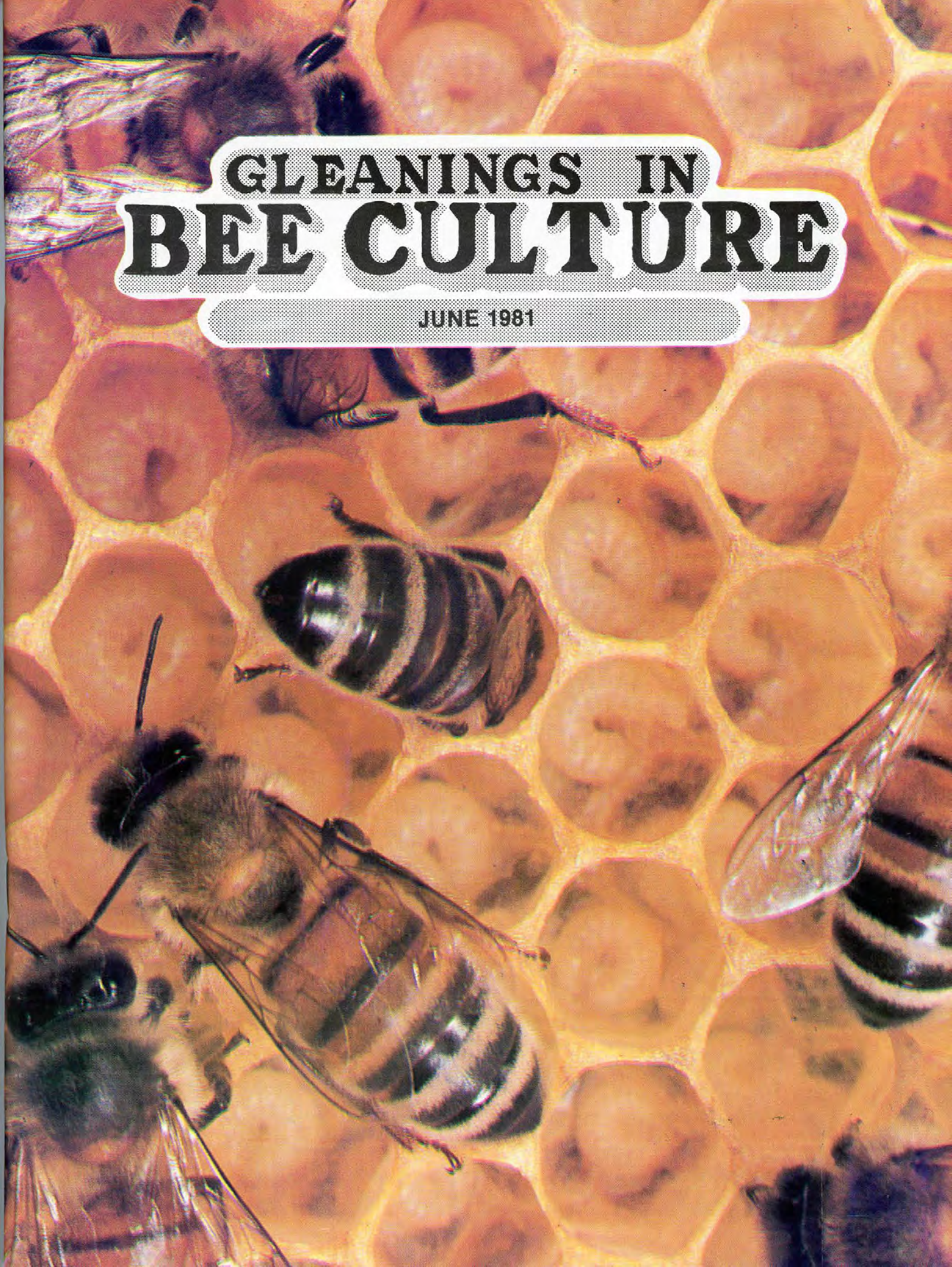

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JUNE 1981

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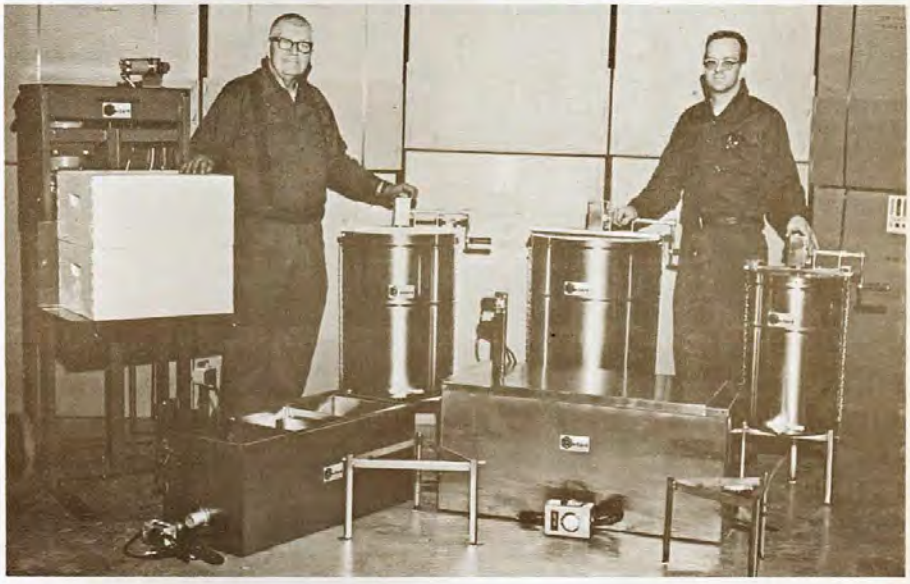

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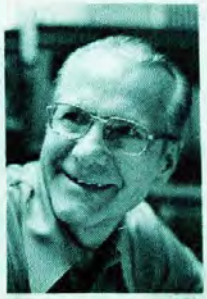
John Root



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COVER STORY

Bees tending brood. The spring of 1981 has been one of heavy brood rearing throughout most of the United States. Except for increasing the swarming rate the high populations could be favorable for harvesting good crops of honey. Drouth may again be a factor in the south-western states.

