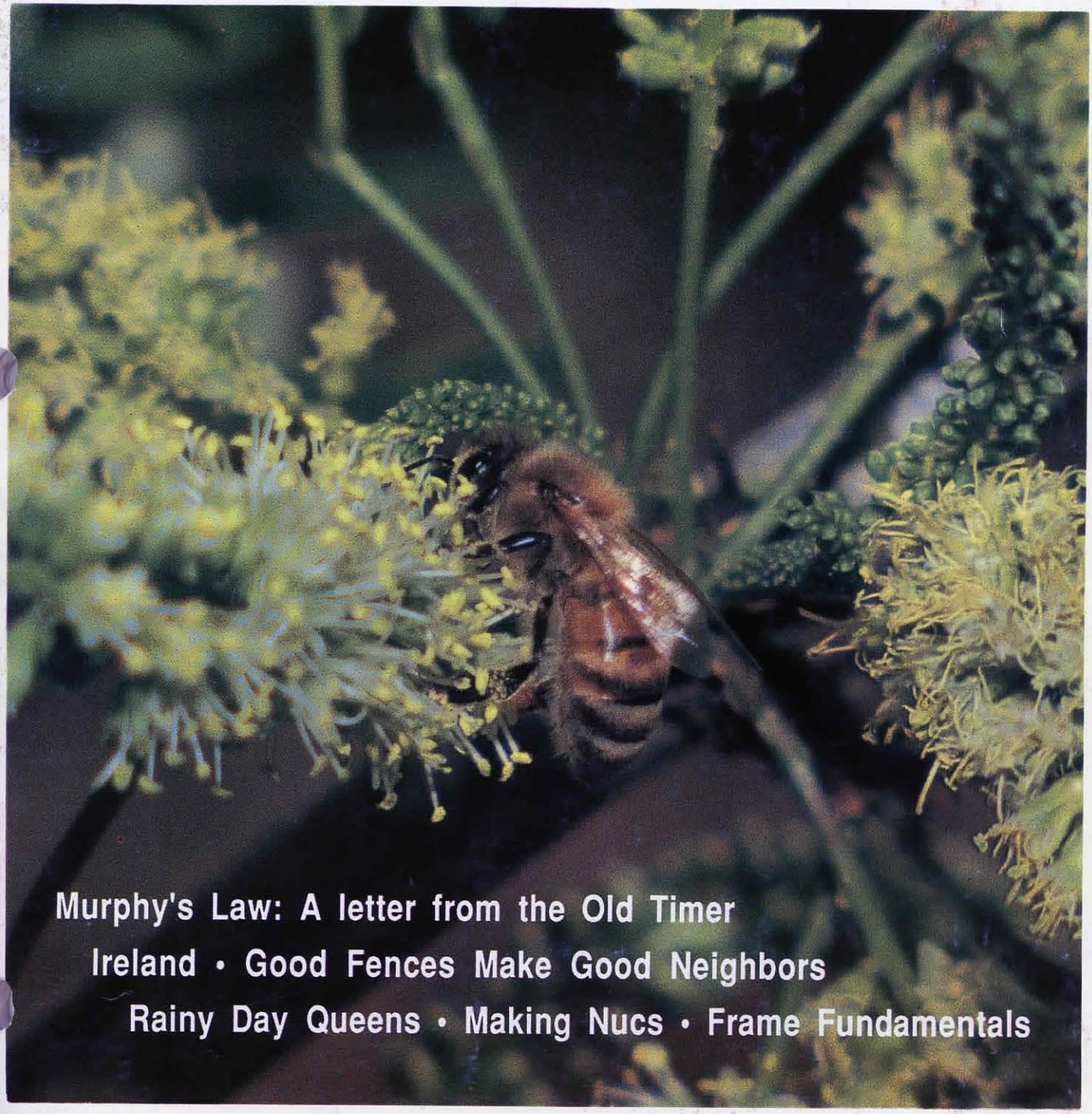
MAR '90

GLEANINGS IN BEE CULTURE



Murphy's Law: A letter from the Old Timer

Ireland • Good Fences Make Good Neighbors

Rainy Day Queens • Making Nucs • Frame Fundamentals

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John Root	Publisher
Robert Stanners	Assoc. Publisher
Kim Flottum	Editor
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Diana Sammataro	Equipment Editor

Contributors:

- Ann Harman
- Roger Morse
- Steve Taber
- Richard Taylor
- Charlie Mraz

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Columns

Departments

Mesquite (Prosopis spp.) *grows to large shrub / small tree size. This legume is very attractive to honey bees and the greenish / yellow flowers come generally in the spring and perhaps again in mid to late season. Primarily a southwestern plant, it is considered both a weed, sought out and destroyed by ranchers desiring pasture improvement, and a land reclaimation plant, responsible for stabilizing soil, providing food for various wild animals and enriching the soil with its nitrogen producing roots. It produces an extra-light amber, mild flavored honey, and in good years will produce a considerable surplus. If rainy weather prevails during bloom, however, poor or no yields are reported.*
Photo by Charles Rau, Portal, AZ.

MARCH '90 CONTENTS

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Features

INNER·COVER

The Numbers Game

African honey bees earned their killer reputation because they were reported to invade and conquer colonies of European bees. They would 'kill' the resident queen and probably a few of the royal staff and take over.

First called 'Assassin bees', the English translation came out 'Killer', and the name stuck. That 'Killer' commands a lot more attention, whether in newspaper headlines or research proposals, than 'African' has helped cement the name in both the minds of the public and scientific communities.

But all that's history, and of less importance than the fact that they have, on occasion, caused the deaths of wild and domestic animals — and humans. Which is where all this is leading.

If you haven't already, at some point you may get trapped in the numbers game. You know somebody is going to ask — "How many people have these killer bees killed?" Or worse, "How many people *will* be killed by those killer bees?"

There's no easy way to deal with this. I suggest you say you honestly don't know and refer them to industry sources like Dr. Tew at ATI in Wooster, OH, or the people at APHIS for details. There's no shame in making sure people get the right answer.

But even though you don't choose to answer this question, I'd like to share some rather sad, but well known statistics that may put this question in perspective. About 80 people a year are killed by lightening (or from the results of a lightening strike). Approximately 70 people *per day* are killed by drunk drivers. About 40 people a year perish in grain bin accidents. And between 20 and 30 people die each year because of 'bee' stings (species not determined).

It would be foolish speculation to predict if that last figure will change when African honey bees are in the U. S. Some experts say "yes, it will increase, but not significantly" (and which of these is *not* significant?), while other experts say no changes will occur.

In all honesty, we don't know what will happen when the public and these new bees meet.

And that's the best answer you can give.

— Kim Flottum

MAILBOX

■ Supports Supports

Are we as honey producers willing to relinquish our rights as the Farmers are doing when the check-off will be mandatory with NO REFUND available?

If commodity groups have their way farmers will not be permitted to sell anything without a mandatory non-refundable checkoff. They say it is necessary to prevent some of the farmers from getting a free ride. Farmers and honey producers alike will lose their freedom of choice.

Labor has always sought closed shoplabor laws for the same reason ommodity groups want mandatory on-refundable checkoffs. Unions argue that workers who do not have dues checked off from their pay are getting a free ride and enjoying the same benefits as dues payers.

It was deemed necessary, however, to legislate right-to-work laws protecting the workers' rights to freedom of choice; the freedom farmers are so willing to give up.

As a honey producer as well as a producer of farm commodities there is little indication that the checkoff for corn and beans has done much for the price to the producer. If it were possible for the National Honey Board to create an exhausted honey supply the slack would be quickly taken up with imported honey.

When it is all said and done it is Government price supports and production control that make it possible for producers to stay in business.

Industry leaders are putting their eggs in one basket with the National Honey Board while completely forgetting, without the Govt. price support ninety percent of the National honey producers will quickly be out of business.

Glen Stanley
Des Moines, IA

■ In the beginning...

I'm writing to clarify the source of the beeswax hand cream formula described in Geary Wong's article published in the January issue. I presented this recipe (formula) at the E. A. S. Short Course held last August in Litchfield, CT. Unfortunately, I did not invent the recipe and apologize for any misunderstanding. I recall trying to credit the "inventor" without success during the presentation.

For the record, I obtained the recipe from Richard Duncan of Augusta, Maine who procured it from Erasmus "Bob" Hoch of Augusta who (as I later discovered) acquired it from Linda Boucher of Massachusetts. You remember Linda, the individual who won *all* the E. A. S. show awards several years back.

Perhaps Linda can expound upon the "parental lineage" of this particular hand cream.

Anthony Jadczak
Augusta, Maine

Continued on Page 135

MAILBOX

■ More on Language

The suggestion (1989, page 668) that bee dance communication may be a dead language is as exaggerated as the report of Mark Twain's premature demise? Karl von Frisch held that "No competent scientist *ought* to believe these things on first hearing" I had the advantage of knowing Dr. Elsie Collias who confirmed von Frisch's work in 1952 at Cornell. I also have on my desk a copy of Dr. Anita Janda's 325 page thesis *The Linguistic Analysis of the Honey Bee's Dance Language* (1978). It is available from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106 on film or paper copy (No. 7902547).

Dr. Janda's mathematical analysis revealed the dance language as a rule-guided animal communication system, syntactically different in kind rather than degree from human language. She reviewed the articles refuting von Frisch's work: "No matter how many contexts are discovered and detailed in which recruitment is accomplished by non-linguistic cueing, this cannot establish that there is no dance cueing. Olfactory conditioning can — and probably does, in the light of this work — play an enormous role in the ecology of foraging behavior, but the so-called dance language hypothesis can not be disproved by such work, but only called into question"

As suggested by von Frisch, the resolution of many questions depends upon the availability of a robot bee acceptable to a colony. *National Geographic's* January, 1990 article "Dance of the Electronic Bee" arrived in the nick of time: "During the experiments 200 to 300 bees arrived at a site when instructed by a live bee. The dancing robot sent from 20 to 10 bees to their goal, yet fewer than 10 bees located the site when the robot offered samples but did not dance...At last we have a powerful tool with which to tease apart the details of an elegant insect language"

Toge Johansson
East Berne, NY

■ Good Neighbors Not Enough!

Pamela Moore's article in the January '90 *Bee Culture* on liability insurance provided good, basic insurance information. Beekeepers should be aware that they are likely to become the focal point of negligence litigation in the next decade. Lest beekeepers downplay the importance of insurance because it increases their annual out-of-pocket (overhead) costs, they should consider the costs associated with defending a personal injury lawsuit.

A beekeeper, whether novice, hobbyist, sideliner, or commercial/migratory, who is sued for personal injury arising from ownership of honey bees, but who does not have insurance coverage will have to hire an attorney to defend him in court. Legal services are becoming increasingly expensive. The hourly rates charged by attorneys vary from region to region, but may range from $75 to $250 *per hour (or more)*. Of course, the client is usually responsible for out-of-pocket litigation expenses (copying fees, expert fees, deposition costs, etc.). In short, the uninsured can quickly be faced with legal bills which

Continued on Page 137

NEXT MONTH

The showers that come with April (or at least most Aprils) will bring more than flowers this year. The Annual *Who's Who In Apiculture* hits the stands Next Month. Used by every leading industry business, this directory is a classic.

If *your* group has changed leadership this year (especially the secretary, a primary contact person in each group) and you haven't let us know, please contact us ASAP so we get the most current information in our issue. If writing doesn't work, call and let us know. Either way, we'll need to know three things — the new secretary's name, the name of your association, and the state you live in. (Yes, there is more than one Brown County Beekeeper's Association!). If you don't have our association subscription package just ask and we'll send it out to you.

Ask for Dawn when you call or write. She'll be glad to help, as will anyone who answers. We want the best Who's Who ever!

But there's more to April than a directory. Next month brings a piece that has everything you've ever wanted to know about smokers. From ancient history to how-to-light that works every time — check out smokers next month.

As an added bonus, we've got the low-down on the newest honey crop to hit the U. S. Canola acres are increasing every year, and the people who use it predict it will soon rival wheat for farmland space. Find out how to make the most of this early crop — what to know, how to harvest and what to expect. Canola — spring gold for U. S. beekeeping!

Showers, smokers, canola and all the regulars — Next Month in Bee Cult*ure*! □

Reader Assistance

To subscribe, simply fill in the form below and enjoy the exciting features awaiting you this year — Insurance Regulations, Smoker How-To, Requeening Tips, Inspections, Feeding, Pesticide Protection, and Wintering. It's all here — every month!

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MAILBOX

easily exceed annual insurance premiums.

If a beekeeper has insurance, then defense costs, as well as settlements and/or judgments (within policy limits), are paid for by the insurer. If the insurer refuses to defend an insurable risk, then the insured, if he can prove bad faith, may recover all costs by suing the insurer.

Demand letters from attorneys representing persons allegedly injured by bees should not be ignored. It is important to seek legal advice as early as possible whether or not you have insurance. If you do have insurance the policy will require you to notify your insurer, generally within one year, of any claims. Failure to give notice to the insurer may lead to forfeiture of coverage.

While being a good neighbor and a good beekeeper are important defensive measures which a beekeeper must take to reduce his exposure to liability, they are no warranty against liability. Therefore, all beekeepers are urged to consider insurance. If they have insurance they should check their policy limits and get as much insurance as they can possibly afford. One option for people with homeowner's and/or general liability policies is to acquire additional protection through purchase of an "umbrella policy". More information on umbrella policies is available through local insurance agencies.

Michael D. Mitchell, Esq.
Providence, RI

EDITOR'S NOTE: Michael Mitchell is an attorney in Providence, RI, a beekeeper and has also worked as an apiary inspector.

■ Mixed Up?

I enjoy very much reading *Gleanings* and being brought up-to-date in bee culture after a personal hiatus of about 20 years both in beekeeping and a subscription to your journal. In 1959 and 1964, I authored two papers which Jack Happ graciously published on the effects of fungicides and herbicides on honey bees.

An article, in the November 1989 issue, *Genetic Engineering* by Steve Taber, contains some major inaccuracies. He seems confused regarding nucleic acids, proteins, amino acids, and "genes." He could benefit from conversation with a geneticist or a biologist to clarify his concepts. Maybe he could talk with Rob Page at U.C. Davis. Too bad we lost this man from Ohio. Enhancement of this technical information in an accurate manner could provide Mr. Taber with material for a valuable column in the future.

Charles C. King
Columbus, OH

EDITOR'S NOTE: Charles King is the Executive Director of the Ohio Biological Survey at Ohio State University.

■ Clean Up Crew!

The Ark-La-Tex Beekeepers Club of Shreveport/Bossier City, LA has taken up a new project. Our club of 80 members has unanimously agreed to keep the trash picked up along a 1-1/2 mile stretch of Louisiana Highway 71. The state has erected signs at both ends of our section of LA71 which happens to be very close to the club apiary of nine hives.

Pictured at one of our trash bashes (left to right) are Carolyn Cryer, 1990 club president; Tommy Cryer, editor of our *Beehive News*; Bill Dearing; Rosemarie Dearing; Diane Renschen; Holly Renschen and Andre Renschen, 1989 club president.

If anyone would like more information about this project or any other of our club activities please write: Ark-La-Tex Beekeepers Club, P.O. Box 78435, Shreveport, LA 71137-8435

W. O. Walker
Bossier City, LA

Continued on Page 139

MAILBOX

■ Uncapping

I would like to share a practical, economical way of uncapping honey frames.

Most of us have an electric carving knife that is usually used around thanksgiving time, but it could be put to good use in the beehouse to uncap. I suggest using only one blade and with a little practice very good results will be obtained.

Thank you for an excellent magazine.

Jorge V. Alvarado, Jr.

■ Research Request

In the spirit of most research, I would like to get the cooperation of several beekeepers to collect data to supplement my own efforts to see what the effect of a non-chemical means of control, specifically of mites in bee colonies, would have on the honey crop.

In as much as the tracheal mite must, by necessity, be transferred from older bees to younger bees, if the older bees are separated from the younger bees, the mite proliferation should be reduced. What the effect on the honey crop with the older bees not being in contact with the younger bees is the effect to be determined.

As regards the Varroa mite, if the brood rearing is restricted before and during the nectar flow, the honey flow should not be seriously affected and the population growth of the Varroa should be lessened. How long to restrict brood rearing is the question.

I would like to provide the necessary equipment to two or three beekeepers who would be willing to check the hive weight gain or loss of a control hive and a manipulated hive at least once a week for a season.

Obviously, I would like to have the data collected in areas that the mites are known to exist, if possible. However, the main objective at this time is to determine the actual effect of older vs. younger bee separation during the honey flow. If anyone has Varroa mites and is presently treating colonies chemically and would want to enter into an experiment for the possible good of the bee industry, I would be happy to hear from you.

Austin Knox
295 Pumpkin Hill Rd.
Mew Milford, CT 06776

■ Backyard Beekeeping

As a backyard beekeeper of nine months I look forward to the arrival of your magazine each month, particularly because it's not above speaking to rank amateurs like me. While most professional journals pride themselves in being strictly for professionals, yours makes room for those of us who keep bees just for the joy of it. I think Richard Taylor's column provides a marvelous balance to the more technical articles addressed to the industry of honey production. I suspect that I am the "fretful beginner" mentioned in his January column, countered at the opposite end by the big commercial beekeeper, which in a way may be saying we all have something to learn from each other, though not necessarily at these extremes.

"Good Neighbor" Donald Cranston's description of his operation was very impressive and certainly worthy of my aspirations. Perhaps one or two professionals have thought again about the importance of being a good neighbor after reading his story. Howard Scott's article, *In Defense of Keeping Bees,* beautifully describes the mystique that attracts us all, beginner and professional alike.

I hope you will always make room for the poets and philosophers in your journal along with the cutting edge reports for the industry, and take the time for the "fretful beginners" as Dr. Taylor has graciously done.

Walter Swartz
Montclair, NJ

MARCH
Honey Report

March 1, 1990

REPORT FEATURES SUMMARY: R=Range of all prices; A=Average prices across all regions; LM=Last month's average; and LY=Prices one year ago. Comments: Price Index is a ranking system comparing a region's prices to other regions.

