

## ILLINOIS STATE BEEKEEPERS ASSOCIATION

# BULLETIN

July/August 2005 • Volume 87, Number 4

### Adventures in Swarming

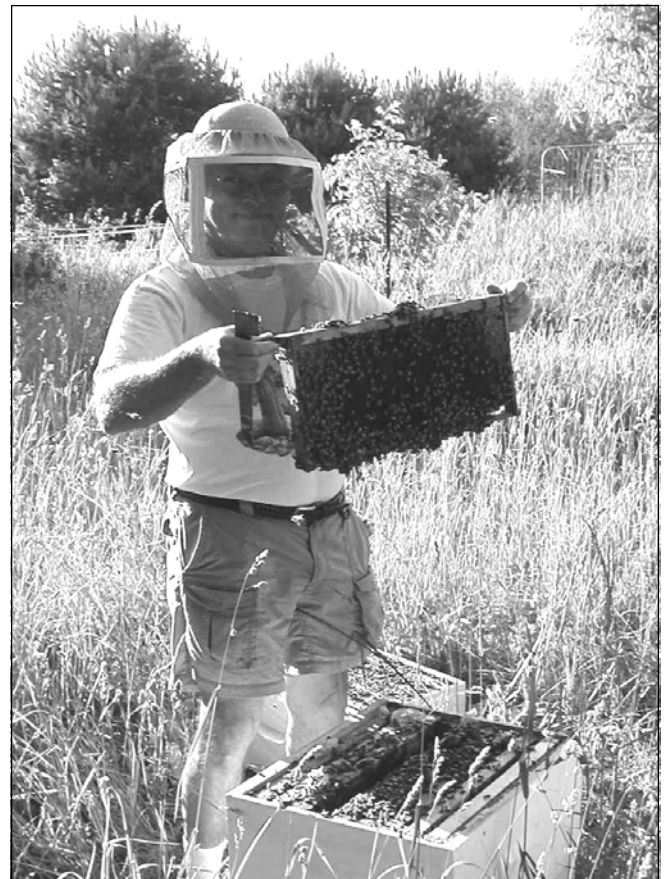
George W. Imirie  
Certified EAS Master Beekeeper

Catching a swarm is an art, but so easy if you understand bee behavior; and requires no veil, no bee suit, no hurry, never any gloves, and rarely any smoke. It is just a test of your understanding of bees.

I will never forget catching a swarm in my hat about 40 years ago. It was a very warm day in May and I was a few miles from home enroute to my job making atomic bombs when I saw a small 2 or 3 pound swarm hanging in a small maple tree about 5 feet off the ground. I stopped my new Cadillac and examined the swarm, but not having a single thing to catch it in. All my life, I have worn a Stetson snapbrim hat, so I gripped my hat, gently pushed it up under the swarm, held it there for perhaps 5 minutes as the bees steered into the hat, carried it back to the back seat of my car, and drove back home. I went to the apiary, put a frame of open brood in the hive body along with 9 frames of drawn comb, gently carried my hat filled with bees to the hive, dumped it upside down, shook it free of bees, and went on to work. I returned that evening to a very happy new colony, put a gallon of sugar syrup on the inner cover, and that became a fine colony. So simple; no smoke, no gloves, no veil, no hive body, not even dirty fingers, and my expensive hat was still clean.

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George Imirie has kept bees for 73 years. He is known for asking, "Are you a beeHAVER or a beeKEEPER?" He promotes the use of his beekeeping innovation—the Imerie Shim. Excerpted from the American Beekeeping Federation Newsletter.



Lynn Osborn, IDOA apiary inspector from Freeport inspects a strong colony of bees at Fuzzy Bear Farm, Marengo. It was declared healthy and ready to move. A complete list of IDOA bee inspectors can be found on the IDOA web site, -

<http://www.agr.state.il.us/programs/>

[bees/inspectors.html](http://www.agr.state.il.us/programs/bees/inspectors.html)

Photo: Gary Plazyk

## Mite-AwayII

### A discussion with David VanderDussen

CEO of NOD Apiary Products Ltd.