June 1981 (ISSN 0017-114X) Vol. 109, No. 6
Created to Help Beekeepers Succeed
108 Years Continuous Publication by the Same Organization

CONTENTS

Beeswax Part One:

It's Production and Some Non-Candle Uses

By DR. ROBERT BERTHOLD, JR.
Delaware Valley College
Doylestown, PA 18901

"Another method of rendering wax is to place it in something like a clean burlap sac and immerse it in hot water."

Introduction

One of the "by-products" of beekeeping is beeswax. The purpose of this article is to give some background information pertaining to this substance, including some of the uses it can be put to exclusive of candle making. A second article on making beeswax candles will follow next month.

How the Bees Make Wax

Beeswax is produced by four pairs of glands located on the underside of the worker bee's abdomen. It has been demonstrated that these glands metabolize the carbohydrates (honey) carried by the bee's blood to produce the wax. This wax, when first secreted by these glands, is a liquid which oozes out between the abdominal plates; this liquid quickly solidifies into small waxen scales which the bee then removes from between the abdominal plates and which is then used in comb construction.

Sources of Beeswax

The beekeeper generally obtains his beeswax from three sources within the hive 1) from cappings; 2) from combs; 3) from scrapings. If the beekeeper is planning to use the wax for candle making, he should use only the wax obtained from cappings, and that rendered from comb in which no brood rearing has occurred. These two sources will provide wax of a lemony yellow color which is clean burning. The wax obtained from rendering old comb and scrapings, although dark in color, is excellent for use in non-candle making endeavors.

Rendering of Beeswax

Prior to rendering, the beeswax should be as free from contaminants, such as honey, propolis, pollen, etc., as possible. There are a number of different ways of rendering beeswax some of which involve expensive equipment. An efficient and relatively inexpensive way of rendering beeswax is a solar wax extractor (Figure 1). Key points in making such a unit is that it be relatively air tight with a tight fitting cover with two panes of glass separated by about a ½ inch space. The outside of the extractor should be painted black and the inside white. There should be some type of a metal melting tray in the botton of the extractor which carries the molten wax into a collecting pan. We have found a teflon-lined bread pan with sloped sides works well as a collecting pan, and the wax, once hardened in the pan, can be easily removed. Additions which we sometimes use is placing a piece of window screening between the wax to be melted and the collecting tray; this helps filter out larger contaminants such as pupal cases in old combs. Also we have found that covering the collecting pan with fine mesh nylon cloth, such as a woman's nylon stocking, also helps in the filtering process.

"The polish is also an excellent way to protect various types of tools from rusting."

Another means of rendering wax is to place it in something like a clean burlap sac and immerse them in hot water (if you have hard water in your area, it is suggested to add some vinegar to the water, otherwise the hardness of the water will cause some of your wax to saponify). As the wax melts, it will be filtered as it escapes through the burlap sac, and it can then be ladled off the surface of the water and poured into containers such as the teflon-lined bread pans.

Once the wax has hardened into blocks, the blocks can then be turned over and any contaminants found on their undersides can be scraped off. If the wax is still not clean enough, it can be remelted in the top of a double boiler and refiltered through double fine mesh nylon cloth. CAUTION: MELTED WAX IS HIGHLY FLAMMABLE, AND MANY A BEEKEEPER HAS STARTED A SERIOUS FIRE THROUGH THE IMPROPER MELTING OF BEESWAX!!!

Commercial Uses of Beeswax

The biggest user of beeswax in the United States is the cosmetics industry which uses this product as a base for many of it's products. It appeared for a period of time that the chemical industry was going to come up with an acceptable replacement for beeswax, but recent findings by the United States Food and Drug Administration that beeswax is hypoallergenic (does not cause any allergic reactions in human beings) has assured beeswax of its key position in cosmetic manufacture.

Probably the second biggest use of beeswax is in the manufacture of beeswax foundation. Most bee supply manufacturing companies provide a ready market for your beeswax though there is generally a minimum placed on purchases. Also many of these companies will take your wax in trade for foundation, thereby reducing your cost.

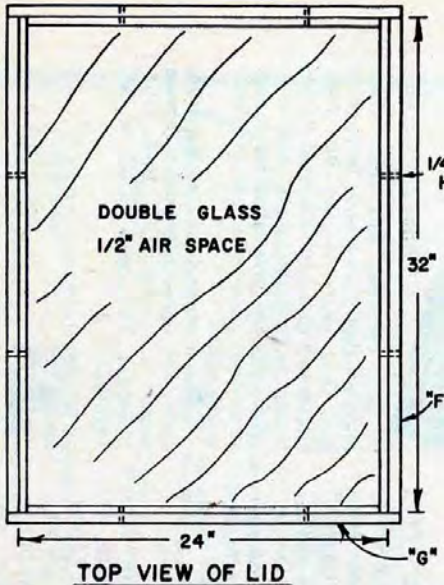
It is estimated that the third largest use of beewax is in the manufacture of candles, and your own use of beeswax for this purpose will be discussed in a later article.

Home Uses of Beewax

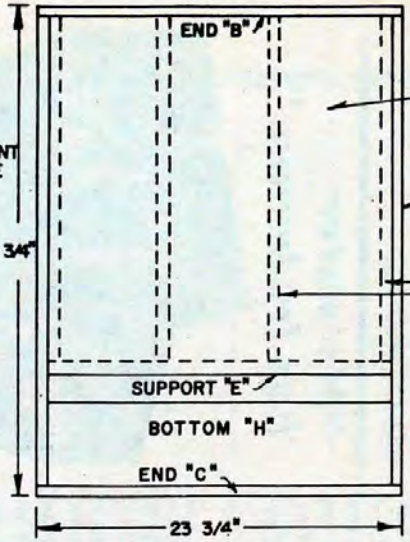
Beeswax can be put to many uses around the home, and if you have a use for beeswax that I may miss in my abbreviated discussion, I would appreciate your writing to me about it in as much detail as possible.

