populations will rear their nasty little heads. These pest populations can significantly damage Canadian forest resources, posing a serious threat to forest health and resulting in large economic, social and ecological impacts.

Canada's approach to pest management has tended to be mainly reactive, based on historical knowledge and focused on stand-level management. Recently however there's been a shift toward developing a more proactive, coordinated and national approach to forest pest management.

To this end, the Canadian Government, with Natural Resources Canada as the lead, has invested

### References

Anonymous. Draft Strategy for Achieving Full Delivery of the NFPS. June 6<sup>th</sup> 2007.

Olson, Kathleen. National Forest Pest Strategy Development. February 26<sup>th</sup> 2008. Natural Resources Canada. <http://www.nrcan.gc.ca/media/newcom/2007/200712-eng.php>.

## Bits and Pieces

Jacqui Gordon

Every so often, while staffing a display or making a presentation, the question of cockroaches surviving a nuclear blast is asked. My answer usually involves a bit about exoskeletons and different organisms being able to withstand different circumstances (ie. really not sure). Having recently been introduced to the "Mythbusters" on the Discovery channel, I thought just maybe . . . and what do you know . . . so here's the Mythbusters take on "Will cockroaches be the only things to survive a nuclear blast?"

**Hypothesis:** Scientists say that sensitive tissues (such as bone marrow & intestines) make us more susceptible to radiation poisoning. Since the cockroaches have simpler systems, they could survive.

**Procedure/Experimental Design:** The MythBusters create insect-containment boxes to house cockroaches, flour beetles, & fruit flies in order to test whether or not they can survive doses of radiation. The team heads to the Pacific NorthWest National

## What's the Buzz?

\$12.5 million toward the development of a National Forest Pest Strategy (NFPS). This strategy will be developed in collaboration with the provinces, territories, municipalities, First Nations and industry.

The principal objective of the NFPS is to protect Canada's forests from the increasing threat of forest pests in response to the needs of the forest industry and for the benefit of all Canadians. This approach will enable the development of better, more coordinated means of preventing, detecting, assessing and responding to forest insect pests across the country.

**Gina**

Gina Penny, Provincial Entomologist

Laboratory, where they have been allowed to use the Cobalt-60 radiation source housed there. This source puts out about 55,000 rads per hour. The insects will have 3 different test exposures: 1) 1,000 rads, 2) 10,000 rads, and 3) 100,000 rads

After the 1k & 10k test, the insects initially survived. However, many of the critters did not survive the 100k test by the time it ended. After 30 days of monitoring, a number of the life forms in the 1k & 10k doses survived. However, in the 100k dosage, the only surviving organism was the flour beetle.

**Results:** While cockroaches survived much more than humans would, the other two test subjects did better than the cockroach.

**Conclusion:** Since more life forms than the cockroach survived, more than the cockroach might survive a nuclear blast.

**Busted or Not Busted:** Busted

## Of Bugs, Birds, and Weather Phenomena!!!

Keith Moore

What a strange winter, must be a leap year!!! Has anybody noticed the winter robins around this year and I am not talking about the red-breasted kind. Many pine grosbeaks have been reported around the province. This is a northern bird and supposedly when the cone or seed crops are sparse in the north, these birds would show up in eastern Canada by the hundreds. I first noticed them around our old orchard in the apple trees in early November and later in some Japanese larch, digging out the seeds. They are quite tame and while I was cutting some pine Christmas trees, they would land beside me on the tree or at my feet. I promptly put out some sunflower seeds in our kitchen window feeder and they came right in, beautiful to see. I can imagine 100 years ago in the deep woods how surprised the folks in the lumber camps were to see these bright red birds in

the depths of a snowy winter. Okay, so what do red birds have to do with Woolly Adelgid, take a deep breath I'm getting to that. The old timers say these birds came around in the harsh snowy winters and I don't recall a snowier or more steady cold December in awhile.