"The Vaporizer"

**Bulletin:** How long has your company been involved in the research on this kind of application of formic acid?

**David:** Our company, NOD, started in 1996 and officially incorporated in 1997. From the start until 2002 the research, directions for use, and labeling was done under the Ontario Beekeepers Association Tech Transfer Program, with Dr. Medhat Nasr and

funded through the Ontario Provincial Apiarist budget. Until 2002 NOD was just involved in production and distribution of the product Mite-Away. NOD independently ran two preliminary trials in 2001. In 2002 extensive trials were run, which led to the development and release of Mite-AwayII in the spring 2003. Since then follow up trials have shown the Mite-AwayII program to be an effective, sustainable, stand alone mite treatment program.

**Bulletin:** You suggest using Mite-Away II as part of an IPM program. With a 93% effectiveness and no projection of resistance developing, why would a beekeeper choose to include other measures? What other measures would be appropriate?

**David:** Part of an IPM program is monitoring. Under Northern climate conditions, such as where we are, no other measures than spring and late summer Mite-AwayII treatments are required. If stock is showing resistance, a beekeeper may be able to reduce the number of treatments. In Southern U.S. conditions a third treatment or use of stock with resistance may be required.

**Bulletin:** Is there an adjustment in the dosage for the size of a colony? How does the beekeeper treat nucs compared to strong colonies?

**David:** This is a very important questions because is brings into focus the difference of using a fumigant product like Mite-AwayII compared to a contact chemical like Apistan or CheckMite+. There is no adjustment in dosage. Mite-AwayII is designed for full size Langstroth equipment, single up to double brood chamber colonies, bees covering a

minimum of six frames. There is a dynamic between the cluster and the formic acid vapors. The bees actually determine the concentration of formic acid by ventilation. If the cluster is too small it can be overwhelmed by the formic vapors, causing extensive damage to the colony. The properties of the formic acid and the pad/pouch structure all come into play, as well as the ambient conditions. The directions for use on the label have a lot of research behind them. If beekeepers want to work successfully with Mite-AwayII they will have to take time to read and understand the directions, and work out application windows into their management program.

**Bulletin:** In other applications of similar material there has been strong concerns about the safety of the beekeeper. Our state DOA points at the importance of careful handling of Mite-AwayII. In developing your product, how have you dealt with the safety of the beekeeper? Are there important procedures that must be followed in the use and disposal of this material?

**David:** This Information is included on our label, which is available on our website. Just added to our website are three short videos showing how to use and dispose of Mite-

AwayII. Mite-AwayII is the safest way to work with formic acid since it's a ready-to-use solid containing the formic acid. Work outdoors, stay upwind, wear proper chemical gloves (not latex) and eye protection, let the pads further air dry after application by ventilating the pad (removing the pouch

“Mite-AwayII does offer a viable long-term solution”

David VanderDussen

or tearing it half off) and leaving them in the bee yard protected from precipitation for two weeks before disposal - these are the main points. In the U.S. a respirator is also required, but not in Canada. We tried to show the EPA that a respirator is not necessary but did not have sufficient data for them at the time. They were not at all sympathetic to the beekeepers working behind a veil and said most agriculture chemicals require the use of a respirator.

**Bulletin:** Does your product have a track record of use in other countries?

**David:** Mite-AwayII has been used in Canada since spring of 2003, so we have just completed our third spring. The first spring some of the beekeepers did not follow the directions for use and there were a lot of problems. Investigations were conducted by provincial agencies. We were exonerated and since then there have not been any complaints. Even some of the beekeepers that had difficulties and said they would not use Mite-AwayII again ordered product this spring. There was a learning curve as people came to realized the importance of following the directions. We have only used Mite-AwayII for mite control for three years now, and the bees are doing very well on the program.

**Bulletin:** Could you explain a bit more about brood death ? Do all brood die from the use of Mite AwayII? Some brood? Brood of specific ages? What would be the effect on developing queen cells?

**David:** Young larva and eggs are at the highest risk, capped brood seems to not be affected. Many factors determine the amount of damage. Single brood chambers are more consistently susceptible, but placement of brood (how close the brood is to the pad) is also a factor. Ambient temperature, especially during the first week, is a major factor, as is cluster size. Generally speaking we have observed about 4 days of young brood loss in an average single story colony. The queen will continue egg laying but will do so as far away from the pad as possible at the start of the treatment, and by the end of the three weeks is laying in comb directly under the pad. With the brood break the hive will store up extra pollen and the queens really like to lay eggs in the cells where the brood was killed and cleaned out, so the colony population does not seem to be effected overall post treatment.