Lubricant

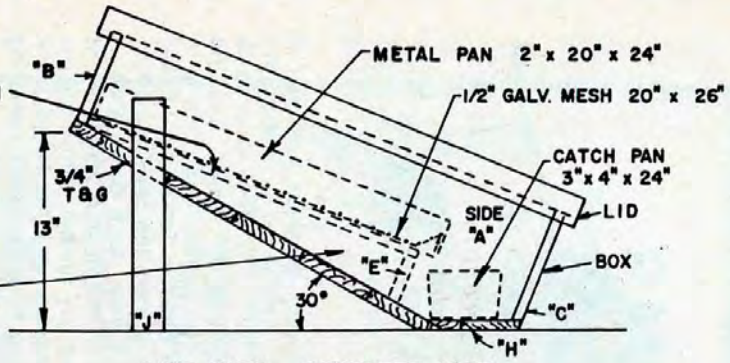
Beeswax makes an excellent lubricant. It can be rubbed on sticky



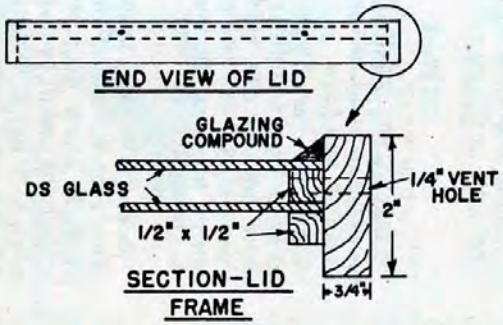
TOP VIEW OF LID



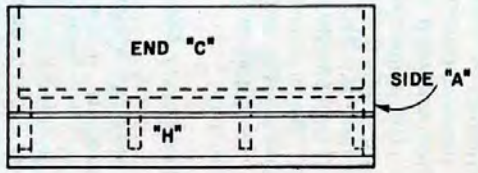
TOP VIEW OF BOX



SIDE VIEW, COMPLETE UNIT



SECTION-LID FRAME



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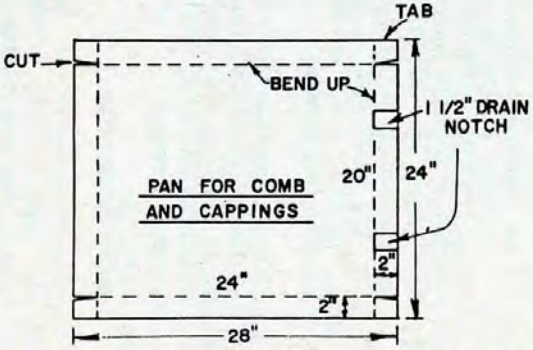
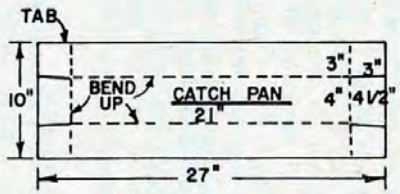
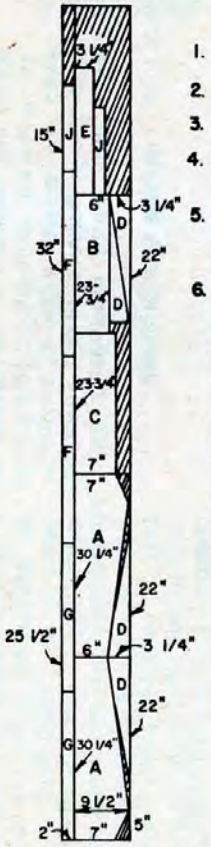




CUTTING DIAGRAMS FOR 24 GA. GALVANIZED STEEL PANS



CUTTING DIAGRAM
1" x 12" x 12' BOARD —
(3/4" x 11 5/8" x 12')

NOTES

1. PAINT INSIDE WHITE.
2. PAINT OUTSIDE BLACK.
3. SEAL ALL CRACKS.
4. PLACE IN PROTECTED PLACE ON SOUTH SIDE OF A BUILDING.
5. REMOVE WAX AND HONEY WHEN MOST COMBS ARE MELTED. THE HONEY SHOULD BE DISCARDED.
6. SEE REVERSE SIDE FOR BILL OF MATERIALS.

Bill of Materials for the Solar Beeswax Extractor

Parts A through G, also J - 1"x 12"x 12" Pine
Glass strips ½" x ½" cut from waste pine above
Part H - bottom 14' - 1"x 6" T&G Pine or 24"x36" Exterior Plywood (½" or ⅝")
Pan Platform - 1 pc. 2'x2'-½" Insulation board.
Lid Glass (double) - 2 pcs. 24" x 32" DS window glass
Comb Pan - 1 pc. 24" x 28" 24 Ga. galv. steel
Catch Pan - 1 pc. 10" x 27" 24 Ga. galv. steel
Comb support - 1 pc. 20" x 26" ½" galv. mesh
Hardware - Sm. nails 1", Nails 6D, 2 dz. 2"No8 FH Woodscrews
Paint - Small can white and small can black enamel
Glazing - Small can Glazing compound

Figure 1.

THE PENNSYLVANIA STATE UNIVERSITY AGRICULTURAL EXTENSION SERVICE		
SOLAR BEESWAX EXTRACTOR		
DRWN. BY: SLB DESIGN: ARG DATE: 9/1/69	ORDER NO. 790-301	SHEET 1 OF 1

drawers, doors, windows, and anything else which involves sliding parts. It can be rubbed on sewing thread, fishing line, and bow strings. It can be rubbed on screws, nails and pegs to facilitate their driving.

Wood Filler

After keeping bees for a number of years, you will find that you have chunks of beeswax ranging in color from light yellow to black. By matching colors and warming the wax, it can be used as a wood filler and also for filling the space over countersunk screws and nails.