Then there is cooling of the pacific ocean (la Nina) which is to peak this winter. La Nina is here, just look at the drought in the Carolinas' and the heavy rains that took place in Australia, lower than normal winter temperatures and no moisture for Florida. All things according to the weather experts point to a peaking la Nina. So, you say, "So what." The effects on our winter weather and temperatures will be noticeable. Let's see what weather towers are recording for lows this winter. Remember a -20° C will help control Balsam Woolly Adelgid.

**And Now for the Question of the Year (so far) . . .**

## HOW COLD WAS IT ?!

Table 1. NS DEPT. OF TRANSPORTATION AND PUBLIC WORKS WEATHER STATION DATA. COLDEST RECORDED TEMPERATURES (°C) FOR WINTER 2004 TO WINTER 2008.

Location	Winter* 2004	Winter* 2005	Winter* 2006	Winter* 2007	Winter* 2008***
North Sydney	-19	-18	-18	-19	-23
Canso Causeway	n/a**	-17	-17	-18	-19
Trafalgar	n/a**	n/a**	-15	-26	-27
Upper Mt. Thom	-28	-23	-21	-24	-23
Marshy Hope	-26	-25	-24	-24	-29
Springhill	-39	-35	-25	-30	-31
Yarmouth	-20	-18	-14	-15	-13
Granite Village	n/a**	n/a**	n/a**	-20	-16
Trunk 12	-25	-25	-20	-23	-23
Kingston	-24	-24	-20	-20	-23
Mt. Uniacke	-27	-25	-20	-22	-24
Blackville (N.B.)	n/a**	n/a**	n/a**	-31	-31

\* Winter = mid-December, previous year, to mid-March.

\*\* n/a indicates that data was not available from this tower because it was a newly established tower.

\*\*\* The readings for Winter 2008 are up to and including 16 February 2008.

## Balsam Woolly Adelgid Population Presence in True Fir Trees

Mike LeBlanc and Keith Moore

This is a good project to start in March to give you an idea of what you will be dealing with in the growing season. This procedure won't tell you how many insects you have but will indicate if they're present.

1). Randomly select three trees per location, and collect one branch per tree, about 12 - 18 inches long (30 - 45cm), from the middle of the tree.

**(Choose branches that are only slightly gouted!)**

2). Stand the branches in a bucket containing 3 - 4 inches (7 - 10cm) of water.

3). Place bucket with branches in a warm, heated area; preferably in front of a sunny window.

4). Approximately five days later, begin looking for white, woolly masses at the bases of buds, under bark scales, or at the branch nodes. These woolly masses grow to about 1/16 inch (2 mm) in size; a hand lens or magnifying glass will aid this procedure.

This procedure will give you a confirmation as to whether or not a population of adelgids exists on your trees. If you observe some woolly masses on the branches, watch for damage symptoms on all the trees in your lot. This will indicate that control measures may have to be implemented such as sanitation (tree removal), or if populations are high enough, spraying may need to be considered.

