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AUG '88

BEE CULTURE



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- O - M00203 1 lb. creamed honey container with lid c/10 wt. 2 lbs. _____ \$4.52
- M00203 lots 50 or more, per 10 _____ \$3.88

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- P - M00238 2 gal. plastic pail with lid, each weight 1 lb. 8 oz. _____ \$3.60
- Q - M00212 60 lb. plastic pail w/lid, ea. wt. 4 lbs. _____ \$5.20
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- S - M00266 60 lb. closed top container with lid, each wt. 4 lbs. _____ \$4.40
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- U - M002664 1½" plastic gate installed in lid for 60 lb. closed top container, each, wt. _____ \$9.96

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- CC - M00892 Wood Honey Dipper, Ea., wt. 3 oz. _____ \$1.10

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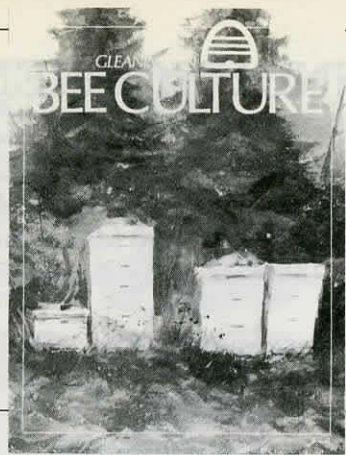


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(ISSN 0017-114X)

Vol. 116, No. 8

115 Years Continuous Publication by the Same Organization

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NEXT MONTH

SEPTEMBER—The Golden Month, with turning trees and cooling nights, bright sky days and the first hint of the slow gray winter ahead.

September brings many thoughts, but new this year is the National Honey Board's Proclamation of September as National Honey Month! To celebrate, and raise it to its proper level — we'll be looking at some of the activities of the Honey Board and their pursuit of more customers!

But wax moths and beeswax are also September songs, and we'll cover the wax, and listen to the moth next month, in some very enlightening articles on these fascinating subjects.

The dark side of Varroa is still on some of our minds — but we will shed some light on control, biology and maybe even good riddance (or at least, mostly gone)!

Finally, wintering must be thought of, in whatever frame of mind you care to address it in. And we have a way to help you help your bees through the far side of summer — next month in *Bee Culture*.

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SPECIAL ANNOUNCEMENT

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To obtain your copy of the signed, numbered, Limited Edition Print, "August Yard" that appears on the August Cover of *Bee Culture*, please remit \$45.00 (cash, check, or money order) and ask for Catalog No. X51-Limited Edition Print.

Or, call 1-800-289-7668 with your MasterCard, Visa or DiscoverCard number. This price includes postage, handling, and insurance.

Each print is 15" x 19" and is guaranteed by The A. I. Root Company to be 1 of *only* 100 copies made. This opportunity will not last long, so order your "August Yard" soon.

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John



Kim



Cyndi

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THE INNER COVER

A small, but deadly drama unfolds outside my bedroom window, deep in a recent summer night. For the million, millionth time prey and predator, eaten and eater face off.

The battle is loud — enough to wake the dead, and the fear and pain are as plain as a child's nightmare cry.

A raccoon has breached the poultry fence.

Owning chickens, for both eggs and meat, is an undertaking we relish, and was definitely on the list when shopping for the Estate — chicken zoning was a must. There is some work involved certainly — feeding and cleaning, occasionally medicating and nursing — routine maintenance.

But unlike bees, one can own chickens. Bees, though living in boxes purchased by man, choose to do so at their whim. They also choose to leave at their whim.

Chickens, on the other hand, can seldom find an open gate, let alone harbor plans for a weekend away from it all. When, with uncommon luck they find their way out of the security of home, food and fence, they are capable of committing vegicide in a headlong plunder through the garden, increasing their daily intake of green stuff. It pays to keep them on the safe side of the fence.

But "safe" works both ways. Thoreau said that good fences made good neighbors, but good fences also keep those things in that should be in, and out those things not wanted. A breakdown in this dual role provided the script for our recent deep night drama.

Several weeks ago we expanded our poultry operation to accommodate the summer tourists — those ten week genetic wonders that fill our freezer with chicken meat all winter. While they take over the bulk of the pen, the four egg layers (and the resident rooster), are moved to the unused portion of the pen planted to various cover crops during the rest of the year.

A temporary shelter was constructed to provide nest boxes, shade and protection from rain — and all seemed well. Almost.

Owning livestock is a privilege, but with it comes the responsibility of providing the basic necessities of shelter and safety. In our haste to provide the former, we neglected to notice that the top of the shelter abutted the fence in the back of the pen. In fact they were eye to eye, with the fence top only a couple of inches taller than the shelter. Mistake number one.

The second flaw in the design came from outside. While removing limbs, brush and small trees this spring, our wood pile had taken on a rather overgrown and disorganized appearance, sprawling in all directions. One direction was toward the fence of the then unused (but now occupied) portion of the poultry pen. I think you get the picture. Mistake number two.

One cannot fault a raccoon for investigating what appears to be an easily obtained meal. Not only easy, but tasty. Raccoons by nature are opportunists, and it took only a few nights to locate the breakdown in poultry security. The rest, as they say, is history.

We reached the pen that night in time to rescue the hen under attack. We got there soon enough to save her, and to see, in my flashlight beam, a striped tail beating a hasty retreat back over the fence.

The chicken, though damaged, was not beyond repair and soon healed. But what took longer to repair was my pride. I had noticed the shelter/fence

Continued on Page 479

COVER . . . *This idyllic setting, so typical of many bee yards, and one of the many reasons we keep bees, is especially attractive this year. The cool, inviting feeling has been beautifully captured on canvas and entitled "August Yard" by artist David R. Fawcett.*

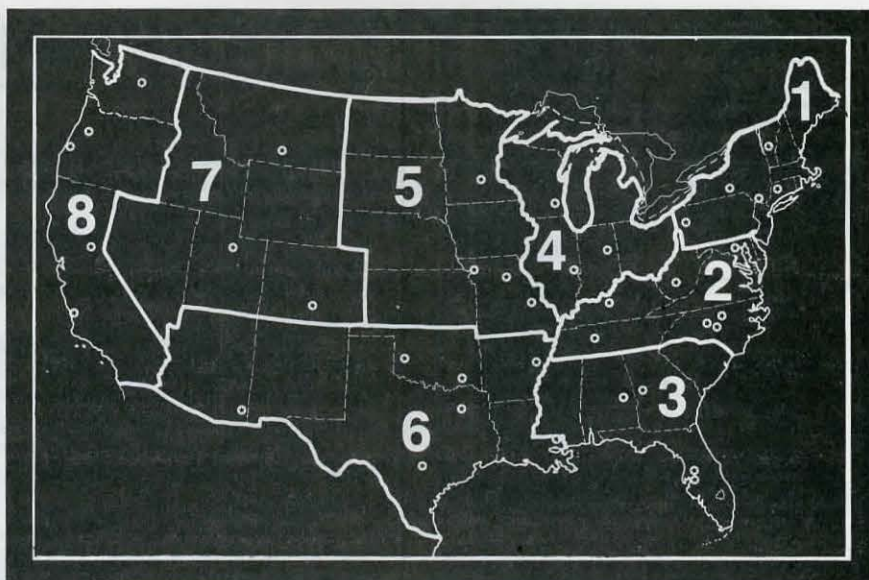
In fact, we were so moved by the beauty and the emotion of this painting that we have made it into a limited edition print. We've made only 100 of these 15" x 19" prints, and each has been signed and numbered by the Artist.

For more information, see announcement on facing page.

AUGUST Honey Report

August 1, 1988

These figures represent current prices from our contributors. They are based on reports from many states and averaged for each region. Where insufficient information is received, no price is shown.



Wholesale Extracted	Reporting Regions								Summary		
	1	2	3	4	5	6	7	8	R	A	L
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.											
Containers Exchanged											
60 lbs. (per can) White	42.00	39.25	25.20	27.00	24.60	36.25	38.63	39.50	24.00-42.00	35.14	37.01
60 lbs. (per can) Amber	40.00	33.25	20.40	21.60	21.60	32.50	36.00	34.50	20.40-40.00	31.49	33.83
55 gal. drum/lb. White	.51	.45	.38	.40	.41	.61	.60	.60	.38-.65	.52	.55
55 gal. drum/lb. Amber	.48	.38	.34	.36	.36	.55	.53	.53	.34-.56	.47	.50
Case lots — Wholesale											
1 lb. jar (case of 24)	28.80	26.60	26.40	25.98	26.35	23.75	26.95	27.73	22.80-33.60	26.53	25.20
2 lb. jar (case of 12)	24.00	25.65	25.10	22.75	24.50	26.35	28.70	25.75	21.00-32.40	25.69	24.93
5 lb. jar (case of 6)	30.50	26.32	28.50	23.95	29.75	24.75	27.60	27.75	24.00-30.50	27.06	25.69
Retail Honey Prices											
1/2 lb.	.90	1.03	.89	.75	.98	.84	.90	.94	.75-1.19	.93	.92
12 oz. Squeeze Bottle	1.40	1.43	1.50	1.29	1.49	1.20	1.18	1.40	1.18-1.79	1.38	1.30
1 lb.	1.50	1.58	1.40	1.50	1.58	1.47	1.34	1.69	1.34-2.09	1.55	1.52
2 lb.	2.80	2.86	2.40	2.75	2.60	2.57	2.87	2.24	2.24-3.70	2.68	2.71
2-1/2 lb.	—	3.93	3.50	—	—	3.07	3.71	—	2.90-4.85	3.59	3.43
3 lb.	4.20	4.19	3.45	3.15	3.63	3.95	3.65	3.55	3.00-4.45	3.80	3.82
4 lb.	4.77	4.83	4.25	—	5.02	4.70	4.72	—	4.65-5.35	4.75	4.67
5 lb.	6.50	5.68	5.44	5.75	6.50	5.47	5.82	6.26	5.45-6.62	5.86	5.64
1 lb. Creamed	1.70	1.45	1.39	1.55	1.59	1.45	1.76	1.76	1.39-2.20	1.63	1.57
1 lb. Comb	2.50	1.85	2.10	2.25	1.99	1.97	2.69	2.25	1.75-2.69	2.12	2.18
Round Plastic Comb	2.25	1.50	2.25	1.85	2.25	1.85	1.85	1.70	1.25-2.25	1.89	1.87
Beeswax (Light)	1.15	1.26	.90	1.10	.75	.85	.95	1.10	.75-4.00	1.29	.97
Beeswax (Dark)	1.00	.82	.80	1.00	.65	.77	.83	.92	.65-1.00	.85	.87
Pollination (Avg/Col)	25.00	17.00	15.00	27.50	18.00	19.00	23.00	21.50	15.00-27.50	20.83	23.17

else dry, dry, dry. Worst in over 50 years in most of region. Reduced crops expected, and feeding required in many areas.

Region 5.

Price Index .80. Sales steady, prices increasing slowly. Dry, dry, and drier. Honey production at a standstill, while spring crop being eaten. Fall outlook bleak.

Region 6.

Price Index .84. Sales steady, prices steady. Dry conditions dominating honey production. Season may be already over in most areas. Summer harvest may not be possible.

Region 7.

Price Index .92. Sales and prices steady to slowly rising. Drought conditions getting dangerous, and nectar production at a standstill. Fall crop in serious trouble.

Region 8.

Price Index .97. Prices steady, and sales increasing. Northern areas almost too wet, but promise to have good summer and fall crops because of excellent moisture. Southern areas dry to drought-like, and summer flows in trouble.

Honey Report Features

Summary Column: There are 3 parts. **R** — Range of all prices reported for the month, lowest and highest. **A** — Average price for each commodity across all regions. **L** — Average price of each commodity listed last month.

Comments Section. Price Index — A descriptive statistic that takes into consideration all commodity prices, and compares each region to the others. The region with 1.00 has the highest overall prices for the month. A region with Price Index .90 has prices, overall, at 90% those of the region with 1.00.

Region 1.

Price Index 1.00. Sales steady to increasing, prices steady to increasing. Moisture adequate, but some areas on the low side. New England generally good production and colonies strong.

Region 2.

Price Index .88. Sales steady to a bit slower, prices steady to somewhat increasing. Early moisture helped spring flows, summer dry spell slowing some flows. Fall outlook varied, with feeding required in some areas, and ample harvest in others.

Region 3.

Price Index .75. Prices and sales down. Northern areas doing better than southern. Rain spotty, ruining flows in some areas because of too much, and in others because of too little.

Region 4.

Price Index .78. Sales steady, prices low to very low. Early flows good to excellent. Locust crop best in years. Everything

Anyone interested in becoming a "Honey Reporter" should contact the Editor.

MAILBOX



Late Mail

In your December issue you said you should receive the Magazine in the last week of the previous month. Mine are consistently at least 1 week late. There is no use complaining to the Post Office — their excuse is it didn't come yet. I don't even bother complaining to them any more about anything. There is no use.

Grace Moyer
RD4 Box 55
Duncansville, PA 16635-9418

Ed. Note: Don't give up Grace, they should be providing better service. Ask to see the boss, and then HIS boss.

Indian Bee Journal

Recent publishing delays of the *Indian Bee Journal* occurred because of certain unforeseen difficulties. The organizational set up is now changed. The back-log in publishing the IBJ is now being removed. The latest issues are in press and everything will be reorganized as fast as possible.

We are aware of the inconvenience caused to the subscribers, and request them to bear with us.

Kindly note our new address.

Indian Bee Journal
Official Organ. of the All India
Beekeepers' Association
1325 Sadashiv Path
Pune 411030, India

African Honey Bees in the Tropics

I enjoyed the article about African Honey Bees (AHB) in the Tropics in your June issue. Argentina, however, has a temperate climate and unlike the tropics, most of the country has a large population of feral European honey bees.

The AHB has been in Northern

Argentina for several decades. The degree to which the AHB has become established, and the impact it has had on beekeeping there, should give us a clue to the problems we will face when in the U.S.

James M. Svrcek
700 Latham Lane
Orient Point, NY 11957

Upper Winter Entrances

My wintering philosophy is quite simple. I end the season with strong, well provisioned hives. Those requiring feeding receive it before cold weather arrives. Two deep supers is my minimum for the winter. The most important step in hive preparation is providing top ventilation. I've found that two 1/4" - 3/8" twigs on top (front) of the inner cover will do the job nicely. The one time I did not install these twigs was the only time I lost any colonies over the winter.

Half of my hives have the Root inner cover with the half moon notch in the front rim. One of my hives has an "upper entrance" between two supers, courtesy of a mouse. Early spring activity appears to be almost exclusively routed through upper entrances. In the hives not equipped with one, an interesting travel pattern develops. The bees go up through the inner cover center hole. The ventilation gap created by the presence of the twigs then enables them to crawl out under the front of the hive cover to forage.

The persistence which the foragers demonstrate in using the upper entrances always amazes me. Forty or fifty laden bees scrambling, bumping and crawling over one another in order to squeeze through a small upper entrance is not an uncommon sight. All this while the lower entrance goes ignored. I believe that the proximity of the upper entrance to the cluster and brood nest is the explanation for this obvious preference.

Overall, I believe that an upper entrance is a positive factor. Winter

ventilation is improved. The proximity to the cluster also enables the bees to respond quickly, and to enjoy our short periods of warmth during winter and early spring.

Jerry Glaser
12 Hemlock Drive
No. Caldwell, NJ 07006

Ontario Symposium

The Workshop held during the Symposium on Alternate Pollinators for Ontario crops, produced a summary of their deliberations and a series of resolutions which, together with those from the floor, are presented here:

RESOLUTION 1.

WHEREAS the Workshop has recognized and identified numerous problems in regard to pollination of crops, and especially of pollinator biology in Ontario, as well as in the rest of Canada.

BE IT RESOLVED THAT the appropriate agencies, such as O.M.A.F., Ag. Canada, be apprised of the deliberations of the Workshop and -

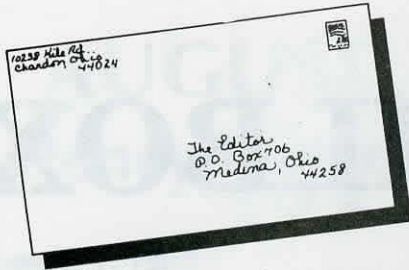
BE IT RESOLVED THAT the consensus of the Workshop that the scope of the problems identified and discussed should be increasingly recognized by those agencies in light of the high benefit: cost ratio of greater investment into mission-oriented research on pollination and pollinators.

RESOLUTION 2.

WHEREAS increases in the abundance of native pollinators could have beneficial effects for many crops and -

WHEREAS the Workshop has recognized the need for further research on native bees, and potential value of native and hive bees in conjunction with each other for the pollination of some of these crops.

BE IT RESOLVED THAT appropriate organizations, representing producers and client groups, be contacted to foster a co-ordinated



MAILBOX

effort to approach appropriate government agencies concerning the promotion of further research on native pollinators of different crop plants in Ontario and Canada.

RESOLUTION 3.

WHEREAS the Alternate Pollinators Seminar has identified many areas in crop pollination requiring research.

BE IT RESOLVED that Agriculture Canada be requested to fill the vacant positions in the Bee Laboratory, Central Experimental Farm, Ottawa, and that other appropriate positions in both Federal and Provincial government services be filled or created, for the purpose of addressing research needs.

Resolution 4 concerns the health of bees and their transport and import. This resolution resulted in some debate, surrounding the use of the word "disease" which

was changed to "deleterious nest associates" to include diseases and parasitic associates:

RESOLUTION 4.

WHEREAS, due to the presence of possibly deleterious nest associates and other problems of both honey bees and solitary species (alternate pollinators) in various parts of the country and -

WHEREAS fruit growers require bees to ensure pollination.

BE IT RESOLVED THAT O.M.A.F. make every effort to clarify this situation regarding the transport and import of bees with the objective of facilitating the movement of all healthy bees within the province, as well as the movement of healthy solitary types of bees into the province.

Peter Kevan
Sec. / Organizer
University of Guelph

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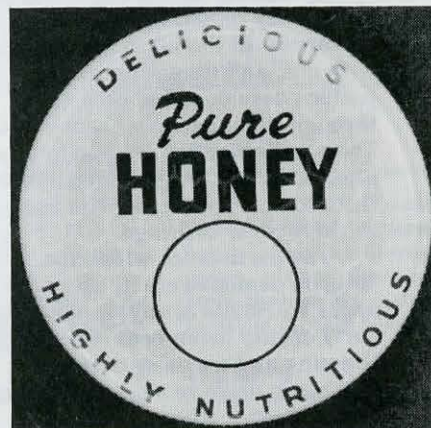
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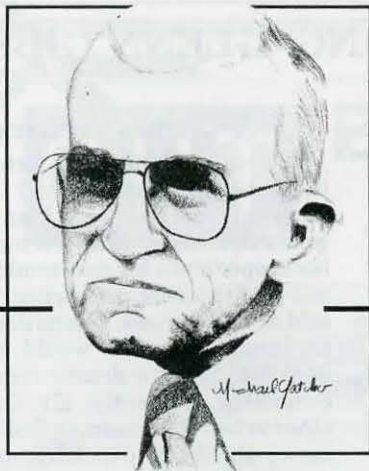
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"Conte has little (if any) understanding of the beekeeping industry . . . and is not interested in learning."

Without question the Honorable Silvio Conte of Massachusetts can be labelled the honey producer's number one opponent in the halls of Congress. His campaign against honey programs began 16 years ago when the Beekeepers Indemnity Payment Program, BIPP, was a part of the farm bill. Seemingly, he has never missed an opportunity to rant and rave about what he thinks are ridiculous honey programs and implies that some producers are crooks. His incoherent ramblings on the House floor are usually loaded with outrageous puns and a few silly poems. These outbursts which contain few facts have really hurt the commercial beekeeper's cause. Regularly he renews his pledge to — "terminate, phase out, and place maximum limitations . . .".

The Anti-Beekeeper Campaign Begins

Mr. Conte's campaign on the House floor to "get us" commenced April 26, 1972 during the debate on agricultural appropriations for the BIPP. On this date his floor speech included a silly poem and 6 moth-eaten puns like the following: "bees in our bonnet; honey of a grab bag; stinging taxpayers; tired of being stung; and buzzing mad." Before rejecting the Conte amendment to terminate the BIPP several friendly congressmen made light of his debate.

The Second Year

In a space of a few minutes on July 16, 1973, Mr. Conte's second attempt to terminate the BIPP was soundly rejected. This time he was able to sandwich 9 moth-eaten puns in his speech while pushing an amendment to — ". . . end the sweetest subsidy of them all . . ." (No poems this year.). The Honorable Bob Poage, Chairman of the House

Committee on Agriculture minced no words in his opposing statement:

"I find it rather embarrassing to have to get up here repeatedly to talk about these amendments, which are obviously introduced by an abundance of ignorance or malice. I do not know what the gentleman has in mind. He, of course, put on a performance which probably would be a pretty good attraction on some vaudeville stage, but as to facts which the gentleman undertook to give the members, they were completely lacking."

In closing Mr. Poage reminds members of the importance of the beekeeping industry:

"I suggest that all of us, instead of being taken in with some vaudeville language, could give some real consideration of the basic facts of agriculture. . . . we must have pollinating agents. . . . Therefore we must maintain the bee business."

The Third Year

Mr. Conte made his third attempt to kill the BIPP on June 21, 1974. This time he promised to keep his remarks short and sweet, but was able to sandwich 13 moth-eaten puns and one

poem. This time the Honorable Jamie Whitten of Mississippi, Chairman of the House Appropriations Subcommittee on Agriculture, opposed the amendment in a short statement. He expressed satisfaction:

"... We now have a sound program, I believe. . . . The program is badly needed. . . . I hope we vote down the amendment."