Polish

Beeswax can also be used to make an excellent polish. Various types of solvents can be used such as mineral oil, linseed oil, lemon oil and others. We generally use turpentine for this purpose. To produce an easy to apply paste wax, melt approximately equal parts of beeswax and of turpentine. Keeping in mind that both of these substances are highly flammable, we generally select a container with a tight-fitting lid. This we will fill about ½ full of turpentine and place it in a pan of hot water on a heat source. We then fill the remainder of the container almost full of beeswax and wait for it to completely melt (Figure 2). Once melted, we then stir the mixture until completely blended, and we then remove the container from the hot water. Once cooled, you will have a beeswax-turpentine paste wax which can then be put to some of the uses below.

The use of the polish will impart an excellent and extremely durable gloss on just about any surface that will support a wax finish. We have used this polish to finish woodworking projects without the use of any type of varnish or shellac. We have waxed furniture and found the resultant finish to be resistant to water and other liquids. We have used it on wood paneling and other similar places, again with fine results.

The polish is also an excellent way to protect various types of tools from rusting. Before applying the polish, the tools should be completely free of grease, oil, dirt, and rust.

Leather Preparation

An excellent preparation for treating and waterproofing leather can be made by melting together 1 part beeswax, 1 part tallow (rendered beef fat), and 1 part neat's-foot oil (obtainable in many hardware stores). Procedures used in making the beeswax polish should be used. We have been using this preparation on our leather hunting boots and have found it to restore "life" to the scuffed and worn leather, as well as being an effective waterproofing.

Making beeswax-turpentine paste wax. Ingredients are combined by melting them in a wide mouth jar placed in a hot water bath.

Bonding with Metals

We have also found that pure beeswax has a bonding effect, particularaly to ferris metals. We have found that oxidation of the metal can be prevented by heating the metal item in question in melted beeswax. The item should be thoroughly cleaned and dried and then allowed to remain in the beewax until its temperature reaches that of the wax (when the item is lifted out, all but a thin film of wax should remain on the item). We have steel screws so treated completely exposed out-of-doors for four years without any rust yet evident.

Temporary Adhesive

Since beeswax adheres readily to many materials, it can be used to temporarily hold light-weight things together until they can be permanently attached. For example, it can be used to hold fine wires together in electrical work until they can be soldered.

Art Work

Beeswax has many applications in art work, a few of which we will discuss. Beeswax can be casted must as is done with plaster of paris, brass, bronze, and other substances. Since beewax can also be colored and painted, many interesting effects can be achieved. Beeswax can also be carved.

Beeswax is used in the drying processes of batik and the making of Ukranian Easter eggs. Both art forms involve the use of beeswax to prevent a dye from fixing. In the case of batik, it is the cloth being used; in the case of the Easter eggs, it is the egg shell. If you should be interested in this type of art work, there are a number of excellent books and pamphlets available. Basically what is done is that a design is drawn on the medium. The medium is then progressively dyed a darker and darker color with the molten beeswax being applied between each dying step to the parts of the design which is not to be dyed any further. When the dying process is completed, the beeswax is then removed revealing the variously colored areas.

Leather Working

Although I have never done any of it, I am told that leather craftsmen use beeswax to "finish" the cut edges of leather. □

Monthly HONEY Report

LAWRENCE GOLTZ

May 10, 1981

The following figures represent the current prices reported by beekeepers and packers over the country. They are based on reports from many states averaged out for each region. Where insufficient information is received no price is shown. The retail prices represent the price of each size jar.

Wholesale Extracted — **Reporting Regions**

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	9
60 lbs.(per can) White	45.00	31.80	34.20			41.50	33.00	33.80	31.80
60 lbs. (per can) Amber	45.00	28.80	31.80			37.00	28.80	31.25	31.20
55 gal. drum (per lb.) White		.52	.57	.56		.60	.55	.56	
55 gal. drum (per lb.) Amber		.46	.54			.57	.48	.53	
Caselots — Wholesale									
1 lb. jar (case of 24)	26.50	24.25	23.70	22.50	34.80	22.50		18.40	24.30
2 lb. jar (case of 12)	25.00	22.40	22.50	21.00	33.20	21.50		17.10	21.90
5 lb. jar (case of 6)	30.00	26.95	24.50	23.50		26.00		22.25	22.00
Retail Honey Prices									
½ lb.	.90		.85	.73		.75		.81	.89
12 oz. Squeeze Bottle	1.35	1.20	1.15	1.05	1.75	1.15		1.25	1.35
1 lb.	1.35	1.35	1.30	1.25	1.75	1.35		1.33	1.53
2 lb.	2.55	2.50	2.55	2.33	3.45	2.40		2.45	2.85
2½ lb.	3.15		3.30			3.00		3.09	3.99
3 lb.	3.80	4.25			5.10	3.60		3.79	
4 lb.	5.00	4.50		4.50	6.80	4.55		5.10	
5 lb.	6.00		5.35		8.50	5.20		5.90	5.99
1 lb. Creamed			1.35					.95	1.59
1 lb. Comb					1.87	1.65		1.75	
Round Plastic Comb									1.39
Beeswax (Light)	1.85	1.90	1.95	1.90	1.85	1.95		1.90	1.85
Beeswax (Dark)	1.80	1.80	1.85		1.75	1.85		1.80	
Pollination Fee (Ave. Per Colony)	30.00	22.00	22.50					12.00	22.00

Region 1

The bees in this region wintered much better than expected. Colonies in very good condition at end of April. Swarming may be a problem. Honey sales are down but stocks are so low no one is pushing sales. Nucs seem to be replacing sales of package bees. Beekeepers want nucs with native queens from time-tested stock. Ground moisture is good to fair and the season is about 10 days early. Spray damage to bees from gypsy moth control may be a problem.