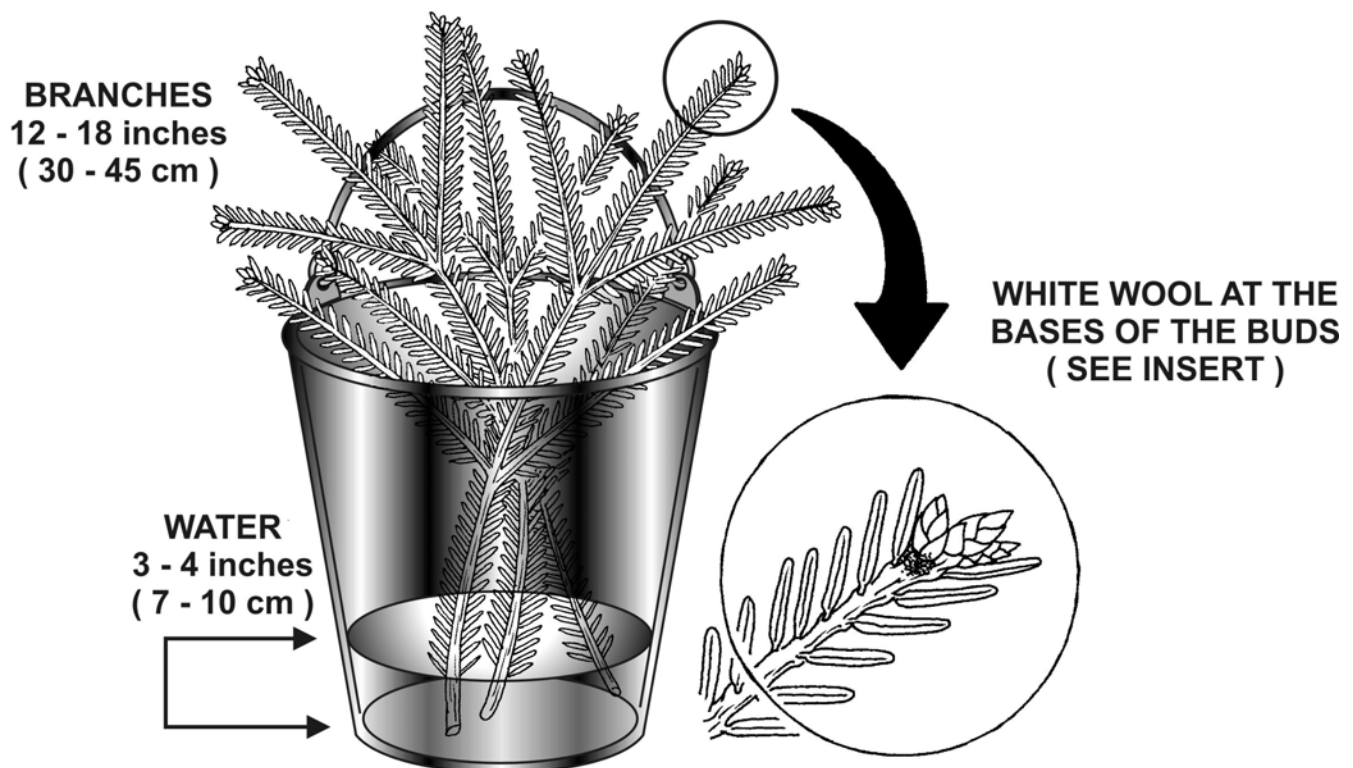


Figure 1. Set-up for determining the presence of the balsam woolly adelgid. Note the enlargement of the white wool below the bud.

## Project Updates

### Passive Tick Surveillance in Nova Scotia 2007

Jeff Ogden

2007 was a very busy year in the world of ticks and tick surveillance. During the year, I received 635 tick submissions from across the province from vets, medical doctors, and the general public. As is usual, 50% of the submissions were our most common and abundant tick, the American dog tick. Black-legged ticks were collected across NS again this year, with a sharp increase in numbers from Cape Breton Island. This jump is most likely due to an increase in tick awareness as all collections remain single tick submissions and do not indicate any established populations. We did have a couple

of areas in Shelburne and Pictou counties of multiple submissions and these areas will be further investigated in the spring of 2008.

The results in the table below show the number of ticks submitted. "Positive for Bb" indicates that the tick(s) were positive for *Borrelia burgdorferi*, the organism that can cause Lyme Disease. "Positive for HGE" indicates that the tick(s) were positive for the agent that causes human granulocytic ehrlichiosis.

Table 2. RESULTS OF PASSIVE TICK SURVEILLANCE IN NOVA SCOTIA, 2007.

Tick Species	Number of ticks received	Number of ticks tested	Positive for Bb	Positive for HGE
<i>Dermacentor variabilis</i> (A. dog tick*)	306	0	0	0
<i>Ixodes scapularis</i> (blacklegged tick*)	248	240	26	3
<i>Ixodes cookei</i> (groundhog tick*)	47	5	0	0
<i>Ixodes muris</i> (mouse tick*)	22	14	2	0
<i>Ixodes marxi</i> (squirrel tick*)	8	13	0	0
<i>Haemaphysalis leporispalustris</i> (rabbit tick*)	3	1	0	0
<i>Ixodes banksi</i> (beaver tick*)	1	1	0	0
Totals	635	274	26	3

- Please note that the common names of the ticks were included for reference only and do not indicate the tick's preference or only host.