	Reporting Regions 1	2	3	4	5	6	7	8	Summary R	A	History LM	LY
Extracted honey sold bulk to Packers orProcessors												
Wholesale Extracted												
60 # Wh.	42.60	40.67	39.10	37.20	39.89	49.53	41.50	46.25	37.20-58.25	42.88	39.16	39.95
60 # Am.	40.33	33.75	30.55	32.40	34.26	47.75	38.00	46.25	24.00-57.25	38.34	36.44	35.82
55 gal. Wh.	.51	.40	.43	.62	.43	.59	.58	.56	.32-.63	.52	.50	.51
55 gal. Am.	.49	.40	.37	.54	.43	.57	.54	.61	.31-.62	.50	.46	.46
Case lots — Wholesale												
1 # 24's	28.10	29.91	32.80	23.80	23.50	24.86	28.75	29.66	20.40-39.60	28.03	26.40	26.01
2 # 12's	26.37	28.65	31.05	22.77	22.20	23.60	28.75	28.28	20.40-37.20	26.61	24.60	25.37
5 # 6's	27.36	26.35	25.00	26.13	26.21	26.00	26.40	26.10	21.90-32.25	26.58	25.82	25.83
Retail Honey Prices												
1/2 #	.93	1.06	1.14	1.23	.83	.91	1.02	.97	.83-1.39	1.02	1.00	.96
12 oz. Plas.	1.56	1.52	1.54	1.38	1.13	1.15	1.34	1.48	1.13-1.89	1.41	1.34	1.33
1 #	1.63	1.75	1.66	1.73	1.35	1.48	1.55	1.54	1.24-2.00	1.61	1.58	1.65
2 #	2.76	3.14	2.88	3.43	2.39	2.67	2.79	3.00	1.97-4.00	2.94	2.87	2.78
2-1/2 #	3.10	3.63	3.12	3.28	3.25	3.23	3.83	3.35	2.60-3.95	3.38	3.63	3.77
3 #	3.38	4.23	4.25	3.39	3.85	3.93	3.95	3.87	2.45-4.99	3.93	3.79	3.79
4 #	3.75	5.23	3.99	4.22	4.79	4.51	4.67	4.45	3.75-5.25	4.60	4.96	4.62
5 #	6.33	6.10	5.75	6.38	5.03	5.25	6.43	5.62	4.75-7.00	6.00	6.08	5.72
1 # Cr.	2.00	1.20	1.43	1.80	1.55	1.72	1.77	1.76	1.20-2.00	1.71	1.65	1.62
1 # Cb.	2.26	1.86	2.00	3.25	3.25	2.17	2.77	2.29	1.29-3.25	2.30	2.38	2.16
Round Plas.	2.13	2.25	2.00	1.85	1.85	2.05	1.85	1.69	1.69-2.25	2.00	2.00	1.93
Wax (Light)	1.17	1.12	.95	1.15	1.15	.80	.97	1.37	1.00-1.25	1.09	1.08	1.02
Wax (Dark)	1.37	1.02	.89	1.05	1.00	.77	.87	.97	.76-1.10	1.01	.98	.93
Poll./Col.	28.92	16.67	20.00	24.25		18.67	26.50	29.75	16.67-33.75	24.60	29.58	24.80

MARKET SHARE

The economics of selling a 1 lb. jar of honey at today's prices. Avg. price - $1.61. Fixed costs - jar -$.30, label - $.04, lid - .02, for a total of $.36. (Add 10% for freight, wasted labels, broken jars, etc.) for a total of $.40.

One lb. of honey sold to gov't (if you do) for (average) $.55, and bought back for $.37 for $.18 subsidy. Add this to the $1.21 you get for the honey in a one lb. jar for a total of $1.39 per jar. (Range $1.02 - $1.78.)

What does it *cost* you to make that one pound?

Region 1

Price Index .94. Prices steady to down a bit, demand steady, especially for darker grades. Cold December and warm January, coupled with average or less fall flow will mean feeding in many areas. Check early. Mites causing excessive losses in some areas and quarantines being tightened.

Region 2

Price Index .92. Prices and demand steady to increasing, a healthy sign. Increased prices, at least in some areas due to shortages of crop. Colony loses increasing across the region, mostly due to mites, but some winter stress problems also. Watch feeding if spring is cool.

Region 3

Price Index .91. Prices increasing significantly, primarily due to product shortages. Demand exceeding supply and sellers doing well. Most beekeepers report light to moderate weight colonies, and watching for feed.

Region 4

Price Index .84. Prices and demand steady, even with some shortages showing up. Crop from western parts of U. S. move to mid-east easily and demand being filled with (mostly) domestic honey.

Region 5

Price Index .85. Prices stable but sales strong and improving. Drought still a concern, and mostly mild winter may increase feeding needs. Watch for hungry bees, especially in the north.

Region 6

Price Index .97. Sales improving in central and northern areas, south slow, especially after holidays. Prices strong in all areas. Easy winter has helped, and colonies strong.

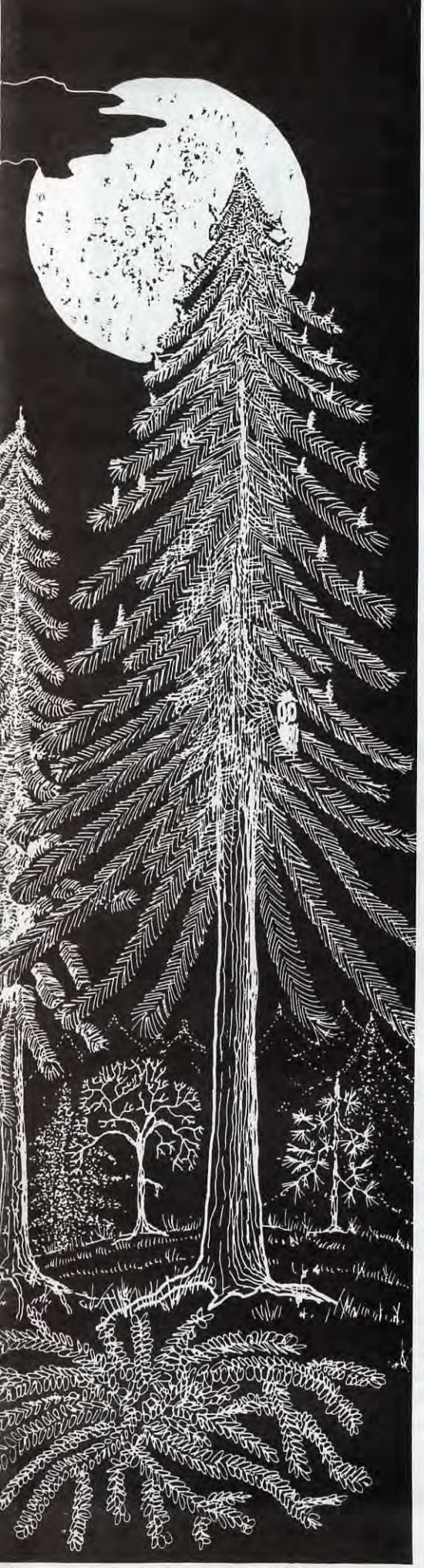
Region 7

Price Index .95. Sales and prices strong and steady. Moisture conditions improving in northern areas, but south still dry. Colonies moving to CA for pollination and splits.

Region 8

Price Index 1.00. Prices steady to increasing a bit. Sales and demand strong. Pollination season in full swing, with some colony shortages showing up. Northern areas sales strong, but weird winter weather, coupled with mites taking winter toll!

Interested in becoming a "Honey Reporter"? Contact the Editor today!



Murphy's Law

A LETTER FROM THE OLD TIMER

Dear Friends,

Jeremiah (I checked with him on the spelling) Smith — known simply as Smitty throughout the Caribou region here, has become a legend, or at very least, a character of renown, sits across from me in his kitchen at a table near the window. While we're waiting for the kettle to boil we discuss the future of his bees — he has ten hives in a little open place back behind the barn, one under the window here beside us and another near the garden. Now normally he has a good surplus considering the fact that his bee pasture consists of scatterings of fireweed, white and yellow sweet clover (which he calls volunteer clover because it simply sprang up in several areas in a magical fashion) and small pockets of other wild blooms.

According to him however, last year was a disaster, just enough for them to winter.

"There's just too much bush around my place, growing by leaps and bounds and like the old saying — too many horses on one bale of hay — so I'll have to do like you and take the bulk of my apiary away for the summer," he said.

It was settled that we would use my flat-deck rather than his half-ton. So now we turned to the selection of one of the many good accessible locations. I suggested that place west of the old fallen-down where I had my bees a few years ago. What do you think?

"Yep" he said, sounding enthusiastic. "That's a good place all right. I remember you galloping in here for more supers and stuff and yelling 'it was raining honey out there' "

Nodding, laughing, I replied, "It is a good location for a fact, but you're going to have to stay there most of the time. I wasn't bothered, but the bears are as thick as flies just to the north along the river."By the way where's that tea?" Quick as a squirrel Smitty hopped up, dumped some tea in a pot, added boiling water and set it on the edge of the stove.

While waiting for it to draw he started in with "Yep, like I always say, get things organized before you start anything, that way, everything goes clickety, clickety, click all the way down the line."

I said, "I couldn't agree with you more on careful planning but in this case we're only going what — forty or fifty miles on familiar ground — with ten hives. I can't foresee too many problems there, can you?"

However, just after I said this, I got a kind of sinking feeling as something came to mind that his wife Mary (visiting my wife just now) had confided. "That husband of mine is a good man. He'll give you the shirt off his back, and as you know, works hard. But he had this one great fault — MURPHY'S LAW, I think they call it. Anything that can happen, will.

Now that I thought of it, there was the time the tailgate came off his truck when he and I were transporting four pigs. We spent two hectic days chasing them back and forth through the woods before we finally rounded them up. Then another time

several of us got together to put him up a hay barn. We had the framework up and went home congratulating ourselves on a fine job with the first and main stage; when of all things, a terrific wind sprang up in the night (a rare phenomenon here in the summer) and by next morning had reduced our handiwork to a pile of Jackstraws.

Pouring the tea Smitty said, "Now where did Mary put that honey? Never mind, we've got some right here." Turning, he deftly lifted the outer and inner cover of the hive just outside the open window. Then, blowing bees he began poking around with a large spoon which he withdrew in seconds twisting and turning to hurriedly plop the warm contents, wax and all, into my steaming cup. He did the same with his then, lowering the covers carefully, he turned and said "Now, where were we" Taking a sip I answered with, "Your bees are working the dandelions, so what do you say a week tomorrow? The fireweed will just be starting by then."

The day in question dawned very warm and sunny; there was no hurry since we couldn't load till late evening so I dawdled, in high spirits enjoying the many shades of green — bird melodies — and anticipating our little jaunt. About noon I reached his driveway where I found myself suddenly besieged by hordes of angry bees. Hastily rolling up the windows as I came to a stop, I reached behind the seat for my hat, veil, and gloves, which I donned, getting a couple of stings in the process.

Alighting, I fairly galloped through some trees to a sight that greeted me coincidental with the ominous phrase Murphy's Law which sprang to mind along with a pang in my lower regions — for before me in tattered overalls, patched-up veil and gloves, there was Smitty earnestly driving nails into an UPSIDE DOWN hive. With every stroke of the hammer, bees poured out in an angry tide. As I approached, Smitty looked up and with a kind of half-way grin said, "They've been sitting here for so many years, I forgot till this morning that the bottom boards were not fastened."

I said "how many have you done", whereupon he looked around and replied, four. I countered with, "hang on, I've got some baling wire".

I ran back to the vehicle, then working swiftly we soon had four hives secured with a band around the front and back. With no more wire we resorted to toenailing the last two bottoms with the hives UPRIGHT — then a mad dash for the house through some trees where we were able to stop and brush off most of the bees. In the house drinking tea and munching sandwiches we were able to scrape off most of the stingers.

We got underway just after dark — a warm velvety night with a sky full of stars. We'd gone perhaps ten miles and were traversing a wooded section when the headlights picked up a fallen tree right across our path. The roar of bees dominated night noises as we stopped and switched off. In a few minutes we had ascertained there was no other easy course so — armed with axe and saw lost no time in attacking the moss-covered, many-limbed obstacle.

An hour later, straightening, mopping our brows we surveyed the chip-littered but unhindered passage once again. Walking back to the vehicle with Smitty in the lead I heard him exclaim, "Oh no!"

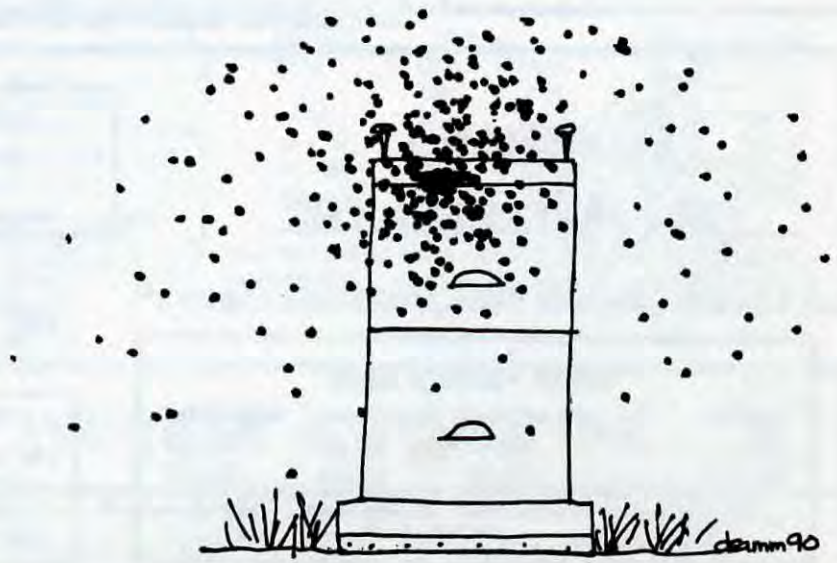
Again I had that forbidding sinking feeling. Catching up I perceived the truck canted at an alarming angle. Unwittingly I had parked a little too close to a dry-wash and with the moss covered ground still spring boggy here in the woods, the near side was sinking. "Quick", I said, "grab the chain, we'll anchor the truck to a tree across there to hold it while we offload the hives"

Now that was no easy task with the deck tilted at so steep an angle and a hidden camera would have had a field-day recording such ludicrous goings-on. However, some time later all the colonies were safely sitting on the trail. By now the vehicle was sitting on its axles so we had to cut down the tree to which the chain was tied because it had now become to tight to release.

It was then that Smitty had a brainwave — we'd run a chain from the truck to about ten feet up that tree over there — fall the tree and 'presto', its weight would pull the truck back several feet and down onto the flat dry creek bed.

To skip the hair-raising essentials, that's just what we did and it worked perfectly. We were now sitting between two and three foot high banks on a stony 25 foot wide ancient watercourse. "What do you say", I said, "to some tea and grub, a little shut-eye, and then in the morning when we can see what we're doing, we'll follow the creek bed until we can find a way out"

A hearty breakfast of porridge and tea at sun-up and we were on our way. We took turns walking in front to roll away boulders and tree limbs — stopping once in our meandering journey for tea and the last of the sandwiches. Then sometime in the early afternoon when we were about to stop again we came to a sharp corner which looked promising. A small fire for tea with honey and biscuits then out came our one shovel



and a crow-bar, whereupon in a little more than an hour — working rather feverishly — we had contrived a sloping runway.

Here goes — the wheels spun at our first attempt about half way, but the next try put us over the top. Well, we were out of that mess but on taking stock we found to our consternation that we were on the wrong side of a forested area and would have to hack our way through to reach the 'road'.

To make another long story and a day later we were in the clear. Gazing back at our 'handiwork', Smitty, shaking his head muttered, "If anyone comes across that, they'll wonder what nit-wits would come way out here to build a road to nowhere."

We had left the house Wednesday evening and here it was Friday evening and the bees were back there somewhere still only about ten miles from the starting point. Oh well, what is it they say about the plans of mice and men.

Anyway, back we went and that evening loaded the bees and resumed our wayward journey. Across the grasslands bathed in gleaming moonlight — broken now and then by shadowy aspen and pine copses — we drifted along in an ethereal world.

Sometime before dawn we reached our destination, a rocky promontory with with plenty of willow and alder for shade — overlooking a sea of new fireweed, a tinkling crystal clear stream with shallow sandy banks close by — a honey bee heaven, and that's for a fact.

Back home (at Smitty's place) again, and tucking into heaping bowls of rice pudding before we (my wife and I) leave — Smitty suddenly blurted out "You see what I mean John by good planning — that way things go clickety, clickety, click, all the way down the line."

Over his shoulder I perceived two females of the species human with hands obscuring big grins.

The Old Timer

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Listening in at the national meetings."

During the meetings of the American Honey Producers and the American Beekeeping Federation in January, I talked to a number of researchers and beekeepers about bees and especially about bee mites. Dr. Gordon Waller of the Tucson USDA Laboratory told me that he has recently seen the classical "streaming or walking away from the hive" by bees infested with tracheal mites. This was near Tucson, Arizona, at an elevation of about 2500 feet. The wings of the bees were disjointed. There were drops of fecal matter on the fronts of the hives the bees were leaving. There were a large number of bees on the ground. The result was hives with no bees or with only a handful of bees and a queen but plenty of food. Yards at higher elevations were hit the hardest in 1989.

One afternoon Dr. Waller took me, Dr. Lawrence Connor, and Texas graduate student Jeff Pettis, to an area about 30 miles north of Tucson, Arizona, to see over 20 feral honey bee colonies that were nesting in holes in a cliff. The colonies were much reduced in population but there was a great deal of exposed comb. No honey was visible. This was in true desert country. It is interesting how these feral colonies can survive in such great numbers under what appeared to me to be harsh conditions. Apparently colonies have been surviving under these conditions for a great number of years. It is important to gather data on feral colonies before the Africanized bees arrive; people may mistakenly think feral colonies are something new.

Feral colonies are going to come under much closer scrutiny when the African honey bee moves in.

As regards Africanized bees, the beekeepers I have talked to are more worried about what the press and government officials will do than they are about the bees themselves. Everyone recognizes that the Africanized bees are more aggressive but in talking with those who have worked with them, they feel they can devise management schemes to work them. Beekeepers are also aware that Africanized bees appear to be resistant to a number of diseases, though no one knows why. As I have reported before, we find varroa in every hive where we search for them in Brazil but no one treats for these mites, yet the colonies of Africanized bees in Brazil do not die out.

Dr. Anita Collins spoke enthusiastically about the research on menthol for the control of tracheal mites that Dr. William Wilson is doing at the USDA Weslaco, Texas laboratory. Menthol is now registered for use to control tracheal mites. Dr. Collins emphasized

that temperature is important. If the temperature is too high menthol may drive bees out of the hive. If the temperature is too low then the menthol does not evaporate and has no effect on the mites. Menthol appears to work best when the temperature outside is about 80°F

We have had difficulty using menthol here in New York State in the fall because of our climatic conditions. The last two falls have been cool and after mid-September, after the honey has been removed, the menthol crystals do not evaporate. Dr. Collins stated that no one has any data on how or why menthol kills mites; I understand this will be investigated shortly by USDA researchers.

No one reported anything new at either of the meetings as regards the biology of Africanized honey bees. I have not read or seen anything that suggests to me that their northward advance has been or will be slowed in any way. A few people I talked to thought it might be possible to slow down their movement in Texas but again that does not seem possible to me. The great need for colonies of honey bees for pollination indicates to me that they will be spread around the United States about as fast as were the tracheal and varroa mites. A representative of the USDA's Animal and Plant Health Inspection Service (APHIS) indicated that they have no plans in place to do anything about the rapid spread of these bees that we assume will take place. APHIS does plan to kill any individual swarms found at ports of entry, especially seaports. Some state regulators thought action plans should be put in place everywhere but that did not meet with enthusiasm among the beekeepers I talked to. Most beekeepers admitted they might not like Africanized honey bees but they thought they could cope with them.

Conversations I had with beekeepers and researchers indicated that almost everyone was hoping we could soon find bees that were resistant to both varroa and tracheal mites. The USDA brought queens into the United States from Yugoslavia this past summer that show some degree of resistance to varroa mites and I have some queens from Great Britain that we hope will be resistant to tracheal mites. There is great concern that honey not be contaminated with chemicals that might be considered harmful as we treat for these mites. □

IRELAND

ALAN HARMAN

Beekeepers in the Republic of Ireland are celebrating one of their most successful years in living memory.

There had been worries that a long drought would bring an early end to the flow, but as the white clover dwindled in mid-July the blackberry took over, oozing with nectar.

Beekeepers in the past good years of 1955 and 1976 had supers generally filled, but with the odd empty cells in the outside combs. Last year (1989) the cells were drawn out to the maximum extent possible, filled and sealed.

Eddie O'Sullivan, Cork-based president of the Federation of Irish Beekeeping Associations, said hives all across the republic had yields of 90 pounds.

He said this was a far cry from 1985 — the first of four bad summers in a row — when a wet summer and scarcity of pollen saw hive yields of only two or three pounds.