By voice vote the amendment was rejected.

During the following years Mr. Conte finally won a victory when the BIPP was terminated during the Carter Administration. To this day he boasts about killing a ridiculous program that paid for dead bees. True, his continuous ranting and raving on the House floor had a telling effect, but this certainly was not the only reason. Beekeeper apathy, the ill-fated creation of a Budget Committee, retirement of hard core supporters in both the Senate and House and opposition in the Department of Agriculture set the stage for a quiet death to the BIPP.

Conte vs. Honey Loans

For several years Mr. Conte remained quiet. However, all of this changed in the 80's when the honey price-support program's cost skyrocketed from practically nothing to \$100 million a year. This caused Mr. Conte to take after us with a heavy dose of gusto. Apparently his staff dusted off the old speeches about the BIPP — using the same old puns and very few facts.

Without question Mr. Conte is in a powerful position to wield the political muscle. He won his last election with 78 percent of the vote. This means that he will probably retain his seat as long as he wants it which will give him an opportunity to continue his campaign against the honey loan program.

Continued on Next Page

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Recent Threats

The April 25, 1988, issue of the Congressional Record contained an insertion by Mr. Conte entitled "The Honey Loan and Price Support Programs". Subject article includes a promise to publish letters from Americans across the country who agree that reform is needed. The following sentence is loaded with illogical conclusions:

"We have been paying for dead bees, for corn syrup disguised as honey or to bail out a handful of the beekeeping industry's largest, most inefficient, and most uncompetitive producers."

Paying for dead bees refers to the old BIPP which was terminated during the Carter Administration (Surely — Conte's staff realizes that this point is irrelevant?). Implying that beekeepers are delivering adulterated honey to the Commodity Credit Corporation, CCC, is ridiculous. Also, it is laughable to label the large producers inefficient and uncompetitive (perhaps it might be helpful if Conte's staff included an economist who understood a balance sheet).

Mr. Conte likes to boast about his promotion of the Duck Stamp Program. Attached to the door of his office in the Rayburn building is a life-size replica of a duck. One would conclude that he would recognize and support a program that would recognize the honey bee. Not

so — according to a recent report in the April 30, 1988 issue of the *Congressional Quarterly*. The following quotation refers to the honey industry's efforts to designate the honey bee as the national insect:

"But Rep. Silvio Conte, R-Mass., the chief opponent of the honey program, is ready for a fight. 'We've been stung enough. We don't need to spend money on a bee emblem.'"

Sounds a bit vengeful.

A Conte Victory?

What would a Conte victory mean to the beekeeping industry? Complete termination of the honey loan program would be disastrous for the commercial beekeeper since his cost would not permit profits where production would be sold at world prices. Limitations placed on large producers would result in bankruptcies or a drastic reduction in ownership. Evidently, Mr. Conte and other urban congressmen feel that efficiency should be penalized and if the domestic producer cannot compete then imported honey can fill the need. This group, which is dominated with "free traders", will probably pooh-pooh talk about honey bee pollination and then suggest beekeepers raise pollination fees.


Reading Mr. Conte's statements on the House floor tells us that he and his staff have little understanding about how the beekeeping industry works and probably are not interested in learning. Continuing to pose the same loaded questions on the House floor year after year causes one to wonder why his staff doesn't call technical people in the Department of Agriculture for the answers.

I am hopeful that the reminiscing and updating of the Conte clowning will cause beekeepers to write their two Senators and U.S. Representative and forcefully explain their views. This man needs to get his comeuppance. Δ

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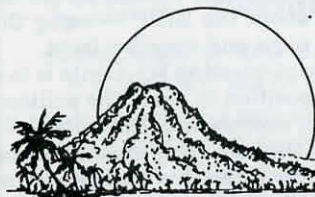
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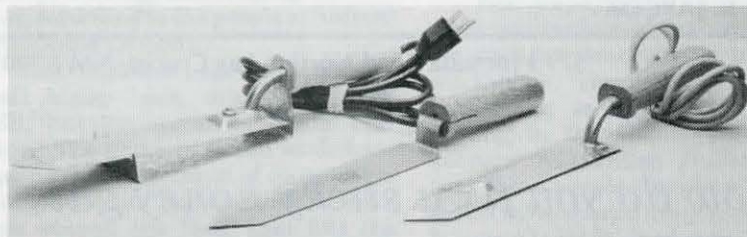
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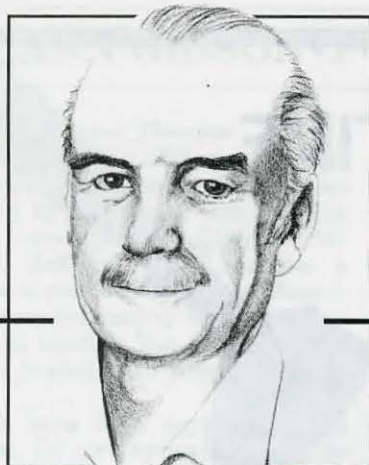
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THE BEE SPECIALIST

ELBERT R. JAYCOX

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"How do you fix a sticky honey gate?"

A good beekeeping newsletter can be the glue that helps to keep your association together. It can serve as a reminder of things to come, as an instructor for less knowledgeable members, and a place to share joys, sorrows, triumphs, and disappointments. Newsletters may be strictly informational or more "organizational." While both types are good, a judicious mixture of the two is probably best accepted. According to *Bee Culture's* 1988 Who's Who in Apiculture, there are 49 newsletters published by state and provincial beekeeping organizations. No figure is available for the newsletters distributed by local and regional groups, but there is a large number.

Newsletters are like all other publications — they require a continual input of news and information. Editorship can be a thankless task without some help from members of the group, or access to other sources of material to use in the newsletter. To help with this problem, Mrs. Mary Fisher of Leeds, United Kingdom, and a group of newsletter editors, established B.E.E.S., or Beekeeping Editors' Exchange Scheme. Some 26 editors participate by sending copies of their publications to Mrs. Fisher who makes up packets and sends them to all the participants. I asked if I might take part, and have been receiving sets of newsletters ever since. Altogether, including those of B.E.E.S. group, I receive 35 foreign and 25 U.S. newsletters. These are good sources of items for my own writing and I have used them regularly with credit to the source. Many others have used material included in my newsletter.

There are many outstanding newsletters, some so large then can challenge the magazines. Among those from B.E.E.S., I particularly enjoy *Beekeeping* from the Devon Beekeep-

ers' Association, *An Hes*, from West Cornwall Beekeepers, and *Apiarist*, edited by Mary Fisher for two associations in central Britain. It is difficult to pick only a few when there are so many good ones. The same is true for other countries such as Canada, which produces good newsletters such as *Bee Scene* from British Columbia, and *Beelines* from Saskatchewan. New Zealand is being hard hit by cutbacks in funding for apicultural activities, but several fine publications are still coming out, including *beelines* by Andrew Matheson and *waikato bee notes* by Murray Reid. New Zealanders have a strong feeling for world affairs, and this is reflected often in their reporting about beekeeping events and problems.



Among our U. S. beekeeping newsletters, I always enjoy and gain from reading *APIS* by Tom Sanford in Florida and *from the U.C. Apiaries* by Eric Mussen in California. It might be valuable to many editors in this country if there were a scheme like the one in the United Kingdom to share newsletters. However, we would need a sponsor to help with the mailing expenses. Jeremy Burbidge of Northern Bee Books supports B.E.E.S. Any volunteers?

Newsletters can provide other

services such as a recent one completed by Jim Crawford of the Hertfordshire Bee-Keepers' Association in England. He compiled a list of 33 acronyms, words or groups of letters formed by the initial letters of words of a set phrase, relating to beekeeping at home and abroad. He called it "A simple man's (and woman's) guide to initials." It starts with BBKA, the British Beekeepers' Association, and ends with SRABE, or Societe Royale d'Apiculture de Bruxelles et Environs. Crawford included not only the meaning of the abbreviations, but also interesting information about many of them. For example, DIB, or Deutscher Imkerbund, the German beekeepers' organization, has 14 regional associations and over 82,000 members. The British Beekeepers' Association has over 16,000 members and the Scottish group has over 9,000. Obviously, beekeepers in other countries more willingly join associations than those in this country. Newsletters play a role in keeping them together.

Beekeeping Games

No, I don't mean salting someone's bees with disease or dragging a telephone pole through a competitor's bee yard. In this case, I mean true games played by small groups, usually a family or several children.

Some time ago I received an attractive catalog from the Animal Town Game Company in Santa Barbara, California. In the introduction to the catalog, the company owners note that since 1976 they have been producing "cooperative" and "non-competitive" games for the benefit of parents and teachers. They point out that *competitive* games often cause players "to feel isolated and 'left out,' and the action tends to be secretive and hostile." Hurt feelings and arguments may

•THE BEE SPECIALIST•ELBERT JAYCOX•THE BEE SPECIALIST•

be the result. Not everyone can look back with pleasure on childhood games because of such experiences. There are also cooperative games which provide excitement, fun, and challenge, but provide experience in joint decision making, sharing, and helping one another, according to the people at Animal Town Game Company.

Their business began with a game about honey bees, originally called "BZB," but now known as "Nectar Collector." The game is aimed at demonstrating the importance of cooperation among bees, but does provide an ultimate winner, the "bee" that fills the honey comb first. All kinds of other games are offered in the catalog, from "Save the Whales" to "Sleeping Grump."

Another game about bees, called "Swarm," has been created by Don Jackson, a beekeeper with 20 year's experience. It is both educational and informative but with a new and important difference: the royalty for the game will be donated to research and promotion within the beekeeping industry. I hope that this unselfish gesture will be followed by others with similar intent. We need more research and develop-

ment on those problems most important to beekeepers and selected by them for attention. You could say that "Swarm" is truly a cooperative game.

The Cost of Education

Besides paying for newsletters and other publications about bees, beekeepers spend a considerable amount on workshops, seminars, and special beekeeping schools. Janet Dowling, writing in the Gloucestershire Beekeepers' Association *Bulletin*, noted that some people complain about the cost of these special programs and seem to expect to get their education for nothing. She says, "The beekeeping world is bedevilled with people (mostly men) with no qualifications, who are so fond of the sound of their own voices that they will travel great distances to speak at branch meetings for nothing but the price of their petrol. You get what you pay for."

Caring For Honey Gates

This time of year, lots of honey gates are in use. They may be of plastic, iron, steel, or brass, but all can create problems. Plastic ones may need an

adjustment now and then, usually to tighten them up, but no real maintenance. It is a different story with gates of cast metal, which rust easily and freeze up or fail to open and close readily and smoothly. These are still sold and are common on older honey tanks around the country.

Because honey is a pure food, most beekeepers would not use motor oil to lubricate a gate that contacts honey, but they would not hesitate to use a vegetable shortening, lard, or some other greasy food product. Initially, these will make the gate work smoothly with no undesirable contamination. Before long, however, such products become rancid and add off-flavors to honey that contacts the treated surfaces.

I asked a friend, a professor of food science, what material to use on honey gates that would not create a problem. Food-grade mineral oil, the type used for human consumption is the best. After emptying honey tanks, clean the gates and rub their surfaces with the oil to prevent rusting and to keep them lubricated. If a gate becomes tight in use, rub a small quantity of the oil on the moving surfaces.Δ

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Thirsty Bees?

DR. JAMES TEW

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“Never let your water source dry up — your bees will find it somewhere else, and you might not like the results.”

The dry weather that much of the U.S. has been subjected to during recent months has emphasized bees' need for water. Just as any other animal requires water, bees too, have water requirements that must be met if brood is to develop correctly. Bees' requirements are driven by two water needs: (1) internal hive temperature regulation and (2) in the bee diet (both immature and adult).

Where they collect it

Bees establish water collection sites long before beekeepers notice any hint of water shortages. In fact, water may not be in short supply. Bees will find any water source that is nearby. Usually this is a stream, pond, or some other common water supply. However, on many occasions I have had to deal with beekeepers and home owners who had a problem with bees collecting water from the neighbor's swimming pool, bird feeder, or recently watered plants. It's difficult to change the bees' collecting behavior once it has been learned. Normally, a swimming pool is large, dependable and has an odor. If the beekeeper tries to provide water in containers near the colony in hopes of enticing the water collectors to change from the pool in the neighbors yard, the chances for failure are excellent.

Unfortunately, the reason for failure is common — failure to keep the supply dependable and available. If the beekeeper only fills a water dispenser once a week, leaving it empty the remainder of the time, the bees have no choice but find other sources. By that time, the bees are a chronic problem at the pool.

To make matters worse, they will probably be on the ladders or other equipment that extends into the water, making stings much more common as swimmers climb from the pool.

Not infrequently, a homeowner is concerned that bees will attack birds that are drinking and washing in a bird bath. Complaints result. I don't know of any incidence of an individual bee attacking a bird at a bird bath, but no doubt the birds are not happy with the intrusion.

Somewhat related, bees will unabashedly collect water from some despicable source, causing concern for the beekeeper selling honey as the purest of nature's products. On many occasions, I have seen bees collecting water from beef feed lot run-offs. Nor is it uncommon for bees to happily collect water from the hoof indentations in the soil in a swine facility.

Thankfully, honey has a fantastic system for safeguarding against such detritus and no harm is done due to natural hydrogen peroxide and its low moisture content. Still, to watch bees collect water from such sources is offensive at best and the beekeeper may

want to offer an alternative water source.

Though bees may not know it, a reason for collecting from such questionable sources could be the high mineral and salt contained in such a water source. For whatever reason, bees will find a water source somewhere.

Obviously, the physical size of many undesirable water sources, combined with the smell and the taste would make such a site much easier for a new water forager to find when compared to a drum or some other manageable container of clean water. Consequently, bees probably have more difficulty locating and collecting from a small, clean water supply. If one watches water foragers for a while, it may be noted that the Nasanov (the scent gland) is exposed, thereby producing an odor that helps other bees find an otherwise odorless water source.

In reality, there is little a beekeeper can do to correct problems with water collectors once the habit has been developed. A few suggestions are listed.

5 Ways To Help THIRSTY BEES

1. Place a boardman (entrance) feeder on the colony.
2. Use an internal hive top feeder.
3. Place buckets, pails or drums in the apiary with floating material.
4. Leave outside faucet or hose on with a slow drip. Let drip onto angled board or concrete slab.
5. Use refillable pet feeders for every 3 or 4 colonies. Some come with "you provide" 2 qt. plastic holders that are easy to obtain & refill.

• *Never let a water source dry up, your bees will find somewhere else to go.*

1. Move the Colonies. On occasion, when bees have been a significant problem at the neighbors pool, the bee colonies have had to be moved in order to retain good neighbor relations. I fully understand the rights of the beekeeper in this case, confrontations can be avoided if colonies are simply moved for a few months of the year.

2. Provide A Dependable Water Supply Before It Is Needed. If the beekeeper waits until the foragers have found their own supplies, the habits are difficult to stop. The water provided should never be allowed to run out.

3. Mark The Water Site. Marking may be done with colored figures or with odors such as peppermint or anise.

3 Ways to GET THOSE BEES OUTA HERE!!

1. Let the source go dry for 3-5 days (Good for bird baths, hard with swimming pools.).
2. Cover the source to keep bees out (screen, glass etc.).
3. Provide a more convenient source, and add sugar, anise oil or other scent to train the bees to the new location.

These suggestions are not requirements, but simply assist the water foraging bee in finding the source and, secondly, helps the forager send other recruits to it. Keeping it convenient for collection helps too. Stones in the collection pan will give the bees something to stand on while collecting. Making a sloping ramp or some such device also helps.

Why they collect it

Controlling the internal hive temperature is critical for the colony (colony thermoregulation). In hot weather, bees collect water and put it in indentations in burr comb along the top bars and within cells themselves. Fanning bees evaporate the water thereby cooling and humidifying the hive. In some cases, it may look as though the comb has been sprinkled with water or the beekeeper may think a nectar flow is

on. Lindauer (1951) felt that water put into cells containing eggs and larvae was to cool/humidify that particular cell. Park (1923) described "reservoir bees", which had the responsibility of collecting water from returning water foragers and holding it until needed — especially during a hot night when foragers could not fly. Water storage bees were quiet and were positioned near the brood area.

Water foragers are encouraged to collect water when they are enthusiastically met at the hive entrance. If delivery is completed within two minutes, water collection proceeded without interruption. However, if unloading took from 2-3 minutes, the collecting bee seemed to "take a break" between trips. If it took as long as ten minutes for the water collecting bee to unload, water foraging stopped. On the other extreme, if the water load was accepted within 40 seconds, the water forager probably danced before returning for another load (Lindauer, 1954). In the manner described, house bees determined how much water was needed and when it was needed. Since nurse bees were the bees feeding the brood, they were ultimately the bees responsible for the water demand.

The brood rearing area is kept in the range of 34.5° - 35.5°C [94° - 96°F] (average 35.0°C [95°F]) (Michener, 1974). As the temperature increases inside a hive, the demand for water increases. First, the nurse bees deposit the contents of their own crop into the brood cells. If the temperature continues to rise, nurse bees and, to some extent house bees, eagerly solicit the

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(From Park, 1928)

crop reserves from bees that have diluted contents. That would incite those bees to begin foraging on the plants that had yielded the nectar crop. Further, the increased demand for dilute nectar would result in dancing for that particular source and, ultimately, would encourage water foragers to start their action.Δ

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Testing Your Beekeeping Knowledge

By CLARENCE H. COLLISON
Pennsylvania State University • University Park, PA 16802

While the use of pesticides is absolutely necessary in the commercial production of many agricultural crops, their use is often detrimental to beekeeping operations in the area. Prevention of bee kills is the joint responsibility of the spray applicator, grower, and beekeeper. Mutual cooperation and exchange of information between these three groups is absolutely necessary to avoid serious bee losses. Even though regulatory agencies are more aware of the bee/pesticide problem and are developing more stringent pesticide regulations to protect the public and environment, pesticide poisoning of honey bees continues to be a serious problem in many areas of the United States.

Please take a few minutes and answer the following questions to determine how well you understand the topic of bees and pesticides. The first eight questions are true and false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect. (Each question is worth 1 point).

1. ___ Most fungicides and herbicides are moderately toxic to honey bees.
2. ___ Wettable powder formulations are often more hazardous to bees than either emulsifiable or water-soluble concentrate formulations.
3. ___ Susceptibility to poisoning is greater for small species of wild bees than the larger species.
4. ___ Insecticide applications made during late evening, night or in the early morning are most effective in reducing bee kills.
5. ___ Weak colonies are more susceptible to pesticide kills than strong colonies.
6. ___ Cold temperatures following late evening or night insecticide applications increases the hazard to bees.
7. ___ Honey bee mortality is normally *inversely* proportional to the distance that colonies are located from treated areas.
8. ___ Granular or soil insecticide applications are usually the safest method of treatment.

Multiple Choice Question (1 point)

9. ___ An example of a microencapsulated insecticide is:
A) Sevin (carbaryl)
B) Penncap-M (methyl parathion)
C) Malathion (cythion)
D) Spectracide (diazinon)
E) Cygon (dimethoate)
10. What is the most common symptom of bee poisoning usually observed by the beekeeper? (1 point).

11. If an area is going to be repeatedly treated with a highly toxic insecticide having long residual properties, what is the best action for a beekeeper to take? (1 point).

12. Explain how you would protect your colonies when the area is going to be treated with a short residual insecticide. (3 points).

13. Insecticides are often classified by their mode of action: contact poisons, stomach poisons and fumigants. Describe the way in which these three types of poisons enter the bee's body. (3 points).

14. Once tree fruit bloom has passed, colonies can be safely kept near an orchard provided the grower/spray applicator does what two things? (2 points).

15. Please explain why ultra low volume spray applications are usually

extremely hazardous to bees. (1 point).

EXTRA CREDIT QUESTIONS

16. ___ Honey bees suffering from the following symptoms (regurgitation of honey stomach contents, disorientation, abdomens distended, erratic attempts to clean themselves, remaining at the hive awaiting paralysis and death) typically have been poisoned by the following class of insecticides:

A) Synthetic pyrethroids (permethrin, decamethrin) B) Carbamates (carbaryl, methomyl) C) Organophosphates (parathion, malathion) D) Bacterial pesticides (*Bacillus thuringiensis*) E) Chlorinated hydrocarbons (lindane, chlordane).
17. Please explain why there is little danger of honey in a colony containing toxic insecticides. (2 points).

18. Give two reasons why Sevin® (carbaryl) is such a devastating insecticide against honey bees. (2 points).

ANSWERS ON PAGE 471

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RESEARCH REVIEW

DR. ROGER A. MORSE

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"Blood is Thicker . . ."

Bit by bit we are gaining a better understanding of how a honey bee colony is organized. We now understand that a queen honey bee mates many times; most of those who have studied mating think ten to seventeen matings is normal. Since a drone mates only once, and dies in the process, a colony of honey bees consists of ten to seventeen sister groups.

What has been newly discovered is that workers that are full sisters, that is those that share the same father, show preferences for the tasks they do as adults. It is believed that these preferences have a genetic basis and it is not because the bees recognize one another as adults.