### Plans for 2008 Tick Survey Season

Plans are to continue passive surveillance across the province and active surveillance in Lunenburg County, monitoring the population expansion. Active surveillance will be expanded to

investigate possible newly established areas noted above.

In an attempt to reduce tick populations in peninsular Lunenburg, we plan to employ deer bait stations.

## Passive Tick Surveillance in Nova Scotia 2007 (contd)

The following map represents blacklegged ticks tested for the causal agent for Lyme Disease.

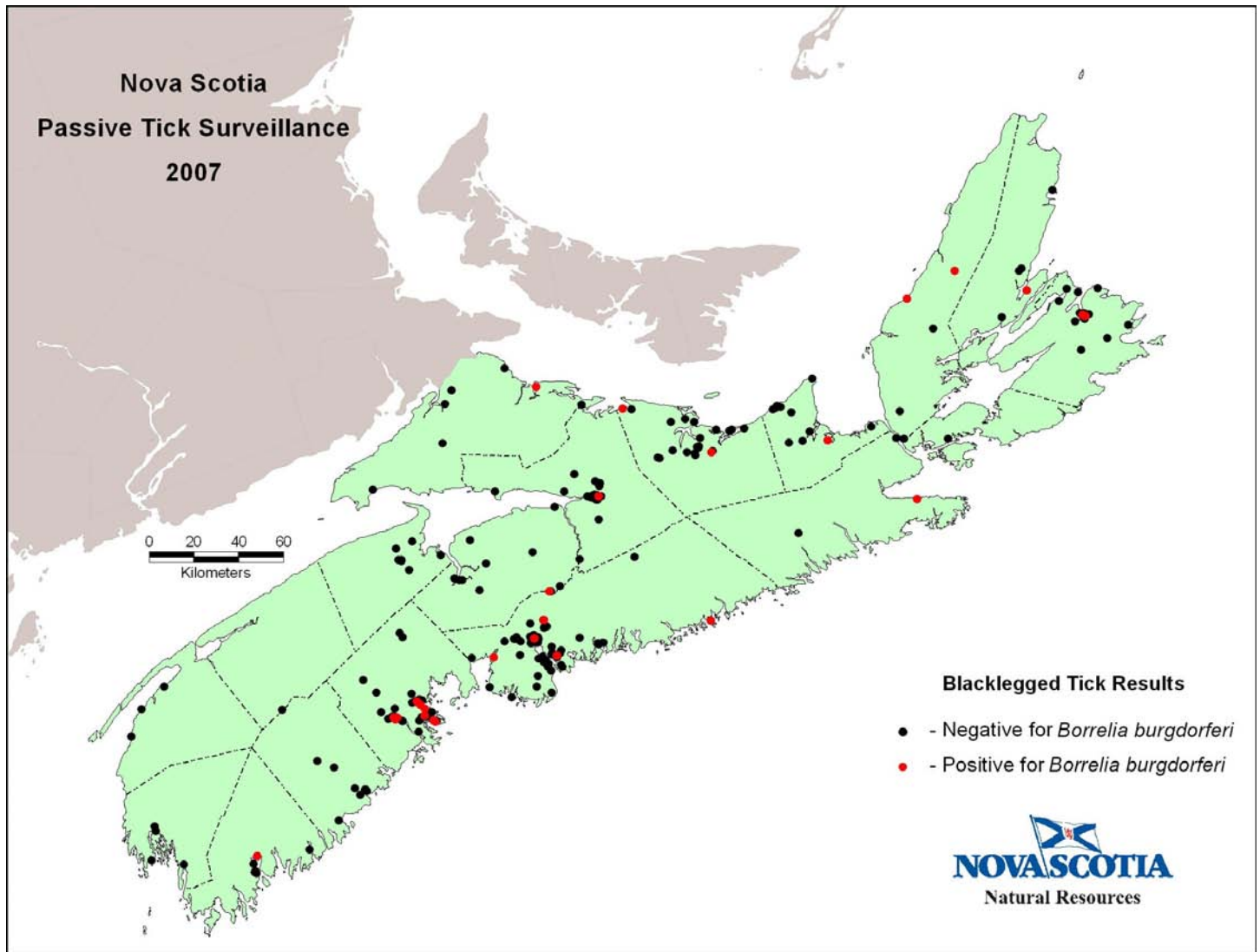


Figure 2. Results from testing of blacklegged ticks for the agent that causes Lyme Disease, 2007.

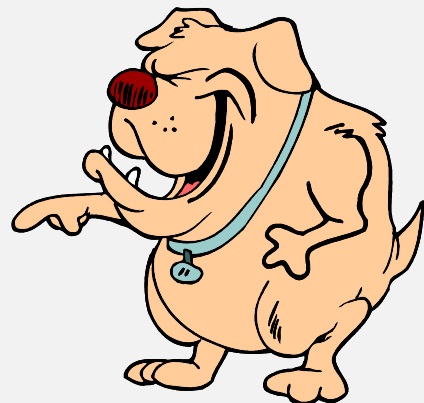
### Questionable Tick Humour

What does a tick eat for dinner?  
Kung Pao Ticken

Who would a tick play in the Wizard of Oz?  
The Ticked Witch of the West.

What's a tick's favourite song?  
Another Tick in the Wall

"If I don't do something about these ticks,  
it's going to come back and bite me on the butt".



## More Bits and Pieces

### Most Unwanted List

Fungus Gnats  
Indian Meal Moth

### Pest Detection Officer Meeting

Just a reminder that the Annual Pest Detection Officer meeting will be held on 15 April 2008 at the Riverview Room, Jenkins Hall, NSAC.

Further information will be sent out later in March.

### From the Weird Science File

#### ..... Scientists Create Zombie Cockroaches

Reservoir Hill writes "Zombie insects might sound like a B-movie plot device but to the emerald cockroach wasp (*Ampulex compressa*), they're a tried and tested way to provide food for their hungry larvae. The wasp relies on cockroaches for its grisly life cycle but unlike many venomous predators, which paralyze their victims before eating them, the wasp's sting leaves the cockroach able to walk, but unable to initiate its own movement. Researchers have discovered that the wasps sting the cockroaches once to subdue them, then administer