It was time of gloom for the country's estimated 6,000 apiarists — 3,000 of who belong to the federation. Autumns were a time of pollen scarcity. There was little or no breeding. Many of Ireland's estimated 50,000 colonies failed to survive the winters. O'Sullivan said losses in some areas were up to 50%. With a strict ban on the importation of foreign bees, large numbers of hives sat empty.

It was a critical time for what is basically a cottage industry. O'Sullivan, who has 30 hives, said while there are one or two commercial producers, most beekeepers have only two or three hives in their backyards.

Third generation apiarist, Dubliner Dan Deasy, 78, who has 50 hives, figures the 10-year average yield was about 35 pounds a hive.

O Ireland, isn't grand you look — Like a bride in her rich adornin'?
And with all the pent-up love in my heart I bid you top o' the mornin'!

John Locke

Then came the summer of 1989, a summer Irish beekeepers will talk about for generations to come.

But while Deasy averaged 90 pounds of honey a hive during the past summer and describes the season as one of the best, he's not sure 1976 wasn't better. "That year I took the bees to the heather," he said. "This year, because of the drought, the heather was not good."

But last summer the white clover, and then the blackberries, made up for the heather with most beekeepers. The stone fences along hundreds of miles of country roads were covered with blackberry vines that were bright with flowers and heavy with fruit.

Even the tourists cashed in on the blackberry crop, stopping to harvest what seemed an inexhaustible supply of berries. The vines were so loaded with fruit it was possible to stop the car and reach out and pick them — without even leaving the vehicle as late as early October!

For beekeepers it was a far cry from the usual six-week season.

"The weather conditions during and before the main flow — June 20-July 30, were excellent," Deasy said. "Bees were in excellent condition in early spring, having overwintered successfully. They were collecting pollen on Christmas Day.

"What made this year different from the other two good years (1955 and 1976) was the coverage for the whole of this island was the highest we have the pleasure of remembering."

Despite this, Dublin beekeeper and equipment supplier Thomas Kehoe said the boom did not turn into a bonanza sales year for him. Instead, the equipment left idle by the disaster of 1985 and the subsequent poor years was brought back into use.

Now O'Sullivan is hoping for the kind of expansion that had been experienced until 1985. "We were growing quite quickly until then," he said.

One of the problems then was that queen rearing was not a widespread practice, even though the federation had always encouraged the production of queens. Deasy said things are better now in queen production. "We use mini-hives," he said. "At the end of May to the beginning of June we take the cells out on the 12th day and put them in a mini-hive. We put queens with a handful of bees and plenty of drones on the wing.

The Swiss-made Apidea mating boxes use about a cupful of bees and produces queens with a minimum of effort and expenditure.

O'Sullivan said there are also plans for a commercial queen rearing station on Sherkin Island off county Cork. "They are setting it up now," he said.

Sales opportunities for Irish beekeepers are excellent. The country produces about 200 tons of honey annually and imports another 1,000 tons, mostly from China and areas of Europe centered on Hungary, O'Sullivan said.

Because of this, O'Sullivan doesn't think the plans for closer economic alliance among the members of European Economic Community — the republic is a member — will have a dramatic effect.

"There may be free importation of honey from other EEC counties," he said, "but not of bees. The complete ban on bee importation will continue."

Organized beekeeping has a long history in Ireland. The present federation was established in 1947, but there has been a national association in some form since 1881.

And while the industry may be small, the government has traditionally taken steps to protect it. Ireland has its own bee disease diagnostic station. Legislation aimed at protecting local bees from foreign disease — such as the Bee Pest Prevention (Ireland) Act dates back to 1908. In theory, it is possible under the law to get a license to import bees, but Irish beekeepers say in practice the licenses are rarely granted.

Still, apiarists are constantly concerned about the threat of diseased foreign bees reaching their hives.

At the Federation's annual congress last June, members expressed concern that because of reduced staff at the Teagasc (Agricultural Department) office, it does not have sufficient inspectors available to check apiaries suspected of being infected with Foul Brood Disease.

"Should the present position con-

tinue, we propose that temporary part-time inspectors' be appointed from local associations with authority to inspect such suspect apiaries."

The resolution was passed on to the incoming council for discussion with the relevant government authorities.

Meantime, at the Teagasc station in Wexford, government beekeeper Patrick Bennett is working at the research and advisory body to demonstrate the benefits of improved bee husbandry.

"For the last three or four years we have been cultivating the queens from superior producing hives," Bennett said. "Because the queens can mate with free-flying drones it's not a controlled experiment, rather it's designed to show that improved beekeeping will pay off in greater honey yields."

Last summer Bennett set up a test with hives populated by superior queens. As a control, hives with average queens were set up alongside.

The results were impressive even for a record-breaking year generally. Bennett said the hives with superior queens produced from 150 to 155 pounds of honey while the hives with average queens produced from 100 pounds to 105 pounds of honey.

Most Irish beekeepers have their own private sales outlets — regular local customers and stores — in the areas where they live. Irish honey can also be found in souvenir stores where it is snapped up by tourists as a healthful souvenir of the Emerald Isle.

O'Sullivan said the average wholesale price of the Irish product is about two punts (about U. S. $3) a pound.

Last summer's bonanza harvest has Deasy warning his colleagues not to panic.

"Sit down and count your losses over the past four years," he wrote in a recent edition of The Irish Beekeeper, the federation's magazine. He wrote of money spent on sugar to keep the bees alive through four bad winters; hives and equipment that have laid idle during those years, resulting in rapid deterioration, especially the honey comb, through the ravages of the wax moth; the purchases of queens, nucs and colonies to fill empty hives; and the time and labor spent over the past bad years.

"Having taken up the losses and placed them against this year, we have to accept the fact that it is bad business management to dispose of our crop at giveaway prices," he advised his colleagues. "Irish honey is a valuable food. The public demand for it is extremely high. Let us keep it that way." □

Alan Harman is a free lance writer and occasional contributor to Bee Culture. *His last article was on Half Moon Disease in New Zealand. He also contributes news items from Canada.*

IRISH CURE?

Veteran Dublin beekeeper Dan Deasy, 78, believes he may have the solution to acarine mite infestation.

And while other apiarists in the Republic of Ireland are not so sure about Deasy's claim, the third-generation apiarist says he hasn't had acarine mite in his 50 hives in 10 years in a country where the mite is endemic.

"Over the past 10 years we have treated our sugar syrup winter feed with Dr. Michael Clancy's Thymol Solution — 20 grams of thymol crystals dissolved in 100 milliliters of ethanol spirit. Four drops of this solution is then mixed with each gallon of syrup. I haven't had an instance of nosema or acarine in the last 10 years."

Deasy said Russian research has also shown thymol is a deterrent for Varroa. "They state that the odor of thymol within the hive during the winter months motivates bees to groom themselves more effectively, thereby removing the mites from their bodies ... they fall to the floor of the hive and perish in the cold.

Eddie O'Sullivan, president of the Federation of Irish Beekeepers, says the acarine is not serious in Ireland. "Not to the extent of causing any problems," the Cork beekeeper said. "The bees seem to put up a resistance to it. We seem to be able to kill it with Folbex (VA) strip. We seem to be able to control it."

Government beekeepers and industry advisor Patrick Bennett isn't so sure about Deasy's remedy. "We have a pretty hard winter here and hives weakened by acarine are not likely to survive," said Bennett, who works in Wexford for Teagasc, a government research and advisory body.

"Acarine is endemic here and the thymol may just be screening it."

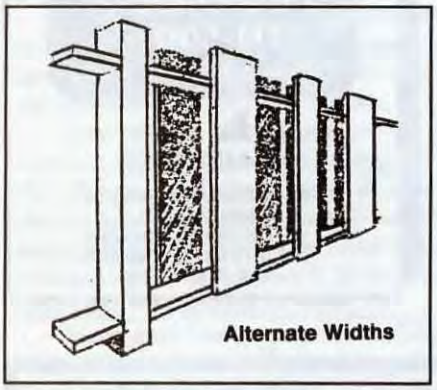
But Deasy has confidence in his remedy. "It's only a theory," he said. "But it works for me."

For those who might want more details about Dan Deasy's mite fighter, his address is: Gracefylde, 45 Waltham Terrace, Blackrock, County Dublin, Republic of Ireland. □

Good Fences

Early settlers found more wood than they'd ever seen when they arrived on the American continent. Coming from timber-short Europe, they used wood for virtually every building purpose imaginable: ships, homes, barns, schoolhouses, bridges, factories and fences.

The poet Robert Frost wrote, "Good fences make good neighbors." Abraham



Lincoln got his start supplying fence rails, and Tom Sawyer conned his friends into painting his Aunt Polly's fence. Today wood fences are increasingly popular with the homeowner to mark his boundaries, protect property, or provide privacy.

A well-designed and installed wood fence becomes a positive landscape asset, providing an attractive picture frame for a home or property. Fences come in all sizes and heights, and most require only basic carpentry skills to construct.

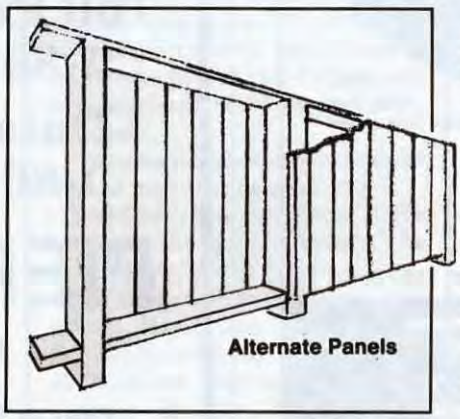
However, before installing a wooden fence, check with the local building code office; there may be height and/or construction limitations. If the fence is going to be put along a property line, don't guess! It is worth the investment of a few dollars to get an accurate survey of the property: opinions between neighbors do not count should a court battle result. Speaking of neighbors, if a property-line fence is being considered, talk it over with your neighbor to review what is planned and see if a possible cost division can be established.

Woods and posts

For competitive, aesthetic and durability reasons, most fence wood used is cedar, redwood, or cypress. Some wood products may be pressure-treated pine impregnated with a registered wood preservative to give it longer life. This treatment adds to the cost and, in the case of some pine, may not result in a fence that would stand up to the elements any better.

The posts should be pressure-treated with a preservative. Brushing or dipping the posts into a preservative does not give long-term satisfaction; it may be considered an illegal use of a pesticide. Other fence components can be treated with a legal brush-on preservative before painting or, if staining, treated with a preservative added to the stain. Rot starts in joints where boards are fastened to framing, so take special care to treat these areas before the fence is built.

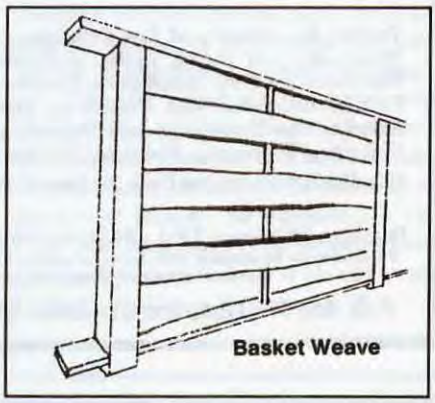
Posts are usually 4" by 4", and up to 8' apart. If, however, the fence is going to be higher than the standard 6', or is subjected to high winds, then 6" by 6" posts would be a better investment. A good rule of thumb is for the post to be buried 2-1/2' into the ground. With most posts being 8' long, the post available for nailing stringers and other members is about 5-1/2'.



To allow the moisture to run off, customize the tops of the posts in some manner so that a bevel exists.

Make sure all hardware, including nails, screws, gate hinges and straps are of stainless steel, aluminum alloy or hot-dipped galvanized steel. For maximum holding power, use annular or spiral-Shank nails.

To reduce splitting, pre-drill a pilot



Make

hole about three-quarters the diameter of the nail. For dense or brittle wood, grind sharpness from nails or blunt the points by striking them carefully with a hammer. Blunt nails cut through; sharp ones pry apart.

Posts can be set in gravel, concrete, set on concrete and braced with strap iron, or simply stabilized in the ground by digging a hole big enough to have crosscleats of 2-by-4s below ground (see sketch). Setting posts in concrete is a popular option as it provides the greatest stability and longevity. Be sure the top of the concrete is sloped away from the post to provide good drainage, and that the bottom of the post does not have concrete placed under it (see sketch). This would be a site for water to collect and accelerate wood rot.

Gravel-set posts should be provided with 6" of gravel beneath the bottom of the post to provide for good

drainage. In all cases, make sure the posts are absolutely straight by using a carpenter's level and then bracing them temporarily for support until they are permanently set. Nothing will detract from a fence quicker than one which is out of vertical or not level.

The horizontal supports (stringers) for most fences are 2" by 4" Use three supports in solid fences 6' or higher. The third rail gives added stability and nailing surface. Stringers should be considered carefully, as overloaded 2-by-4s are a very common cause of fence failure or sag.

When in doubt, three are always better than two, and the method of attachment is very important. While nailing may be quick and appear to be satisfactory, in time the nails may loosen or pull out as they are exposed to the weather.

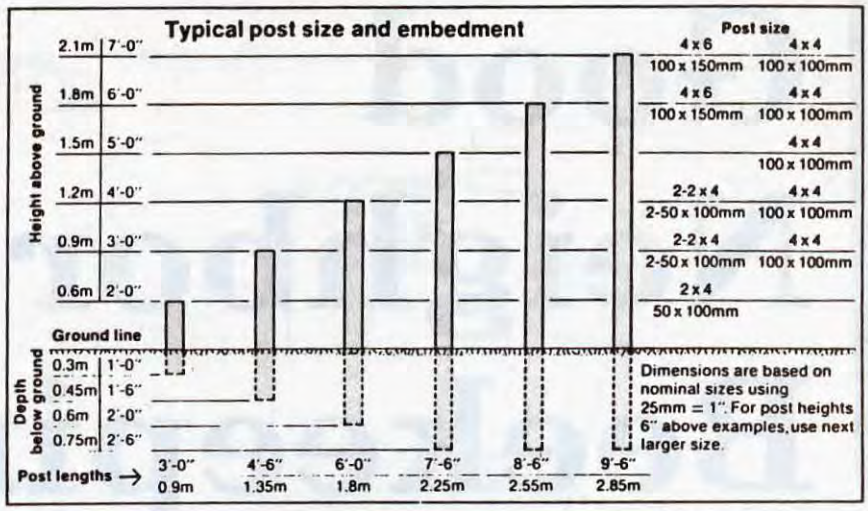
Use either a counter-sunk carriage bolt for attachment or a steel angle bracket to attach to the posts. If nailing is still preferred, then use the annular or spiral-shaped ones for maximum holding power.

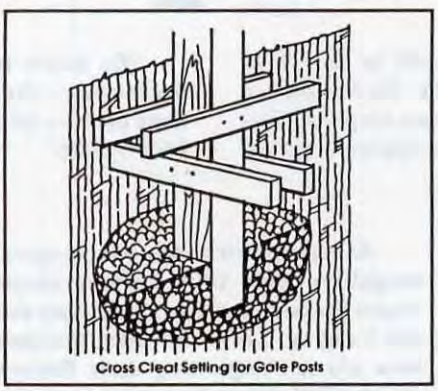
Facing detail

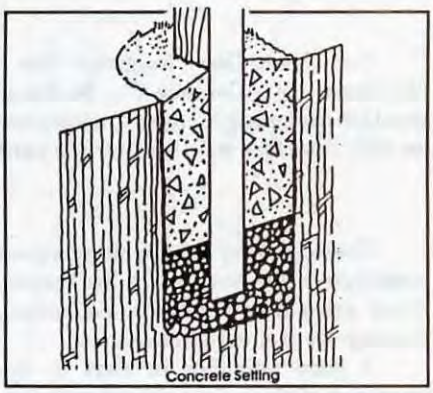
Fences have many purposes, but most are installed for privacy or some degree of security in a hopefully aesthetic manner. One of the best fence styles to meet these criteria is the board-on-board or alternate board style. In addition to aesthetic features, this style allows the air to pass through, spreading out snow drifts for faster melting. The real bonus of this fence is that it looks great from both sides.

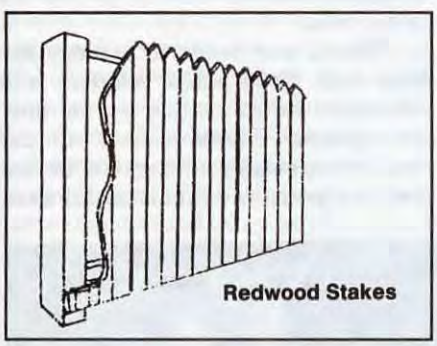
A solid, stockade-type fence may offer a little more privacy and security, but it provides the greatest wind resistance, causes deep snow drifts to form, looks good from only one side and is usually quickest to deteriorate. Additionally, heat zones can build up on south or west exposures which can kill some plants, accelerate plant desiccation, and over heat colonies.

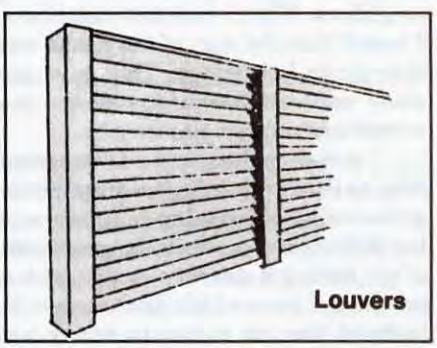
Let your imagination run free in selecting a design — virtually anything can be done, which is a major advantage of working with wood.




Cross Cleat Setting for Gate Posts


Concrete Setting


Redwood Stakes


Louvers

The gate

Since gates will be getting the most wear and tear, their construction should be especially sturdy. Here, the

Continued on Page 156

Good Neighbors

RONALD C. SMITH, PhD

Good Neighbor Beekeeping

Our Great Good Neighbor this month is Rev. Alan Williams, 1604 Cascade Ct., Midland, Tx. He has done a good job designing his area to accommodate a couple of hives so they interfere with neither his yard or adjoining yards.

His public relations activities certainly speak well of beekeepers—from a community wide project to the neighbor next door all have a better understanding of bees and beekeeping.

There are four keys to being a good neighbor when you are a beekeeper. They are public relations, education, management and maintenance.

A good neighbor is alert to the concerns of the neighborhood and new neighbors. When I had new neighbors, I heard that the man of the house was allergic to bee stings. This gave me some concern because swarms are sometimes unpredictable.

I met with the man and discovered that he is allergic to wasp stings. After a discussion about sting reactions and the differences, and with no guarantee of not having a similar reaction with a bee sting, I assured him that our neighborhood was no higher in honey bee activity that any other area in the community.