Researchers Gene E. Robinson and Robert E. Page Jr. of Ohio State University studied two occupational specialties: guarding and disposal of corpses (undertaking). They found that more than 80% of the bees doing either task were fully related. These determinations were made using instrumentally inseminated queen bees. When bees were found guarding at a colony entrance, or acting as undertakers and removing dead bees from the colonies, they were captured and the chemistry of certain of their enzymes was studied. It was by this means that their relatedness was determined.

Peter C. Frumhoff and Jayne Baker, working at the University of California at Davis, now at Harvard, approached the question of sister competition differently. They also used instrumentally inseminated queens but those with genetic markers that could be followed by their distinct color markings. They found that there was a definite preference for one line of bees to groom other bees more than did those in a second line. This too showed a consistent behavioral difference between groups of fully related sisters.

Why has it taken so long for re-

searchers to discover these facts? The problem appears to lie in the fact that we have known so little about mating behavior in honey bees. For many years, and in fact some textbooks still state, we thought that queen honey bees mated only once, rarely twice. Even when it was found that multiple mating was common people thought that queens mated only six to eight times; data that the figure is higher are more recent.

It is a fact too that a queen's spermatheca will hold five to nine million sperm. A single drone will produce more than five million sperm and this made it appear that one or two matings were sufficient for a queen. What we understand now is that 80-90% of sperm never make it into the spermatheca and are somehow lost in the mating process. The number of sperm that move into the spermatheca is not exactly the same in each mating and thus

the size of each sister group is not exactly the same, though it is nearly so.

M. D. Breed, writing in the same journal issue as these two research papers concludes that social insects that have many queens, or have multiple matings, show greater genetic variation. One interprets this to mean that they are better able to cope with the variables they find in nature.Δ

References

- Breed, M.D. *Genetics and labour in bees.* Nature 333: 299. 1988.
Brumhoff, P.C. and J. Baker. *A genetic component to division of labour within honey bee colonies.* Nature 333: 358-361. 1988.
Robinson, G.R. and R.E. Page Jr. *Genetics determination of guarding and undertaking in honey-bee colonies.* Nature 333: 356-358.

How did we come to get two spellings of the word honey bee (and honey-bee) in the same journal? I can't answer the question but this isn't the first time I've seen this happen.



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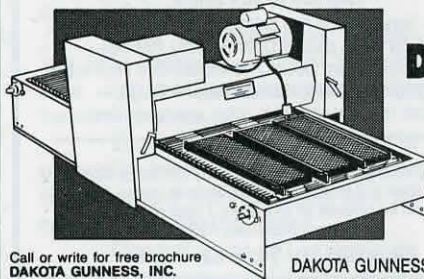
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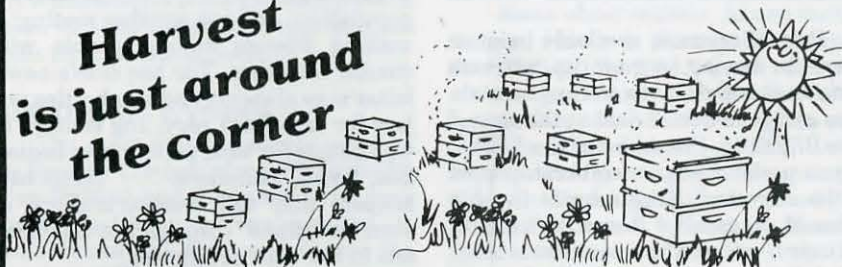
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KEN OLSON

If success is your goal, and you want to learn from the experiences (and mistakes) of others — join a Bee Club. A local club offers not only information on bees and beekeeping, price breaks on equipment, programs not available to individual beekeepers, but the chance to meet, and know, other folks who share at least one pastime, one hobby or one passion — beekeeping.

One such club is the Lane County Beekeepers Association (LCBA) which began in 1974 and has close to fifty members. Jim Sheridan, the Club Treasurer says, "Last year we had nearly forty members, but some years we have more than fifty." Sheridan has been keeping bees for twenty years and was a charter member of the Lane County Bee Club.

"I like to learn a few more tricks of the trade," says Frank Mersdorf, another member of the LCBA. "I enjoy visiting my friends at the meetings, especially the members who have been in the business a long time," he says. Mersdorf has only sixteen hives now, but once maintained over seventy. Over the years he's developed strong friendships with other area beekeepers. One of these is Orville Bassett who has kept bees for over fifty years. "I think Orville is the most knowledgeable man in the West," says Mersdorf. Bassett lives in a suburban area south of Eugene and maintains about 150 hives. Members of the club recognize Bassett's expertise

and respect his opinions. When he makes a suggestion or offers a management tip, the group listens!

"Friends, discounts, help, advice — and sharing the passion of beekeeping."

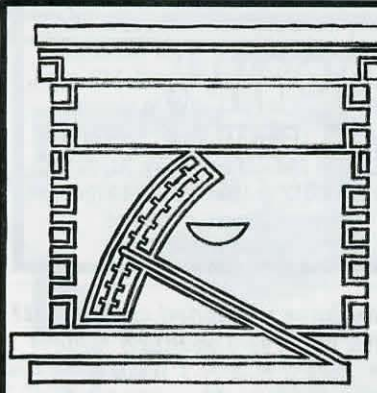
Price discounts, available in some stores for buying in quantity, attracts some beekeepers into joining a club. "You can get a better deal at the store," says Bill King, President of the LCBA, "if you present your membership card at the counter." King admits the 5% discount on smaller items isn't much, but over time, or when your list is long, the dollars saved eventually become considerable. King has been keeping bees for five or six years, and he says "the discount available through club purchases is the best advantage to joining the club." Many beekeepers, he observes, don't need 5,000 bottles or jars. But if a group of twenty beekeepers combine their needs, each one could use 250 bottles over a period of two or three years. Similarly, individuals don't often need enormous quantities of labels, lids, frames, hive parts, or

drugs, but collectively the club will use these items. Coordinating the needs of several and purchasing items at reduced rates not only increases the profit of each member, but builds bonds of friendship between the participants and makes honey production pleasurable.

If the bee club prints a newsletter, members often can advertise items for sale or for trade at little or no cost. These ads are directed to the relevant population, and are another method of making friends among people with similar interests. The bee club's newsletter may also carry ads for bottles and jars for sale from recycling centers as well as ads for wax, pollen, hive bodies, lids, floors, excluders. . . . Some beekeepers may sell trucks, trailers, or even "locations" through the classified ads in the club newsletter.

Members may wish to learn specialized information — such as how to treat a person who has gone into anaphylactic shock. The Club can schedule an MD to come and discuss such a problem. Or the speaker could be an E.M.T. specialist and may be able to offer advice about the critical first few minutes after a bee has stung the victim. These persons often are not very willing to discuss these problems to a single individual, but are very happy to address a group of twenty or thirty at one time.

The bee club often invites other special guests to deliver current information on trends and developments. The LCBA listens to the State Bee Inspector, Dave Turner, at least once each year. Turner invariably presents an interesting view of the industry from the state level. At his last appearance he discussed the study of Varroa in Germany, and showed a video to illustrate the discussion. In other years speakers have brought films, slides or tape recordings to discuss a variety of concerns facing beekeepers everywhere. Topics have included market-



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Continued on Page 452

Games Beekeepers Play

J. IANNUZZI

Introduction

The Old Line State hobby bee farmers have a tradition of amusing themselves with games/contests at special get-togethers, usually during the summertime. These competitive events consist of some old standbys designed to improve one's apian skills or to educate the public, while others are based on memory and speed coupled with dexterity. What follows is a brief description of these various entertainments and the rules for governing them.

Listing of Events

The most popular surely must be the Smoker Contest, closely followed by Hive-Hefting and the recently reintroduced Bee-Catching. Newer games include Name the Part and Guess the Number of Honey Bees.

The Smoker Contest



Rules for this event are:

1. Any size smoker with any kind of fuel may be used.
2. Smokers are lit on a signal from the judge. Time limit: one minute.
3. All smokers are then grounded and left untouched for two minutes.
4. Smokers are puffed, and/or refueled if necessary, for 30 seconds.
5. All smokers are again set down — for five minutes.
6. The arbiter checks them for presence of fire, absence of flame and

spark emission to eliminate the non-qualifiers. These smoke machines are turned on their sides.

7. At the end of 20 minutes, the judge grades the standing smokers on the presence and quality of smoke (heavy but cool), after puffing each of them for no more than 10 times.

8. Any smoker touched by a contestant after Step 4 is disqualified.

9. The decision of the judge is final.

Some observations. At one contest in the Howard County Beekeepers Association Festival, seven different size smokers competed, but the smallest smoker won. Fuel was fallen pine needles topped with binder twine capped with green grass. The number two winner, a jumbo smoker, had pine needles followed by twine. Number three contained the needles only. The other four contestants used needles (the contest was conducted next to a pine grove) along with twine and/or corrugated cardboard.

Objective: to develop skills in smoker use and to have fun!

Hive-Hefting Contest

Rules for this event are:

1. Hives marked "1" and "2" may be hefted from any side.
2. One edge *must* remain in contact with the ground.
3. Record the estimates.
4. The two guesses are divided by two.
5. The scores closest to the actual average weight of both hives are the winners.

Example: Hive 1 weighs 65# while Hive 2 is 45#. The sum 110 divided by two is 55#, the winning number.

Alternate rules:

1. Only one hive is used.
2. It may be hefted or actually lifted off the ground, at discretion of the arbiter.
3. Estimates are recorded.
4. Guesses closest to the actual weight are the winners.



Some observations: At a recent meeting, all those who had guessed above the correct weight were disqualified unilaterally by the judge. Since most of the initial figures were over the correct weight, he permitted another round.

Objective: The purpose of this game is to develop a skill (to replace the missing scale) to determine if feeding is necessary in February/March, with the onset of brood build-up, instead of breaking down the hive for an actual inspection (emergency feeding might then be in order). This is why hefting (*tipping* the brood chambers) and not lifting (actually raising the whole structure) is the proper procedure, especially if one runs two-stories year round.

Bee-Catching Game

George Jenvey Abrams (+1965), professor of apiculture at the University of Maryland, College Park, as well as long-time secretary of the Maryland State Beekeepers Association, used to operate a bee-catching contest at MSBA summer meetings. Here are the parameters:

Continued on Page 453

ing, killer bees, AFB and EFB, queen rearing, packaging bees, swarming, or predator control.

Often a beekeeper encounters an alarming problem or a condition that frustrates his operation. Frank Ratti, a beekeeper from Mapleton, described the damage skunks were doing to his hives. He never saw them, he didn't hear them, and only rarely ever smelled them. But each morning the scratch marks in front of the hives, and on the porches gave clear evidence some animal was molesting his bees. "I wanted to set up a trip-wire attached to a shotgun," he said, "but I was afraid one of my kids would get hurt." At the meeting in February, members shared experiences with skunks marauding their bee yards, and told how they solved the problem with leg traps, box traps, or drop traps.

Beekeepers who want to learn about government loans can also get this type of information from a club meeting. Christine Erwin, secretary of the LCBA, affirms, "We learned about honey loans from the government at the meeting last November." The speaker, Dick Block, carefully explained how the loans work: who is qualified; the pay-back requirements; the amount of dollars available; the procedure for securing them. Other regulations also are discussed at club meetings such as quarantine requirements, interstate inspection regulations, honey sales across borders, etc. The beekeeper who wants to learn great quantities of information without having to digest books or long-winded reports will enjoy informally listening to government representatives at meetings. "Usually these speakers are articulate, enthusiastic, entertaining," says Erwin, "and often they bring along pictures to illustrate their talk." Erwin maintains 80 hives, has been keeping bees for nearly ten years, and has been secretary of the association for five years.

The bee club can offer the community a "hot-line" service for removing swarms. A local club maintains a list of members who want to collect swarms. Dave Hoerger, a beekeeper from Creswell, recalls, "When I first began keeping bees in 1982 I got fifteen calls from the hot-line and had fifteen new hives without buying a bee!" Hoerger removed bees from the eaves of houses, bird houses, chicken nesting boxes, beneath barn floors, and tree limbs.

Beginning beekeepers have many opportunities to learn basic manipulations at club meetings. Basic medicating for foulbrood, for example, or tech-

niques to remove a swarm plastered on the wall of a building are discussed informally in groups of two or three over a cup of coffee. The beginning beekeeper listens intently, asks questions, hears of problems — and most importantly, their solutions. The exchange of experiences and lessons learned teaches the inexperienced and entertains the veterans.

"Bee Clubs benefit not only members, but the community, too."


Some bee clubs offer their members other services, like the use of expensive equipment. An individual beekeeper may not be able to purchase a radial extractor, for example. But if the club buys (or rents) one, the members can use it, and perhaps paying a small "fee" to help defray the cost. Some clubs arrange a "honey processing day" where members are invited to bring

their honey to a central location and a "production line" is set in motion. One member removes frames, another uncaps, a third puts them in the extractor while others turn the crank, fill bottles, attach labels and box the bottles. This cooperative enterprise builds an attitude of community and mutual support which makes keeping bees a pleasure.

Finally, the bee club offers picnics to its members in the summer and perhaps a banquet dinner in the winter. These activities often become a time of celebrating another successful year, a record honey yield, or learning a new method. At these times new locations may be revealed, purchases of bigger equipment, or moving to new buildings discussed, or new flowering crops bring excitement and interest. These are "up-beat" occasions which for some, may be the only reward for the diligent, lonely, beekeeper who has become discouraged over set-backs and frustrations over the past year. It's the Bee Club that renews and refreshes, stimulates and inspires to start one more year of determined effort to do even better. Δ

Ken Olson, an occasional contributor to Bee Culture, is a former member of the LCBA. He teaches Language Arts, keeps bees and raises 2 sons, all in Eugene OR.

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2. On the signal from the judge, contest begins after he reads aloud the rules and instructs as to the best method of kidnapping the lively ladies.
3. Game ends after five minutes, on signal from the arbiter.
4. More than one sting: *instant* elimination.
5. Winners: those with the most

live honey bees in their jars, including those eliminated, as determined by the judge whose decision shall be final.

Objective: to gain experience in capturing honey bees without being stung and, more important, to have fun.

Guess the Number of Bees

This is a very simple game: one merely estimates the number of *Apis mellifera* in the typical mailing cage, gives his number *in sotto voce* to the operator for recording. To eliminate charges of inaccuracy, the insects are instantly depopulated (via the freezer) and hand-counted.

Some observations: at an MSBA summer meeting, a partially filled three-pound mailing cage was found to have exactly 2,702-1/2 bees — the best guess was 2,996. The optimum technique for estimation is probably the following: One such mailer contains approximately 10,500 agricultural angels (the standard figure is 3,500 per pound). If the cage looks one-quarter full — as this one did — 10,500 divided by 4 yields 2,625: practically right on the money!

Objective: actually knowing the number in a package is a necessary skill for the bee supplier although an apiculturist is frequently queried as to how many insects he thinks are in an observation colony or in a captured swarm.

Educating both Beekeepers & the Public

The final contest serves to educate the apiarist and the public respectively. It is called 'naming the part.'

Rules:

1. Each contestant records on a sheet of paper the proper name — or function — of what he has just studied for 90 seconds.
2. Each correct answer is worth one point while each wrong guess, minus half a point.

Background: placed on an outer cover are 30/40 items as follows: entrance reducer; round-section ring; eyelets; piece of Duragilt and a piece of cut-comb foundation; support pin; Boardman feeder; BF cap; super spring; wax tube fastener; hive staple; frame rest; section box; cappings scratcher; steel frame saver; queen cage; frame grips; wire embedder; honey label; section scraping knife; Porter and conical bee escapes; eyelet punch; and honey dipper. After a minute and a half of looking, the assemblage is covered and writing begins. The contest ends after the last person finishes.

Objective: to acquaint the apiarist with the proper naming and use of various items connected with this hobby.

Concluding Word

That, dear readers, is a description of some of the games beekeepers play at their get-togethers and some of the rules they follow. Why not try one at your next meeting???

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August is a month of great riches. Every garden plant and fruit tree seems determined to fill our baskets, refrigerators and freezers to capacity. Actually we should thank our bees for doing such an excellent job of pollinating. We can add another "thank you" for the honey we use with our vegetables and fruits.

This is a good time to take advantage of the peach harvest. No matter how ripe and juicy a peach is, its flavor is definitely enhanced with honey. A liberal spoon of honey is the only way to reclaim a boring, tasteless peach. For a superior taste treat, every peach pie and cobbler should be sweetened with honey instead of sugar. Just substitute honey for sugar in your favorite recipe.

Now it is time to try something new with the current peach harvest. This next recipe is a delightful combination of ingredients.

CRUNCHY PEACH COMPOTE

1 cup orange juice
2 tbs. cornstarch
6 cups fresh peaches, sliced
1 cup dates, pitted and chopped

Topping:

2 tbs. butter
1 tbs.
1/2 cup chopped cashews
1/2 cup whole wheat pastry flour, or other flour
1/4 tsp cinnamon

Thoroughly mix the orange juice and cornstarch together, and combine with the sliced peaches and dates in a deep baking dish. To make the topping, melt the butter in a saucepan and stir in the honey until dissolved. In a bowl, mix together the dry ingredients. Add butter and honey and blend with a fork until it forms crumbs the size of peas. Spread the topping over the peach mixture and bake at 350° for about 35 minutes, or until topping is golden brown. Serve warm. Makes 8 servings.

Honey and Spice
Lorena Laforest Bass

The following recipe may be used for any fresh fruit fondue — simply substitute 1 cup of your favorite fruit (or a combination) for the peaches.

Fresh pineapple is delicious, also strawberries, raspberries, pears, and apricots.

BAKED PEACH FONDUE

1/3 cup butter
1/4 cup honey, warmed slightly
3 egg yolks
1 cup cookie or cake crumbs
1 cup finely chopped fresh peaches
3 egg whites
1/4 tsp salt
1/4 tsp almond flavoring

Cream butter until soft, add honey gradually, and beat until light and fluffy. Add egg yolks one at a time, beating well after each addition. Add crumbs and chopped peaches. Beat egg whites until foamy, then add salt and beat until stiff but not dry. Fold into yolk-fruit mixture, then add almond flavoring. Pour into a greased 1-quart casserole. Bake in 325° oven for about 30 minutes, or until lightly browned. Serve immediately, directly from the baking dish. Serves 4 to 5.

Naturally Delicious Desserts and Snacks
Faye Martin

Melons of all kinds are competing for table space also. Here is a quickly

made dish that can be either salad or dessert.

MELON SUMMER SALAD

1 cup watermelon balls
1 cup cantaloupe and/or honeydew balls
juice of 1 lemon
1/4 cup honey
1/2 cup whipping cream

Sprinkle fruit balls with lemon juice, then with honey. Chill. Whip the cream and fold into fruit just before serving. If using as a salad, serve on crisp lettuce.

Nebraska's Honey Cookbook
Nebraska State Honey Producers

Tomatoes are now too plentiful to be ignored. Although the heat of a summer's day can make cooking uncomfortable, now is the time to put up preserves for those dreary winter days when something from the garden is so appreciated.

TOMATO PRESERVES

Makes a delicious, unusual spread on toast!

1-1/2 quarts tomatoes, peeled (about 2 pounds)
3/4 cup water
2 lemons, thinly sliced
3 cups honey
1 piece ginger root
1 tbs. mixed pickling spices

Put water in kettle. Tie spices in cheesecloth bag; add to water along with honey and lemon. Simmer 15 minutes; add tomatoes and cook gently until they become clear. Stir occasionally. Remove spice bag. Cover the tomato mixture and let stand 12-18 hours in a cool place. Heat to boiling and pack tomatoes and lemon into hot, sterilized jars, leaving room for syrup. Boil syrup 2-3 minutes or longer if too thin. Pour boiling hot over tomatoes, leaving 1/4-inch headspace. Seal and process 10 minutes in boiling-water bath. Yield 6 half-pints

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Record Keeping: How It's Done

STEVE TABER

P. O. Box 1672 • Vacaville, CA 95688

*“Learning about bees is continuous . . .
it never stops.”*

What's in your colonies? Of course you hope they are full of bees and honey, with a good queen. Do you mark your colonies, or do you trust yourself enough to leave it all to memory? If you trust all to memory you are going to forget something, and your bees will suffer. Why make your bees suffer?

There are lots of ways to mark colonies so you know what you did last time and what needs to be done on the next trip. Here are three simple ways to keep records of your bees.

I. Keep a notebook and number your colonies. Check your notebook the night before you plan to visit an apiary, and check what equipment you need to bring on your trip other than the regular stuff. Do you need drugs, supers, a bottom board, brush? Apiary *Cherries* (give your apiaries nice names — this one is called *Cherries* because the land owner grows Bing Cherries, and the apiary owner's name is Taber. Which sounds better — Bing, Cherries, or Taber?) has 10 colonies. You think there is a failing queen in #4, but all the others are O.K. After you check all 10, you find that #4 is really O.K. this time, but #'s 3, 7 and 10 have too much honey, which you will remove next time. Write everything down, including the date, the weather, and the temperament of the bees.

As long as you're keeping a notebook, remember to write down everything that you can think of. Exactly what operations did you do? Did you just look at them for fun? No harm in that, but write it down. Did you look for queens? How many did you see? Did you look at the brood? Were there eggs, larvae, sealed brood? Was there more brood in some hives than others, how much more, and why? How much drone brood was there? Were there adult drones, too? Did you check for disease — AFB, EFB, chalkbrood or just for

dead brood in the brood nest? Did you see wax moth larvae, or tunnels under the brood cappings. How much pollen did you see, how wide a band around the brood? Were the bees robbing and snooping by the time you finished work? Exactly what has to be done next time, and when do you plan to visit this apiary again?