another, more precise sting right into their victim's brain. The venom works to block a neurotransmitter called octopamine with a similar action to dopamine, which is involved in preparations to execute complex behaviors such as walking. Then the wasp grabs the cockroach's antenna and leads it back to the nest 'like a dog on a leash', says one researcher. The team found that they could restore spontaneous walking behavior in stung cockroaches by giving them a compound that reactivates octopamine receptors in the insects' central nervous system. Researchers were also able to create their own zombies by injecting unstung cockroaches with a compound that blocks the receptors producing a similar effect to that of the venom."

### Woodland Owner Conferences

Although one conference has passed, there is still time for you to attend the Woodland Owner Conference in the Eastern or Central Regions. These conferences are designed for everyone who owns or plans to own woodland . . . whether you want to harvest timber, provide wildlife habitat, explore non-timber forest uses or just keep your forest healthy.

To register, go to the Woodlot Info Shop website

<http://www.woodlotinfo.ca/default.asp>

or call (toll free) 1-866-477-2494

### Funny Tales From School . . .

One day the first grade teacher was reading the story of the Three Little Pigs to her class. She came to the part of the story where the first pig was trying to accumulate the building materials for his home. She read, ". . . And so the pig went up to the man with the wheelbarrow full of straw and said, "Pardon me sir, but may I have some of that straw to build my house?" The teacher paused then asked the class, "And what do you think that man said?" One little boy raised his hand and said, "I think he said 'Holy %\$#@! A talking pig!'" The teacher was unable to teach for the next 10 minutes.

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Editor: Jacqui Gordon (902.758.7014)  
gordonjm@gov.ns.ca