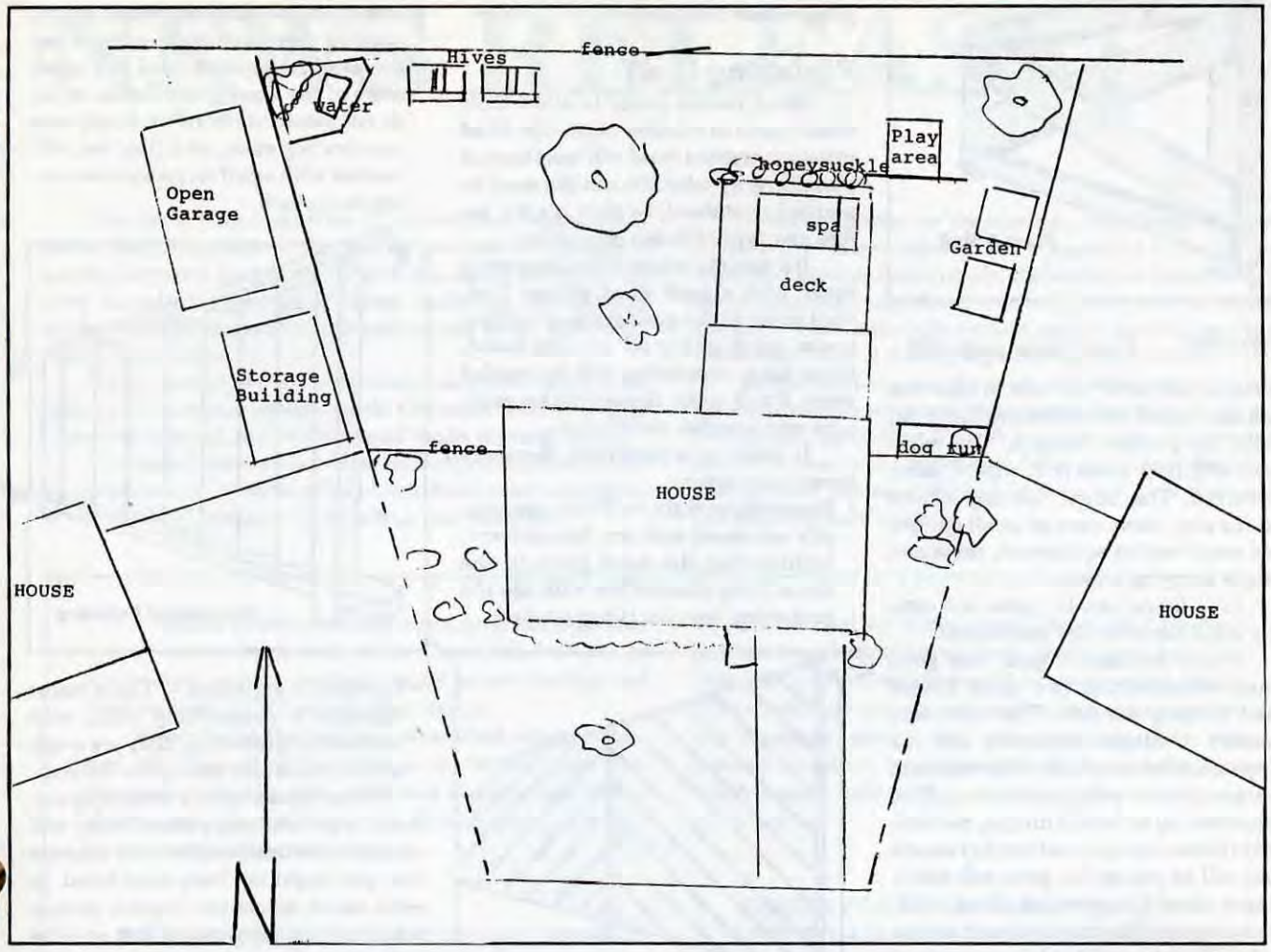
At neighborhood bar-b-ques, neighbors have been curious about where the bees are. I tell them they are out foraging. I also tell them that my bees are not neglecting their flowers and gardens. When harvest time comes and the neighbors see me extracting in my garage, I invite onlookers to dip a finger in the cappings and sample the honey. With my immediate neighbors, I share a jar of honey as a gift. In short, the first item of business is sensitivity to neighbors and their needs, and second, education.

I help the Boy Scouts with the merit badge program and have completed thirteen badges over the last five years. Since I love beekeeping, it is an opportunity to share with visitors of all ages the fun, as well as respect, needed to work with honey bees. When I have a local honey sale, many buyers want to see the hives and I show them. I point out the bees flight path and why it is advantageous to avoid it. The bees flight path, looking at the diagram, is due south. The play activity and gardening area in our yard is to the east and is not hampered since our lot is pie shaped, at the end of a cul-de-sac. The dog run is also on the opposite end. This leaves flowers, lawn, a satellite dish, and ham radio antennas in the vicinity of the bees.

Third, one needs to manage the bees well. Good public relations and education do not make up for poor management. I have worked with the two-queen, side-by-side system for the past ten years and find it useful since

A close-up of my two-queen system and the fence that keeps their flight path high.

An aerial view of the west end oif my yard showing the rose/water area, well-kept lawn and other details.



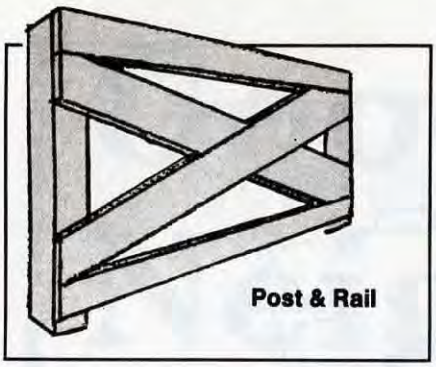
brood and nurse bees can be transferred to the opposite side, the mixed queen scent common to both. I keep extra space with the two-queen colony. If I hive a swarm I have an instant brood chamber that will take up to thirteen frames. The larger brood chamber helps reduce swarming and increases crops. My care of the colony allows for a better harvest and this year I harvested one-hundred fifty pounds of honey per hive, not including the honey left for wintering.

The pictures illustrate how both of my two-queen system hives are sheltered from the wind by an adequate fence on the north and west. Next to the hives is a shallow pond that is fed by a timed irrigation system in the rose bushes. There are rocks in the pond so that the bees can get water easily. In the top super is a gallon container where water is always available. In the spring the container is used for terramycin and sugar syrup feedings. This past year when unmanaged hives were having five or more swarms, I had none. If the bees are satisfied with their environment, they are generally more productive.

On hot days, the top lid is set ajar and the gallon container is moved off the feeding board slightly to allow for airflow. There is an upper and lower entrance, though most activity is through the lower. The upper entrance aids in ventilation.

Maintenance is the final important key. Lawn care is important because it gives predators little place to hide. Keeping hive bodies in good repair is also important. Painting needs to be done annually with the supers off the colony. In our climate, the humidity in the hive is such that a dried super takes and holds paint well. The white paint I use reflects the sunlight and looks nice. The alley, apartment lot and buildings behind would not know there are hives except for seeing me in protective wear caring for the hives or harvesting.

Sharing the product or consuming it ourselves, melting down wax, helping people in my neighborhood or workplace appreciate and respect the honey bee, and managing the hives properly — all make for good public relations. I look at the activity around the hives daily and enjoy seeing this community (which could exist without my care) go about its business. Of course, on days when someone gets stung by a bee or a swarm emits, I question my sanity about being an urban beekeeper. At those times, it takes tact and prayer to keep on keeping on. □



FENCES . . . Cont. from page 153

posts should be 6" x 6" set in concrete and assembled with screws rather than nails, for greater strength. The minimum width for gates is 3', with 4' being preferred. The larger opening allows for the easy movement of small garden and construction equipment, carts and people carrying supers.

Like fence panels, gates are usually a matter of design preference.

Every successful gate has good frame construction and good hinges used to hang the gate. There are any number of hinges available, but the hinge must be matched to the weight of the gate. As a rule, gates should be supported by at least 3 hinges, particularly if there is a chance that any excess load will be put on the gate, soft metal hinges should be avoided. Small children are one of the most common excess loads. Kingpin and flat hinges made of heavy duty, hot dipped galvanized steel are commonly used and re-bolted to the gate, rather than nailed.

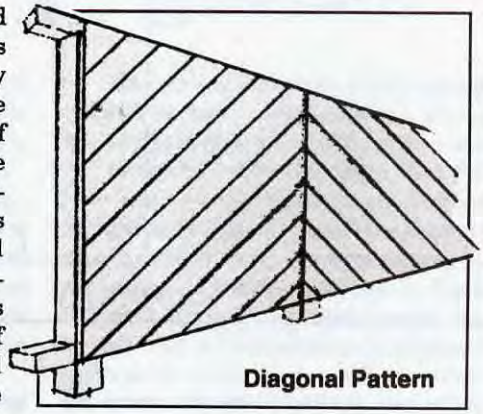
Finishing it off

Many people prefer to allow their wood fences to weather naturally. Most pressure-treated wood will weather to a pleasing gray color. Should the wood be painted or stained, be sure it's dry before any type of finish is applied.

If a paint is to be applied, be sure to cover with a good wood primer first, then paint with a good grade of outdoor house paint, either oil or latex based. Once done, repainting will be needed every 3 to 5 years depending on exposure and weather conditions.

If staining is preferred, there are three basic types:

- Penetrating stain — These are usually oil-based and are transparent, highlighting the wood grain in the fence. They also mellow with age if a protecting top coat is not applied.



- Latex stain — These are water-based, making clean-up much easier. They are semi-transparent and will mask some of the wood grain. Latex stains do not penetrate wood as deeply as a penetrating stain, and they too, will mellow with age if no protective coating is applied.

- Varnish-based stains — These stains combine a penetrating stain with varnish for protection; they are available in gloss and semi-gloss finishes.

Wood fences open a vista of opportunities for landscape ideas. Many will create a microclimate for your colonies that you might not have considered. In some cases, fences can provide protection from the extremes of sun or wind aiding in colony health and longevity. □

Reprinted with permission from Landscape Management

NEWS RELEASE:

This is the first in a series of sample news releases that beekeeping Associations can use to promote the variety of events they are a part of. In the next few issues we'll publish some samples on a range of topics, including meeting and workshop announcements, the pollination story, swarming season, and more.

We encourage your group to take these generic pieces and reshape them to your specific needs. Or better, take these basic ideas and expand and improve and make yourself heard.

This month we have two releases; both reflect the need for an association to promote what should be its most important, or even critical activity — recruiting new members.

A meeting notice has the power to grab the attention and capture the imagination of every would-be beekeeper who reads it. But more importantly, it should also be catching the eye of those few individuals who will never, ever be beekeepers, but who want the information, experience (and maybe the excitement) only a beekeeping meeting can provide.

Remember too, even the most dedicated members of an association have other activities, commitments and responsibilities pulling on their time. A meeting notice must not only lure in the new and uninitiated, but it must keep the faithful coming also. Notices are two-fold then, which makes a good one twice as hard to write.

A regular meeting seldom commands the attention a once-a-year work shop does. Therefore, two things must occur — your meeting should be interesting, and your release MUST convey that image.

Never forget the basics — who, what, where, when and why. Get all of the news, in the format your local newspaper usually uses, and with enough flair that it will not only get published (not all of them do), but read by the people who need them.

DO HONEY BEES EAT DANDELIONS?
Fascinating facts about honey bees and beekeeping explained every month.

The Brown County Beekeepers Association will hold their next meeting at 7:00 PM, Tuesday night, March 27, 1990 in the Courthouse basement in Capitol City. The courthouse is at 123 Lakewood Street and there's free parking in front or back.

This month's special speaker is Don Spencer, who's going to look at all sorts of honey plants and the fruits and vegetables that need honey bees for pollination. Don't miss this special slide show and lecture, and then stick around for the coffee and honey-made goodies afterwards.

There's no fee and the group invites everyone interested in bees, beekeeping, pollination and related topics to stop in. For lots more information contact President Mike Fields at 555-123-4567.

The annual workshop should be an exciting event, and inviting those who want to be beekeepers, and those who just want to watch should be given equal weight. This is a unique opportunity to give your group continuous exposure, gain a few new members, help your current members increase their skills, and get some much needed information out into the community you are a part of.

BROWN COUNTY BEEKEEPERS HOLD HOW-TO, OR JUST-WATCH WORKSHOP

Mike Fields, President of the Brown County Beekeepers Association has announced the schedule for their annual April week-end workshops.

Every Saturday afternoon during April (Apr 7, 14, 21, 28), the group holds an indoor/outdoor workshop on the how's and why's of beekeeping.

The first session is strictly lecture and demonstration work, but the next three are held outside (weather permitting). Actual bee work is not required, and in fact anyone interested in just seeing how it's done is encouraged to attend. But for those interested there will be ample opportunity each week to work the hives.

There is a small fee to cover class material and equipment. For more information, contact Mike Fields at 555-123-4567 for a complete schedule. Advanced registration isn't required, but is requested.

The sessions will be held at the Capitol City high school in the Agriculture annex. Look for signs in the parking lot. Classes start at 1:00 PM sharp each Saturday, and run for about 2 to 3 hours.

If the weather doesn't cooperate, we'll decided on future make-up sessions at the meeting.

Teachers, 4-H leaders, outdoor educators, Boy and Girl Scout leaders, parents and anyone interested in the fascinating world of the honey bee is welcome. We offer a NO-Sting Guarantee! □

Remove Here

HOME HARMONY

ANN HARMAN
6511 Griffith Road • Laytonsville, MD 20882

"Finding recipes is getting easier!"

Is it my imagination or have I really been seeing more recipes using honey in newspapers and magazines? I certainly hope it is a definite trend because no one of us can hope to reach all those living in one area. Most newspapers have a food or recipe section. You could give the editor a phone call to see if the newspaper would be interested in some recipes with honey. Select your favorites: one for a meat dish, one for a vegetable, a salad dressing, a dessert. Don't forget to credit the source of the recipe, if known.

If you find some honey recipes in your local newspapers, try them in your own kitchen and if you find them tasty, send them on to me and we can all share them.

Sometimes I find a recipe that can be adapted to use honey. Such recipes are easy to spot — soups, salads and meat dishes that contain sugar or brown sugar. You can simply substitute honey for the sugar, the same quantity. This recipe for chicken sounded good, but it used brown sugar. That is pointless — honey is so much better! It is quickly made and the blend of spices is very good!

•Spiced Chicken

3 Tbls. cooking oil
2-1/2 to 3 pounds chicken pieces
1/2 cup flour
1 tsp. salt
1/4 tsp. pepper
1 cup orange juice
1-1/2 cups sliced fresh, canned or frozen peaches
2 Tbls. honey
2 Tbls. vinegar
1 tsp. mace or nutmeg
1 tsp. basil
1 clove garlic, pressed or minced

Heat oil in fry pan. Dredge chicken in seasoned flour. Brown chicken. While it is browning,combine orange juice, peaches, honey, vinegar, spices and garlic. Simmer this sauce 10 minutes. Remove chicken from pan, pour off oil but leave browned bits in skillet. Replace chicken and pour fruit sauce over top. Cover. Simmer about 40 minutes or cook according to your microwave instructions. (In general, the slow simmering will produce a tastier dish, but the microwave is faster.)

adapted from the Washington Post

Another source of recipes are small leaflets that are given away in booths at county fairs, shopping mall displays and demonstration booths. These leaflets also seem to be using more honey recipes. Here is a recipe from a leaflet entitled "Children's Choices with Dairy Foods". Since I love peanut butter, I am content to be a child for a little while as I am enjoying this milkshake.

•Peanut Honey Smoothie

1/4 cup honey
1/4 cup creamy peanut butter
3 cups cold milk
1/2 tsp. vanilla extract
ice cream, if desired

Place honey, peanut butter and 1/4 cup milk in blender container; cover. Blend until smooth. Add remaining milk and vanilla. Blend until smooth and frothy. Serve immediately, garnished with a small scoop of ice cream. Yield: aprox. 3-1/4 cups.

Middle Atlantic Milk Marketing Board

State departments of agriculture frequently publish small pamphlets encouraging people to use crops produced in that particular state. These are given away at agricultural fairs and at tourist booths. I looked through the Maryland pamphlets and adapted this recipe, using a popular Chesapeake Bay fish. The sauce can be used for any fish.

•Poached Flounder With Ginger Sauce

4 flounder fillets

Sauce:
3 Tbls. ground ginger
1 Tbls. garlic powder
1/2 cup olive oil
3 Tbls. vinegar
1 Tbs. soy sauce
1 tsp. honey
1 tsp. flour

In a skillet, poach fish in water just covering fillets for 5-10 minutes, until flakey with a fork. Reserve liquid. To the liquid add ginger, garlic powder and oil. Reduce, by boiling, to 1 cup. In a small bowl, combine vinegar and soy sauce. Stir in honey and flour, stirring until dissolved. Whisk the mixture into the ginger mixture, cook over moder-

ately high heat, stirring for 2-3 minutes or until thickened.

Serving suggestion: Serve sauce in small bowl for dipping bite-size pieces of fish. Serve with Tahitian or oriental-style vegetables. Serves 4.

Maryland Office of Seafood Marketing

Magazines are an excellent source of good recipes. If you are fortunate in having a subscription of one of the gourmet cooking magazines, you probably have found some honey or honey-adaptable recipes. Seeing the word "honey" in the title of a recipe is always very encouraging. It means that honey, as a cooking ingredient instead of a toast spread, is being promoted to the non-beekeeping public.

This next recipe calls for pork tenderloins. However, I have used it on pork chops with excellent results.

•Orange & Honey-Pork Tenderloin, Roasted

2 8-10 ounce pork tenderloins, trimmed
2 tsp. grated orange peel
1 tsp dried, crumbled thyme
1/2 tsp. freshly ground pepper
2 garlic cloves, minced or pressed
1/3 cup fresh orange juice
2 Tbls. rice vinegar
vegetable oil
2 Tbls. honey

Using a fork, work orange peel, thyme, pepper and garlic to a paste in small bowl. Rub into pork. Combine orange juice and vinegar in same bowl. Pour over pork. Cover and refrigerate at least 2 hours or overnight. Brush heavy baking pan with thin layer of oil. Heat oven to 425°F. Heat pan in oven 4 minutes. Set pork in pan. Drizzle with 1 tablespoon honey. Roast pork 10 minutes. Turn pork. Spoon any pan juices over. Drizzle with remaining tablespoon of honey.

Food Chamber

It is not too early to begin thinking about your entries in the honey cookery shows of 1990. If your local and state associations do not have a honey cookery show, encourage them to do so. "Honey chefs" are happy to exhibit their skills and those chefs come in all ages! The winter months are excellent for kitchen experimenting to find just the right recipe and techniques for presenting a winning show entry. Beekeeper association meetings are in full swing, before the spring rush of gardening and beekeeping tasks. Have an informal honey cookery show with judging, as part of a meeting program. After the judging, everyone attending can share the goodies AND the recipes.

Roast 20 to 25 minutes longer for medium done, basting one or twice with pan juices. Let pork stand 5 minutes. Cut into 1/4-inch slices and serve. Serves 6.

Bon Appétit

General cookbooks have recipes using honey. Unfortunately, the word "honey" does not always appear in the title. This makes finding a honey-containing recipe very difficult. I usually find the honey recipes when I am flipping through, looking for something to make. I mark the honey recipe page with a small slip of paper for future reference. As a result my cookbooks resemble porcupines with the little slips of paper protruding from the tops. I was searching for a vegetable recipe when I came across this one. It sounded so good that I switched my menu for the day — and am glad I did. These carrots are different and delicious!

•Minted Carrots and Pineapple

1 small fresh pineapple (you can substitute canned)
1/3 cup unsweetened pineapple juice
1 Tbls. honey
1/4 cup minced fresh mint
4 large carrots, cut diagonally into 1/2-inch slices

If using fresh pineapple, cut pineapple in half lengthwise; remove core. Cut pineapple pulp into 1/2-inch cubes. Measure 2 cups pineapple cubes. Combine pineapple juice, honey, and fresh mint in a medium saucepan, bring to a boil. Add carrots, cover, and reduce heat. Simmer 8 to 10 minutes. Stir in pineapple cubes and cook an additional 5 minutes or until carrots are tender. Yield 6 servings.