Region 2

Excellent weather and winter bee losses very low. Bees in excellent condition. The early spring has helped to boost bee populations. Spring build up better than average. Look for a heavy swarming year. Beekeepers wondering about USDA's CCC announcing loan and purchase rates well above selling price. Some wonder what government would do with all the honey it could get (particularly amber) at announced support prices.

Region 3

Bees wintered well and building up populations rapidly. Moisture conditions excellent in Northern Illinois, Indiana and Ohio. Bees moved back to Indiana from Texas in very good condition in spite of extreme dry winter there. Feeding needed during spring in Wisconsin and Indiana. Swarming began at end of April in southern Illinois.

Region 4

April brought unfavorable conditions in Minnesota for bee flight. This necessitated considerable feeding. Colonies in top condition in early May with the possibility of making divides for increase. Honey sales reported fairly good in Minnesota but slower in Nebraska. Most honey is sold. There is concern about the lower prices on foreign honey imports and the high level of support prices on 1981 honey production. A producer-packer may not be able to compete with retail pack prices offered by large packers using imported bulk honey.

Region 5

Very dry weather conditions. Swarming began at end of April. Many small swarms in North Carolina.

Region 6

Badly needed rainfall occured over most of Kentucky during April. Soil moisture was mostly adequate at end of April. Build up of colony populations good with little feeding needed. Tulip poplar ready to bloom at end of April, prospects for good flow is pro-

(Continued on page 347)

Capping The News

THE EDITORS

"Beekeeping Small Talk"

Feeding HFCS

THE HIGHER PRICE of cane sugar has brought on a greater interest in feeding high fructose corn syrup (HFCS) to colonies of bees. "Feeding experiments in experimental yards and substantiated by laboratory analysis have indicated the strong possibility of unintentional adulteration related to the colony feeding of HFCS" according to Sue Honey News (April 1981).

Honeybee hoarding behavior shows that bees will store significantly more HFCS and 50% can sugar syrup than 60% can sugar syrup. Bees that had a choice between HFCS and cane sugar syrup showed a strongly significant preference for HFCS, reports Rinderer and Baxter from Baton Rouge. Feeding beyond the needs of the bees for brood rearing could result in the unintentional adulteration of honey. The principal sugars of HFCS closely correspond with those of honey.

The advantages of feeding HFCS are that is is cheaper than sugar, it already is in the liquid form and is highly acceptable to bees. There are two disadvantages to HFCS, according to Dr. Elbert Jaycox of Illinois. The most serious one is the possibility of adulterating honey taken later from the colonies that received the syrup. The second disadvantage is the HFCS is difficult to purchase in smaller quantities.

Feeding tests in the United States and Canada are generally favorable to HFCS in terms of total brood produced.

Our Writers

At least once a year we try to express our appreciation by letter to our excellent contributors to *Gleanings*; not only our regular columnists but those who contribute more or less periodically as well. I have been remiss in following through in this declaration of thanks. While public acknowledgement of our indebtedness to our writers has merit in that it is shared with our readers, it is not a proper substitute for the personal letter we have managed previously. Far from being taken as a matter of course, as perhaps some of our writers feel is our and our reader's wont, the contributors to *Gleanings* are greatly appreciated.

In writing style, technical emphasis and choice of subject matter our writers may differ but their level of competency is as high as any in the area of beekeeping. While no one agrees totally with all of our writers' opinions and conclusions the mere fact that a reader is exposed to controversial or even opposite opinion is a credit to a writer's courage to exercise the right to write very much as they think. As editors we must necessarily reserve the right to correct gross inaccuracies relative to facts and errors in form, yet not restrict the free expression of opinion.

Thanks to all of our writers who make our pages a mosaic of words and pictures that are the heart and soul of a magazine that was "Created to Help Beekeepes Succeed".

Drought

The Honey Market News (March 1981) carried a drought severity map on page 19. The "moderate", "severe" and "extreme" drouth areas are extensive and bore bad news for beekeepers in those areas this coming season. It has been suggested that *Gleanings* publish information on how to keep bees in a drouth-stricken area. Any contributions?

While I write this, in northeastern Ohio, right in the center of one of the few "moist" areas the rain continues to fall relentlessly. I wonder when, if ever, I'll be able to reach my bees across soggy fields. While I fret, the bees build queen cells and our neighbors to the east and west pray for rain. The incomprehensible powers that control such phenomenon continue to operate and apparently little can be done. □

Master Beekeeper Certification

The Eastern Apicultural Society is sponsoring a certification program for Master Beekeeper. Any experienced beekeeper with at least five years of extensive and varied beekeeping experience is eligible to apply. Persons wishing to apply for certification should send a letter to the Secretary of EAS, Mrs. Liz Rodriques, 157 Five Points Rd., Colts Neck, NJ 07722, stating his/her intention and reason for becoming certified as Master Beekeeper. The letter should list at least one well respected beekeeper who can attest to the applicant's experience in beekeeping. The application deadline is June 5, 1981.

Information in regard to references for study., fees, resource material, teaching syllabus, testing and certification will be mailed on request from the above address.

Tests for certification will be conducted in conjunction with the annual EAS Conference or at a location designated by the Chairperson of the EAS Master Beekeeper Committee.

The program is aimed at certifying competent beemasters to provide education and assistance to beginning beekeepers in local communities.

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Strauser Bee Supply is dedicated to providing a wide range of products for beekeepers. We have an ultra-modern woodworking plant which produces only the best of wooden bee supplies at reasonable prices. Our new waxworks is busy making fine-quality plain and wired foundation, in addition to recovering beeswax from all slumgum, cappings and old comb.

We recently added a clothing department to turn out our own folding bee veils for adults and children. Last but not least, we have designed two new forklifts especially for the beekeeper.

High fructose corn syrup is available at our Three Rivers, Texas, branch in your drums or in our tote bins. Call ahead for scheduling.

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THE WORLD OF BEES AND BEEKEEPERS
The newest bee magazine for the whole family. Published quarterly. Subscription rate $5.00 per year.