I have not used Mite-AwayII on colonies being used as cell builders, but in colonies that had initiated queen cells for swarming or supercedure before treatment seem to successfully complete the raising and mating of those queens. We have found several two queen colonies post treatment. The Mite-AwayII treatment appears to have knocked back the swarming drive while allowing the completion of the queen rearing process.

Take home message: don't panic at the initial brood loss, the colonies rebound very quickly. Some beekeepers have worked it in to their management to knock back swarming but from my own experience it will not stop it completely.

**Bulletin:** Has wax been tested for residue? If so, what has been found and what concerns should the beekeeper be aware of in

continued use of Mite-Away II? Is there reason to be concerned about Mite-Away II appearing in wax foundation used for comb or chunk honey?

**David:** Formic acid is a water based molecule that is not lipophilic so there are no wax residue concerns. It does cause a spike in the levels of formic acid in honey, but two weeks after the treatment it has volatized out back to background levels. That is why there is a two week no harvest interval on the label.

**Bulletin:** Concern has been expressed about the temperature range. Can you provide some guidance on how we might deal with this?

**David:** The requirement for removal in the situation of high temperatures is only for the first seven days of the treatment. Most weather forecasts will give a good idea what the temperature expectations will be for the upcoming seven days and beekeepers can plan accordingly. If the temps do spike up after the first seven days enough formic acid has been released that the remaining amount will not cause a surge that the colony will not be able to cope with.

**Bulletin:** For nearly 20 years beekeepers in North America have been disappointed with short-lived attempts to deal with varroa. There is a hope that your new product will be the "silver bullet." There are many beekeepers cheering your efforts on.

**David:** Mite-AwayII does offer a viable long-term solution. It's not pretty but it does do the job, and with no residue concerns.

*For more information visit <http://www.miteaway.com/> or call NOD Apiary Products USA at 866-483-2929.*

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## Learning Opportunity of a lifetime 2005 HAS Convention July 7-9, SIU Edwardsville Campus

Take advantage of this rare learning opportunity coming our way this summer. The Fourth Annual Heartland Apicultural Society Convention will be held at the Southern Illinois University Campus at Edwardsville July 7, 8 and 9.

Learn from speakers such as **Dr. Zachary Huang**, Michigan State U., **Dr. Mike Stanghelin**, Rutgers U., **Dr. Nancy Ostguy**, Penn State U., **Dr. John Skinner**, U. of Tennessee, **Dr. Stu Jacobson**, U. of Illinois, **Clarence Collison**, Mississippi State U., and **Diana Sammataro**, Carl Heyden Bee Research Center, Tucson, AZ.

There will be live bee demonstrations, side trips, and a host of activities. Cost is more than reasonable at \$40.00 for three days, or \$15.00 per day. Stay off campus at nearby motels or on campus in dorm rooms, \$25.00 per night for a double or \$35.00 single. Get registration forms online at [www.heartlandbees.com](http://www.heartlandbees.com).

## **Ken on IPM—Integrated Pest management** **The first in a series**

### Integrated Pest Management (IPM) for Honey Bees

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Whether you are new to beekeeping or have been keeping bees for many years, one thing is certain – there are as many management practices, theories, and techniques as there are beekeepers. Over the next couple newsletters I will dive into a relatively new topic within Honey Bee management. While a necessary strategy for other agricultural stock, Integrated Pest Management (IPM) has really only been part of our common beekeeping vocabulary for the past 2-3 years.

Integrated Pest Management is a long-term approach to minimizing pests (and some diseases) through the use of multiple, diverse and coordinated techniques.

On the surface, IPM is a fairly simple concept to grasp, but as with most comprehensive strategies we will need to spend some time exploring it to truly understand both its global concepts and its specific, daily techniques and applications. This first article will attempt to look at the general definition of IPM and its context while future articles will spend time with the details.