Cooking Light Cookbook 1989

You will find that some beekeepers produce their own honey recipe handouts to assist honey sales and create an interest in using honey as a cooking ingredient. Try to accumulate a "library" of these pamphlets as part of your cookbook collection. So that my "3-fold" leaflets do not get lost among the large cookbooks, I keep them in a cardboard box, so they stand upright, on my cookbook shelves. Then I can find the recipes and try them, just as you might like to try this cake.

•Dark, Rich Applesauce Cake

1 cup applesauce
1/2 cup honey
1/2 cup vegetable oil
1-1/2 cups flour
1 tsp. baking soda
1/2 tsp. salt
1 tsp. cinnamon
1/2 tsp. cloves
1/2 cup raisins or nuts (optional)

Mix first three ingredients together in large mixing bowl. Sift together all dry ingredients and stir thoroughly into applesauce mixture. Place in greased 9" x 9" pan. Bake at 350°F for 40 minutes.

Volker Family Honey Recipes
by Jane Volker

Now that you have an idea of how and where to look for honey recipes, keep your eyes open and you will find many good ones to try.

TUTU

NEW ZEALAND'S TOXIC HONEY

B. A. STRINGER

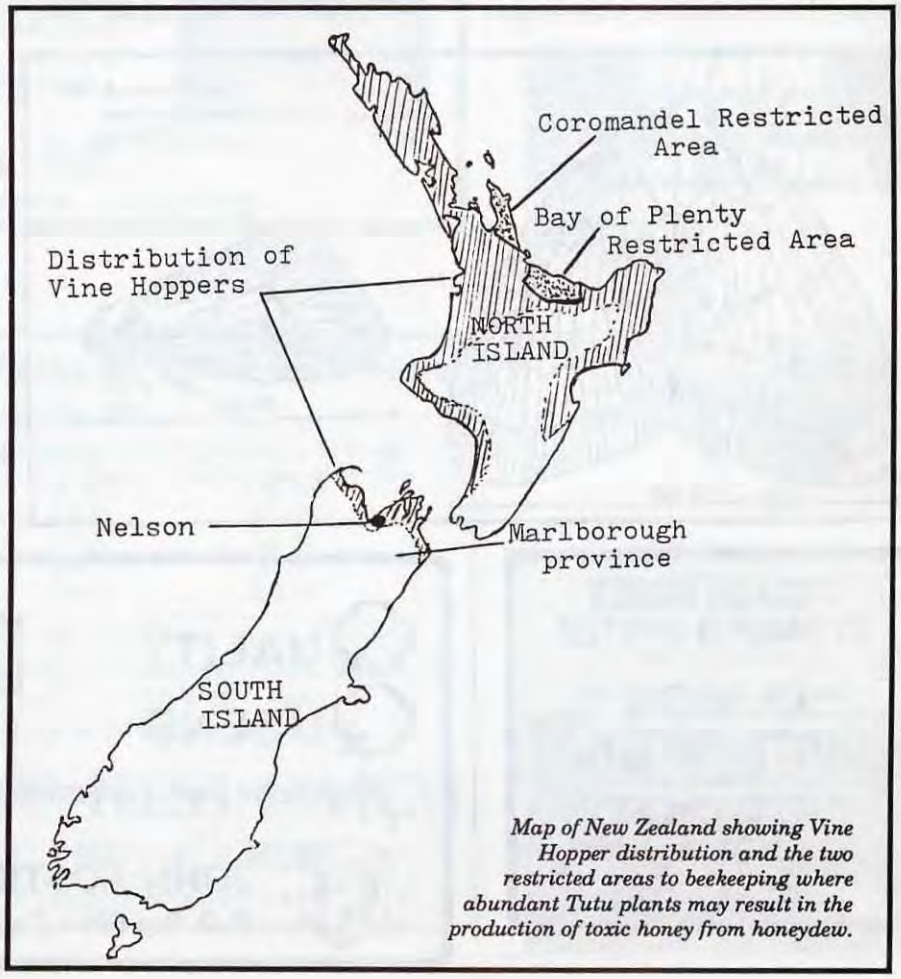
Cases of honey poisoning, with some fatalities, have been recorded in New Zealand since the 1890's. After a serious bout of poisonings in 1945, the cause was finally established and a connection was made between the native Tutu shrub (*Coriaria arborea*), a vine hopper insect and honey bees. Today, the risk of toxic honey production is very low because of increased awareness of the problem, restricted beekeeping area, and altered management techniques.

The Coromandel Peninsula and eastern Bay of Plenty in New Zealand are restricted areas to beekeeping, with rigid enforcement of conditions in the required permits. These areas have abundant stands of the native Tutu (pronounced "toot") shrub, which contains a highly poisonous chemical called tutin. The source of the poison is not the plant's nectar, but rather the honeydew secreted by a small vine hopper, *Scolypopa australis*. This insect feeds on the sap of Tutu, and is unaffected by the tutin that it secretes along with sugars, water and other products. The toxic honeydew also usually contains another toxin, hyenanchin, which is a modified form of tutin.

Several factors and conditions must be in place before the vine-hopper's honeydew becomes a problem. There must be abundant Tutu and high numbers of the vine-hoppers at a time when there is dry weather to allow honeydew buildup on the Tutu, and also little else for bees to forage on. The adult vine hopper is present in large numbers from January to April, which is the high risk period for production of toxic honey.

When all these factors exist, bees collect the accumulated honeydew and store it with other honeys in the comb. The toxins have no effect on honey bees and the poisonous honey cannot be distinguished by sight, smell or taste from other honeys. Both comb and extracted honeys can be affected, but extracted honey usually contains lower concentrations because of dilution and mixing with other honeys. The toxins persist in the honey, and people have been affected by honey that is several years old.

Symptoms of tutu and hyenanchin poisoning include nausea, vomiting, convulsions and loss of memory. If the concentration of toxins in the honey is high, as little as one teaspoonful can cause poisoning. There are also many



Map of New Zealand showing Vine Hopper distribution and the two restricted areas to beekeeping where abundant Tutu plants may result in the production of toxic honey from honeydew.

Tutu plant in flower.

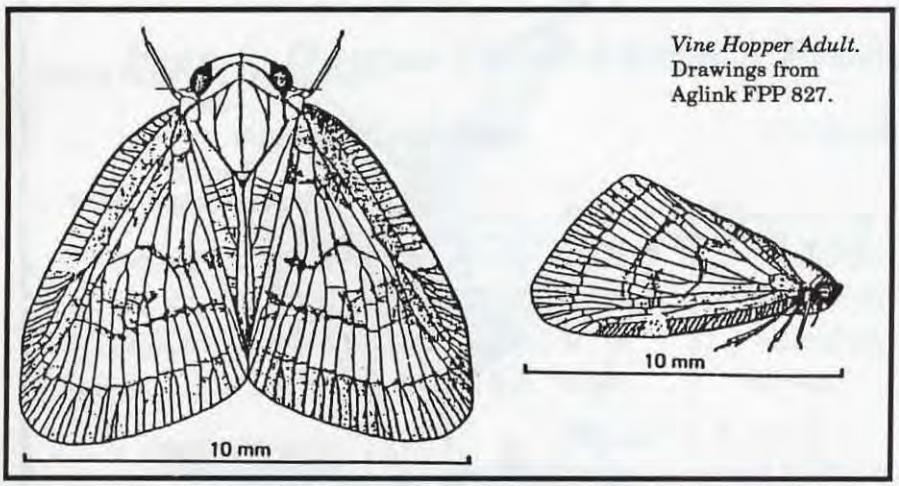
Tutu. (Reproduced by kind permission of N.M. Adams).

From Ministry of Agriculture and Fisheries Aglink FFP 827.

cases of stock poisoning from ingestion of the plant itself, including the death of a circus elephant which nibbled Tutu in transit.

Beekeepers in susceptible areas are well aware of the potential danger from Tutu. The Ministry of Agriculture and Fisheries (MAF) registers apiaries and provides information to beekeepers and the public regarding this hazard. Tutu plants in eastern Bay of Plenty, the Coromandel Peninsula, Northland and the Marlborough Sounds are monitored for the presence of vine hoppers and the production of honeydew. Surplus honey is removed before December 31, earlier than the appearance of adult vine-hoppers. Feed or surplus honey produced after December 31 is not removed from the hive. Supers for a winter honey flow are replaced after May 1, after the vine hoppers are no longer present (early winter). Honey from feral colonies in the danger areas is considered unsafe for human consumption.

Since the causes of toxic honey production were identified in 1946, cases of honey poisoning have been rare. Those few instances have resulted from the ingestion of honey out of feral colonies by people unaware of the hazard. It is the beekeeper's responsibility to ensure that toxic honey is not produced or sold. Restriction of beekeeping in certain areas and timely removal of honey supers minimizes the risk of harvesting any toxic honeydew honey that is gathered by bees. □



Vine Hopper Adult.
Drawings from
Aglink FPP 827.

Bertie Stringer is a regular contributor, author of the Beauty & The Bees Column. She is a native New Zealander.

RAINY DAY QUEENS

RICHARD DALBY

Come spring, a beekeeper's fancy always turns to thoughts of — what else? — bees. Well, not just bees, but all that pertains to and affects bees. Including whatever sort of weather Mother Nature might have in store for the day when those precious queens one has ordered arrive in the mail, bearing with them all the promise of a new season.

But what if the beautiful warm weather you were counting on turns out to be cold, gloomy rain instead? And the apiary which is to be the queens' new home is 100 miles away? And you can't, for a variety of sudden reasons, get there for 10 days?

The answer, of course, is that you do what you can to keep those rainy day queens alive. And when I found myself involved in the above scenario, I entered the little-known world of microbeekeeping, where you tend your queens in their tiny shipping cages.

The first problem was knowing what to do, which was not a problem right off when I did nothing except keep my precious package of nine queens in the closet on a shelf. But then, after three or four days, a few of the attendant bees in some of the cages began dying, and I was certain the queens would be next unless I took some sort of action.

But what to do? I could find nothing in my bee books on this subject. I did find lots of information on storing queens in cages in a queenless nursery hive. But the rain continued to fall, and I had no nursery hive, so I began to experiment. I had observed that the attendant bees didn't seem to be using much of the queen cage candy in the end of the shipping cages. Perhaps the mixture had dried out too much, for it seemed too hard for the caged bees to eat easily. Luckily, I had some good light honey from my own apiary on hand, and I decided to see if the attendant bees would be interested in having some of it.

To make sure your queen makes it to her destined hive, follow these few steps while keeping her at home.

- Never store queens in direct sunlight, near heaters or cool air vents.
- Give each cage at least one drop of water every day but better, two one in the morning and one at night.
- If the candy has dried, feed a sugar solution. Honey is okay but know your source.
- Keep in a cool, dark place if possible. This reduces activity.

But how to feed them? Feeding bees confined in a queen mailing cage presents some problems. They just don't make Boardman feeders this small. So I put a drop of honey on the end of a toothpick and then transferred this honey onto a small area of the wire cloth on one of the shipping cages. To my surprise and delight, the attendant bees in the cage soon discovered the honey and eagerly began eating it with their delicate, exploring tongues. It was the same story with all the rest of the caged bees. Even the queens got into the act and fed themselves from the honey on the wire cloth.

I was careful not to put more than just a drop of honey onto the queen cage screen at one time. I took care, too, not to scrape the delicate tips of the bees' tongues as they licked vigorously to clean every trace of honey from the wire screens covering the cages. Soon the bees were full. They no longer showed any interest in eating more honey. So I put the nine queen cages back into the mailing envelope and placed them in

Enter the world of micro-beekeeping.

the closet. Every day for the rest of their confinement I fed them all the honey they wanted. I also began giving them some water, putting a drop on the wire screen of each shipping cage with my fingertip.

The closet in which I kept my nine queens had little light and a moderate temperature. These are important points. Too much light causes the bees to become very active and run excitedly about their small cages. Too much heat will have the same effect. A temperature of about 60°F is ideal.

One more point. Do not attempt to store caged queens near any sort of insecticide or other toxic substance. This includes those slow-release insecticide strips sold for home use. These strips are deadly for bees and have a residual effect which takes some time to dissipate.

By following the regimen described, I was able to keep my nine caged queens in fine fettle for a period of 10 days after their rainy arrival. By that time there was a break in the weather and I was able to get away to my apiary for a weekend, where these queens were used to head some splits. Come Monday the rain began again, but now my nine queens were all safely ensconced in their own hives, with a large force of young worker bees to see to their queenly needs. When next I was able to get away from the city to check on them, all were doing fine.

When feeding, drop water or sugar syrup on the screen. Brushing it on may injure a feeding bee.

Richard Dalby is a side line beekeeper and free lance writer from Levan, Utah.

I do not know just how long queens can be kept in their tiny shipping cages outside a hive. And certainly keeping them in a nursery hive where they can be taken care of by a force of devoted workers is much better than storing them in a closet. But if you should find yourself with some newly-arrived queens and the weather is cold and rainy and your apiary is miles away, you might want to try my method of keeping them happy until you have the chance to get them into a hive. Then, like me, you will probably remember those rainy day queens with affection as the sun shines day after day and another season begins. □

Making Nucs

ED WEISS

Ed Weiss makes and sells nucs every spring. He uses his own bees, so is comfortable with their source and makes much of the equipment he uses, too. Whether you want to increase your own apiary, or sell to others, making nucs is a sure fire way to safely increase stock.

Nucs can be as simple as three frames, though maintaining a three frame nuc may not be simple. Keeping enough bees to keep themselves, a queen and their brood warm is sometimes a problem. Three frame nucs also have trouble collecting and storing enough food, so feeding is often required.

I narrowed my eyelids to a slit as I looked through the frosted windowpane in my den. I should have been wearing my glasses, but I had just stumbled out of the bedroom and down the stairs. I gasped when I saw nothing colored above the zero mark. Wow! Winter was still two days away but I knew the time had arrived.

It was time to figure out how many Nucs I had to make this coming Spring. When I arrived at that number... I had to fill in the checklist with all the requirements.

As I started to check off the items on the list, my eyes got stuck — on of all things, the word "Nuc" itself. Suddenly, my mind started spinning back a couple of dozen years to the first time I saw that word, "Nuc"

What in the world was a Nuc? Well, my mentor, a grand lady who furnished me with my first complement of bee supplies, blithely blurted out, "A nuc is short for nucleus, in beekeeping parlance."

Of course, I felt like a dummy. Sure, nuc is short for nucleus but, what is a nucleus? My grand lady beamed her blue eyes at me and began:

"A 'nucleus' is really a miniature colony of bees with a laying queen. It can consist of as few as two frames, or have as many as ten and still be considered a 'Nuc' " "Somehow," she continued, "I always have felt that four frames was not quite enough and more than five frames a bit too much. If you set up ten frames, which is a full hive body of deep frames, the bees don't really have that nice tight nest-like feeling that

A typical home-made four frame nuc. These have a telescoping cover and commercially produced frames. The bottom board is permanently attached. Openings are small and easy to defend and entrances are clear.

they want.

"So think in terms of five frames" she said, "and then expand it into ten frames in a full sized hive body, once the Queen gets up to speed and everything looks a little crowded a few weeks later."

I found myself staring at my checklist, and the big word "Nuc" came back into clear focus. Of course, my checklist of materials was headed up by the term — Nuc Box. This miniature colony container is a rough built box, which will hold three, four or five deep frames with all necessary tolerances (remember 5/16" beespace) along with a cover of sorts. It generally is connected to its own bottom board with a half dozen hive staples.

The second big number to check off is, "five deep frames with wax foundation sheets" You need these five frames to replace those that you will take away from the colonies furnishing your new nuc with Bees, Brood, Honey and Pollen... but more about that next month.

Now check off the next big number, the third and possibly the most important requirement once you have the house and furniture for the bees in place — a fine, mated, laying Queen. I like mine marked, so I can keep track of what is going on in that new colony this year and next.

A commercially produced, five-frame nuc. These larger units are generally more able to feed and defend themselves and require a little less attention. A decided advantage is that they are easily converted to full size colonies.

Locate a good queen breeder and arrange for a queen or queens to be furnished to you on, or just the day before you will make up your Nuc. It is too early and too cold to breed your own Queen.

By this time you probably are ready to move on to some of the other interesting articles in this magazine, thinking to yourself — "Boy, that's a lot of trouble and work — what for?"

Well, between the mighty mite and the inevitability of the Africanized Bees' march through Mexico, it's a comfortable feeling to increase your apiary numbers via nuc making. They are your bees and you have knowledge of their lineage. Choose your Queen source carefully and your nuc will turn into a viable strong, new colony.

NEXT MONTH Making Nucs, from how-to make the box to how-to fill it with bees — from your hives or others. Nucs can be fun, but more importantly profitable, if you have the right know-how! □

FRAMES

GRASP THE FUNDAMENTALS

Hive furniture can have a long life, be fully interchangeable, and have a good resale value if it is properly made. In the case of frames, this includes using the right dimensions, proper nailing and wiring, placing the foundation in the frame at the right time and putting the new frames on a colony to draw the foundation at the right time and in the right place. In preparing to write this article I measured and studied many old combs we have on the Cornell University colonies; some of these are at least 75 years old. They were made by W. L. Coggshall, who, around the turn of the last century, owned 4,000 colonies in the vicinity of Ithaca, and for many years owned more bees than any other beekeeper in the world.

Coggshall made his own beekeeping equipment but followed Langstroth dimensions. Most beekeepers buy the frames they use and the manufacturers have been very careful to follow standard measurements. However, one may make one's own frames and they can be fully as satisfactory as those that are bought. Many beekeepers have used the winter hours to make new equipment, thereby saving considerable money.