This business of learning about bees is continuous. It never stops, it never ends, it just keeps going on and on. Your notebook will be consulted at the same approximate dates next year to compare what the bees were doing last year, the year before and so on. You will also be able to compare different apiaries, and how your bees do when close or several miles apart. When working with bees remember two axioms: 1. Whatever can go wrong, will; and, 2. expect the unexpected and prepare for the worst.

The biggest problem with a notebook is that you will get it smeared with honey and propolis when filling it in at the apiary, and the pages will stick together. Another problem is that you will misplace it (which I am the world's authority at), or you will forget to record some of the information.

II. You can write on the hive and use a notebook. In the same apiary mentioned earlier, the #4 colony would have on it some code that you alone know, which tells you to check that queen very carefully. Then another code indicates honey should be removed from colonies 3, 7 and 10. This means less entries in the notebook, which is an advantage. But the disadvantage is the colonies that have a nice coat of paint will soon be needing more because they will rapidly be all marked up. They sell these grease pencils with different colored grease so you can use a different color each year. I mark my hives but it does cause some confusion.

Also, the grease tends to fade after awhile, and it's hard to tell colors. *Always date your entry.*

III. Use colored tacks and a notebook. This is what I am going to do more and more, because it is fast. The notebook entries are the same but I use a **black** tack to indicate a failing queen, and a **silver** tack to indicate that honey needs to be removed and so on.

In my queen rearing operation, where there are lots of small units holding virgin queens for mating, and already inseminated queens, there is a great amount of information that needs to be known for each nuc (short for nucleus colony, or mating box). In the old days (30, 40 or more years ago), queen rearers would put a dial with a pointer on each nuc which would be turned to a certain position indicating — queen cell, laying queen, needs a cell, and so on.

I now use colored tacks to indicate all those things, and this is how I do it. **Blue** — needs a cell or a virgin; **Yellow** — caged virgin or caged mated queen; **Blue and Yellow** — queenless, needs a cell and a frame of young brood; **Red** — empty nuc; **Red with Yellow or Blue** — add some more bees; **Green** — laying queen; and finally, **Two Green** — the laying queen has been tested is disease resistant, and is gentle — so she is a breeder for next year.

There are quite a few colored tacks available at my stationary store here in Vacaville. Note that you can use combinations of different and same colors to indicate a multitude of things in a colony or nuc. The only problem with this scheme is when someone unaccustomed to your codes is working with you. I give them a list with colored tack code and what each color and combination stands for.

Continued on Page 457



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• STEVE TABER • STEVE TABER • STEVE TABER •

Years ago I was spending some time working with one of the largest and smartest beekeepers I have ever known at Powers Apiaries, who operated 29,000 colonies. They operated bees in Arizona, Hawaii, South Dakota, Florida, Idaho and other states, too. I was working with Irwin Powers in Hawaii, and in every colony we went through the queen was evaluated to whether she might be a potential breeder for next year. That information was coded, using a wax pencil, and

marked on the hive cover. With that many colonies they had many employees doing the work, but all had to follow the "Powers System". Essentially, this system evaluated each queen every time the apiary was visited, requeen each colony every other year, and record, before leaving, some of the following information: Apiary location, number of colonies, condition of bees and colonies, equipment needed. Each apiary location had one sheet of paper for that visit with blanks to be filled in.

Powers Apiaries may not have been the worlds largest operation and he may not have been the worlds best, (how could he, because I am). But they kept extensive records of their bees, their apiaries and what needed to be done. They were, and still are, a successful beekeeping operation. Don't you think that you should also keep records of each and every visit to your apiary and record what was there and what was done and what should be done next time?Δ

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And Now . . . For Your Viewing Pleasure

STEVE TABER

Almost all observation bee hives are built the same, most hold only one standard size frame while some others will include a "super" with another frame on top. This does not give the bees enough room and they will be starving or overcrowded and swarming most of the time. Some are made to hold 4 standard sized frames, one on top of each other, all enclosed by glass. The problem with all these single width glass hives is that it is difficult to keep the

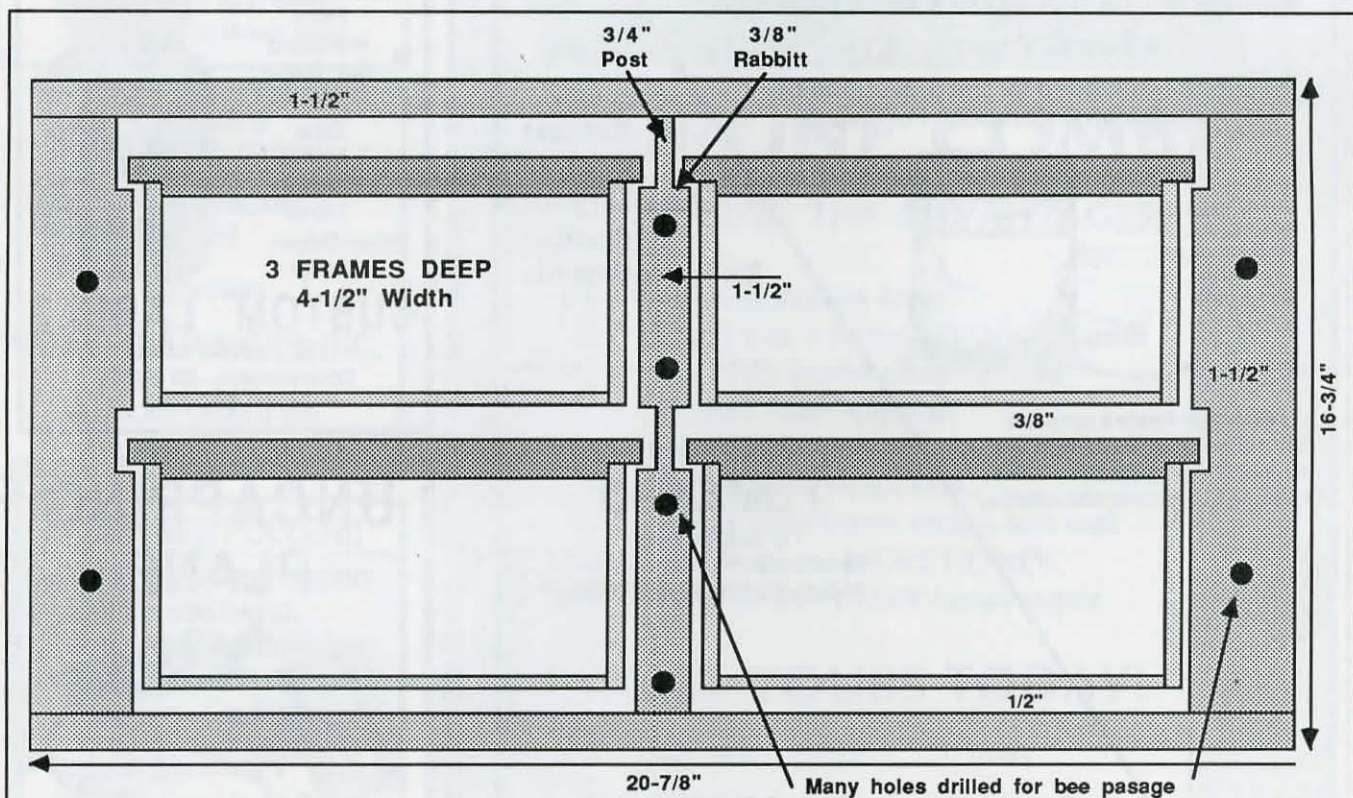
glass temperature warm.

This article describes an observation hive I have made that gives the bees more room, and permits much more observing to be done. It holds the equivalent of 6 medium depth frames of 6-5/8th inches. But the frames are cut in two, making the top bar 9-1/2 inches long instead of 19 inches, and the hive is built to hold exactly 12 of these. The hive is built 3 frames wide, (that is 3 x 1-3/8 inches plus 1/4 inch wide) and two

frames high with the top permanently attached. All frames slip in and out sideways.

The queen is confined to one comb by building in a queen excluder cage to hold that one comb and she is given a new comb every 3 or 4 days. The combs are numbered so that the proper rotation is followed. After being 3 days on comb #6 she will be given comb #1 again, where the bees are emerging.

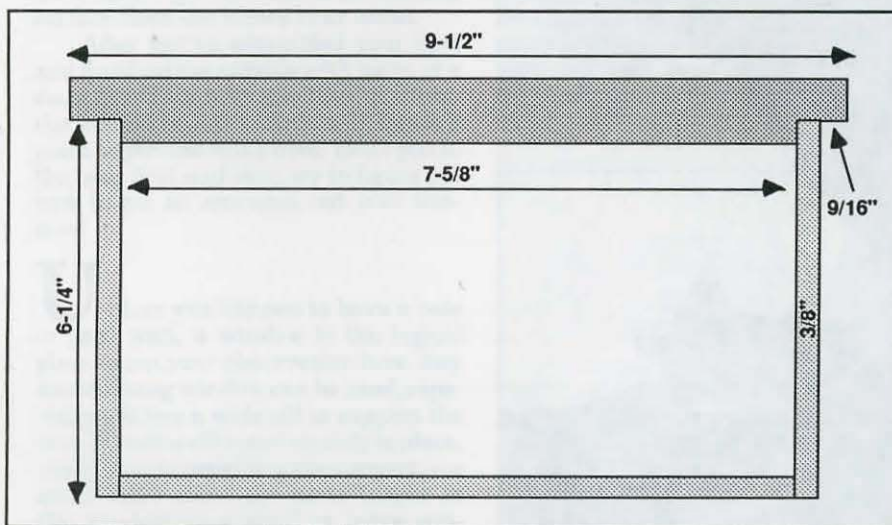
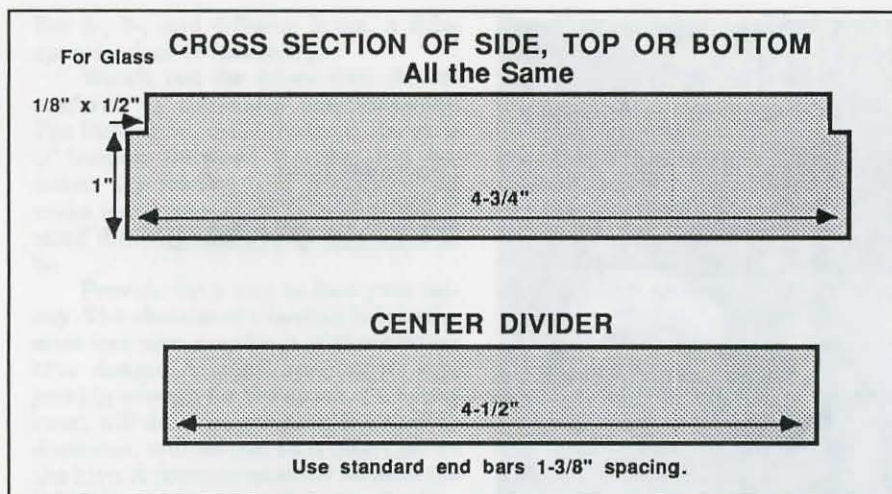
There are lots of advantages to



MATERIALS:

Buy end bars and make top and bottom bars.
2" x 6" white pine, 7 feet and 3/4" x 3" white pine, 3 feet
zinc queen excluder
glass and glass cutter (glass can either be cut 1 & 2 or 4 panes each side — mine was 4)
Assemble all 12, 2-1/2" joints with brass screws.
table saw, drill

After the hive is built, the excluder material is cut to exact width of the side which will be enclosed (about 9-1/2 inches) with a small extra piece toward the bottom to be used in attaching it to each side with a staple gun. Then the bottom is folded out to exactly touch the glass. I enclosed a top frame but it makes no difference. For entrances to each hive I bought a piece of polyethylene pipe about 2 feet long and about 2 inches in diameter, inserting that in a block to fill the opening in a window, and in the hive.



this type of hive. The population never gets out of control and you can put whatever type brood frame you want to have observed next to the glass. The remaining combs that the queen never gets to use are for the bees to cluster on and store honey in.

Four separate panes of glass are used on each side of the hive, one to cover each comb giving ready access to easy removal twice a week. The glass panes are held in place with clips and after a month or so they collect enough propolis that they don't fall off even when clips are removed. The glass pieces are handled so frequently that their edges should be rubbed a bit over fine emery paper to prevent cut fingers. I took the precaution of cutting extra pieces of glass, having them ready in case one broke during handling.

During the inactive winter season I usually remove the confined queen from her one comb cage and let her have free run of the entire hive. If this is not done the bees will probably abandon her and move to the combs containing honey. Δ

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Whenever our association puts up a booth at a fair or mall to talk to the public about bees, the prime attraction is the observation hive. You can have one of your own to amaze your friends, educate your children, and to keep you posted on what your bees are doing inside. It will tell you when brood-rearing starts and ends, when the honey flow begins, when the drones are cast out, and where nectar sources are located. Its many benefits more than repay your small investment in getting it started.

There is nothing difficult about setting up an observation hive. You probably won't even get stung in the process, though you will expect to be!

The first thing you'll need is the hive itself. It's best to buy your first one from a bee supply dealer, so that all you'll have to do is assemble the parts. You will have to supply the glass yourself — use tempered glass if you can get it. If you're a skilled woodworker, you'll want to build your own eventually. A manufactured hive can serve as your model if you measure the pieces before

you put them together. A variety of plans are available for hives of several different sizes.

Select a hive that is larger than a single frame. A one-frame colony is just too small to survive very long, though it might do for a temporary display. If you want to keep one going over the winter, a larger one is mandatory.

Once an observation hive is larger than 1-1/2 frames, the bottom frames become very difficult to pull out from above, especially after the bees have added a little brace comb and propolis.

For 2-, 3-, and 4-frame hives, a side-opening door is necessary.

Watch out for hives that do not conform to bee-space requirements. Too little or too much room at the ends of frames, between frames, and between the frames and the glass can make management and cleaning much more difficult tasks than they need to be.

Provide for a way to feed your colony. The absence of a feeding hole is the most common drawback of observation hive design. A small opening on top, just big enough for the spout of a honey bear, will do. A larger hole, 2-13/16" in diameter, will let you fit a quart jar on the hive. A dozen or so small holes in the lid of the jar give a much larger feeding surface than the honey bear spout.

After you've assembled your hive and finished the outside with paint or a clear finish (as with any hive, the interior should be left unfinished), locate a place to put the filled hive. Don't put in the bees first and then try to figure out how to get an entrance out your window!

Unless you happen to have a hole in your wall, a window is the logical place to put your observation hive. Any double-hung window can be used, especially if it has a wide sill to support the hive. If such a sill is not already in place, you'll have to provide some support—a small table about the same height as the window or a shelf or ledge supported by angle brackets underneath. Unless you make a monster hive, there won't be too much weight to contend with, but considering the consequences of a collapse, be sure to have adequate strength.

Next, raise the window sash a few inches and insert a piece of wood cut just a bit longer than the window sash opening, but short enough that you can wiggle it into the space between the stops that hold the sash in place. A 4" wide strip of plywood works well. Decide where you want the entrance to be, mark the spot on the piece of wood, and drill a hole approximately 3/4 inch in diameter. Pick the size of the hole to correspond to whatever you want to put into it. A 3/4 or 1 inch piece of transparent plastic tubing works well, but you can use whatever you have that fits the entrance to your hive.

Suppose you don't have any tubing? Here's a substitute that works well and can be made to fit anything. Cut a piece of sheet metal (aluminum flashing is easy to work with, but you can cut up a tin can if you watch out for the sharp edges) about four inches wide and four to six inches long and roll it into a tube of whatever size you need.

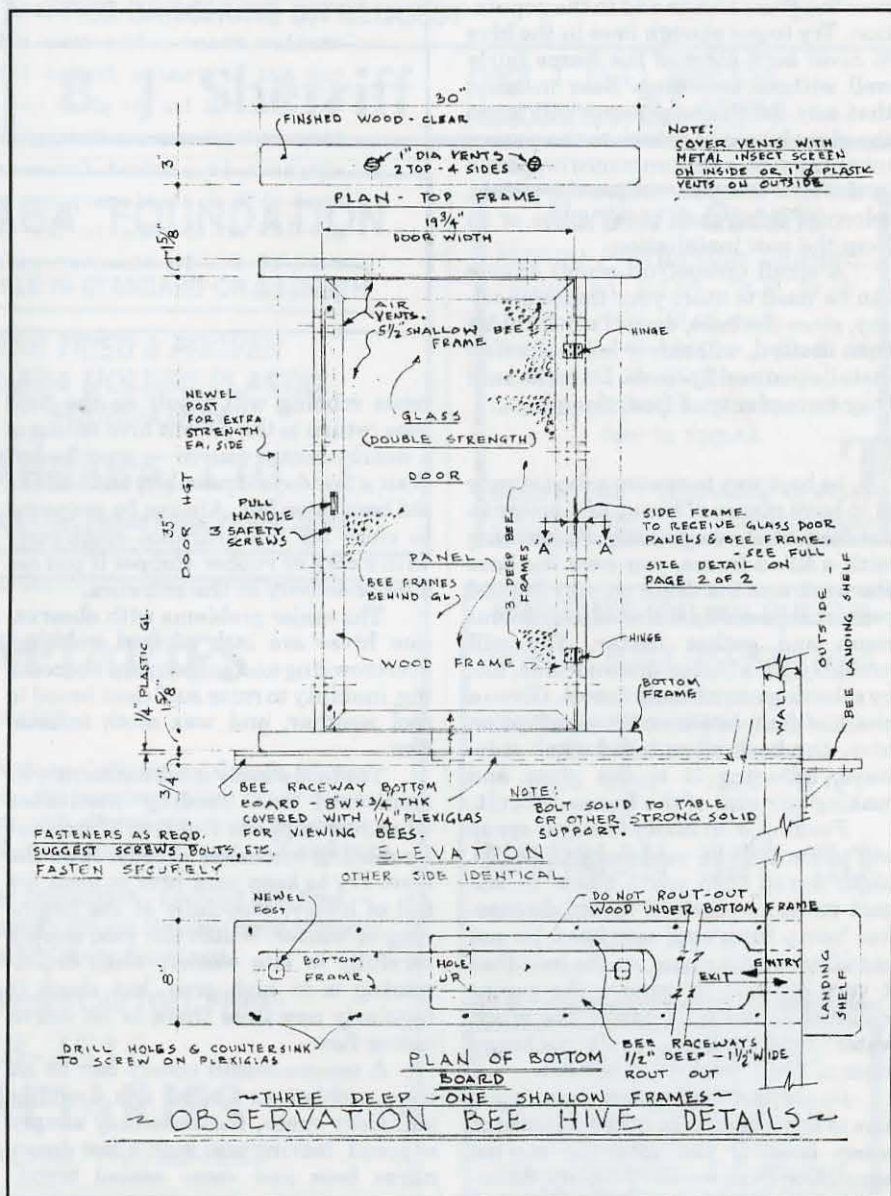
Keep it as round as possible for a fairly tight seal, and its natural springiness will hold it in place. Remember, it does not have to be airtight—just bee-tight. I used one on my hive, which has a square entrance, though the opening to the outside is round and of a different size. It's not too hard to bend one end sharply with a pair of pliers while keeping the other end round, and it beats trying to fit a round tube into a square hole!

Tack the plywood in the opening with a small nail at each end, then lower the window sash to make sure the fit is snug. As added insurance against the unwanted entry of bees and drafts, a piece of wide, clear tape to seal the gap between board and sash is a good idea. Don't neglect the gap between the two sashes, either. Now that the window is partially open, bees can walk right up the window glass and into your house. A

piece of wide tape or rolled-up cloth is enough to prevent problems.

Be sure to provide a way to close off the entrance—a sliding gate made of sheet metal, a rubber stopper to close the tube, or even a piece of duct tape will work. Take the hive outside to install the bees, keeping the entrance closed until you are ready to let them fly from their new location.

Now is the time to install the bees. You can use several methods, but the important considerations are to make sure you have 1) a queen, 2) plenty of young bees, 3) good worker comb for brood rearing, and 4) plenty of food. You may be able to get all of these at once by taking a comb from a strong hive in the spring. If you pick one with several ripe queen cells, a substantial amount of capped brood, and plenty of honey and



pollen, you're in business. Be careful not to injure or crush the queen or queen cell when you put the frame(s) in the observation hive.

You can also use a caged queen bought especially for the hive, or an old one you've removed from a hive being requeened. In the latter case, you should replace her with a young queen fairly soon. It is best not to rely on using a frame with eggs and letting the bees raise their own, because such a queen is apt to be underfed and inferior due to the small number of bees in the hive. The long hiatus in egg-laying this method produces can also set back the colony so far it can never recover.