Notes From The Straw Skep

Knowledge on Nucs

By BESS CLARKE
50 Lycoming Street
Canton, PA 17724

Knowledge on Nucs

WHILE WE WERE in Florida I heard a lot of talk about nucs and, since my mind was hazy on the subject, I decided to get some information. Now that I know ALL I want to share with you some of the knowledge I have acquired.

A nuc — short for nucleus — is actually a small colony, complete with bees, a laying queen, and 3 or 4 frames of brood and honey. Nucs are becoming increasingly popular as a way to replace winter loss, or to increase the numbers of colonies.

Production of nucs has become the fastest growing segment of the beekeeping industry. Forced on beekeepers by the decline in the postal service, it has proved to be a real improvement on the package. Although the unit may cost may be a quarter to a third higher, the savings in time must be considered in the decision to purchase a nuc rather than a package.

For years beekeepers made up winter losses by purchasing package bees from the south each spring. The packages, composed of 2 or 3 pounds of bees and a caged, mated queen were sent through the mail in screened boxes and delivered quickly by the post office. I remember one Decoration Day morning around 1960 when the P.O. called to say 20 packages had arrived and, since there was no delivery because of the holiday, would I be interested in picking them up? Bill was out somewhere so I went for them in my little English Ford and the mailman helped me load them into the trunk and the back seat. That type of help is not apt to happen anymore. Now the postal service discourages the shipment of bees there are delays; and the cost has risen astronomically.

The nucs are delivered, usually by truck, directly to the purchaser; or alternately to a location convenient for pick up. The purchaser may exchange the nuc box and frames of comb for similar equipment, or may purchase the entire unit. Some producers are using cardboard nuc boxes for transportation. The price is adjusted to reflect the amount of equipment exchanged or purchased.

A nuc has definite advantages over a package; the chief one being a saving in time. A nuc is really a small colony. When it is transferred to a full size hive body filled with drawn comb it is ready to begin functioning. It should be checked in a few days to make sure the queen is laying. A super should be added when it is needed. There is no need to feed a nuc because there is honey in the frames along with the brood.

"One problem connected with nucs is the transfer of disease."

By contrast, a package must be shaken into a hive body and the queen must be introduced. Even if she begins to lay immediately it will be at least three weeks before any brood emerges and the colony must be fed during this period. It takes about a month for a package to become an effective colony and the chance of getting a crop of honey is diminished because of the delay.

One problem connected with nucs is the transfer of disease. The producers' hives should have a certificate of inspection and, of course, it is important to purchase from a reputable outfit.

Nucs can be produced anywhere, depending on the weather and the honey flow. They are shipped from the southern states in the spring and may be grown in the north during the summer. One or two frames of brood and honey, with bees on them, are taken from an established colony and placed in a nuc box, along with sufficient frames to fill the box. A queen cell is introduced; the unit is moved to a different location; and is left to grow. The cell will develop into a queen which will hatch, mate and begin to lay, forming a complete colony, which is then ready to sell.

A nuc may also be started by pulling 2 or 3 frames of brood, honey, and bees from an established colony and introducing a mated queen. In either case the nuc is a working unit, ready to collect pollen and nectar.

Beginning beekeepers will find that nucs are a good way to avoid many problems, and established apiarists will appreciate the savings in time.

Communication is important in purchasing nucs. Written confirmations can save disappointment, and telephone conversations are helpful in explaining details of equipment exchange. Location and time of pick up should be clearly understood.

That just about does it for my study of nucs. You'll have to find out more for yourself if you're interested.

Remember the article about the New Jersey Beekeepers' Association flag? I've had word that there has been a delay in the project and they're afraid the new flag won't be ready for the EAS meeting in August.□

RECIPE

With picnic time at hand you may want to try charcoaled Ham Steak. Start with 2 slices of center cut ham steaks one inch thick. Cook them over charcoal, brushing with a sauce made of ½ cup orange juice, ¼ cup honey, and 1 tablespoon salad mustard which has been blended. Turn several times to obtain even browning, using the sauce each time. Total cooking time will vary but it should take about 20 minutes. This serves 4 generously.

Corn (on the cob if you have access to it), a tossed green salad, and hard rolls make good accompaniments.□

Keeping Honeybees in Suburbia

"Can bees be successfully kept in suburbia and/or towns? My answer is a qualified yes..."

By W.L. GOJMERAC
Dept. of Entomology
Univ. of Wisconsin
Madison, WI 53706

NOTHING IS MORE disturbing to a hobby beekeeper than to receive a visit from a police officer, zoning administrator, or a delegation of neighbors and be told his honeybees must go. In this article I would like to explain the problems related to keeping honeybees in suburbia and more heavily populated areas.

Some municipalities have passed laws which prohibit keeping honeybees within their jurisdiction. Those communities which don't have such regulations can force a beekeeper to move his operation if bees or location of the hives become a public nuisance. Practically all communities, however, have some type of public nuisance ordinance which can be used to deal with such general problems.

Can bees be successfully kept in suburbia and/or towns? My answer is a qualified yes, provided, of course, it's not specifically prohibited. Honeybees will do quite well in many metropolitan areas. Some plants frequently grown in suburbia produce highly desirable nectar (basswood and clover) others, such as privet, bear flowers, have a distinct odor, and some would find it objectionable if the odor were transferred to honey.

If you wish to keep one or two hives in a densely populated area, make certain they are out of sight. Even empty hives will frighten some people. Hives could be hidden behind dense evergreen shrubs or a solid board fence. A barrier around the hives will also force bees to fly above the heads of people, avoid accidentally bumping into innocent passersby.

I know of one instance where a person placed five hives on a front lawn in view not only to neighbors, but the hives attracted reporters from local television and newspapers as well. They did not remain on the front lawn long.

Don't plan to keep more than two or at most three hives in one area. A low population of bees is less likely to attract attention. You will have to use discretion when working the colonies. Don't attempt to manipulate the hive bodies on cloudy days, especially after the honey flow. Experienced beekeepers know workers will be more defensive on those days. Should children or even adults wander too close to your operation, they could easily get stung.