Dimensions

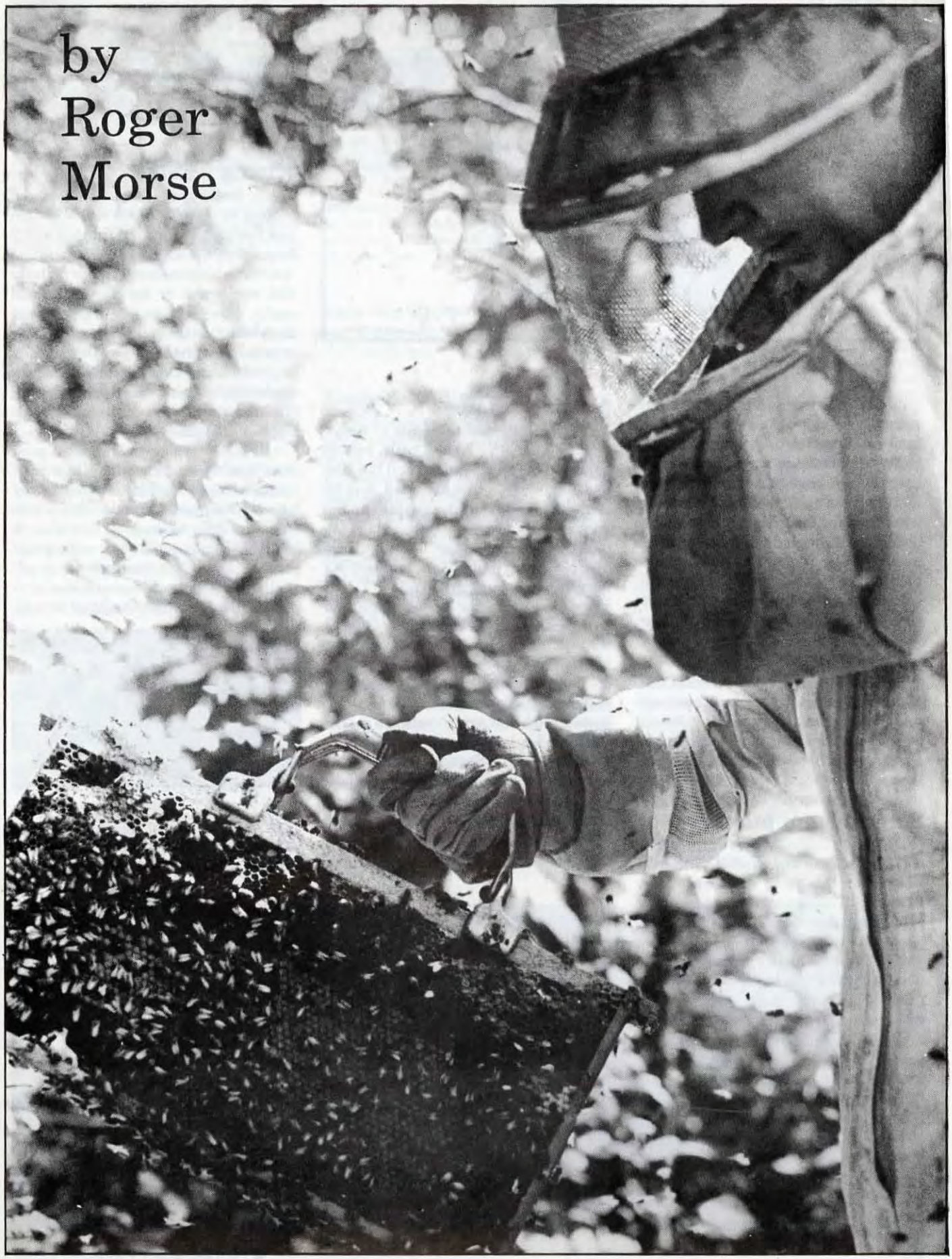
A standard full-depth, Langstroth-type frame has three parts: a top bar, two end bars, and a bottom bar. A frame is 17 and 5/8 inches long and 9 and 1/8 inches deep, with projecting lugs on the top bar that are 5/8 of an inch long. There is much debate about the appropriate width of the top bar. Most manufactures make a top bar that is 1 and 1/8 inches wide and 5/8 of an inch deep. These dimensions make a top bar that is very strong; however, I think such a top bar is too wide. Wide top bars were popular when beekeepers used ten frames in a super (most use nine today) and were producing comb honey. Wide, thick top bars act in part like a queen excluder and deter a queen from moving upward into the next super. Coggshall, who was particularly interested in producing liquid honey, made top bars that were 7/8 of an inch wide and 5/8 of an inch deep.

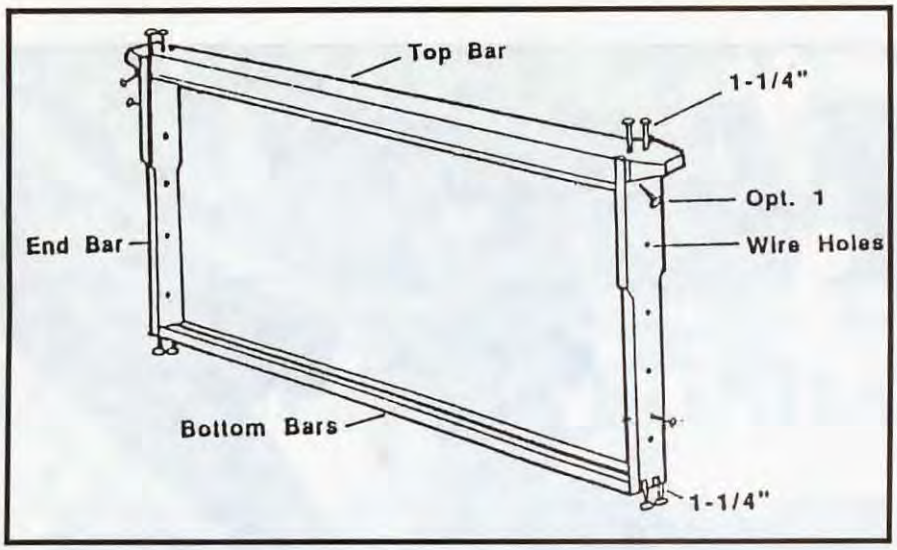
End bars on a free hanging frame (left) and a standard, self-spacing Hoffman frame on the right. The top bar, side and bottom bars of free hanging frames are all the same width, while the differences in the Hoffman frame are obvious.

Free-hanging versus self-spacing frames

A free-hanging frame has the top bar, end bars and a bottom bar the same width. Free hanging frames made from 7/8 inch wide lumber were apparently favorites with Coggshall, for we have many among the equipment given to us by his son and grandson. They are certainly the cheapest and easiest frames to make. Migratory beekeepers prefer self-spacing frames, that is frames with wide shoulders. When moving bees it is important that the frames not sway and catch and crush bees. Self spacing frames must be spaced by hand, which many beekeepers feel is a great disadvantage; however, this problem may be eliminated by using frame spacers. (Some use spacers on top, and special spacers on the bottom for stability when moving colonies.) One may reduce comb storage space by placing 15 to 18 free-hanging frames in a super. I have made and tested free-hanging frames that are of 3/4", 7/8" and 1" wide and I like the 7/8" width the best. Such a frame is easy to

by
Roger
Morse





To make sure a frame holds up under constant wear, use ten nails when assembling. The two extra nails in the side bars are for anchoring wires when wiring.

hold and to extract. A frame with narrower parts is a little more difficult to hold and extract from but still I use many with 3/4 inch wide top bars, end bars and bottom bars. It is easy to find lumber that is 3/4 of an inch wide, whereas special milling is required to obtain the 7/8 inch thick lumber. When making free-hanging frames I prefer to buy lumber of the thickness that will equal the width of the frame; I then cut the three parts to the desired thickness.

Type of lumber

The best lumber for frames is soft, white pine. Some beekeepers use basswood. The reason for using a softwood is it is important to nail the frame carefully and hardwoods split too easily when nailed.

Sanding and planing

The best quality hive furniture is carefully planed and sanded. The chief reason for this is to discourage bees from depositing an excessive amount of propolis on the wood. Bees collect plant gums and resins, which we call propolis, and use them to varnish the hive interior. This fills in cracks and crevices where insects, mold, yeasts, bacteria and other noxious living things might hide. If the hive furniture has a smooth finish the bees will collect less propolis. Propolis is a nuisance for beekeepers and when there is too much of it in a hive one's hands and fingers become covered and it is difficult to make beekeeping manipulations.

Nailing frames

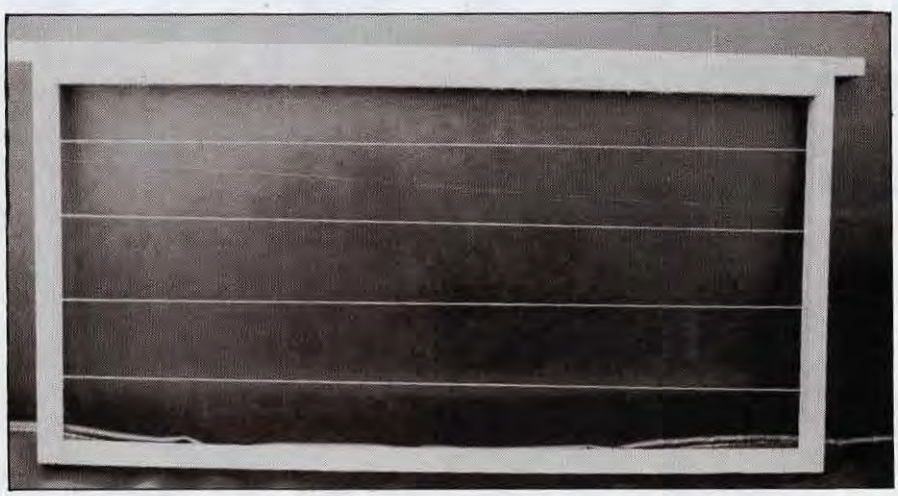
I prefer to use ten nails to nail a frame. I use four 3d box nails, two on each end of the top bar, to nail it to the end bars. Two nails are used, one on each end bar, just under the lugs on the top bar, to secure the end bars to the top bars. The bottom bar is nailed into place with four nails. If one makes one's own frames, strength can added by fitting the bottom bar *between* the end bars, not nailing it onto the bottom of the end bars. I prefer to use box nails, which have a smaller diameter than common nails, to make beekeeping equipment. Box nails bend and twist more easily and are sometimes a nuisance to use but they are less likely to split the wood. Several beekeepers I have known glue their frames in addition to nailing them and feel it is worth the added time and expense.

Wiring frames

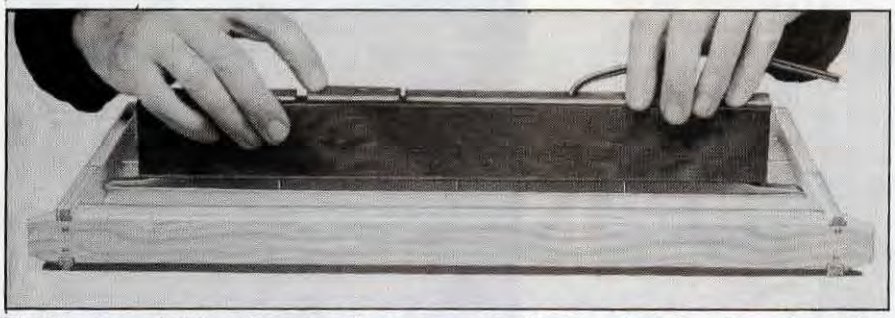
A beekeeper has a number of choices as regards types of foundation and methods of wiring it into place in a frame. Wire is used to hold foundation in a frame because new comb is delicate and can break or become disformed easily. Many beekeepers prefer plastic foundation with high cell walls; our experience with this type of foundation is good. I have seen many excellent combs made using plastic foundation. We have not been too successful with plastic core foundation.

The cheapest way to make a good comb is to wire a frame using four horizontal wires and to use unwired, heavy brood foundation. However, this is also the most time-consuming and what a beekeeper makes in this regard depends on how much time and money are available. A favorite compromise is to use vertically wired foundation and

Though somewhat time consuming to install, frame eyelets will enable you to pull your support wires piano tight, giving exceptional strength to the finished comb.



A well wired frame, ready for foundation.



Electric wire embedders all work on the same principle — a current is applied to the wire, which offers resistance and heats up. Pressure is applied to the wire, which melts the wax when in contact. Practice makes perfect here too. Too much pressure and the wire goes all the way through, and too little and it lies on the surface.

A spur embedder. Using two at a time speeds things up because the spur should be hot when pushing the wire into the wax. Have one warming in a pan of hot water while using the other.

horizontal wires.

I have wired frames with and without metal eyelets in the end bars. I prefer to use eyelets but putting them in place is too time-consuming for many beekeepers. Without eyelets the wire may cut into the wood. One can get away with a wire that is not perfectly horizontal and it may be embedded at that angle and will hold the foundation just as securely. When eyelets are used the wire may be pulled a little tighter, though I'm not really certain this holds the foundation any better.

Bar thickness

Manufacturers usually make end bars that are about 3/8 of an inch thick. When I wire frames with end bars this thick I can bow them in slightly by drawing the wire tight, especially when I use eyelets. I don't think that does any harm. Coggshall made end bars that were 1/2 inch thick and his bottom bars were not so thick as those made by manufacturers today. Thicker end bars are less inclined to bow in under pressure but I'm not sure if this is the reason Coggshall used them or not; one can argue that his frames have stood the test of time whatever the reason for the thick end bars.

Embedding wires

Embedding is an art that requires some experience. I prefer to embed wires into foundation using an electric embedder sold by one of the bee supply manufacturers. I have used spur embedders and have found they are satisfactory if one has only a small amount of foundation to embed. It is best to embed the wires deep enough so that they are covered with wax from the foundation. Embedding too deep will cut the foundation.

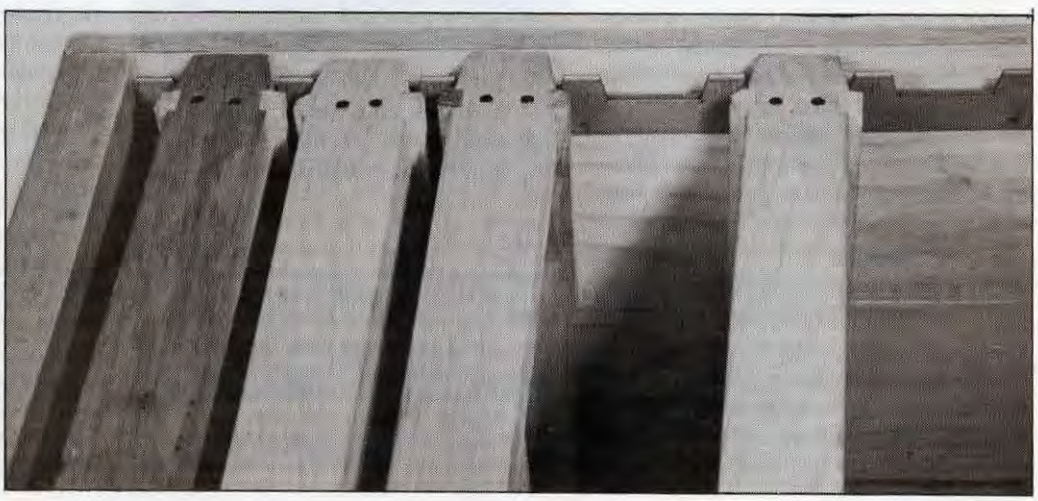
Adding foundation

The chief problem with working with beeswax is that it shrinks and expands as the temperature changes. If foundation is placed into a frame and embedded into place long before it is placed on a colony it may warp and buckle as the temperature goes up and down. The more wires one uses the better this is controlled. The ideal situation is to place a sheet of foundation into a frame the same day the frames are placed on the hive to be drawn, or only a few days before; there is no good alternative.

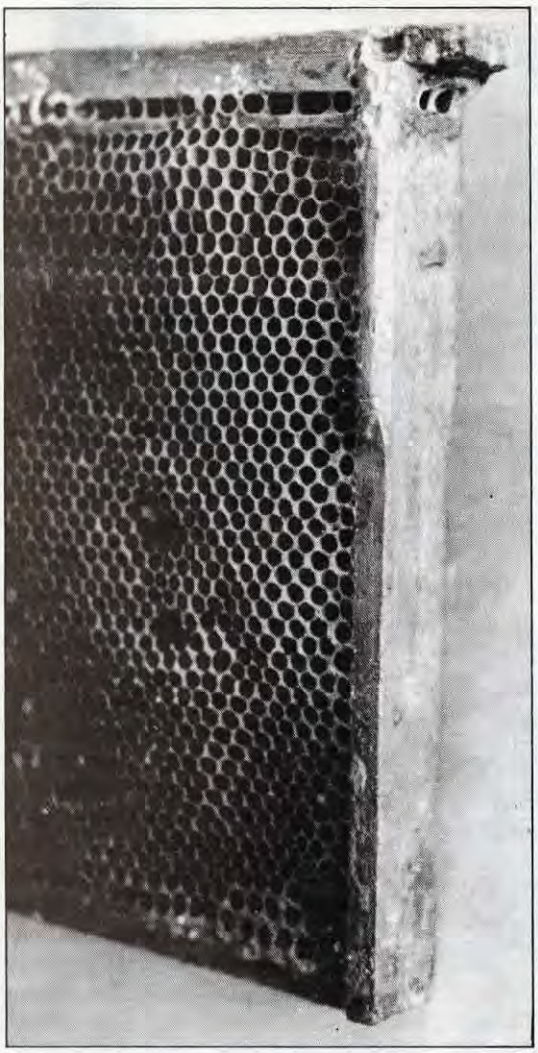
Spacing and Placing

When making new combs one should have ten frames in a 10-frame super. Under ideal conditions frames with new foundation should be placed on colonies a day or two after the honey flow has started. If new foundation is placed on colonies when there is no honey flow the bees will be inclined to chew and destroy some of it.

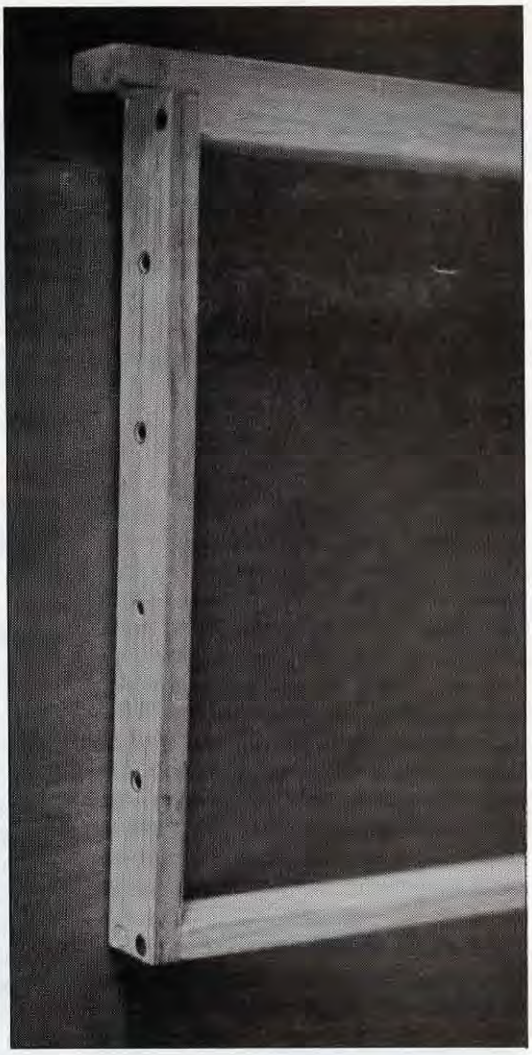
Beekeepers who start with package bees, without drawn combs, are forced to place the bees on frames with foundation. Bees in a package colony will draw good combs, even in bad



Frame spacers are attached to the rabbet on the inside of supers. If attached properly they will not cause the frame to violate the bee space. They can be found in 8, 9 or 10 frame sizes.



This frame was not constructed properly and the side bar has pulled away from the top bar. This will cause problems below because now the frame is too tall to sit in the super properly. It will probably come apart if handled roughly.



A properly constructed free hanging frame. This home-made frame was put together with 10 nails, frame eyelets added and it is well wired. This frame should give years of service.

weather, if they have sufficient food. One should never use an entrance-type feeder for feeding a package of bees when placed on foundation. A three-pound package of bees, installed in a hive in the north sometime between April 15 (the ideal time) and May 15, will need at least 25 pounds of sugar in the form of syrup during the first month. We usually use one or two one-gallon glass jars to feed bees in a package colony. These are inverted on the top bars inside an empty super, thus making certain there is food available at all times. Feeding this much sugar to a new colony will insure that the foundation is drawn properly.

New frames

Bees will do the best job of drawing out foundation and making new cells if the frames with foundation are placed just above the brood nest. If one is short of combs, and is forced to draw a whole super of frames at one time, then the super should contain ten frames. A better method is to place two drawn combs on either side of a super and six new frames with foundation in the center.

Extracting new combs

New combs filled with honey are very delicate and will break easily in an extractor. Beekeepers have used several techniques to prevent the combs from being broken. One method is to uncap the new combs by hand with a knife and to cut the cells a little deeper than one would normally. This removes more wax and honey and therefore much of the weight; since the cell bases are already formed, cutting deeply does no harm to the comb.

Some beekeepers extract new comb using reversible extractors, that is extractors that remove the honey from only one side of a comb at a time. The combs can be reversed three or more times thus reducing the weight slowly. If one has a radial extractor then it is important to run it more slowly when extracting new combs. One or two wide rubber bands may be wrapped around a comb (over the top and bottom bars) to help hold it in place while it is being extracted.