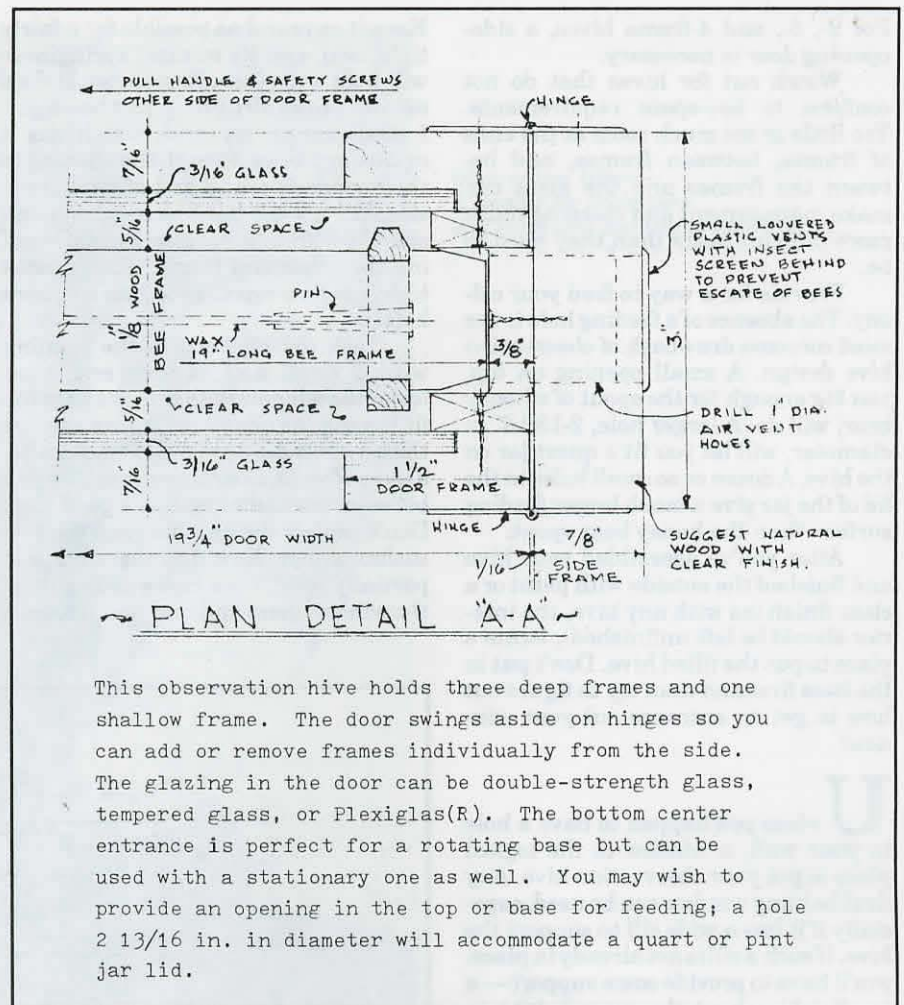
Young bees can be obtained by using capped brood or by shaking the frame moderately before installing it. The youngest bees hold on tightest, so a fair shake will exclude many older bees. If one frame contains too few young bees, shake a few more frames gently over the parent colony and strongly over the glass hive to add to the population. Try to get enough bees in the hive to cover both sides of the frame fairly well without crowding. Bear in mind that any field bees present will leave the glass hive and return to the parent colony as soon as the entrance is opened in the new location, unless the parent colony is more than three miles or so from the new installation.

A small (grapefruit-sized) swarm can be used to start your fishbowl colony, since the bees, even if a little older than desired, will rarely leave the new installation and fly home. Do make sure they have plenty of food, though.

The best way to ensure a food supply is to have plenty of honey and pollen in the hive at the beginning. By starting with a filled frame, you save the bees the work and the drain on very limited resources posed by the need to draw out comb and gather nectar. You will probably get a better-drawn frame, too, by selecting one already drawn. Given a sheet of foundation in an observation hive, the bees often build comb sideways, adhering it to the glass and making removal of the frame difficult.

Feeding with honey or sugar syrup will definitely be necessary. Use 2:1 sugar syrup (two parts sugar to one part water) or (better) clean, disease-free honey from your own bees. Do not use dilute sugar syrup, as the bees find it very difficult to remove the excess moisture before it ferments. Too much water in the hive can result in a soggy mass of dead bees in the bottom.

Do not feed the first few days if your hive is anywhere near other colonies of honey bees. If you took the starter population from a nearby colony, dis-



This observation hive holds three deep frames and one shallow frame. The door swings aside on hinges so you can add or remove frames individually from the side. The glazing in the door can be double-strength glass, tempered glass, or Plexiglas(R). The bottom center entrance is perfect for a rotating base but can be used with a stationary one as well. You may wish to provide an opening in the top or base for feeding; a hole 2 13/16 in. in diameter will accommodate a quart or pint jar lid.

trous robbing will result as the field bees return to the parent hive telling of a nearby nectar source — your feeder! Wait a few days if possible, until all the old bees have left. Always be prepared to close off the entrance completely with a cork or rubber stopper if you see a lot of activity at the entrance.

The major problems with observation hives are lack of food, robbing, overcrowding and subsequent absconding, inability to raise sufficient brood in cool weather, and wax moth infestation.

The food supply must constantly be monitored and feeding instituted whenever supplies run low. Watch out for robbing whenever a feeder is on the hive. Try to keep your hive at least 3/4 full of honey, especially at the beginning of winter. Watch the food supply carefully in late winter, when brood-rearing is in high gear, but check it regularly any time there is no active nectar flow.

A too-successful colony can be as big a problem as a weak one. Lacking sufficient space, the bees may simply abscond, leaving you with a few dozen nurse bees and some sealed brood.

Whenever a colony becomes too strong, remove some bees (one way: a vacuum cleaner applied to the entrance) so that no more than one layer of bees covers each side of a frame.

Observation hives have particular difficulty in the winter because they cannot cluster deeply enough to provide the 93° temperature needed for raising brood. They may begin to do so only to be thwarted by a cold draft that kills their little ones. To help them keep warm, cover the glass sides with some sort of insulation (one-inch sheets of styrofoam work well) for protection. Be careful, though, never to block the ventilation openings. Doing so can kill the entire colony overnight.

Wax moths can infest a small colony, and an understrength observation hive is especially susceptible to them. Fumigation is obviously not possible unless the bees are removed, so there is only one treatment available that can be used without breaking down the colony: Certan. This treatment is effective against only caterpillars, so it can be applied to the comb without harming

the bees. The best method is to remove the frame temporarily, spray it with Certan according to label directions, and replace the frame in the hive. Since the bees will lick up the spray to clean the comb, more than one treatment may be necessary.

Setting up one of these showcases is definitely worthwhile, but don't expect it to last forever, since such a small colony is inherently unstable. Part of the fun, though, is the challenge of keeping it going as long as possible. It can provide you with innumerable hours of entertainment, especially if you keep it near the telephone as I do (it gives me something to do while I'm on hold). Also, some day one of your hives is going to turn up queenless, and it is comforting to know that you have a well-tested but not worn-out laying queen always in reserve.Δ

Stephen McDaniel is a professional photographer, whose photos have graced Bee Culture covers several times recently. He keeps his observation hive, and several regular hives, in Baltimore, MD.

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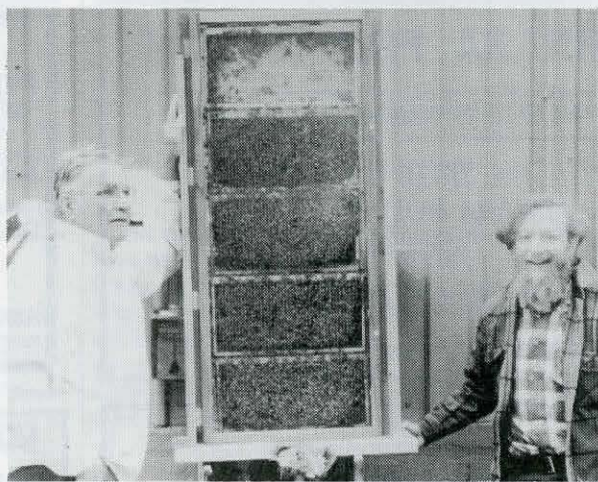
A permanent, live honey bee display is an excellent method to educate the public about bees and beekeeping; however, there are problems in setting up and maintaining such a display. One excellent solution is to combine the skills of those individuals who know about honey bees (beekeepers) with those agencies (museums, nature centers, etc.) that are in the exhibit business. This solution has been tried in North Carolina and there are now seven institutions that maintain live bee displays with a total annual attendance of over 1,000,000 people.

In today's climate of sensationalism about "Africanized bees" it is more important than ever to present the public with accurate information about honey bees. One way to do this is by setting up a display which combines live honey bees along with various types of information. A number of beekeepers and beekeeping groups have set up such displays at state fairs, county fairs, beekeeping meetings and farmer's markets. No doubt beekeepers can reach a large number of people with such temporary exhibits, but think how valuable a permanent display would be as both an educational and recreational exhibit. The problem is that few beekeeping groups have the resources to develop and house a permanent public display.

Natural history museums and their like are equipped to develop exhibits and to maintain them on a long term basis, but the exhibitor must have some knowledge of the biology of the honey bee before a successful and long-lasting exhibit can be developed. Honey bees do present problems to exhibitors in that they should be seen but not felt, and colonies have an unsatisfactory habit of swarming or dying if not properly maintained. On the other hand, honey bee exhibits can add to the ap-

peal of a museum and increase public attendance.

Since beekeeping, natural history museums, and nature centers have complementary goals, it would be of common benefit for beekeepers to encourage the development of beekeeping displays in such institutions. An effort has been underway in North Carolina, and it has met with a considerable degree of success. It should be noted that the NC effort was not a centralized effort, but rather the result of several local beekeeping chapters working towards the same end at the same time.



In cooperating with an institution such as a museum or nature center, the beekeeper should be aware that there are potential problems. Most of these problems are due to the institutional representative's lack of information about bees and what is necessary to develop and maintain a live bee display.

Some Suggestions for Developing a Bee Display

1. Once you have sold the institution on the value of a live bee display, be prepared to provide advice on the practical aspects of setting up the observation hive. Be tactful in your suggestions, but you are probably the expert in

this matter. If you need assistance, contact the apiculturist at your land-grant university or the apiarist at your state department of agriculture.

- a. An observation hive does not have to be just one style. Depending on available space and the location in the building, a log hive or a "modern" hive with a cutaway section for observation might be best.
 - b. Be sure the hive entrance is away from the public to avoid stinging episodes. Locate the entrance so it is more than eight feet above the outside ground level, or so it is into a non-public area.
 - c. Avoid direct sunlight or any direct light on the hive. Mount the hive in a recessed area with a light switch that viewers can turn on.
 - d. Be sure to use shatter-proof transparent material.
 - e. Be sure the hive is large enough to ensure that the bees will survive for a reasonable period of time without replacement. A one-frame observation hive is not practical.
 - f. Mark the queen with a small dot of brightly colored paint so she is identifiable.
 - g. Develop a convenient and vandal-proof method for feeding the bees. Placing containers of sugar-water or dilute honey on top of the observation hive for feeding is generally good, but be sure that the containers are not accessible to the public.
 - h. Construct the hive display so that it may be easily removed for cleaning and restocking, but so it is also vandal proof.
2. Display more than just an observation hive. This is your chance to educate the public about bees. Posters, silk-screens, etc. may be prepared or purchased.
 3. Offer to assist the institution's staff in providing educational pro-

NORTH CAROLINA BEE EXHIBITS

Asheville

Western NC Nature Center

This was established as a zoo in the 1960's but was changed to a Nature Center in 1976. The Center has provided educational programs on honey bees for several years and added an observation hive this year. The local beekeeping association assists the Center and provides bees for the observation hive. Average attendance = 60,000/year.

Durham

NC Museum of Life and Science

This state/local supported institution was established in 1946 and combines the exhibits of a zoo, nature center and a museum. It has maintained an observation hive for two years and programs on honey bees are regularly presented to school groups. One of the staff members has an interest in bees and the local association provides assistance and bees for the displays. Average attendance = 210,000/year.

Greensboro

Natural Science Center

This Center was established in 1956 and contains a wide array of exhibits including a small zoo and a planetarium. With the encouragement and support of local beekeepers, a bee exhibit was developed in 1987. Average attendance = 300,000/year.

Highlands

Highlands Nature Center

This Center was established in 1927 and is part of the Highlands Biological Research Center. It maintains a number of exhibits for the public including a bee display which has been in place for the last eight years. The bees for the display are provided by local beekeepers. Average attendance = 20,000/year.

Raleigh

NC Museum of Natural History

This is the state Museum of Natural History and it dates back to 1879. It is administered by the N.C. Dept. of Agriculture and live honey bee displays have been part of the museum since 1942. Even though NCDA personnel do provide the manpower and expertise to maintain the display, local beekeepers provide bees for the exhibit. Average attendance = 300,000/year.

Rocky Mount - Rocky Mount Children's Museum

This institution was first opened as a private museum in 1952 but it is now administered by the City's Recreation Department. The museum has maintained a live bee display since 1982 and the local beekeepers are very active in providing manpower and bees to support the display. Average annual attendance = 55,000.

Winston-Salem

Nature Science Center of Forsyth County

This Center was established by the Junior League in 1964 but it is now administered with a combination of county, municipal and private support. It has a wide array of exhibits including a planetarium. The first bee exhibit was established this year with considerable support from local beekeepers. Average attendance = 90,000/year.

Four of the seven listed institutions have added live bee displays within the last two years and support from local beekeepers and groups has been influential. It should be noted that most of these institutions have more than just an observation hive display, and most also provide programs on bees for school groups. The total annual attendance for the seven institutions is approximately 1,035,000, and even if only 25% of the museum visitors stop to look at the bee displays, over a quarter of a million people have had an opportunity to learn something about honey bees. And, it should be emphasized that these quarter million people were exposed to *factual* information about bees, not the sensationalized information which is often presented by the media.

grams to the public, especially to school groups.

4. Provide a plug (advertisement) for your local and/or state beekeeping association. List a name and address or phone number — you may attract new members to your group.

Misinformation about honey bees is a common problem that beekeepers have always had to encounter, but recently the problem has become acute with the expected arrival of Africanized bees in the U.S. Developing live bee displays at museums and nature centers is an economical way for beekeepers to provide valid information to the public.Δ



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MICHAEL ROLING

Pail Hive II

A couple of years ago (*Bee Culture*, January 1986) I reported on a hive designed for my beekeeping course. Since then, students in several classes have constructed and placed these hives in operation. This report is intended to illustrate some modifications concerning the use of these hives.

First, a short review on the construction of the original plastic pail hive:

Hive Description

A five gallon plastic pail with the lid attached comprises the main component of the hive. A 1-1/2" hole is drilled into the center of the lid and the pail is then cut in half from top to bottom. The 1-1/2" hole serves as the entrance. This type of pail was chosen since it is easily available. Attached to the length of the pail on both sides of the interior are two wooden strips, which act as frame rests. They measure 1/4" x 3/4" x 13" and are attached to the pail with two nuts and bolts approximately 2" from the front and back, and one inch from the opening of the cut surface. Frames are made

by cutting wood strips 3/4" x 1" x 10" to 10-3/4" in 1/4" increments. There is a taper as you proceed from the front (lid) to the back (bottom). Nine frames are needed for each hive. On one of the inch wide surfaces on the frame a groove is cut down the center for insertion of a starter strip of beeswax foundation. The groove is the width of the saw blade and is 1/4" deep. The starter strip is held in place by melting beeswax and pouring it into the groove with the strip inserted and allowing the wax to solidify. Eight equal sized starter strips can be made from one sheet of shallow cut comb foundation. The top of the hive is constructed of 1/4" thick hardboard 13" x 16". In order to feed the colony, a 2-1/2" diameter hole is cut in the center of the top. This hole fits the lid size of the jar that would become the

feeder. In addition to cutting the hole in the top, it is necessary to build a small lip of waterproof material around the opening for the feeder. The water tight lip around the feeder is made of G. E. Silicone bathroom caulk and sealer®. To construct the water tight lip, wax paper strips are cut to conform to the thickness of the lid and wrapped around the lid. The wrapped lid is then inserted into the opening in the top and the top of the hive is rested on a flat surface. The sealant is then applied to conform to the lid. Once the sealant dries, approximately 24 hours, the jar with the lid is removed and the wax paper discarded. The wax paper does not stick to the water tight lip. The whole unit is mounted between two concrete blocks or bricks.Δ



Ellen Barnitz of Lake Spring, Missouri, examining a bucket hive. Feeder and top of hive are removed exposing top bars.

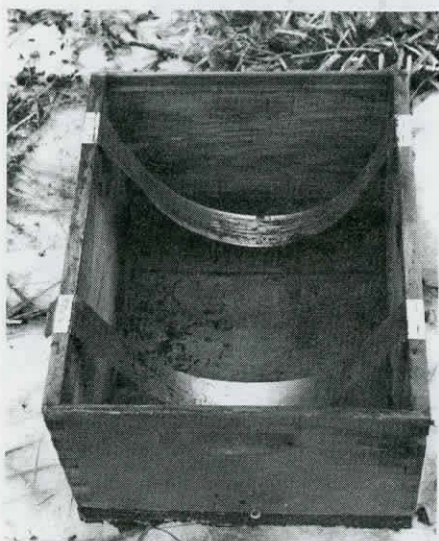
Since then the hive has undergone one essential modification. Now the entrance is shaped like a keyhole and located lower on the front of the bucket hive (lead photo). The original entrance allowed easy access by the bees. However, the primary reason for the change was to facilitate removal of excess moisture created by condensation on the plastic walls.

Those students who chose to take their bucket hive with them at the end of the class encountered difficulties moving the hive and transferring the

Continued on Next Page

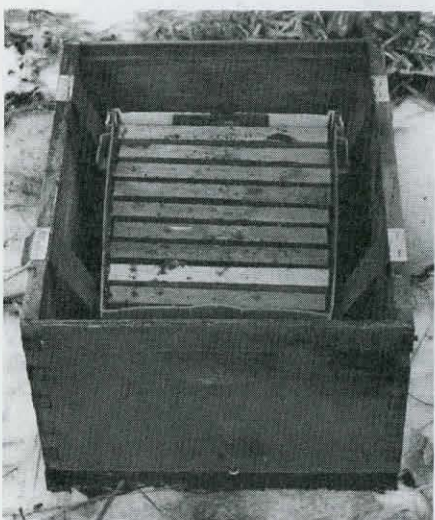
Here, Ellen is inspecting newly formed comb and adhering bees.





Duct tape stapled to the sides of a brood chamber with appropriate slack needed to properly suspend the hive.

colony to a standard hive. In order to prepare colonies for moving, old, deep brood chambers were obtained from the local beekeeping community. These were of little value since they frequently were flimsy or contained areas that had rotted. By using window screen and a staple gun, the holes or rotted areas were easily plugged. To secure the bottom of these old brood chambers, corrugated cardboard was stapled to it. Then several strips of duct tape were stapled to the top of the old brood chambers on both sides with sufficient slack to receive the curved surface of the bucket. This duct tape sup-



Bucket hive with top removed, suspended by duct tape in a brood chamber.

ported the hive in an upright level position while in transit instead of the hive tipping from side to side. Finally, window screen was stapled over the top of the old brood chamber to insure that bees did not escape. This arrangement allowed sufficient air circulation eliminating potential heat stress.

Once moved to the final location, the top screen and lower piece of corrugated cardboard were removed. With the top and bottom coverings removed, the old brood chamber with the bucket hive supported by the strips of duct tape was placed on a bottom board. Next, a new brood chamber with frames of comb or foundation was placed on top. A cover was placed on the new brood chamber and the hive allowed to stand for several weeks. As the bees became crowded in the bucket hive, they built burr comb to the new brood chamber

and eventually the queen and colony moved up into the new brood chamber. Once the queen and colony were established in this new brood chamber, a queen excluder was slipped between the old brood chamber containing the bucket hive and the new brood chamber with the queen. As soon as the young workers emerged from the comb in the bucket hive, the old brood chamber containing the bucket hive and the queen excluder were removed. The new brood chamber was then set on the bottom board and the transfer to a standard hive complete.Δ

Dr. Michael Roling is a Professor in the Agriculture Department at Southwest Missouri University. Besides beekeeping, he teaches Forestry and Entomology. He has been keeping bees for over 12 years, and runs 30 or so colonies.



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BRAZIL REPORT

— From Alan Root

I had the exceptional opportunity to visit Brazil this past April, both to see my granddaughter's family in Sao Paulo, and later to attend a meeting with Brazilian Beekeepers. I was fortunate to have the assistance of Professor David DeJong and Constantino Zara Filho, President of the Federation of Brazilian Beekeeping Association and also Chairman of Apacame Beekeeping Association of Sao Paulo.

Sao Paulo is a large, modern, densely populated city of about 14 million people, twice the size of New York. This seems no deterrent to the hobbyist beekeeper, however, as many people in Sao Paulo have property in the country they call *sítio* (a place) where they keep their bees.

This visit was also an opportunity to see this vast country and visit with the people who live here. In particular, I was able to talk with Brazilian beekeepers. It was a good chance to learn first hand about the Africanized bee — and to learn of the Brazilians' experience with *Varroa* mites. Both of these problems seem to be of little consequence to local beekeepers, and they seem to cope with them very well. In fact, I was told several times, "You are going to like the Africanized bee".

Apparently their slightly more aggressive behavior is more than offset by their greater ability to produce honey. Reports at the meeting seemed to indicate Africanized bees produce honey at nearly double our average annual yield. Of course, this could be due to either the climate or the 12 month gathering period.

This production advantage, as well as what appears to be a greater resistance to the *Varroa* mite makes the Africanized bee desirable in Brazil.

I was invited to speak at the monthly meeting of Apacame, the Sao Paulo Beekeepers Association on April 6th, which, I was told, had about 1200 members.

On the evening before the meeting, the officers of The Federation of the Brazilian Beekeepers Association invited me to dinner — in attendance were the President, Constantino Zara Filho and his wife; Vice President Walter Moretti, and the Secretary/Treas-

urer Erick Jany and his wife. Several spoke English, and with the help of my grandson-in-law, we were able to communicate very well. It was at this dinner that I had a preview of modern beekeeping in Brazil, as well as an opportunity to discuss problems concerning beekeepers in the United States.