Don't let your colonies swarm. A swarm could raise havoc, especially if some neighbors knew it came from your "hidden" hive.

What problem may be encountered by keeping bees in town? I think there are two serious ones. In northern areas after a long confinement, some worker bees fly out for a cleansing flight on a nice warm day in early spring. Should the next door neighbor have clothes on the line, she just might not appreciate having white clothes soiled.

There is no simple way to solve this problem, other than to select understanding neighbors or bribe them with a jar or two of honey. I don't think you need be concerned with families living more than 500 feet away. As a rule, cleansing flights take place within a radius of 100 feet of the hive.

Honeybees need water, especially in the early spring and during hot, dry weather in late summer and fall. They will obtain it at the nearest source which might be a bird bath, swimming pool, pet watering container or nearby river or lake. Some people get upset if they find honeybees around their bird bath, even though each species can take care of itself. Bees are not going to keep birds away from it.

"Don't let your colonies swarm. A swarm could raise havoc..."

Swimming pools, however, could be a different story. People have been stung by bees obtaining water from pools. It takes only one or two stings to spread fear among all the users. While foraging bees are not defensive, people either step or sit on one and get stung, so it's a result of accidents rather than honeybees deliberately attacking people.

You can keep your bees from visiting swimming pools and bird baths if you provide them with water. It is important to keep it available at all times. Should your container run dry, bees will search for water elsewhere. Then it is difficult to entice them back. If you live in areas where others also keep bees, your bees might get blamed for creating the "hazard" around the pool, when in fact they might belong to someone else or they might be honeybees which took up residence in a hollow tree.

The single greatest obstacle against keeping honeybees in a metropolitan area is the ignorance of the public. Most people do not distinquish between hornets, wasps, yellowjackets, and honeybees. It is during late July, August, September and into October when I receive many calls asking how to get rid of bees nesting in the lawn, under steps or eaves, in the garden and even around drive-in restaurants. This is the time of year when wasp colonies increase, and practically all of these creatures causing concern are not bees but various species of hornets and wasps.

When one or two outspoken, but misinformed, citizens get stung, they immediately associate this incident with a nearby hive of bees. Their local representative is contacted, and ordinances are passed outlawing bees in town. While these people mean well, it will have no effect on the number of stings received by citizens, yet these laws will prevent someone from enjoying the hobby of keeping bees.

Honeybees can be kept in metropolitan areas, provided the beekeeper uses good judgement and discretion. I will also readily admit that a colony could become a nuisance if it is improperly located and managed. Adequate laws are available for health authorities to take care of the occasionally negligent beekeeper. Information I have is that it is legal to exclude beekeeping in municipalities by specific ordinances and/or interpretations of zoning regulations.

A few cities specify bees can be kept in residential areas, provided certain rules are followed. The ones I am familiar with state the colonies must be at least 50 feet from the neighbor's lot, surrounded by a barrier of evergreen shrubs or solid fence and provided with a source of water next to the hive. □

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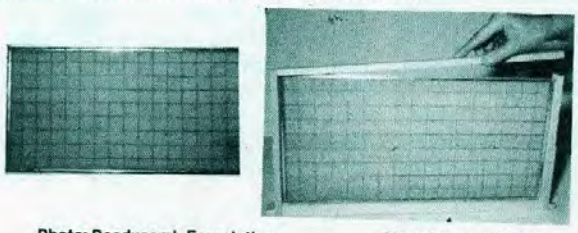

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REPRINTS FROM **BEE WORLD:**

HONEYBEE POISONING BY CHEMICALS (M100) by C.A. Johansen $1.75 plus 20¢ pp.

U.S. $, Personal checks negotiable.

IBRA, Hill House, Gerrads Cross
Bucks SL9 ONR, England

Questions and Answers

IN PLACE of the regular questions from our readers and our answers here is a quiz to test your "Bee Q". These questions were on a test given to my beekeeping class recently. Following are the questions which were the most frequently missed out of the 80 questions on the test. (The figure in parenthesis is the number of the the seven class members that failed to answer the question correctly.)

Editor

1. Honey is resitant to the growth of bacteria due to (5)
A☐The acidity of honey
B☐The sugars of honey
C☐The hygroscopicity of honey
D☐All of the above
E☐None of the above

2. A self-sterile flower (5)
A☐Is pollinated only by insects
B☐Always lacks a stigma
C☐Always lacks stamens
D☐None of the above

3. The site of a Nosema infection is the (4)
A☐Intestine
B☐Rectum
C☐Ventriculus
D☐Breathing spiracles

4. Which of the following honeys is likely to be the first to granulate if not heated (4)
A☐Clover
B☐Rape
C☐Tupelo
D☐Locust

5. A queen bee has the following anatomical parts (5)
A☐One pair of ocelli
B☐A spermatheca
C☐A barbed stinger, like the worker
D☐All of the above

6. The clovers may be classes as (4)
A☐Legumes
B☐Herbaceous plants
C☐Nectar plants
D☐All of the above

7. The principal sugar(s) in the nectar is (are) (6)
A☐About equal parts of levulose and dextrose
B☐About equal parts of sucrose and dextrose
C☐Sucrose
D☐Glucose

8. The venom of the honeybee is contained in the (5)
A☐Spermatheca
B☐Pharyngeal glands
C☐Ganglia
D☐None of the above

9. The internal organ of the bee which functions to cleanse the body of impurities is (5)
A☐Spiracles
B☐Malpighian tubules
C☐Ventriculus
D☐Corbicula

10. The sub species to which the Italian race of bee belongs is (6)
A☐lugustica
B☐Apis
C☐mellifera
D☐Carniolan

11. The shallow super measures in depth (7)
A☐6 5/8"
B☐5 11/16"
C☐4 3/4"
D☐None of the above

12. A fertilized honeybee worker egg may produce a (4)
A☐Drone
B☐Queen
C☐Bumblebee
D☐None of the above

13. A laying worker (4)
A☐Is hatched from an unfertilized egg
B☐Is about the size of a queen
C☐Have the same capabilities as a mated queen
D☐Will be tolerated only in a queenless colony