Conclusions

A comb should have a long life. This is possible only if the frame around it is properly nailed and wired. Good combs are best made during a good strong honey flow when the bees are naturally secreting a large quantity of wax. It is important to give a new comb proper care during the first extracting in order to insure it has a long life. □

ON THE SIZE OF CELLS

SPECULATIONS ON FOUNDATION AS A COLONY MANAGEMENT TOOL[1]

E. H. Erickson†, D. A. Lusby+, G. D. Hoffman† and E. W. Lusby+

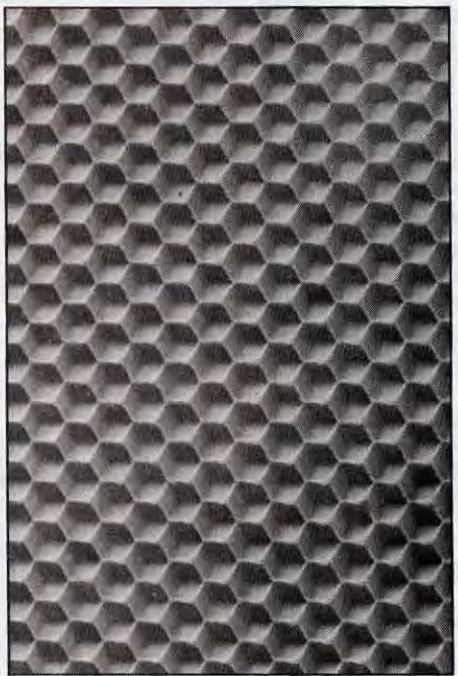
PART II — *Optimal cell size, which many take for granted, is not as simple a thing as one might expect. The belief that cell size alone is responsible for bee size is not quite accurate. Rather, both cell size and inheritance determine ultimate bee size.*

Clearly, reported differences in cell size and in bee size between domestic (European) bees reared in large cells and Africanized honey bees reared in naturally built comb have often been misinterpreted. AHB cells are not Smaller, *but domestic strains build cells that are* Larger.

While AHB may produce slightly smaller cells (6), cell size is a poor diagnostic character due to the overlapping size ranges of AHB and natural comb or comb drawn from small commercial foundations (see "How Big").

Could it be that the reproductive advantage reported for AHB over domestic bees occurs, at least in part, because AHB have not been subjected to artificial selection pressure for large body size and, as a result, build comb of a smaller size? This is a logical hypothesis if we assume that smaller bees and reduced cell size combine to increase the number of individual bees reared per unit area of comb and shorten the developmental time of the larval and papal stages. Moreover, accelerated spring buildup in smaller cells could lead to early drone production and, hence, a mating advantage of AHB. The logical extension of these hypotheses would suggest that domestic bees would be more competitive with Africanized bees if they were reared in hives with comb of natural cell size and had comparable developmental periods.

Realization of the importance of cell size might also provide a management tool against the Varroa mite.



Recently, Message and Goncalves reported that, in Brazil, cell sizes for Africanized and domestic (European) honey bees averaged 4.5 to 4.8 and 5.0 to 5.1mm per cell, respectively. They further reported that Varroa infestation rates were 4.8 and 11.5 percent, respectively. Camazine, (3) calculated female Varroa replacement rates for Africanized and domestic honey bees at 1.2 and 1.8 with drones present and 0.8 and 1.5 without drones, respectively. (A female Varroa replacement rate of less than 1.0 indicates that the mite population is declining while a 1.0 rate is indicative of zero population growth). Thus, we think that it may be possible to suppress Varroa populations in domestic colonies by using small strains of bees with shorter development times reared in smaller cells.

Cell size may impact a range of issues from the efficacy of queen excluders, given the variable size of bees that may be produced, to the susceptibility of colonies to disease, parasites and pesticides. Whether or not we can manage Africanized bees and Varroa mites using a combination of smaller brood cells and smaller bees remains to be seen. But, as Cheshire first suggested many years ago, it is possible that departures from the normal size of honey bees may cause or contribute to the severity of problems facing the beekeeping industry. We speculate that this line of reasoning might apply to problems such as tracheal mites (e.g. smaller tracheal openings in smaller bees might confer resistance to tracheal mites), winter mortality and other

[1]Mention of a trademark, proprietary product, or vendor does not constitute a guarantee or warranty by the USDA an does not imply its approval to the exclusion of other products or vendors that may also be suitable.

† U.S. Department of Agriculture, Agricultural Research Service, Carl Hayden Bee Research Center, 2000 E. Allen Road, Tucson, AZ 85719.

+ Rangeland Honey, 3832 Golf Links Road, Tucson, AZ 85713.

stress related losses (5). These issues deserve further study.

Some research is now in progress but much remains to be done. For those beekeepers interested in experimenting with cell size on their own, we have, in our early studies, found that packaged bees obtained from a single producer will readily draw out foundation of either 857 or 800 cells per dm^2 (see Cell Size). We simply placed one fully drawn comb in each hive with nine frames of foundation with the same cell size. We assumed that, during the period when the packaged bees were disassociated from comb, the workers would lose their memory of previous cell size and thus ensure that the bees would quickly adapt to the new size.

Cell sizes produced by packaged bees on two sizes of foundation.

Foundation Size	Cell Size
5.12	5.14 ± .09
5.36	5.36 ± .06

Based on 40 colonies per treatment, and 5 measurements per colony.

These data clearly demonstrate the ease with which a beekeeper can effectively reduce comb cell width in colonies. A corresponding reduction in bee size should follow without selection and breeding. However, simple methods are available for further reducing bee size through selective breeding (see our paper entitled "Managing Colony Genetics by Grafting and Selecting for Queens With Shorter Development Times" in the *The American Bee Journal,* November, 1989, pg. 717). Further reduction of cell width appears to follow in such a selection program. We now have samples of comb resulting from the annual insertion of new foundation (5.18 mm per cell) into colonies undergoing continued selection pressure for smaller bee size over a three-year period. Cell width in the most recently drawn comb measures 5.08mm per cell. However, be cautioned that the extent to which such a program can or should be carried out is yet unclear. □

The authors wish to thank H. Don who measured all foundation and mill specimens and C. Shipman who helped us assure the accuracy of our mathematics. We also thank all those people who kindly provided us with foundation and mills for examination.

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For a complete list of references used (33) contact the authors.

HOW BIG

Measurements of cell impressions from foundation and foundation mills produced by various supply houses from the late 1800's to 1989.

Type	Source	Average Cell Size in mm
wax	Africa	4.76
wax	Africa	4.89
wax	A.I. Root (circa 1929)	5.05
aluminum	unknown	5.10
mill	A.I. Root (circa 1929)	5.12
wax	L.A.Honey (1989)	5.15
wax	Miller (circa 1888)	5.18
wax	Mexico	5.18
wax 5-3/8"	A.I. Root (1989)	5.18
wax	Glorybee, OR	5.19
wax	Tom Industries, CA	5.19
wax	Honey Acres, WI	5.19
mill	A.I. Root (1989)	5.20
wax 8-3/8"	A.I. Root (1989)	5.20
plastic	Arnaba, HI	5.21
plastic	unknown	5.23
plastic	unknown	5.28
wax	W.T. Kelley, KY	5.28
mill	A.I. Root (circa 1910)	5.29
wax	Brushy Mountain	5.30
plastic	unknown	5.35
wax 8-5/16"	Dadant (med. brood)	5.36
wax	Honey Acres, WI	5.39
wax 5-1/2	Dadant (med. brood)	5.39
Duraguilt	Dadant	5.40
wax	Bolivia	5.44
7-11	W.T. Kelley, KY	5.53
Perma-dent	Draper's, NE	5.56
Perma Comb	Perma Comb	5.64

QUESTIONS?

Frugal Feeders?

Q. Hoping to get my bees off to a good start on brood rearing I gave them pollen substitutes, both as patties and mixed with syrup. Two weeks later I found that nothing had been consumed, in either form. How come? Is there an alternative to spring feeding?

Chic Bearce
Coventry, CT

A. I have often seen bees reject supplemental pollen substitutes, and I figured it was because they were getting plenty of pollen from natural sources. So I decided they were not worth the money. I am more puzzled by bees rejecting syrup, assuming it was a sugar syrup. Of course there is an alternative to spring feeding, and that is leaving plenty of honey in the hives in the fall.

Insurance

Q. If one is attempting to prevent brood disease, why is it recommended that Terramycin be given when brood rearing is at a minimum? How can it prevent disease when it is not administered to *all* the brood produced during the season?

Demorest B. Howard
McNeal, AZ

A. The idea behind administering Terra early in the season, when brood rearing is just commencing, is, I believe, to "nip it in the bud," that is, to destroy any incipient infection before it can become widespread in the colony. Terramycin should not be used to cure any visible symptom of foul brood, but rather, to prevent it from getting started in the first place.

Work, Work, Work!

Q. I normally reverse the top and bottom hive chambers two or three times in the spring. This spring I propose to do this only twice and then, instead of reversing the third time, put all the more or less empty combs in the bottom story with the queen and a queen excluder between the two stories. How would that work?

Joe W. Frederick
Sapulpa, OK

A. It would be quite a bit of extra work, but it should work well in preventing swarming and getting maximum hive strength for the honey flows. This is a version of the "open brood nest" principle, in which the queen is kept in the presence of plenty of empty comb space.

Great Plains Plan

Q. We are thinking of using only one brood chamber for our hives instead of two. What is your view on this?

James Morganflash
Fairfield, NE

A. I am not personally familiar with conditions in Nebraska, but generally speaking, a two-chamber hive is preferable where there are strong honey flows and one is producing extracted honey. One and a half chambers — that is, a full-depth hive plus a shallow extracting super — work well for comb honey production. A single-story hive, consisting of only one full-depth hive body, works fine if one then combines hives into two-stories when the honey flows are over. And as a general rule, a single-story hive will work, even for wintering, *provided it is good and heavy with honey* in the fall. I have eight such hives in one of my apiaries this winter, and I expect them to come through strong.

Need To Read

Q. With Africanized bees about to spread through the south it appears that beekeepers are soon going to be raising their own queens. What is a good book on queen rearing?

Wayne Welch
Loveland, CO

A. There are many books on this, but one of the clearest and best illustrated is Roger Morse's *Raising Queen Honey Bees,* if you can find a copy.

It's Not The Size That Counts

Q. I ordered three pounds of bees with a queen to get me started. Considering all the work a new colony must do in a new hive to get started, would not four pounds have been better?

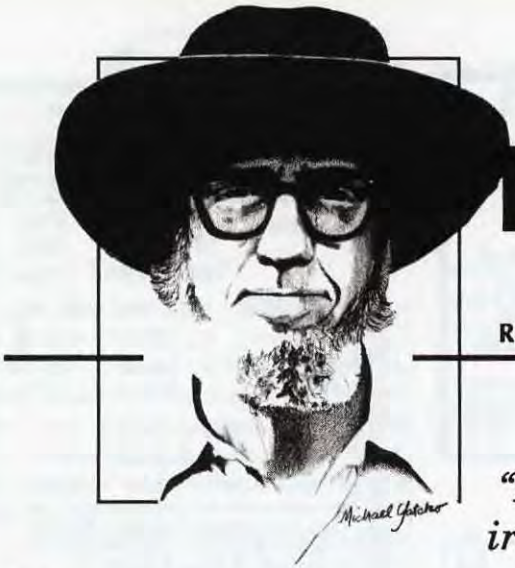
W.S.
Montclair, NJ

A. Not really. Even two and a half pounds are enough. Build-up is a function more of stimulative feeding than of initial population. Feed the small colony sugar syrup slowly, to stimulate egg laying and enable them to draw foundation, until all the combs are drawn out.

(Questions are welcomed. Address Dr. Richard Taylor, 9374 Route 89, Trumansburg, NY 14886, enclosing US or Canadian stamped envelope for prompt response.)

ANSWERS!

Richard Taylor



BEE TALK

RICHARD TAYLOR

9374 Route 89, Trumansburg, NY 14886

"In my opinion, the dance language theory is irrefutable. But there are those who disagree."

Is there a bee language? Do honey bees, by dancing on the combs, communicate with one another on matters of interest to the colony, such as the sometimes distant locations of food sources or potential nesting cavities?

I well remember when, about forty years ago, I first read Dr. Karl von Frisch's popular summaries of his research with bees, research that would eventually win him the Nobel prize. I was fascinated, not only by his findings, but by his meticulous research methods, but I was not really astonished. What von Frisch disclosed somehow seemed to me to be about what one might expect from these tiny creatures, given what I already knew about them. In the decades since von Frisch's work first won him world-wide attention his monumental conclusions have come to form the foundation of much, perhaps most, of the ongoing research on honey bees. A survey of a few years ago disclosed that, of the 161 bee research scientists queried, all of them, without exception, endorsed von Frisch's views concerning the dance "language" of the bees.

What the bees actually do is by this time well known, even to lay persons. Scout bees return to the hive and perform a dance-like behavior on the combs. The pattern resembles a figure eight. Dr. von Frisch proved — and doubt has not been cast upon this — that from the pattern and rapidity of this "dance" a human observer can deduce both the distance and the direction of the food source or nesting cavity to which the dancing bee is oriented, the direction of the sun being the focus of orientation. The distances in question are sometimes very great, extending even to miles, and there may be formidable obstacles between the hive and the source, such as woodlands or hills. Still, the "information" thus imparted by the dancing bee is accurate and can be confirmed by human observers. Of course, as von Frisch knew, and as anyone else familiar with bees well knows, bees are also guided to food sources by other more obvious clues, such as scent and color, most nectar sources being both fragrant and brightly colored. And, as von Frisch showed, bees easily distinguish between, for example, white, yellow and blue. But von Frisch found that bees still respond to the guidance of the forager's dance even when the clues of scent and color are eliminated. For example, when a scout found sugar syrup placed at a distance from the hive, it recruited foragers to that spot even after von Frisch covered the spot with glass, to exclude scent clues, or switched color clues. The evidence was quite overwhelming, even after every conceivable refinement, that sometimes, at least, foragers are guided to food sources simply and solely by clues somehow encoded in the dance behavior of the scout bees.

Scout bees, searching the countryside for suitable nesting cavities for a swarm to occupy, perform this same

How this bee and that flower get together...

...still has to do with the bee's dance, and the flower's aroma.

kind of dance on a clustered swarm, and researchers, observing this behavior, and relating the dances to the position of the sun, have sometimes been able to go find the potential nesting cavity ahead of the bees, that is, before the bees actually broke cluster and flew off to that very cavity. A sceptic, wishing to cast doubt on von Frisch's work, might claim that the so-called "dance language" means nothing to the bees, and that they are guided to nesting sites by mere odors, or perhaps by just following the scouts, but one can hardly claim that the information encoded in the dance had no meaning to the human observer.

I have lately been astonished, therefore, to discover that there are still people, though very few, who suggest that von Frisch's interpretations of bee behavior, which are treated as monumentally important by bee research scientists throughout the world, are basically false. The impetus to this comes from Dr. Adrian Wenner, an entomologist who has for years pursued every imaginable avenue of attack on the experiments that are generally thought to confirm von Frisch's conclusions. Dr. Wenner does not deny that scout bees exhibit the behavior in question, which is, of course, easily observable to anyone with an observation bee hive, nor, more important, does he deny that this behavior contains or encodes the sometimes subtle and complex information that bee researchers find in it. The dance "language" is in fact correlated with distance and direction of food sources, relative to the ever-changing position of the sun, in precisely the way researchers have found. A colony of bees does in fact behave exactly as if it were deriving from those dances the important information that human observers have found them to contain. But what this entomologist claims is that this dance behavior really has no meaning for the bees, and that they are probably guided, instead, by something no more subtle than scent clues!

This suggestion, it seems to me, is what taxes credulity. It is perhaps astonishing that such seemingly simple creatures as bees should have evolved such a subtle, complex and refined means of exploiting nectar sources. But it seems to me far more astonishing to suggest that this extraordinary behavior pattern should have evolved within this species, and that it should in fact have the meaning that it has demonstrably been found to contain, *and,* that it should nevertheless be without function or survival value to the bees themselves! It would perhaps be easier to take this suggestion seriously if Dr. Wenner and his students had in fact *shown* that foraging bees are in fact guided by odor, and provided some demonstrative proof of *how* this is accomplished. But no one, so far as I know, has done this. It is, instead, presented as a mere possibility.

Lately, researchers in Germany have developed a little robot bee, controlled by a vast and complex computer setup in which, I am told, one hundred and twenty-five thousand dollars has been invested. This robot can imitate not only the dance behavior, but even the subtle sounds or agitation of air particles, that a scout bee produces. In spite of the sophistication that has been built into this robot bee, it still strikes me as a crude device indeed in comparison with a live bee, but it will be enormously interesting to the world's scientific community to see what, if anything, can be learned from it concerning the apparent role of the bee dance with respect to communication within the hive. □

Comments and questions are invited. Use Trumansburg address and enclose stamped envelope for a prompt response.

GLEANINGS GLOBE

MARCH, 1990 ALL THE NEWS THAT FITS

But Not Everyone Happy

CANADA KEEPS DOORS CLOSED

The Canadian government has extended the ban on the importation of bees from the U. S. for another two years.

The ban was first imposed in October, 1987, to protect the Canadian honey industry from infestation by varroa mites. The ban now has been extended until Dec. 31, 1991.

"Our first responsibility is to protect the Canadian industry from the threat of this mite," Agriculture Minister Don Mazankowski said. "An outbreak of varroasis could devastate the honey industry in this country."

Agriculture Canada's research branch is refocusing and restructuring its honey bee research program to seek new methods of detecting and controlling mite diseases. The work is underway at its research station in Beaverlodge, Alberta.

In the meantime, Agriculture Canada has allocated C$200,000 (US$172,000) to help promote a more self-reliant and market responsive Canadian industry.

The recent formed government-industry working group on honey will also be examining technology transfer and development options for producers of honey bees and queens.

"We need to develop a reliable source of healthy bees in Canada so that beekeepers will have access to replacement stocks," Mazankowski said.

However, beekeepers on both sides of the international border have mixed reactions to the extention of the ban.

"For every beekeeper that wants to import, there's one that's opposed to it," said Roy Sterling, general manager of the Alberta Honey Producers' Co-operative.

Many Canadian beekeepers kill their bees in the fall rather than over winter, and buy new bees in the spring at a cost of about C$15 a package before shipping costs are added.

Honey producers in northern Alberta's Peace River region say they are having to pay C$15 to C$20 extra for each package of bees to cover air freight from New Zealand and Australia.

American beekeepers say the Canadian ban is costing them between US $6.5 million to US $10 million a year in lost sales.

Pointing out there's a chance infected bees are crossing into Canada on their own, they say they can ship mite-free queens and worker bees for less than Canadian beekeepers are now paying.

"I feel we can put a clean package of bees, or clean queen bees, into Canada and I would argue with them about free trade," said Reg Wilbanks, president of the American Beekeepers Federation. "I've lost, personally, in the neighborhood of US $200,000 annually. And I relied probably 30% on Canadian sales. Some of my competitors relied 95% or more."

But the Canadian government is unyielding.

Said Claude Livingne, associate director of Agriculture Canada's animal health division: "It is entirely possible and relatively easy to let a few mites slip and to import supposedly clean bees and find after a year or two that you've imported the mites with the bees."