I also had the opportunity to meet Carlos Tivurcio, Editor of *No Brazil Apicultura*, a beautifully printed beekeeping journal, and during our discussion we agreed to exchange journals on a regular basis. Also during the meeting President Filho suggested we establish an exchange "question and answer" column in both our journals so that beekeepers in Brazil and the United States could question each other on various common topics. This seemed appropriate, as they have already encountered and solved many problems that we in the United States may yet face. And, also, some of our



Sr. Erick Jany, Sec./Treas.; Alan Root; Sr. Constantino Zara Filho, President; and Prof. David De Jong.

beekeeping methods may be of benefit to the Brazilian beekeepers.

During the meeting, my speech was translated into Portuguese, and questions to me were translated into English by both Erick Jany and Professor David DeJong from the Universi-

dade of Sao Paulo, Depto de Genetrca. This gave us an easy flow of information back and forth. One thing that surprised me very much was that a show of hands indicated about 85% of those present were hobby beekeepers.

The commercial beekeepers in Brazil practice migratory beekeeping extensively, and they were interested in our methods of moving bees. One of the commercial beekeepers at the meeting exhibited a hive for transporting bees with one side open and a mesh bag that fits over the entire one story super. The bag and super are fastened to a flat pallet below the bottom board. The open side produces adequate ventilation in the very warm climate so moving is facilitated for the bees.

Beekeepers came from several Brazilian states covering a great part of the country. We were treated to a jar of fine flavored honey produced in the northern part of Brazil, from the state of Apau, not far from the equator and the Amazon region. This was given by a representative of Apicultura E Com. Ltda, a commercial beekeeping organization. I also had a discussion with Maria Lgra de Millo, who manufactures beekeeping supplies — but, because of the time limitations, I was unable to visit their operation.

Prof. David DeJong provided not only excellent translation, but he was often able to elaborate on my answers to questions. He has spent a considerable period of his life in the United States,

but is now a citizen of Brazil. He earned his Masters degree in the United States at Cornell University, under Dr. Roger Morse and is now both teaching at the University of Sao Paulo and working on

Continued on Page 473

TESTING ANSWERS

- False** Most herbicides and fungicides have proven to be relatively nontoxic to honey bees and can be used around them with a minimum of injury. Herbicides indirectly affect honey bees by reducing the acreages of attractive plants for the bees to forage on.
- True** Pesticide spray formulations vary significantly in their toxicity to honey bees. Wettable powder formulations are often more hazardous to bees than either emulsifiable or water soluble concentrate formulations.
- True** Typically, susceptibility to pesticide poisoning is greatest for small species of bees. The surface/volume ratio is increased and this ratio is the critical factor in determining lethal exposure. A small bee can much more quickly accumulate a killing dose per body weight than can a large bee.
- True** The single largest reduction in colony losses from pesticides is due to the application of pesticides in the evening, night or early morning when the bees are not actively foraging in the area to be treated.
- False** Strong colonies always suffer greater losses than weak because more foragers are exposed to the insecticidal residues.
- True** The rate in which insecticide residues degrade in the environment is strongly influenced by temperature. Thus, cool temperatures increase the persistence of spray residues and increase the hazard to honey bees.
- True** Severity of honey bee kills is usually inversely proportional to the distance colonies are located from treated fields. Field studies have shown that distance affords protection. Most colonies are safe when located one mile or more from a treated area.
- True** Soil treatments or granular insecticide applications are usually the safest method of treatment since the insecticides do not come in direct contact with plant surfaces frequented by bees.
- B) Pennacp-M (methyl parathion)
- Appearance of massive numbers of dying and dead bees at the colony entrances throughout the apiary.
- Move colonies away from the area to be treated.
- The evening before short residual insecticide applications are to be made, the colony entrances would be screened shut. The following morning the colonies are covered with wet burlap or plastic while the spray applications are being made. Wet burlap is preferred since the water helps to lower the temperature of the hive and the bees need water to regulate hive temperature. If colonies are to be confined for several hours they should receive water inside of the hive and an additional super so they have increased clustering space.
- Contact poisons** are absorbed by the bees through the integument (exoskeleton) or outer covering of the body. **Stomach poisons** are absorbed through the alimentary canal (stomach, intestine) when taken internally through feeding or cleaning activities. **Fumigants** are absorbed through the spiracles (breathing pores) or respiratory system.
- Control the blooming weeds on the orchard floor and minimize pesticide drift so that adjacent blooming crops and weeds do not receive toxic residues.
- Ultra low volume (ULV) refers to the technique of applying the insecticide as technical formulations or as concentrate formulations without the addition of water. Extremely small particles of undiluted insecticides are more toxic to bees than the larger droplets of conventionally diluted sprays. In addition, it is a lot more difficult to control pesticide drift with ULV techniques due to the smaller droplet size.
- C) Organophosphates (parathion, malathion)
- There is little chance of honey containing toxic pesticides within the colony since the nectar is transported back to the hive internally within the honey stomach. Thus, nectar foragers rapidly absorb the toxic chemicals which alters their normal behavior. Workers quickly lose their sense of orientation and/or their ability to fly and usually die away from the hive. Should bees return to the colony with a load of poisoned nectar, there are further natural provisions against a general contamination of the honey. Foraging bees which become incapacitated at the hive are usually removed from the hive without expelling their load of nectar. When foraging bees regurgitate their load of food, the hive bees process the nectar during the honey ripening process and thus are exposed to any toxic substance it may contain for a considerable period time. Hive bees tend to retain the food in their honey stomachs when they become affected by a poison and are removed from the hive by other bees. Guard bees also resist abnormal bees or bees which return with offensive odors and remove them from the hive.
- Sevin® (carbaryl) is extremely dangerous to honey bees since it does not kill field bees quickly and they return to the hive and deposit contaminated loads of pollen. If this pollen is deposited in the hive from foraging bees, the hive bees may be poisoned in the process of storing the pollen in the brood nest. When nurse bees feed on this pollen (which is required in the development of brood-food glands and production of royal jelly) they are poisoned. As contaminated pollen is incorporated into bee bread, larvae are also killed. Carbaryl normally breaks down in the field in 7 to 10 days. When packed in pollen within the hive, it may remain toxic for up to 8 weeks.

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Number of Points Correct

25-18	Excellent
17-15	Good
14-12	Fair

Funny Beesness

ROGER WELSCH

Summer is here and things are buzzing. I'm not going to say much in this issue because I am going to reprint a letter from Loren Davis of Decatur, Arkansas, who maintains that his story is the very essence of truth. For his effort, he wins a copy of my book, *Shingling The Fog*, full of truth.

A few days ago, Dave, our bee inspector, stopped by my place to see how my bees were doing. After visiting a while, I said, "Dave, I have some honey I want you to taste and see if you can tell what kind it is."

I got up, took a small jar from the kitchen, and handed it to him. He took the jar, opened it, and sniffed. Then he tasted it. After studying it a moment, he said, "It's different from any honey I've ever tasted. What kind is it?"

"Honeysuckle," I replied.

"You're kidding. Surely you know honeysuckle flowers are too deep for honey bees to reach the nectar."

"Mine do."

"What kind of bees do you have?"

"Italians, like most everyone else."

"Then how is it that your bees can reach the nectar on honeysuckle when other people's bees can't? Do they have longer proboscises?"

"No, I don't suppose so, but I haven't ever measured them."

"But then, how...?"

"My bees are educated."

"Educated?"

"Right. One day I was out by the patch of honeysuckle by my driveway. I noticed a few bees trying to get the nectar, but without success. I watched them, thinking, 'What a shame, all that honeysuckle around here and the bees can't get it.' Then I had a brainstorm.

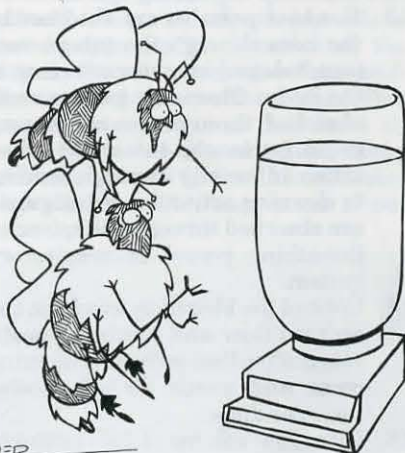
"I reached over and carefully caught a bee between my thumb and finger so she couldn't sting me. I placed

her near the lower end of a flower about where I thought the nectar should be. Her stinger was fully extended and I used it to poke a hole in the side of the flower. I turned her around, placing her head where the nectar was leaking out through the hole made by the stinger. She caught on quickly and started sucking up the nectar. I released her and stood watching. She crawled over to another flower, poked a hole, turned around, and took in more nectar. During the next few minutes I put four more bees through the same educational process.

"I went in to eat lunch and the mailman came by with the day's delivery, which included *Gleanings in Bee Culture*. I sat down and paged through it, reading the articles that interested me most.

"Then I remembered my experiment, so I walked out toward the honeysuckle patch but I knew the results before I even got close. There was a loud humming like a swarm leaving the hive. The flowers were covered with bees. They were busily stinging flowers and slurping up the nectar like crazy. In no time at all I had a full super of honeysuckle honey."

"I think you're pulling my leg," Dave said as he turned to leave. I stood and watched him limp back to his pick-up. Δ



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his Doctorate, studying the Varroa mite. We look forward to his comments about the control of the mite in a future issue. I certainly appreciated his assistance, as it made for a more informative meeting for all of us.

David told me that Argentina already has experienced the migration of the Africanized bee and this may indicate, to a degree, the northern penetrations we may expect in the United States. He said that in Argentina you will find Africanized bees predominating north of the 32nd parallel, mixed European/Africanized north of the 34th Parallel, but south of the 34th parallel there are almost entirely European bees. The farther south one travels, the cooler the prevailing weather, which, it would appear, prevents the Africanized bee from surviving.

It was interesting to note that staple food products in the grocery stores and supermarkets seemed inexpensive in comparison to similar items in the U.S. Honey was no exception. In one case, we noted a 10-1/2 oz. jar was priced at 1.95 cruzados or at 1.55 cruzados to the dollar, about \$1.30 per lb. retail.

In 1989, the Federation will be the host of Apimondia, the International Beekeepers Association, in Rio de Janeiro. I urge as many of you as possible to attend. Not only will you see the beautiful city of Rio de Janeiro, but you will have the opportunity to visit the warm and friendly beekeepers of Brazil, as well as beekeepers from many other countries around the world.

This trip, which originally started as a visit to my granddaughter's family in Sao Paulo, turned into a most pleasant visit with the friendly beekeepers of Brazil, highlighted by our common interest in the honey bee. Δ

Hint of the Month

There's no doubt that honey is a very versatile ingredient of many recipes. But even this wonder ingredient can give trouble in some types of recipes. Jellies that are supposed to be "still" and jams that are supposed to be thick, not runny, sometimes turn out like syrup instead. To make matters a little more complicated, honey from your own hives that have never been moved will differ from year to year. Unfortunately, the fruit is also variable. The use of commercial pectin, following instructions, and the addition of lemon juice generally will control any tendency for jams and jellies to be runny. Δ

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Unveiling the Mysteries of Beekeeping

BEE TALK — IN A BOX!

KENNETH E. NUSS

To all you proponents of bees and honey, relax from the crusade for a moment, and consider this simple approach. Imagine the affect if you were to assemble your most interesting beekeeping paraphernalia in a box, then let your narrative emerge from that box, with each article telling its own story.

If you have studied a hive of bees for a year or more you have the foundation to enrich the minds of community members who already share a passion for the wonders of a honey bee colony. The buzz of a bee suggests the pain of a sting — then killer bees — what a way to die! Does the promise of pollinated fruit blossoms and delicious honey outweigh that menace?

There is a mystique about beekeeping that evokes the naturalist in all of us. We are a part of a living, interacting society, each of us flitting from flower to flower collecting our rewards, sharing them with those to whom we are committed, and passing them on to our posterity.

With promotion in mind, beekeepers need not strive to develop interest in the husbandry of honey bees — it is always there. We merely provide our insights to those who will listen to our tales, join in our excitement, and experience the satisfaction of knowing nature's ways . . . in bees and men.

You have the qualifications to speak to these issues, and it doesn't need to be a personal trauma. Keep it simple, be yourself, and use the props you have at hand.

Make A Kit

Make a kit with everything you need to expose the lore of your craft. Start with a cardboard box large enough to hold, with room to spare, one hivebody with ten clean, dry frames — some with white extracting combs, at least one dark comb, and the remainder with foundation. Don't avoid those with drone cells or queen cell cups. Add bee

gloves, a hive tool, a smoker, a veil, and some honey recipe folders. Include a honey bear and a box of honey-graham crackers. A comb of honey is good to, if available.

A small box of pinned specimens will complete the collection. Choose a nicely shaped queen, a couple of drones and workers, and several other stinging insects *properly labeled*. Bumblebees, wasps, and hornets are interesting for comparison. You now have, assembled and waiting for an audience, the ingredients for a bee talk of any length or complexity.

To build your confidence, introduce yourself to youth group leaders or elementary school teachers who are look-

you need protection.

Allow questions to coax new tidbits from your store. What does a beehive look like on the inside? Lift out the hivebody of frames, explaining that you provide the foundation and the bees develop their own combs, drawing six-sided cells where the queen lays her eggs and where honey may be stored. Disclose the daily and the yearly routine of colony life — take an hour if appropriate.

The Story Will Emerge

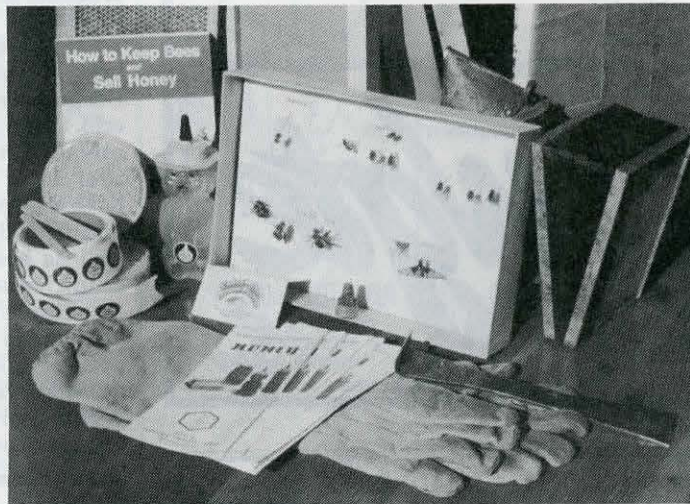
Open the container with pinned insects, describing how queens, drones, and workers differ physically and in function. Do bumblebees store honey — what about hornets? How do bees differ from wasps? What about their stings? The story will emerge from your box.

During the talk, indicate that later everyone will sample honey — develop anticipation, but save the treats for the end. Using a squirt of honey on a cracker, a twelve-ounce honey bear will serve up to 30 people. "Imagine the flavor of clover blossoms," you say, as they savor that particular floral source. As you circulate a round section of comb honey, explain that the popsicle

stick with which each person has been provided has two clean ends, each of which may be used *once* to explore the texture of the beeswax honeycomb and to taste the delightful flavor of the honey bee's treasure.

When you put a bee talk in a box, it really can be simple — even fun! Remove yourself from the spotlight, letting your craft become the story, while you control the lid to a treasure chest of inspiration.Δ

Ken Nuss, his wife Sherry and their eight year old son run 300 colonies, producing round sections and extracted honey on "Cedar Valley Honey Farm", near Waverly Iowa. In his spare time Ken teaches Entomology at the University of Northern Iowa and is also a woodworker.



ing for educational or inspirational speakers. When your enthusiasm (and skill) becomes known, you will be invited to speak to adult groups — perhaps even the local Rotary. *You are qualified*. The interest is there; you just provide the information.

Begin your presentation by asking, "What do you already know about bees and honey?" Be prepared to pace the timing of personal comments. You will soon have a feeling for the level and needs of your audience. Then let your story flow from your box, unfolding like a fairytale to a gathering of entranced children. You have a treasury of intriguing artifacts of your craft — the smoker makes you the master in control, your veil and gloves protect, when

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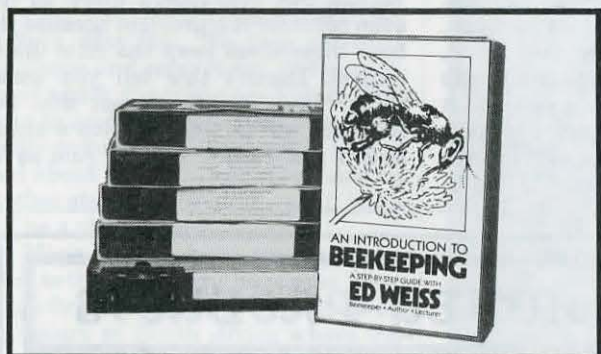
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Teresa T. Crone

He had just one hive at the back of the yard,
But he could have had twenty and not worked as hard.
For seventy years since he was a boy,
Countless techniques he sought to employ.
With fresh paint and carefully tended landscape,
And finest foundation, it stood in fine shape.
He handled his one hive like it was a palace,
His table bore always a full honey chalice.
A wealth of bee knowledge he set to explore,
Became quite the expert of beekeeping lore.
He heard of new theories and some he applied,
Learned to spot quickly the ones best not tried.
He moved his hive once for a different flow,
Learned how to feed it and saw his crop grow.
But owing to how a queen bee can pull stunts,
He thought he might lose his one hive more than once.
But somehow he nurtured it on through the season,
Satisfied knowing his work was the reason.
Through years that he labored to help his bees thrive,
He got more than honey from that single hive.



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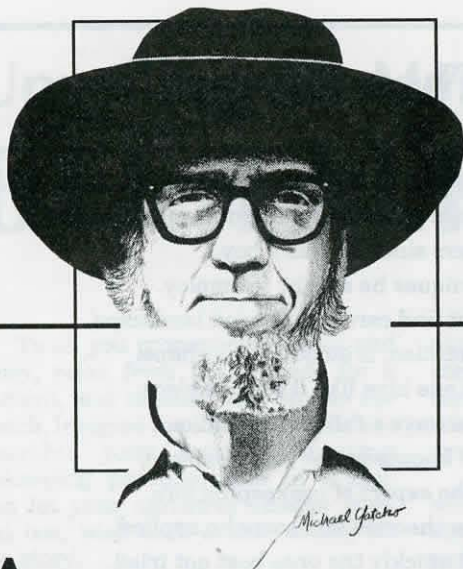
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BEE TALK

RICHARD TAYLOR

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"Beekeeping will always have the rewards and fulfillments it has always had."

American beekeepers have been hit by three new bee diseases in the last few years — tracheal mites, varroa mites and chalkbrood — on top of which we now await the inevitable arrival of Africanized bees. All this has given me lots of food for thought, and my moods have sort of gone up and down. On the whole, however, my moods are upbeat, and apparently I'm not alone in this. I get reports that the bee supply business is thriving, which indicates more and more people are getting interested in bees after a considerable lull, and I find optimism in recent writings of bee experts. So I am going to offer my thoughts on all this, for whatever they may be worth.

One surprising thing is that so little has been said about chalkbrood. This is a real pest to the beekeeper, and I know from experience that it has a seriously adverse effect on honey production. I also do not know how to deal with a colony that has it. In other words, I don't know much about it at all, beyond being able to recognize it, and that is because not many people take it seriously enough to be writing about it.

The appearance of tracheal mites, on the other hand, produced a veritable hysteria, with screaming headlines in some of the bee literature and vast overreaction on the part of some of the official regulators. According to Matt Cochran, the West Virginia State Bee Specialist, something like twenty-five thousand colonies of bees were destroyed in the misguided attack on this mite, and perhaps five million dollars of income lost, to which Mr. Cochran wryly adds: "The colonies are dead, the mites are still here, and it's still being debated what to do about them," (Beekeeping Newsletter, W.V. Dept. of Agriculture, June 88).

There was, of course, a similar hysteria with respect to Africanized bees, and for awhile it looked as though

government agencies were actually going to underwrite, at a cost of several million dollars, an attempt to confine them south of a proposed *bee barrier*, to be created in Mexico in a terrain where there are not even any roads!

Fortunately, the response to the latest problem, varroa, has been far more restrained, and notes of optimism are being struck here and there.

Which brings me to my own thoughts on all this. Basically, I suggest that we heed the recommendations of people who have dealt with these matters at first hand, who have travelled and actually had a good look at things. Take the Africanized bee, for instance. After all the lurid tales we have heard, about the "killer" bees that are about to invade our land, we get a somewhat different picture from those who have actually been to Brazil and worked with

them. They are aggressive. Very aggressive. They are also good honey producers and good pollinators. I was talking recently with a beekeeper who had lived for sometime in Brazil, and she said that what you have to do with Africanized bees is locate your apiary away from areas where there are lots of people, wear good protective clothing and use lots of smoke. You cannot, she said, just wander unprotected through your apiary, or leave a hive opened up. She also said that Africanized bees take care of varroa very nicely. Every colony down in Brazil, she said, has traces of varroa, but beekeepers there do not even consider it a problem because the bees themselves keep the mite under control. Doesn't this tell you something? Does it not suggest that bee breeders will in time develop a strain that is resistant to varroa? And as for

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the Africanized bee's aggressiveness, this surely evolved in response to hostile environment. I do not believe that it is going to persist indefinitely under the more benign conditions of our environment, particularly since it can to some extent be controlled by genetics.