For some of you IPM will be a breath of fresh air, you will immediately want to embrace its philosophy while others will see IPM as a fad that will fizzle out in a couple of years. In reality, IPM strategies have been commonplace in general agriculture for many years and we as Beekeepers are really only now catching up.

To begin understanding IPM let's first look at our current pest and disease reality. With the introduction of Varroa, Small Hive Beetle, Tracheal Mites and other exotic pests over the past 20-30 years, our traditional methods of treatment

have been primarily preventative and have relied entirely on the yearly application of chemical treatments. These preventative, yearly treatments have been common whether a colony is in need of treatment or not. While this management technique is great for the treatment manufactures, in the long run these techniques do little to benefit our colonies and actually are beneficial to the targeted pests. Why?

By simply relying upon preventative, yearly chemical treatments we are unintentionally allowing the targeted pests to become immune (resistant) to the chemicals we are using. If we are not aware of this resistance, the result will be the sudden collapse of our colonies – something we had been attempting to prevent from the start.

IPM is fundamentally different from traditional management techniques by focusing on:

1. The long-term health of our colonies
2. The use of chemical treatments only when necessary
3. The use of multiple, coordinated and diverse control techniques that generally fall into the following categories:
  - a. Biological (pathogens, fungus, parasites, etc. to control pests/diseases)
  - b. Genetic (breeding Honey Bees for resistance to targeted pests/diseases)
  - c. Cultural (the strategic timing and rotation chemical treatments)
  - d. Mechanical (the use of barriers and traps to control pests/diseases)

You will see throughout this series of articles that IPM does have a learning curve and it contains no silver bullet. IPM is the future however. So, be patient, look for and read additional material on the subject and slowly begin to weave IPM strategies into your daily management. Your Honey Bees will thank you.

**From the  
National Honey Board  
WHAT'S MISSING?  
Read Your Label and Find**

*Study Shows Consumers Are Misled by Products  
that Have Honey in Their Name but Not in Their Ingredient List*

(Longmont, CO) While consumers might be paying more attention to what's in their foods thanks to the release of the new USDA Dietary Guidelines, there is still possible confusion over what's NOT in their food.

Many consumers, especially in light of the recently revised USDA Dietary Guidelines, have begun paying closer attention to the labels on their food. What consumers may not be doing, however, is reading labels to see what's *missing* from the ingredient list. In fact, just because a product has honey in its name, doesn't mean there's actually any honey in the product according to a newly released national study of 400 household primary shoppers, conducted by the National Honey Board.

The study shows that virtually all consumers, when presented with a product with the word honey in its name, expect the product to not only actually contain honey, but also use honey as the primary sweetener. That means many are completely unaware that numerous products containing the word honey in their names not only do not have honey as the primary sweetener, but they may not use honey altogether.

"Using the word honey in a product's name not only invokes a sense of purity and natural goodness, it also leads buyers to believe that the product is using honey as its primary sweetener," said Bruce Wolk, director of marketing for the National Honey Board. "For consumers to then read the label, and find honey missing from or at the tail end of an ingredient list is a violation of consumer trust."

To help avoid confusion when purchasing products with the word honey in the title, consumers should review ingredient labels to determine if honey is actually being used as a primary sweetener. Ingredient lists include nutrients and other ingredients used to formulate the product, in decreasing order by weight. Therefore, if honey is the first sweetener listed in a product's ingredient list, consumers can feel confident that the product is using honey as the primary sweetener. If honey is not listed at all, or is listed toward the end of the ingredient list, after other

sweeteners, consumers should be aware that the product is not using honey as the primary sweetener, and any real or perceived benefit associated with pure and natural honey may not be present in the product.

The study asked consumers how likely they would be to purchase five different products that often contain the word honey in their name – honey mustard salad dressing, honey-glazed baked ham, honey cough drops, honey oats cereal and honey barbecue sauce – if those products actually contained no honey, or honey was not used as the primary sweetener.

On average, if consumers were aware that there was more of another sweetener in the product than there was honey, purchase intent dropped by more than half. If honey was not present or represented only a small portion of the sweeteners used in such products, two-fifths of respondents indicated that using the word honey in the product's name was misleading and shouldn't be used. In addition, more than two-thirds of respondents said they would be willing to pay up to 15 percent more for a product made with real honey. This was particularly true of honey cough drops, as many consumers perceive the honey in cough drops to be an active ingredient. Three-quarters of survey respondents were willing to pay more for honey cough drops made with real honey.