Alan Harman, Reporting

Spring Arrival

TEXANS STILL WAITING

Scientists tracking the progress in Mexico of the aggressive Africanized honey bees, now expect them to arrive in the Brownsville, Texas, area between February and May 1990. At the latest, they report, the bees should arrive in the Rio Grande Valley by August or September. "These bees are not going to hunt people down and kill them," says John Thomas, a Texas Ag Extension Service entomologist. Only one person a year dies from bee stings in Texas, Thomas says. He says he would be greatly surprised if that number increased appreciably with the arrival of the Africanized bees.

Newsletter, Too!

MEAD GROUP RE-FORMS

Effective January 1990, the American Mead Association will again take up the task of promoting mead, the venerable wine made from honey. The primary activity of the association will be publication of The Mead Letters, an informal newsletter containing news from the winemaking and beekeeping industries, mead recipes and other assorted articles of interest.

The Mead Letters will be published three times a year. Yearly subscriptions cost $10.00.

The stated purpose of the association is to "promote the production, consumption and appreciation of mead." This promotion constantly emphasizes the need and desirability of supporting the domestic honey industry.

Direct inquiries to director/editor Pamela J. Spence, P.O. Box 206, Ostrander, OH 43061.

Peng Wins Western Award

Dr. Christine Peng from the University of California, Davis, was awarded the Distinguished Service Award by The California State Beekeepers Association at the November meeting. This award is given in recognition of her valuable research contributions to benefit the beekeeping industry. Christine's research has concentrated on honey bee nutrition, bee parasites and diseases, and reproductive physiology.

Christine had focused her research on tracheal mite diagnosis, and developed a simple method of staining tracheal mites in the trachea allowing easier detection at low magnification. Studying the resistance mechanism of Varroa on the Asian honey bee in a joint project with China, Christine documented physiological and behavioral resistance. Asian honey bee workers were found to recognize, kill and remove Varroa mites from infested bees in the colony. European honey bees were also found to occasionally perform this behavior suggesting it is a trait which could be selected for. Christine has also developed an *in vitro* larvae rearing method useful for screening antibiotics for treating American foulbrood diseases and chalkbrood disease.

Christine has made major progress in the area of honey bee nutrition. The protein supplement formulated and recommended by Christine is widely used by commercial beekeepers with beneficial results. Supplemental feeding is necessary to provide strong colonies for early pollination in California. Christine has demonstrated that feeding protein in the fall is more effective and more feasible. This has changed feeding practices with great benefit to the bee industry.

Christine Peng was born in Harbin, China to a farming family. Her great grandfathers served in the royal court of the last Chin Dynasty. At a very early age, she moved with her family to Taiwan shortly after the communist revolution. Receiving a B.S. in Entomology she went to work as a chemistry and physics teacher in Taiwan. She went on to earn her doctorate at the University of Manitoba. In 1974 she accepted a teaching and research position at the University of California, Davis where she continues to be a major asset to the University and the beekeeping industry. Christine lives in Davis with her husband Raymond and two daughters, Phyllis and Leslie.

DR. CHRISTINE PENG

"Journalism is literature in a hurry."
Matthew Arnold

It Never Gets Easier
New Farm Tax Laws

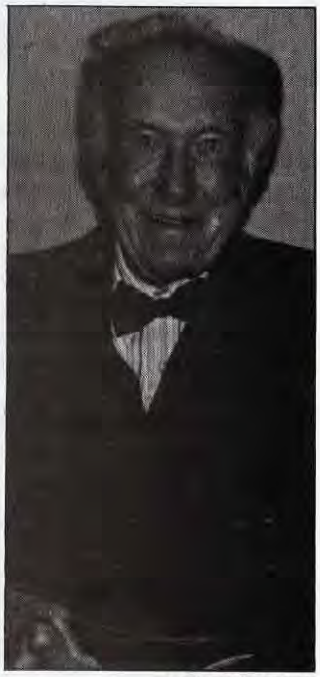
New tax rules make farm bookkeeping more complicated. Richard Duvick, agricultural economist at Ohio State University, says farmers now have to withhold both federal income and Social Security taxes for employees who are subject to FICA tax withholding.

Withholding is required for any employees who receive more than $150 cash wages per year and for any employees whose annual cash and non-cash wages exceed $2,500. Some exceptions apply to children under 18 who are employed by their parents.

Duvick says farmers need to get an employer identification number and start withholding federal taxes effective Jan. 1. The new rules won't change state tax reporting.

Beekeeper of the Century
Dubay Honored by California Group

Louis Dubay was honored "Beekeeper Of The Century" at the Centennial Convention of the California State Beekeepers Assoc. Louis describes the honey bee as "the love of his life and one of God's greatest creations"



LOUIS DUBAY

Born in 1908 on the family potato farm in Maine, Louis moved west chasing his dreams. He worked as a cook's helper in the lumber camps in Montana for several years. His interest in bees was aroused as he watched package bees arrive from California. He established his own apiary and provided honey for a steady flow of customers.

With the outbreak of WWII Louis went to California to join the war effort. There he studied commercial art which led to a career in business. He retired in 1965 and devoted much of his time to promoting beekeeping. Louis helped found the San Francisco Hobby Beekeepers Assoc. in 1975 to prevent the passage of laws restricting city beekeeping.

Honey Board Highlights

HALL COMPLETES CAE

Washington, D.C., Dan Hall, executive director of the National Honey Board, was one of 221 individuals who recertified as Certified Association Executive (CAE) with the American Society of Association Executives (ASAE) in 1990.

Prior to certification, applicants are rated on their experience and accomplishments in association management and must successfully complete a comprehensive, one-day examination, which tests general knowledge of the association management profession. Candidates must have either five years experience as an association executive or three years as a chief staff executive. To maintain certification, an association executive must accumulate professional credits each three years based on their involvement in association management continuing eduction and the profession.

The total number of association executives who have earned the CAE designation is more than 1,600. Among association professionals, "CAE" is an indication of demonstrated skill in leadership, activity in community affairs and expertise in association management.

The American Society of Association Executives, Washington, D.C., is an individual membership society made up of more than 18,000 association executives and suppliers. Members manage leading trade associations and professional societies across the country.

March Seminar on Exports

"Selling is based on good information about your product and your consumers. The National Honey Board sales seminars provide just that," said Dan Hall, executive director, National Honey Board.

The Honey Board has designed an exciting agenda for this year's program in New Orleans. The Domestic Sales Seminar, March 1, will cover such topics as "All About Honey — The Information Manufacturers Want" and "Consumer Perception of Manufactured Products with Honey."

The Export Seminar will focus on subjects such as "Overcoming Tariff Barriers" and "Elements in Successful Honey Exporting." These are just a few of the subjects to be addressed at the seminars sponsored by the National Honey Board in cooperation with National Honey Packers and Dealers Association.

For information about the seminars, write Tina Tindall, National Honey Board, 421 21st Avenue, Suite 203, Longmont, CO 80501 or call (303) 776-2337.

Government Prices

Loan Buy-Back Prices as of 1/1/90

	'89 Crop	'90 Crop	Loan Rate
White	40.0¢	40.0¢	59.93¢
Ex. Lt. Amber	37.0¢	37.0¢	54.93¢
Light Amber	36.0¢	36.0¢	53.93¢
Amber	34.0¢	35.0¢	52.93¢
Non-Table	33.0¢	33.0¢	50.93¢

New Names, New Faces

• Dr. Brian Smith to Ohio State

Dr. Brian H. Smith on July 1, 1990 will take the position of Assistant Professor in the Department of Entomology in Apiculture at Ohio State University, Columbus. Dr. Smith received his B.S. from Huntington, PA and moved into a Ph.D. program with Dr. Charles Michener and Dr. Orley Taylor at Kansas. His specialty is neural biology including honey bee learning and stimuli, and the neural sting reflex process. He is currently working with the USDA and the University of AZ in Tucson.

• Dr. Al Dietz to USDA APHIS

Dr. Al Dietz, University of Georgia, Entomologist in Apiculture, has taken a temporary position with USDA APHIS as a Staff Officer. His position will be as the APHIS apiculturist, based in Hayttsville, MD starting Feb. 1, 1990. It is a two year contract program with extension possible after the initial period. Dr. Dietz will be the APHIS specialist for all matters concerning the African Honey Bee, and possibly a National Certification program.

• Dr. Delaplane to Georgia Extension

After a dedicated lobbying effort, the Georgia Beekeepers' Association was rewarded on January 1, with a new 50% Beekeeping Extension position at the state level.

Dr. Keith Delaplane has taken the position, and rounds out his time with a 50% assignment in Pesticide training. Dr. Delaplane received his B.S. at Purdue University in Animal Sciences. His masters work included studying queen rearing and queenless colonies at LSU with Dr. John Harbo. He received his Ph.D. from LSU also. Dr. Delaplane and his wife Mary live just outside Athens, GA.

"I've been a beekeeper, without interruption, for 15 years", Dr. Delaplane said recently, "and I'm excited about this new position, and working with Georgia's beekeepers."

Agriculture Notes to Note:

Thoughts on the 1990 Farm Bill

Declining Farm Numbers May Influence Spending at Individual Level

Current total U.S. farm program payments compare favorably with earlier years as a percent of total expenditures, says Dr. Carl Zulauf of The Ohio State University. "But when compared on an inflation adjusted per-farm basis, they are very high," he points out. Such a per-farm focus could undercut current levels of farm program payments, as debate begins on 1990 Farm Bill.

Farm programs could be the target for future cuts because of the pressures to reduce the budget deficit and other pressures to fund other initiatives such as the savings and loan bail-out, drug enforcement, and child care.

Even though farm program expenditures have declined, the specter of the huge 1986 farm program costs of $26 billion still haunts the farm policy debate.

Carl Zulauf and his colleagues point out that farm programs were extremely important in stabilizing the farm financial crisis. "From 1983 through 1988, farm program expenditures equalled 10.6% of gross farm cash income for all farmers."

The Ohio State University economist believes that if farm program advocates are able to keep the focus on total program outlays, they may fare well. They point out that, "Farm programs, if not changed substantially, will probably claim about 1.0% of federal outlays and provide 6 to 8% of gross cash farm. income for all farmers in the next three years. Since these projections are within the ranges of the last quarter century, the numbers do not imply substantial cuts in programs.

But, farm numbers have declined. "Considerable political skill by farm groups" will be required if the debate focuses on individual farmers or beekeepers. Even if program costs/benefits were cut 10 to 30% the inflation adjusted dollar value of per farm expenditures would still be at the high end of the 1950-1989 range. Larger cuts would be needed if per farm expenditures are to return to the 1950-1989 average.

But Research, Education Improve

Items funded by President Bush's 1991 budget proposal hint at changes for the direction of farm policy in 1990. The proposed $100 million increase for agricultural research fits Bush's general theme of increasing funds for science and education. Technology and new markets are seen as a way to revitalize the farm economy.

Environmental programs also fared well in the agricultural portion of the president's budget. New funding was proposed for tree planting, research on global environmental change, and new land for forest and recreational areas. The proposal also asks for more money to monitor chemical residues in food. Such programs show how public concern about the environment and other issues can affect farm policy.

Meanwhile, the cost of many individual farm programs may be trimmed even though total spending for agriculture is proposed to increase 4.1 percent. Budget constraints will make increasing farm-income supports nearly impossible. Cuts in crop deficiency payments are likely and Congress may look closely at eliminating whole programs. Past budget cuts have taken all the "fat" from farm spending. The government doesn't have much choice but to cut deeper.

Reducing Soil Erosion Means Increasing Bee Pasture

The Conservation Reserve Program is expected to reduce soil erosion on the nation's cropland by about 20% when the conservation practices are installed, according to Wilson Scaling, chief of USDA's Soil Conservation Service. "We already can see the benefits of the program — in less sedimentation, increased habitat for wildlife and improved water quality," he says.

An hour-long "how-to" videotape will be available to farmers early this year to help them implement their conservation plans. "Conservation on Your Own," produced by USDA's Soil Conservation Service and the National Association of Conservation Districts, features eight segments on widely used soil conservation practices, such as crop residue management, field borders, contour buffer strips and windbreaks. For a brochure of the video, contact: Mary Cressell (202) 382-0558.

Researchers Rejoice: CD-ROM Moves in on Ag Data

As a result of its recent agreements with the producers of the CAB ABSTRACTS and AGRIS databases, SilverPlatter Information is able to offer its users a complete collection of the most important agricultural databases on CD-ROM: AGRICOLA, CAB ABSTRACTS, and AGRIS. Also, SilverPlatter's PEST-BANK title complements this trio with its coverage of the related field of pesticides. Plus, the company's recent agreement with BIOSIS makes available a wealth of information in the life sciences on SilverPlatter CD-ROM. AGRICOLA and PEST-BANK are available now; the other titles are scheduled for release by early 1990.

It is commonly recognized by those in the field, that the three major information resources to the world's agricultural and related literature are: AGRICOLA, CAB ABSTRACTS, and AGRIS. By early 1990, all three unique titles will be available on compact disc from SilverPlatter.

Only 19.7%

U.S. Lowest In Food Spending

AMERICANS SPEND LESS on food. Dennis Henderson, agricultural economist at Ohio State University, says food purchased for home consumption is 10.4% of total U. S. consumer spending. Canada is next at 11.5%. The Sudan, at 62.9%, spends the most. In the 47 countries Henderson studied, food for home consumption averaged 28.4% of total consumer spending. Add spending for beverages, tobacco and food consumed away from home, and the U. S. total is still the lowest at 19.7%. The Netherlands comes in second at 23.5%, and Sierra Leone is tops at 65.4% Henderson notes three reasons such a small share of Americans' total spending is on food: Total income and consumer spending in the United States are second only to Switzerland on a per-capita basis; Efficient food production and distribution systems help keep food prices at moderate levels; And Americans spend less for away-from-home food than consumers in many other countries.

Traplines and the Freeze Affect Movement

AFRICAN HONEY BEE UPDATE

The USDA-ARS has at the present three traplines for capturing swarms of honey bees.One trapline extends from Cidudad Victoria to La Pesca, in Mexico. This line was established February March, 1988 and is comprised of 310 traps. Present plans are to expand the number to approximately 500 traps. The second trapline, comprised of 300 traps, was established during the same period and extends from Brownsville, Texas to just west of Mission, Texas. The third trapline from Tampico, Mexico to Manuel, Mexico was established in October - November 1988, but due to the heavy traffic and densely populated areas on this trapline, has been discontinued effective November 1989.

The traplines were instituted to serve as an early warning system to monitor the range expansion of Africanized honey bees (AHB), and to serve as a baseline on the frequency of swarm captures. Also, they are an indication of the swarm season before AHB swarms arrive and would provide a reference point for comparing the behavior of both races of honey bees.

Finally, the establishment of these traplines will provide scientists a morphometric and behavioral baseline for the differentiation of AHB and the existing honey bee populations in Northern Mexico and South Texas. Samples of honey bees collected in the traps are being shared by the Weslaco and Beltsville Laboratories. The Weslaco Laboratory is also examining the swarms of bees to study their role in the transmission of parasitic bee mites and diseases.

These traplines are also being used to study the process of Africanization. In addition to recording the size, dates and number of swarm captures, scientists are also evaluating the swarms using standard tests for defensive behavior, and examining the bees for the presence of diseases and pests. The data on mitochondrial DNA will help scientists understand the genetic changes that occur in Africanization and be used in developing action programs for Mexico and the United States.

The presence of USDA-ARS scientists in Mexico has resulted in close cooperation between the two countries. Both countries will benefit from the establishment of more precise identification of honey bees. The experience in trapping honey bee swarms and identifying suitable habitats for honey bees will be of benefit to beekeepers, regulatory officials and to all of agriculture in developing "state of the art" action programs.

USDA-ARS scientists have contributed technical knowledge to beekeepers in Mexico on subjects such as marking queens, transferring bees to movable frame hives, and general bee management. Probably the greatest benefit to both countries is the early warning that these traplines can provide. The warnings could reduce serious stinging incidents and provide regulatory officials with the latest on the progress of AHB in Mexico.

Meanwhile, the freeze that hit the Mexican Northern States and Texas in December, 1989, damaged vegetation as far south as the coastal areas of Northern Veracruz. Since the low temperature had destroyed or damaged many of the feral swarms and managed colonies, a general slowing of the northward movement of the Africanized honey bee is a small possibility. It will probably be next season before it is known for sure if the freeze had any effects on Africanized honey bee populations.

Due to strong winds, trap hive destruction was experienced in the unit area. Because of constant wind movement, more than half of the plastic traps had been abandoned by the bees.

The State of Tamaulipas and the Cooperative Program are assisting beekeepers who do not have funds to feed their colonies. Both sugar and protein are being made available. The major concern at the moment is the high number of colonies absconding. It is feared that once the rains start, feral swarms as well as absconding swarms, will begin their northward movement earlier than usual.

Politics & Bees Don't Mix

Soviets Block Bee Party

A beekeepers' association has been blocked from running for parliament in the Soviet Union. The Bogucharsky Beekeepers' Association had wanted to run for election to the country's largest republic — the Russian Federation.

Election officials in the city of Voronezh barred the association from running because it is not listed among approved organizations for the parliament.

Bee Venom Therapy

American Apitherapy Society Forms

The American Apitherapy Society, Inc., has released an informational letter on the group, its officers and goals. A non-profit group, the AAS seeks to advance the investigation of apitherapy by encouraging research, elevating standards and informing the general public and the medical community f these goals.

There are six membership categories, with dues ranging from none to $80.00 per year. For more information, contact Harold G. Levy, AAS Sec./Treas., 34 Heron Road, Middleton, NJ 07748.

Post Office to Uphold Quarrantines

In the Domestic Mail Sec. 124.63C it is stated that, "Bees are acceptable in the continental surface mail shipped in accordance with Federal and State regulations to ensure that they are free of disease." A list of states that have quarantines and will not accept honey bees through the mails is now being compiled and will be sent to all the U. S. Post Offices in February.

Display Index

Perseverance

JOHN N. BRUCE

One lesson that I learned from my father, was — if you believe in what you are doing, stay with it through all kinds of adversity...

It was a very wet, late spring and I had about forty hives of bees. They were running out of stores and would starve if I didn't get feed to them. But being so very wet and the roads being miry, we couldn't go the five miles to town except on foot. I had all my money tied up in these bees except for a little cash reserve.

Every day I walked to town and bought a fifty-pound sack of sugar. I carried it back home and made it into syrup. The syrup was fed to the bees and the next day they would be out of feed again. It also made them build up faster and they were extra *strong*. This kept up for several weeks, and then I ran out of money. When I had fed them the last of the sugar syrup, I stayed home.

About ten o'clock, that morning my father asked, "Son, are you going to get any sugar today?" I told him I was out of money, and he replied, "Won't your bees starve?"

I answered, "Yes, but what can I do about it? I give up! This weather won't ever change and how can I get sugar with no money?"

He looked at me with disappointment showing in his face, and said, "If I believed in a thing as strong as you did, I wouldn't give up. Not after spending all my money on them. Why don't you go to the store and ask for credit?"

I was feeling sorry for myself and so went off alone for awhile, to sulk. After a bit, I gave that up and headed to town, all the time telling myself that it was a fool's trip.

When I got to town I went to the big general store where I had been buying the sugar, and hunted up the owner. I told him my story and expected him to turn me down.

Instead, he said, "If you need sugar, get all you want and charge it."

"But I don't have any money", I said to which he replied, "Sonny, you sell me honey, don't you? Well, when you get your crop, I'll take my pay out of honey."

The upshot of all this was that I made four more trips to town, and then the rain stopped, the sun came out, and honey came in so fast I could hardly keep the bees supered. With all that water in the ground, the honey kept coming in all summer. The crop averaged three hundred and ten pounds that year.

And to think! I almost blew it for a paltry two hundred pounds of sugar.

BOTTOM·BOARD