So I am not much concerned about Africanized bees. Perhaps I would be a bit more concerned if I lived in the south, but living up here I do not worry about them. The tracheal mite I do not worry about at all. I don't know whether my apiaries have tracheal mites or not. My bees make honey the same as they always have, and I'm convinced that, so long as I keep my colonies strong and otherwise healthy, they will take care of any tracheal mites. As for chalkbrood, I treat this as a minor nuisance, of the same order as the occasional hive that gets kicked over by a horse or knocked over by a falling limb. It doesn't seem to spread very fast from one hive to another, and I don't think my honey production has suffered very much in the several years since I first noticed it.

What, then, about the varroa mites? I think that in time this problem will be dealt with effectively through genetics. In the meantime, Charles Mraz has described a system used in Germany, by which a piece of facial tissue is dipped in a miticide, allowed to dry, then put over the brood nest, in late fall when brood rearing has ceased (*Bee Culture*, May '88). The bees pulverize the tissue and carry it out, in the process of which the mites are killed. That looks to me like a neat system, and my spirits were lifted considerably when I read about it. It will just mean adding another step to my management, but it will be a simple one.

Meanwhile, I have suggested we listen to the people who have seen these things first hand. Roger Morse has seen the apiary in South Africa where the Africanized bees of Brazil came from. He has seen the apiary in Brazil where they got loose. He has talked with beekeepers and researchers in Poland and Germany and Britain and all over. What he says makes sense, and convinces me that people who love beekeeping are going to be around for a very long time, coping with problems, some of them old ones and some of them new, and finding in beekeeping the same rewards and fulfillments that dedicated beekeepers have always found.Δ

Questions and comments are welcomed. Please send a stamped, self-addressed envelope to the Trumansburg address above for a prompt response.

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QUESTIONS?

Q. How do you clean the burr comb and propolis off queen excluders?

Lowell Sloat — Goshen, IN

A. The best approach is to try to keep the bees from building burr comb there, by proper spacing. If the distance between the excluder wires and the tops of the frames below, or the bottoms of the frames above, is not more than 3/8" there will be little burr comb. Burr comb does not, however, obstruct the bees significantly, so it is not essential to scrape it all off. About the only way I know of getting it off is by scraping with a hive tool, plus using a wire brush.

Q. Our bees gather water from a spot where it drips on the pavement, ignoring the rock-filled pan of water we put near their hive. How can we retrain them to a different water source?

Fred Stimmell — Scottsdale, AZ

A. Close proximity to the hive is not a significant factor in the bees' selection of a water source. Far more important is water temperature. Have the desired source in full sun with something dark there to absorb warmth from the sun. A good arrangement is to arrange for the water to drip onto a dark sun-lit board or rock.

Q. What is a fair retail price for round section comb honey in my area?

Wayne Emerick — Hyndman, PA

A. Two dollars is fair, and nice white, well-filled sections will sell readily at that price if properly displayed. My going retail price has for some time been \$1.75, which is a bargain. Price depends on circumstances. Comb honey sells well at roadside stands visited by tourists. It does not sell fast in supermarkets.

Q. I have no trouble selling cut comb honey, but find that round comb honey sections move slowly. Has it been your experience that customer acceptance of these takes time?

John Farley — Columbus, OH

A. Yes, but once customers discover what they are and try them, then they sell well. I found that sales were greatly stimulated by a brief message, pasted on the back, explaining what comb honey is. Here is the message I use:

What Is Comb Honey?

It is the only sweet in the world that is neither made nor processed by man. The bees build their delicate comb, and fill it with honey, in the very container you purchase.

Honey that has been extracted from the honey comb and strained is not the same. Usually it has been heated, to retard granulation. If it is commercially packed, then it has been heated and filtered as well. It is good, but not as good as comb honey, the most exquisite delicacy to be found anywhere in nature.

Put comb honey on anything you wish to sweeten, or eat it as is. The wax won't hurt you; in fact, though it has little nutritional value, it is good for you in other ways. It is your guarantee that the honey mingled with it is the perfection of what honey should be.

R.T.

To Use: Remove covers, top and bottom, run a knife around inner edge of container to let honey comb drop out onto a dish.

I will be glad to send anyone a sheet of fifteen of these, which can then be put in a xerox copier to make as many as needed. Just send a stamped addressed envelope.

Q. One of my beekeeping students brought me some dark green honey. Any ideas what this was?

Stephen E. Horn — Clarkston, MI

A. I suspect it was purple loo-estribe, which I have seen growing in southern Michigan. This is not a native plant, but got here in wool imported from Australia.

Q. How can I keep bees away from my humming bird feeders?

Many readers.

A. This is a question that keeps coming up. The problem is common, but easily resolved by using the right kind of feeder. One kind consists of a bottle with a glass tube coming out the bottom. There is always a drop of sugar syrup at the end of the tube, and always bees there, which the humming birds soon learn to avoid altogether. The other type of feeder consists of a reser-

voir from which the syrup flows into a sort of enclosed tray or dish with four holes. Bees do not sip at this kind. For more precise information write to: Bruce W. Burney, P.O. Box 82, Apple-gate, CA 95703, enclosing stamped envelope.

Q. Is there any way to clear the spiders out of my honey house? I clean out all the webs and in a few days they're back again. Also yellow jackets. I finally solved that problem with a bug light.

Elmer Moje — No. Tonawanda, NY

A. The spider question has me stumped. Suggestions from readers will be happily received and passed along. As for yellow jackets, there is a cheap way to get rid of them that is completely effective. The trouble with them is that they can find a way in even when bees cannot, and they just keep coming, as if from nowhere. Hang a large can, like a coffee can, under a light bulb with a quarter inch of kerosene in the bottom, and leave the light on all night, and all day too if need be.

Q. We had a good spring flow here, then I put the supers back on and now I have two or three supers per hive of cotton honey. Farmers here have done away with the boll weevil so they do not have to spray cotton the way they used to. My question is this: My biggest sales are chunk honey, but I do not like to prepare too much at once lest it granulate. Should I put the chunks of comb in jars and store these in a freezer, adding the liquid honey later, or would it be better to add the strained honey now and store in a freezer until needed?

Tommie Tolar — Lumber Bridge, NC

A. What you say about the boll weevil is good news indeed. I have never lived where cotton is grown, but I had understood that spraying had virtually eliminated cotton as a source of nectar. Honey plants manuals describe cotton honey as one that granulates quickly. I think, therefore, that your best bet would be to store the chunks of comb, preferably in a good freezer, in their jars, but without the strained honey, and then, when ready to sell it, add honey that has been warmed sufficiently to retard granulation.

Send a SASE to: Dr. Richard Taylor, R. D. 3, Trumansburg, NY 14886 for a prompt reply. No phone calls, please.

— ANSWERS!

Richard Taylor

GLEANINGS IN BEE CULTURE

situation even as I was building it, and, because of time, cost and general expediency, chose to ignore it. It'll be O.K.; I'm a good fellow; who would pick on me, right? Sound familiar?

I also was aware of the woodpile mess, and had made (and discarded, apparently) several mental notes to clean it up. I wanted to at least be able to mow around it. It didn't get done.

My responsibility to provide safety to the livestock in my care had dissolved. Not intentionally. Nor was it a matter of too high costs or other external short comings.

Plainly put, it amounted to benign neglect. Benign because the situation was not compelling enough to motivate me to action, and besides, it appeared harmless enough. And neglect? Certainly neglect. I was aware of the needs, and, for what at the time seemed important reasons, chose to ignore them

The fence has been upgraded, and there have been no more evening visits. The woodpile is cleaned and I can mow around it now, and our chicken has healed, although I don't think she's comfortable at night.

Benign neglect can be an insidious killer. And it can kill bees as well as chickens. Disease, broken equipment and the like can, and will, come to haunt you — and the micro livestock *you* are responsible for.

But probably without the noise.

With the right equipment, and skills, a farmer can almost completely control the environment his crop is growing in. Soil can be amended to drain better, or not as well; fertility can be increased, in any proportion, with essential plant nutrients; insect and disease pests can be kept in check with resistant varieties, proper cultural techniques, natural predators or, as a last resort, chemicals; weeds can be cultivated, sprayed or ignored; fruit can even be treated to ripen all at the same time, making harvest efficient, and cost effective.

But all of these technological advantages, all the skill and experience, even the best piece of land in the world — will not produce so much as a bad idea — without water.

It has definitely been dry.

We had a grand scheme this year, on the Ohio Estate, to raise pounds and pounds and pounds of fresh herbs. Our experience last season taught us how and what to grow — we were going to make a fortune this year (or at least do better). So it goes. The few seeds that

did germinate either perished shortly afterward, or went into shock and have refused to grow. There will be no herb crop this year.

Obviously, we don't have irrigation. In fact we don't even have a well. Like everyone, we depend on rain for water, but unlike most we depend on it directly — we have a cistern. Rain runs off our roof into a 2000 gallon tank buried next to the house. If it doesn't rain, we don't have water, or, at least, free water.

If necessary, we can purchase it from any of several suppliers in the area. We pay 1-1/4 cents/gal delivered. On the surface this seems rather inexpensive, and it is, considering the importance of this fluid.

But we don't grow only herbs. There are all the mundane food things — tomatoes, peppers, potatoes — the staples and substance of our diet during the rest of the year. These must have water, or, like us (and the herbs) perish. So we use water twice. The water that washes our bodies, our clothes and our dishes is not casually discarded, but recycled — into the garden.

It is inconvenient, to say the least, to carry all those gallons to our thirsty crops, but I can see no other way to eat this summer's produce next winter. And this only supplies a fraction of our needs, so much of the garden is barren and lifeless, save a few incredibly hardy weeds.

The loss of a season, for that is what this amounts to, is bad enough for someone with big plans and a little garden — but it is devastating to those in the real world of farming. Whether the crop is soybeans, wheat, sunflow-

ers, alfalfa, vegetables or honey — the result is the same — no crop and no income.

It is frustrating to plan and plan each detail in an operation, and have the one thing go awry that you cannot control. You can have everything just exactly right, ready to go, and no rain — no plants — no foraging — no honey — no money. Some may have access to irrigated crops, but most don't. And, a fortunate few may have found pockets of moisture here and there that have saved the farm, but most haven't.

Is this fair? Is it equitable? Just? Even legal? I don't suppose it makes much difference — it just is, and there's not much that can be done about it. It may turn around. There may yet be that downpour so badly needed in much of the country. But I'm not holding my breath, and I'm still carrying the wash water to the tomatoes.

But you know, I noticed something quite odd the other day. There were, on the landing boards of several of our colonies, hundreds of bees doing this dance thing I don't recall having seen before. It was sort of a wig-wag type, but it had some of the washboard movement thrown in too!

You don't suppose. . . ?

There is a toll free National Drought Hotline that you can call for information on federal and state assistance programs for stricken farmers. I'm not sure if they are set up to handle beekeepers, but if they are it sure will help — and if they aren't they should be. The number is 1-800-541-3375.

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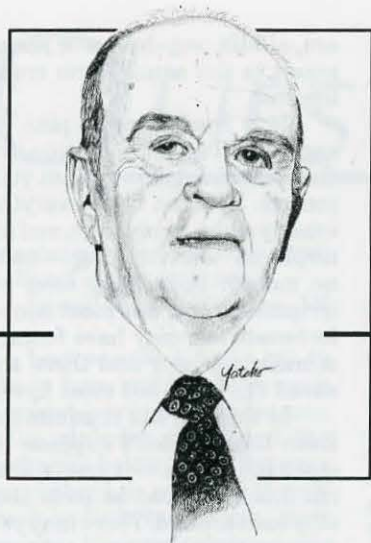
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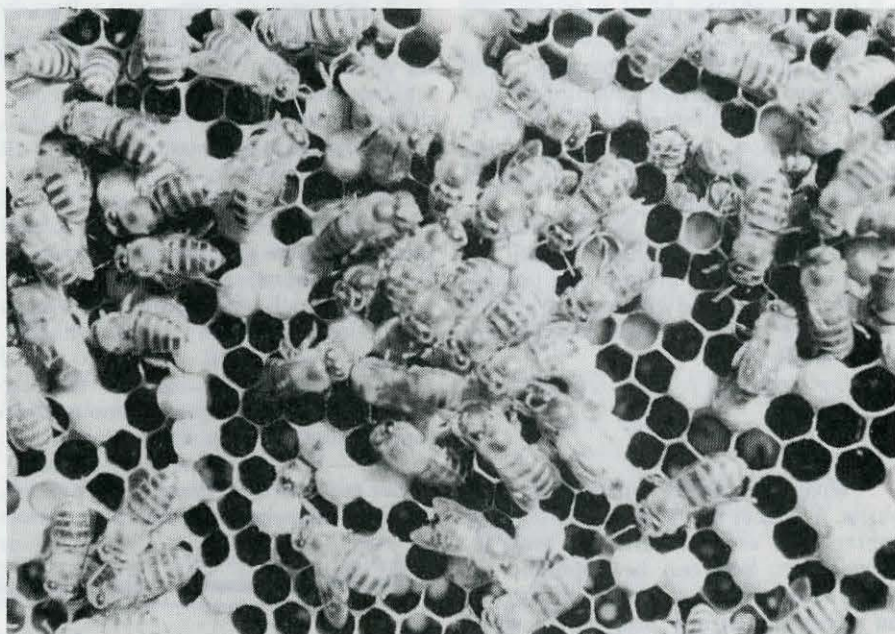
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"Apis Cerena is small, productive, and resistant to Varroa."

Apis Cerena



When it comes to smuggling, I am an expert. For I smuggled myself into the United States. It was not intentional, but I was forced to. I asked for an immigration visa and they gave me a visitor's visa. The day before arrival in San Francisco, the purser of the Japanese ship I was traveling on called me to his cabin and told me he could not land me as an immigrant because my papers were not in order. "What am I to do," I asked him. His reply, "Get lost". So, I got lost. That was 65 years ago. It took me 12 years and all kinds of trouble to become the proud owner of my American citizenship. What has that to do with Varroa you ask? EVERYTHING!

Someone in South America invited me to visit him. He was a beekeeper and he asked me to bring him an Italian queen. Right there and then I canceled my trip. I had enough of violating the laws of the land and I did not care to languish in a South American jail for violating their law against the importation of bees.

How did Varroa get here? According to a report in the *British Bee Journal*, someone brought it from London to

Florida and from Florida it got to Wisconsin. Now the British authorities are looking for how it got to London. You know the rest of the story. Once you have it, you never get rid of it. Varroa is here to stay and we have to learn to live with it. If you read Charles Mraz' excellent article in *Bee Culture* you will realize that it is so. What can we do?

I know a Chinese beekeeper here in Hawaii who kept bees in China, and this is what he told me. *Apis Cerena*, the Chinese bee, is small but a hard worker. It will produce up to four or five hundred pounds of honey. It's touchy and doesn't want to be interfered with. When moved, it will stop feeding its larvae. It is also a good stinger. Cover yourself up and that will take care of that. It also forages early in the day.

All good qualities. Our bee scientists are no angels when it comes to

messing around with bees that don't belong here. That's how the African bee got to South America. The little Chinese bee will not sting you to death. Why not give it a try? As my Chinese friend said, "They can handle the Varroa mites".

European beekeepers have been treating their bees with pesticides and are getting nowhere. Oh, yes, our American scientists will be climbing all over my back for suggesting such a thing. If it doesn't work out, all we need to do is gas them. And that's the end of them. Now you who read this do your bit and start howling that you want something done. Remember,

*There ain't no use in kicking,
It's not apt to bring one peace,
But the wheel that squeaks the loudest,
Is the one that gets the Grease. Δ*

NEWS . . .

National Honey Board Awards "Pot of Gold"

The National Honey Board awarded \$10,000 to Stop & Shop Supermarkets, Boston, Mass., for being the grand prize winner in the "Pot of Gold" honey advertising and display contest.



Retailers across the country entered the contest by setting up special honey displays and by advertising honey in their local newspapers. Stop & Shop earned the most points with numerous honey displays and extensive advertising. Many of the store's honey displays featured teddy bears, honey bees and hives.

"Not only did we win \$10,000 but our honey sales went up dramatically during the promotion as well," said Steve Flynn, buyer/merchandiser for Stop & Shop.

Flynn reported that honey sales increased by 210 percent during the contest.

In addition, the National Honey Board awarded three prizes of \$250 or a gold constitution coin in each of four regions.

The twelve regional prize winners are:

West Region:

Fred Meyer, Portland, Ore.
Raley's, West Sacramento, Calif.
Reeds Shoprite, Hadlock, Wash.

Central:

Schott's Supermarket, Castroville, Texas
Rip's Supermarket, Gretna, La.
Park Pantry Co-op., St. Louis Park, Minn.

Northeast:

DeMaulas Supermarket, Tewsbury, Mass.
Stauffers of Kissel Hill, Leola, Pa.
Nell's Food Market, Carlisle, Pa.

Southeast:

Musten & Crutchfield Food, Kernersville, NC
J&M Wholesale, Bristol, Va.
Ray's Shop & Save, Staunton, Va.

Arizona Gets Tough!

For the first time since 1921 the State of Arizona has completely revised and overhauled its statutory bee laws. It was a joint effort by all the bee associations within the state.

For the first time apiary laws within our state permit:

1. The Commission of Agriculture and Horticulture to inspect all apiaries for disease, parasites, and pests which constitute a threat to the beekeeping industry.

2. Allows the state entomologist to enter in or upon any premises with bees or beekeeping equipment *under certain conditions*.

3. Allows the state entomologist to inspect, control, and eliminate Africanized bees, parasites, other pests, and feral colonies.

4. Stipulates that procedures to control AHB, parasites, pests, and feral colonies shall minimize negative impact on the beekeeping industry and include a public education program emphasizing and mandating the importance of a healthy beekeeping industry.

5. Strikes the current requirement for all apiaries within three miles of an infected or infested colony to be inspected; permits inspection of all colonies within an infected apiary.

6. Authorizes the Commission of Agriculture and Horticulture to appoint a beekeeper advisory committee consisting of regional beekeeper association members, representatives from the USDA, AHC, and individual beekeepers.

7. The laws also provide changes in bee management:

a. It mandates removeable frames for all beehives.

b. Changes the way live bees in wire cages are handled.

c. It permits movement of bee colonies from mite infested areas *under certain conditions*.

d. It directs the State Entomologist, rather than the Commission of Agriculture and Horticulture, to appoint an apiary inspector for the state.

e. It mandates that all hive locations be annually registered with AHC.

Both Bush, Dukakis Plan To Cut Farm Spending

Farmers shouldn't expect much from either of the candidates in this fall's presidential election. And that will cause extra problems in the negotiation of the 1990 farm bill, says an agricultural policy expert at Ohio State University.

"It's very clear that both parties are looking to the farm budget as a place to cut spending," Luther Tweeten says. "The rhetoric may be different, but Bush and Dukakis are talking about basically the same thing."

Republican George Bush supports the current administration's proposal to phase out existing farm support programs by the year 2000. Democrat Michael Dukakis wants to return to the \$4 billion farm program funding of the 1960s — a far cry from current government spending of around \$21 billion.

It's not that Bush and Dukakis don't like agriculture, Tweeten says. It's merely a case of having too many higher priorities for funding.

All this means agriculture will depend on its traditional allies in Congress — particularly the Senate — for support during the 1990 farm bill deliberations. But Tweeten says to expect a different atmosphere in 1990 than during 1985 negotiations.

"The attitudes left over from this year's election and the fact that most farmers are doing better financially than they were in 1985 is going to create a totally different atmosphere for the 1990 legislation," Tweeten says.

He says not to expect a repeat of the support from business and urban people who felt sorry for farmers' economic problems in 1985. *In fact, consumers who backed*

supports in 1985 could become staunch advocates of smaller farm supports if food prices increase because of drought or other reasons.

Tweeten is convinced that Congress will help lessen the sting of farm support cuts. But even a 2 percent annual reduction in commodity target prices would mean about 6 percent lost farm income when inflation is added.

"Farmers need to do what they did on the last several farm bills and build that support from within Congress," Tweeten says. "That's critical going into 1990 since it's obvious that neither of the possible new presidents will bring any special support for agriculture with him into office."

Varroa Mite Control

The Europeans have been leading the fight against *Varroa jacobsoni* Oudemans for many years. Based on their results, North American researchers and regulatory personnel are trying to obtain registration of the most effective, non-contaminating materials for mite control.

Until *Varroa* mites have been established in the U.S. for a longer time, the best research information will come from Europe. *Apidologie*, a European bee research journal, is devoting its entire second issue of 1988 to studies on *Varroa* mite and its control. The titles of the articles are:

Laboratory feeding of Varroa jacobsoni Oudemans on natural and artificial diets (Acari: Varroidae); W. A. Bruce, et al.

Control of Varroa jacobsoni Oudemans in honey bee colonies containing sealed brood cells; N. Koeniger and S. Fuchs.

Application of contact acaricide against Varroa mites with contaminated proteinaceous food; M. Infantidis, et al.

The influence of the Nasonov pheromone on the recognition of house bees and foragers by Varroa jacobsoni; H. Hoppe and W. Ritter.

**The trap comb technique as part of bee management under heavy infestation by Varroa jacobsoni Oudemans; V. Maul, et al.*

**Investigation on the correlation between rate of reproduction of Varroa jacobsoni Oudemans and infestation rate of honey bee colonies; R. Moosbeckhofer, et al.*

Seasonality and colony variation of reproducing and non-reproducing Varroa jacobsoni females in western honey bee (Apis mellifera) worker brood; J. M. Kulincevic, et al.