In fact, existing FDA guidelines for sweeteners and table syrups say that a statement identifying a flavor (other than in an ingredient list) may be included on a label only if the flavor contributes the primary recognizable flavor characterizing the syrup. Therefore, when honey is represented as the characterizing flavor in the name of a product, the total quantity of honey "shall not be less than 10 percent by weight of the finished food" (USDA Code of Federal Regulations; Title 21, Volume 2).

"Beekeepers for many generations have worked incredibly hard to harvest and produce the pure, high-quality honey that consumers trust and love," said Wolk.

Based in Longmont, Colorado, the National Honey Board provides consumers with honey information and recipes at [www.honey.com](http://www.honey.com), and serves U.S. honey producers, packers, and importers through honey research, promotion and marketing.

**Next month in the Bulletin**

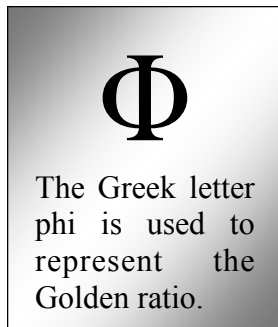
- ⇒ Using pheromones in beekeeping
- ⇒ ISBA insurance coverage review
- ⇒ The second article on IPM

# The Beekeeping of the Da Vinci Code

By David A. Cushman

Beekeeper, Bee Breeder, Grass Track Racer, Snooker Referee  
Hatfield Terrace, Leichestshire, England

An article written by... Denis J. Horgan C.F.L Nat Cert Sc. (Apic), of Co. Dublin BKA. Originally entitled... BEES AND MATHEMATICS, which was published in the February 2004 issue of *An Beachaire* (THE IRISH BEEKEEPER). [The layout, graphics and the following comments are down to me.] The Fibonacci sequence or series



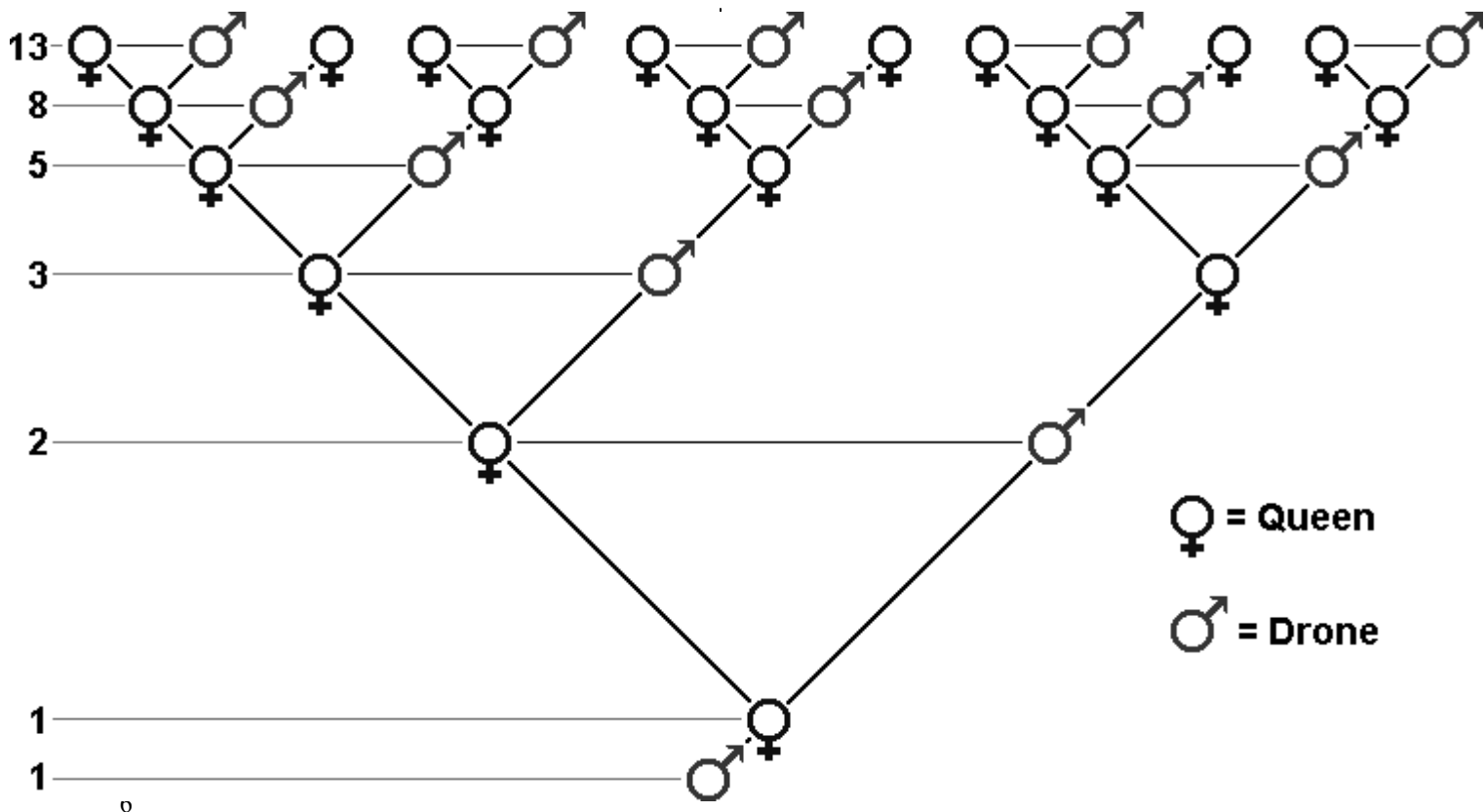
of numbers is related to many features in biology and other branches of science, in this case it describes the number of parents of male bees (drones) that result from the haplo-diploid sex determining mechanism of fertilisation.

Leonard di Pisa, alias Fibonacci (son of Bonaccio) 1170 - 1250 was an Italian mathematician. Leonardo's father was nicknamed Bonacci - the good natured one, and so Leonardo became known as Fibonacci - son of the good natured one. He was famed for introducing the decimal number system into Europe. He

has given his name to the sequence of numbers 1, 1, 2, 3, 5, 8, 13 21 34... 144, 233...

He invented the sequence when investigating a problem about the growth of a population of rabbits. While the model was not particularly realistic, it was the first of its kind. It is referred to as the "Fibonacci sequence" and will be familiar to anyone with a background in maths. If you study the sequence you will see that each number is the sum of the two previous numbers. It is a recursive sequence where the first two values are 1 and each successive term is obtained by adding together the two previous terms. Thus, the sequence begins 1, 1, 2, 3, 5, 8, .. that is 1+1=2, then 1+2=3, then 2+3=5 etc.

However at this stage I am sure you are asking yourself what this article has to do with bees and why it should be in 'An Beachaire' at all. The answer is that this sequence of numbers is found in nature. When Fibonacci was asked why he studied these numbers and their ratio he replied: "Someday these numbers will unlock the secret of nature and will explain why a drone does not have a father".



Male bees (drones) are produced from a queen's unfertilised egg (parthenogenesis) so that a male bee has only one parent - a mother and no father. The female worker bees have two parents a male (drone) and a female (queen). The Fibonacci sequence is a great representation of this reproductive pattern. The ancestry of both drone and worker is shown below.

You can see from the above table that if you start by imagining one male or worker bee you can calculate how many parents, how many grandparents and great grandparents he or she would have etc. You will see that the number of bees of each generation follow a Fibonacci series exactly, both for males and females.

The ancestry can also be shown by an ancestry

tree on the preceding page. If you take a calculator, using the first example mentioned at the top of the page, divide 34 by 21 and then divide 233 by 144 you will see that the ratios approach the decimal 1.61803 to five places. Over and over in nature, in both living and non-living realms, this particular number comes up again and again. Why? This number, known as the "Golden Ratio" (Golden Mean) is related to a mathematical series and a certain spiral shape that is found in nature in surprising ways. The famous astronomer, Johannes Kepler who said that scientists were "thinking God's thoughts after him" called this special number the Divine Proportion.