**A study of thermopreferences of*

Varroa jacobsoni Oudemans; Y. LeConte and G. Arnold.

Titles marked with an asterisk (*) are in either French or German. The abstract and the summary are translated into English. Graphs and tables are provided with translated titles, also. Similar French and German translations are provided for English articles, which recently have become predominant in *Apidologie*.

Apidologie is produced quarterly, and an annual subscription costs \$60. Under a new agreement with the Europeans, the American Association of Professional Apiculturists will be the U.S. clearing house for *Apidologie* subscriptions. Any individual or institution wishing to start a subscription should send their payment to: A.A.P.A., c/o Dr. Eric C. Mussen, Entomology Extension, University of California, Davis, CA 95616.

Canada Honey Sales

A Saskatchewan beekeeper has assured himself of national sales by making a deal with the Boy Scouts of Canada.

Tisdale beekeeper Brad Fettis first experimented with the idea of selling honey in reusable bear-shaped dispensers when his son was a scout. Trial sales before Christmas were encouraging and the project went nationwide. In two months Double Bee Honey Co. Ltd. shipped 72,000 units of the honey all over the country.

Each 341-ml container of honey is sold for C\$3. Half the money goes to scout activity.

"I'm really excited about it," Fettis said. "We've based our whole company towards this project."

Fettis employs 18 people — some mentally or physically handicapped. They paste on labels and are manufacturing wooden six-pack crates designed to make it easier for the scouts to carry the honey.

The Canadian government is providing up to C\$207,000 (about US\$266,000) to the Canadian honey industry to help stimulate honey consumption and establish strong markets.

Federal Agriculture Minister John Wise said discussions with the industry had identified market development as a solution to problems of surplus stocks and low economic returns.

"A national honey marketing plan has been developed by Agriculture Canada in consultation with the industry," Wise said. "The next step is to put the plan into action."

Agriculture Canada has recommended that the Canadian Honey Council hire a full-time marketing specialist who will be responsible for coordinating the marketing plan as well as a number of other projects.

Marketing research is planned on consumer and food industry attitudes to give ideas on the type of promotional activities that are needed. Long-term projects include development of new projects and improved packaging.

During the first year of the plan, costs are being shared by Agriculture Canada, participating provincial governments and the industry.

Meantime, a market analyst with the Alberta Agriculture Department says producers who make it through this year should enjoy good times in 1989 and beyond.

Said Fred Boyce: "The current situation facing Canadian beekeepers is not favorable. A relatively large crop, above average carryover stocks, sluggish export demand and low prices are combining to create financial difficulties for many beekeepers."

On the other hand, he said, the worldwide surplus of honey is declining while production in the United States, Mexico and other countries is down and usage is up.

He said Canadian bulk honey prices have improved and further price increases for the 1988 crop to the C\$1.10 to C\$1.20 a kilogram range are possible.

Submitted by Alan Harman,
Toronto

& EVENTS

☆ INTERNATIONAL ☆

The next **TRI-COUNTRY ANNUAL MEETING** will be held on Oct. 21-23, 1988, in the city of Oaxaca, Mexico. For more information contact: Union Nacional De Apicultores, Av. Uruguay No. 42 101, 06000 Mexico, D.F., Tels. 512 88 01 = 512 29 81 or Wagons Lits Viajes, Balderas No. 33 60. Piso, 06000 Mexico, D.F., Tels. 512 49 68 = 518 11 80, Telex 1775839 WDANME.

☆ COLORADO ☆

REMINDER. . . The National Honey Board's second annual sales seminar will be held on August 31 in Denver, Co. A great program is planned. Contact the National Honey Board Office for registration/travel information:

The National Honey Board
9595 Nelson Rd., Box C
Longmont, CO 80501
(303) 776-2337

★ MASSACHUSETTS ★

MEETING NOTICE MIDDLESEX COUNTY BEEKEEPERS ASSOCIATION, MASSACHUSETTS. The August meeting of the Middlesex County Beekeepers Association is Saturday, August 27, 1988 at 2:00 PM at the home of Birgit DeWeerd, 8 Crescent Avenue, Bedford.

Novices may get answers to their questions when our expert beekeepers go into the hives.

All are welcome at our meeting. For more information contact: Linda Boucher, 276 Salem Street, Wakefield MA, 01880, phone 245-8443.

★ MONTANA ★

THE EASTERN MONTANA BEEKEEPERS ASSOCIATION, in cooperation with the Montana Fair, will have an open international honey show. American Honey Queen Shiryl Donahoo will open the honey show and judge the entries.

The Montana Fair will be held August 13-21 and entries must be received before Thursday, August 11, 1988. There is no entry fee for the international honey show. Exhibitors are required to pay shipping costs.

Premium books can be requested from Montana Fair, P.O. Box 2514, Billings, MT 59103 or by calling (406) 256-2400.

★ NEW YORK ★

THE WESTERN NEW YORK HONEY PRODUCERS ASSOCIATION will be holding it's Annual Picnic and Business Meeting, on Saturday August 20th, 1988 at the Akron Falls Park, Shelter #11. Please note the date, the picnic has traditionally been held on the first Saturday in August. This year it will be held on the third Saturday, August 20th.

Registration starts at 10:00 AM with the business meeting at 11:00 AM. Speakers will be updating information on Varroa and it's movement in WNY. There will be a demonstration on an easy technique for putting foundation into frames. For more information contact Sally Potoczak, (716) 599-3491.

★ NORTH CAROLINA ★

NCSBA SUMMER CONVENTION, AUG. 4-6. The N.C. State Beekeepers

Association will hold its annual convention this year on August 4-6, 1988 at the Radisson Hotel in High Point, N.C. The theme of this year's meeting is "Preparing the Individual Beekeeper for the Arrival of the Africanized Bees". When all is said and done, it will be the individual beekeeper who must deal with the Africanized bees and the public when the bees finally enter the U.S. If you would like to be prepared for the arrival of the Africanized bees, then this meeting is for you.

We begin with a workshop on Africanized bees presented by a number of subject matter experts. They will cover such topics as Insurance Protection for the Beekeeper, How to Treat Bee Stings and Bee Allergies, How to Work with Media, Developing a Workable Bee Ordinance, and the Individual Beekeeper's Response to Africanized Bees. Several of these topics will be given further coverage during the general sessions and workshop periods, and related topics such as Queen Rearing for the Small Beekeeper will also be covered. Speakers include Dr. Jim Tew, the Federal Extension Apiculturist; Kim Flottum, Editor of *Bee Culture*; Dwight Stoller, National Honey Board; Brian Sherriff, B.J. Sherriff Co. Cornwall, UK; and many more.

In addition to speakers, workshops, and other special meeting activities, there will also be ample opportunity to enjoy being in the "Furniture Capital" of the World. There will be guided tours of some of the largest displays and exhibits. For further information contact Dr. John Ambrose; Box 7626, N.C. State University, Raleigh, N.C. 27695-7626.

★ TEXAS ★

QUEEN REARING, BREEDING, INSEMINATION TRAINING OFFERED IN TEXAS. Here is an opportunity to learn the basics of bee breeding, queen production and mating, and a chance to stay for training in instrumental insemination in two seminars offered back-to-back in September in Navasota, Texas.

On Saturday and Sunday, September 10 and 11, 1988, a course in "Queen Production and Bee Breeding" will be offered at the Howard Weaver Apiaries in Navasota. The instructors are Drs. Larry Connor, Beekeeping Education Service, and Anita Collins, Baton Rouge Honey-Bee Breeding and Genetics Laboratory. Seminar emphasis will range from fundamental queen production to more theoretical aspects of stock improvement. The course runs from 9 AM Saturday to 5 PM Sunday. Registration for the two-day program is \$75.00, which includes instruction, handouts, and reference materials.

On Monday and Tuesday, September 12 and 13, 1988, Dr. Connor will offer a small-group course in the various aspects of instrumental insemination. The seminar will concentrate on aspects of queen holding, drone production and holding, semen collection, insemination, and post-insemination care and evaluation. Enrollment will be limited. The registration fee will be \$225 per person, and will include instruction, handouts, reference materials, and a training video tape. Individuals who provide their own insemination equipment will earn a discount on their registration fee.

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Participants will be able to stay at nearby motels in Navasota. Air travel is available through the two airports in Houston.

For registration and further information, contact Dr. Larry Connor, BES, P.O. Box 817, Cheshire, CT 06410. Phone 203-271-0155.

The registration and course payment deadline is Saturday, **September 3, 1988**. Participants must pre-pay by check, money order VISA or MasterCard.

★ WASHINGTON ★

1988 W A S MEETING. Host for the 1988 conference in Tacoma, WA on August 8 - 13 is the **PIERCE COUNTY BEEKEEPERS ASSOCIATION (PCBA)**. The site is the campus of the University of Puget Sound (UPS) in north Tacoma. UPS is a first rate private institution with a lovely campus within the Tacoma city limits. The facilities are superb, the costs are reasonable and the campus is small with all facilities close at hand.

A beekeeping short course will be held on Monday, primarily for local beekeepers. Registration will begin at 1 p.m. and will continue until 7:00 p.m. A press conference for the primary purpose of informing local and state government officials of the current threats to beekeeping and to agriculture is scheduled Monday afternoon.

A set of interesting and qualified speakers from around the nation has been arranged. While the theme of the conference is "Hive products and Services", presentations of current topics have also been included (i.e., the mites, AHB, etc.). These presentations in the lecture theatre in McEntyre hall will occupy Tuesday and Wednesday, plus Thursday morning. Beekeeping craft demonstrations and initiations into the Royal Order of Bee Beards are scheduled for Thursday afternoon.

Two delegate and director meetings are scheduled, one on Monday afternoon and one on Thursday afternoon. Also, two general business meetings are planned: one Tuesday afternoon and one before lunch on Thursday.

The first social is the get-acquainted "Hive social" Monday evening, featuring entertainment. Wednesday evening is left free for local sightseeing and general visiting. The "Fish Fry, Clam Bake and Corn Roast" on Thursday evening at the beach party in the city of Tacoma's Owen Beach Park, on the shore of Puget Sound, will be the big middle of the week social, followed by the Awards Banquet Friday evening at UPS.

For more information contact

Robert Taylor, 9917 94th Ave. E., Puyallup, WA 98373

Monday, 8th

- 9:00 First session, beekeeping short course, McEntyre Hall (MH)
- 1:00 Second session, beekeeping short course, MH
- 1:00 Registration, University Hall (UH)
- 4:00 Director's and delegate's meeting, Board Room SUB
- 5:30 Dinner, SUB
- 7:00 Hive social, UH

Tuesday, 9th

- 7:00 Breakfast, SUB
- 8:00 Registration, Exhibits, MH
- 8:30 Conferees welcome, MH
- 9:00 *Pollen for Pollination*, Neil McClure, Firman Pollen Co.
- 9:30 *Beekeeper Relations with the Press*, Kim Flottum, Editor, *Gleanings in Bee Culture*
- 11:00 *Federal Extension Bee Program*, Dr. James Tew, ATI, Wooster, OH
- 12:00 Lunch, SUB
- 1:30 *Bees and Beekeeping*, Dr. Elbert R. Jaycox
- 2:30 *Pollen Trapping*, by Mr. George Ashby, PCBA
- 3:10 Business meeting
- 5:30 Dinner, SUB
- 7:00 Puget Sound Cruise, MV *Spirit of Tacoma*

Wednesday, 10th

- 7:00 Breakfast, SUB
- 8:30 *Research Projects*, Dr. Mark Winston, Simon Fraser University, Burnaby, BC
- 9:30 *Hive Products*, Dr. Douglas McCutherson, BC Ministry of AG.
- 11:00 *Research Projects*, Dr. Michael Burgett, OSU

- 12:00 Lunch, SUB
- 1:30 *Mites on Bees*, Dr. Joseph Moffett, USDA Weslaco, TX
- 2:30 *Washington Beekeeping*, Mr. James Bach, Chief Apiarist, WSDA
- 4:00 *California Bee Quarantine Lessons*, Drs. Norman Gary, UCD and Eric Mussen, UC Extension
- 5:30 Dinner
- 7:00 Hive free-flight/foraging

Thursday, 11th

- 7:00 Breakfast, SUB
- 8:30 *Africanized Bees*, Dr. Joseph Moffett, USDA Weslaco, TX, MH
- 9:30 *Value of Pollination*, Dr. Daniel F. Mayer, WSU Extension Service
- 10:00 *Bee Tree Hunting*, Mr. E. Wayne Robinson, PCBA
- 11:00 WASNA Business Meeting
- 12:00 Lunch, SUB; Deadline for honey show and competitive exhibits entry
- 1:30 *Urban Environment Bee Poisoning*, Dr. Carl Johansen; Honey show and exhibits judging
- 2:30 Beekeeping craft demonstrations; Royal Order of Bee Beards
- 4:30 Director's and delegate's meeting, Board Room SUB
- 6:00 Fish Fry, clam bake, and corn roast, Owen's Beach

Friday, 12th

- 7:00 Breakfast, SUB
- 8:30 Embark for excursion to Mt. Rainier
- 9:30 Continue to Mt. Rainier National Park, box lunches at Mt. Rainier, NP
- 6:00 Clustering (social hour) in Banquet Room, SUB
- 6:45 Awards Banquet, Banquet Room, SUB

Saturday, 13th

- 7:00 Breakfast, SUB
- 8:00 Adjournment

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Send classified ads to:

The A.I. Root Co., Attention: Cyndi Stephens, Class. Ad. Mgr., P. O. Box 706, Medina, Ohio 44258-0706.

For more information call (216) 725-6677, ext. 213.

WANTED

PROPOLIS USA, Route 8, Hayward, WI 54843 is buying hive scrapings and propolis. New suppliers please send 5-10# sample. Paying \$2.00 - \$6.00 per pound plus freight. Call (715) 634-4274. (TF)

BEEES FOR ALMOND POLLINATION. We are interested in discussing 1989 almond pollination with beekeepers that can supply colonies of 8 frame or better strength. Contact Joe Traynor, Scientific Ag Co., P.O. Box 2144, Bakersfield, CA 93303. (805) 327-2631. (10/88)

FOR SALE

BEE BUSINESS FOR SALE. 87 Four story hives, 1988 honey and equipment. \$7,000.00. Don Laird, Houston, TX (713) 669-1735. (8/88)

75 HIVE APIARY without bees. Includes 30 frame extractor, melter and more. Best Offer. Greg, (716) 592-9417. (10/88)

BEEKEEPING OPERATIONS. 30 colonies in 3 deep, much other hive and processing equipment. Send SASE for complete list/price to: H & S, 148 Firestone, Madison, AL 35758 (205) 837-3779. (8/88)

BURSA-FIL BOTTLING MACHINE, Stainless steel warming oven, holding tank, honey pumps, fork lift truck, 1250 Addressograph-Multigraph Printer. Rhoda Wahl, Route 2, Box 212, Clayton, NY 133624 (315) 654-2157. (10/88)

HONEY STRAINER 8TH YEAR. Easy, practical, convenient, guaranteed. Use with bucket. Instructions. Approximately 18"x21" nylon bag. \$4.00 ea. two or more \$3.50 ea. Beckman G., Box 633, Stuart, FL 34995. (10/88)

180 COLONIES in Livingston County, Michigan. Call after 5:00 (517) 546-4583. (10/88)

20 COLONIES FOR SALE. 5 story, heavy with honey. In California, Los Angeles County. (818) 845-2181. (8/88)

30 COLONY OUTFIT. Good Condition, with 16-frame extractor and blower. Send stamped envelope to Hubert Martin, Dry-ridge, KY 41035. (8/88)

HAWAII HONEY FARM complete business and home, 300 colonies at 200 lbs. yearly per each, all equipment, accounts, no predators, pest, wintering. \$169,000 terms. Terry (R), Sunrise Properties, 209 Kinole Street, Hilo, HI 96720. (9/88)

SEVERAL COMPLETE BEEKEEPING OPERATIONS in North Eastern Saskatchewan, Canada, including Beehives, Buildings, Production and Processing Equipment. Also additional Brood Chambers and Honey Supers available for sale. Contact Ken Childs, Agricultural Credit Corporation of Saskatchewan, Box 1480, Tisdale, Saskatchewan SOE 1T0, or call (306) 873-2693. (8/88)

BEE-OFF BLOWER SYSTEMS. Control bees and harvest honey fast in cooling comfort. Try one this year and say goodbye to smokers, fume boards, and other blowers. Purchase and lease plans available. Call collect, (616) 256-9506 between 9:00 and 3:00 Monday - Saturday. Ask for Marlene. (8/88)

HONEY MOISTURE TESTER. Hydrometer 15-21%. \$21.95 airmail. AMBROSIUS, Svanvagen 50, 83162 Ostersund, Sweden. Checks Accepted. (12/88)

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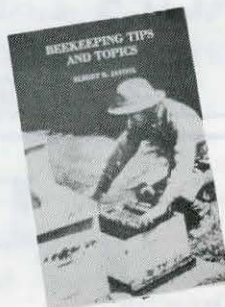


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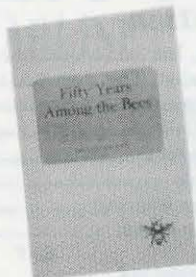
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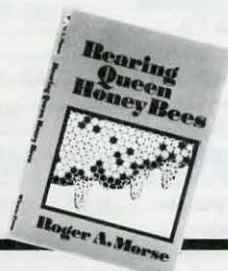


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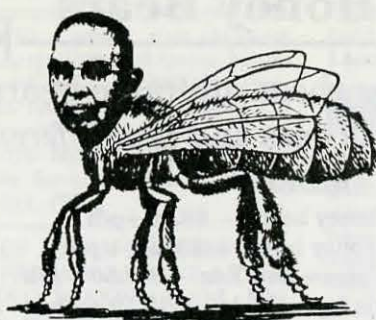
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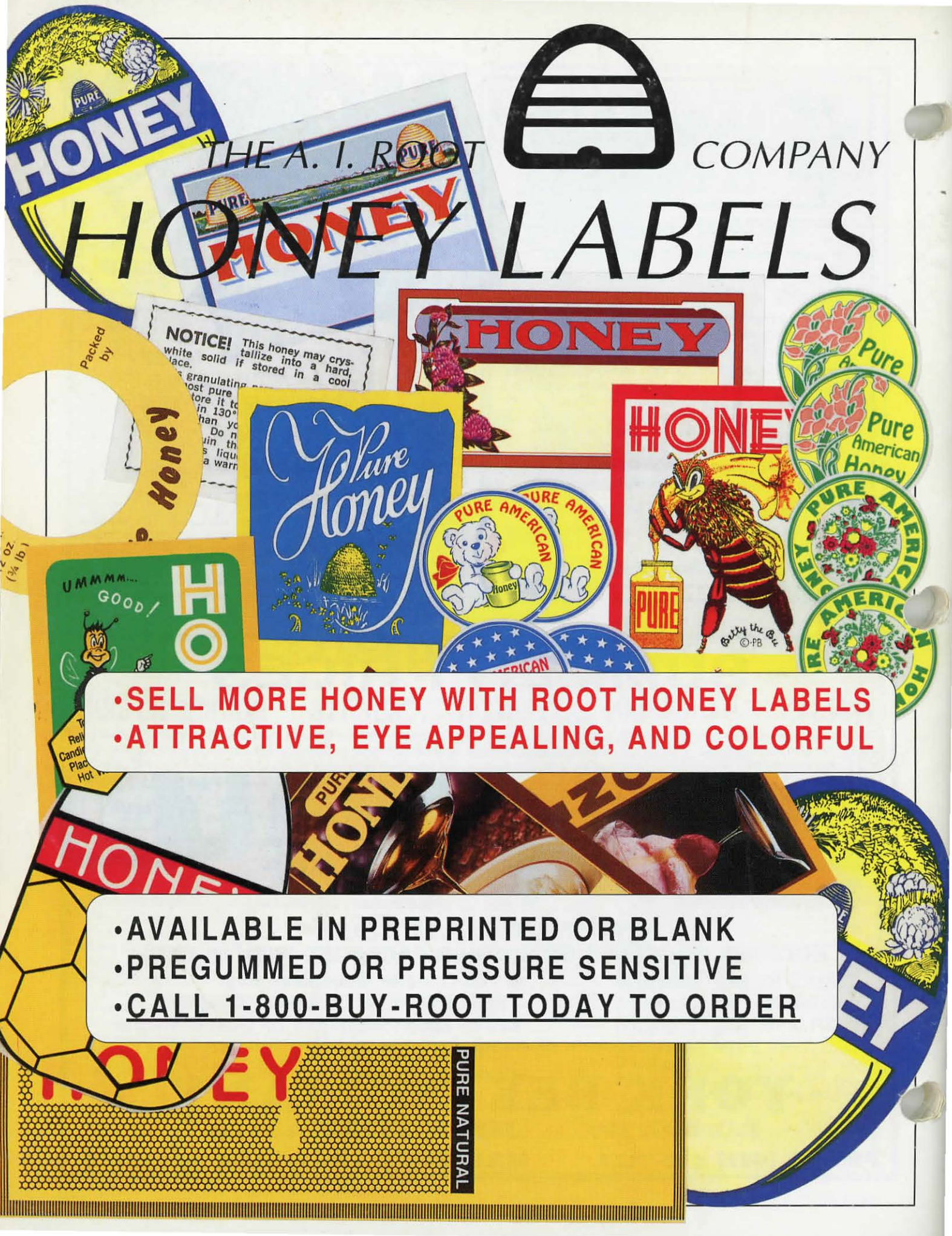
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