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Visit Dave Cushman's Website at  
<http://www.dave-cushman.net/bee/newhome.html>

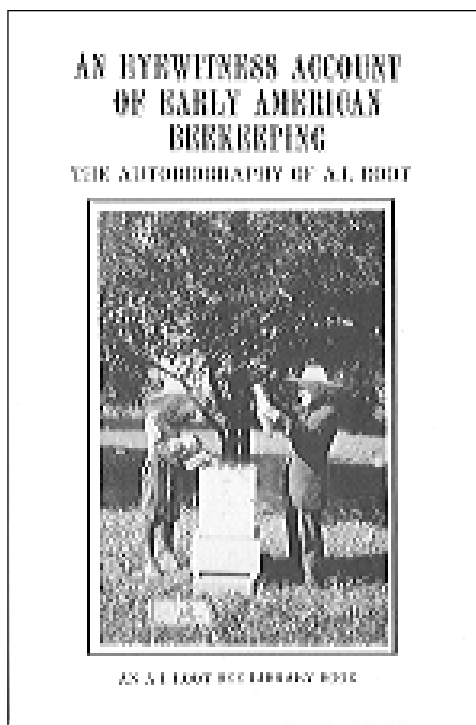
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## From A. I. Root's Story of His Own Life

### The 1870 "quit smoking program"

In the late 70's I was visiting a young beekeeper one day and he lighted a cigar before attempting to open one of his hives. When I remonstrated he said he was not in the habit of smoking—in fact, about the only time he used a cigar was when he wanted to handle his bees. I told him if he would throw away his cigar and promise not to use tobacco again in any shape or manner, I would give him a nice new bee smoker. In this he could use rotten wood and therefore he would not be obliged to have tobacco around.

"But suppose I should get back to using tobacco again—must I then give you back the smoker?"



"No, but you must pay me the price of the smoker."

As there were several other beekeepers and others standing near, this occasioned some merriment. One of them said, "If I promise to give up the use of tobacco, may I, too, have a smoker on the condition that I pay for it if I ever go back to the tobacco habit?" I told him he could have a smoker on the same terms.

I related the incident in *Gleanings* and I made the offer to all its readers, that every tobacco-user who would take a pledge similar to the one mentioned and have it published in *Gleanings* could have a smoker. For many years quite a string of pledges were published in each issue of *Gleanings*.

We once looked up the number of orders that had been sent out and found there were over a thousand pledges for which we had sent smokers. We did not keep track of the number of those who afterward paid for their smokers, having returned to the tobacco habit, but there were comparatively few.

The price of the smoker I gave away was only 50 cents.

While attending a national convention in 1909, an old gentleman took me by the hand and said he had been owing me a debt of gratitude and thanks for a great service I had rendered him 28 years before. Why? He had been induced 28 years before to give up tobacco. His health had improve right away and he felt that he was growing younger instead of older.

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*A. I. Root (1839– 1923) wrote his autobiography which was printed in monthly installments covering the five years following his death. It is now available in a complete volume from the A. I. Root Company.*



Membership in the Illinois State Beekeepers Association is open to all persons interested in bees and beekeeping. Beekeepers are urged to join through their local associations. Dues for 2005 are \$6 for the calendar year January 1 through December 31 only. Dues include a subscription to this newsletter, the ISBA Bulletin. Beekeeping journals are available at about 25% discount to members as listed below; rates are subject to change without prior notice. Make checks payable to: Illinois State Beekeepers Association and mail to: Rita Taylor, Secretary, 4274 Taylor Homestead Road, Pleasant Plains, IL 62677-4024

Please indicate new or renewal subscription when ordering journals.

Address Changes: Send old and new address six weeks prior to date of change when practical to the association secretary.

Reduced Journal Rates for 2005 (*members only*)

	1 yr	2 yr	3 yr
American Bee Journal	17.20	32.75	46.05
Bee Culture	17.00	32.00	N/A
The Speedy Bee	13.25	25.25	34.00

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## ILLINOIS STATE BEEKEEPERS ASSOCIATION

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- ⇒ The art of capturing a swarm
- ⇒ Mite-AwayII Q and A
- ⇒ The Da Vinci Code of Bees
- ⇒ Beekeepers give up tobacco