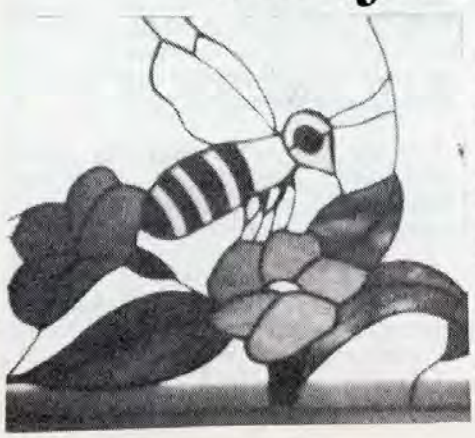
14. Filtered honey is that which has been (5)
A☐Heated and strained through a cloth
B☐Passed through a charcoal-filled vat
C☐Passed through a centrifuge
D☐None of the above

15. Reproduction by means of an unfertilized egg is called (4)
A☐Parthenogenesis
B☐Mitosis
C☐Ovulation
D☐Spermatogenesis

The answers are on page 343

Artful Bees

"This is all hand worked..."



I have seen different versions of "BEE" designs in art glass form. It was a challenge for me to produce what I felt was an improvement.

I went to the Milligan Art Glass Studio in Vandalia, Ohio. With my design, their artistry, and my proof reading for detail, we arrived at this end result.

This is leaded glass, 13 inches by 15 inches in size. A black and white photo doesn't do the work justice. The background sky is of hues of white, blue and shades. The wings are of a white frosted glass. The flowers are of green foliage with red petals.

I plan to mount it in a deep frame so as to have lights mounted in the back for a lighted wall hanging.

This is all hand worked so can be made in any size or design. If anyone would be interested, contact me:

Charles Fisher, P O Box 88, Vandalia, Ohio 45377; or The Milligan Art Glass Studio at 1 West National Rd., Vandalia, Ohio 45377.☐

Death of a Beekeeper

"He was only sixty five," she told me. "Had looked forward to retiring in another five years or so."

By GRANT D. MORSE, PH.D.
Saugerties, NY

Who loses.....

The Widow?
The Community?
The New Owner?

ONE OF OUR local commercial beekeepers died last fall. He was not a large scale operator. Had 1000 colonies. He worked them rather much alone except for occasional help in the spring and summer. I'll call him Mr. Smith in deference to his widow who avoids publicity.

"He was only sixty-five," she told me. "Had looked forward to retiring in another five years or so."

She asked me my opinion about disposing of his holdings. I advised her to advertise nationally and widely, asking no more than the outfit was worth — maybe a bit less. She did so but no early firm offer was received.

I didn't think her asking price was too high. She offered to sell the 1,000 colonies separately from the honey house, extracting equipment and truck if a buyer preferred.

Shortly after the advertisement had appeared, a local unmarried young man came to see me one evening to get my advice as to whether he should make Widow Smith an offer on the outfit.

"For ALL of it?" I asked him. "Yes," he said, "I believe I could make a good living from those bees." While in high school he had worked for Mr. Smith during parts of two summers.

"I'm told," he said, "that every one of those thousand hives in worth a hundred dollars. They're all in two hive bodies each, and in addition there are a little better than two full depth extracting supers for each colony. Mrs. Smith is estimating the hives and supers at only $75 per colony. Thirty thousand for the rest of the outfit for a total of $105,000."

"Do you have that kind of money?" I asked him bluntly.

"My Mother has almost that much which she is willing to loan to me. I can probably get the rest from the bank," he replied.

I waited a couple of minutes before saying anything. I knew from bitter experience about how long it takes the average small scale commercial beekeeper to accumulate $100,000.

"As you know," he went on, "my father is dead. He and my Mother saved the money she has from the small grocery business they operated."

"I believe you work in the public library, don't you Andy?" I asked him.

"Yes," he said. "And I like it. But the idea of operating a thousand colonies of bees challenges me."

I was so overcome by his daring and venturesomeness that I was prompted to ask him openly. "What would happen to your Mother if you borrowed the money from her and failed at the business?"

"I don't plan on failing," he answered.

"No, of course not, but how much do you really know about the beekeeping business?"

"Only what I learned from working with Mr. Smith for parts of two summers."

"You didn't work for him during the preswarming season, did you? Nor late in the fall when he was preparing the bees for winter?"

"No."

"Do you realize that a beginner at beekeeping can lose something like a third of the season's production if he can't handle swarming?"

"Tell me about it," he asked, showing real humility for the first time.

I went over the subject a bit thoroughly, telling him about the importance of young queens; the effect that crowding has on a colony of bees in springtime; and about the fact that a colony which casts a swarm or two may not make enough honey during the season to take care of winter needs. I talked with him about the importance of timeliness in making certain swarm prevention manipulations, else swarming can scarcely be stopped, especially for an individual operating a thousand colonies of bees pretty much alone.

"But requeening is expensive, isn't it?" he asked.

"Yes," I admitted. "It is, but so is swarming."

"Ever try requeening a colony?" I asked him — a bit gently, for I didn't want to overwhelm him. Then I told him about the prices for young queens. "Anywhere from $3.50 to $7.50 for a queen that may be killed by the worker bees if you don't know just how to introduce her."

"And how is it done?" he asked.

I told him about killing the old queen and replacing her; or dividing a colony into two parts and giving the queenless part a young queen in a cage. I went, also, into introduction by way of a nucleus, pointing out its supposed superior features of acceptance, and the reasons why. He seemed impressed.

"Mr. Smith had some difficulty with wintering, didn't he?" Andy asked.

I agreed that I had heard that he didn't believe in packing bees for winter despite his losing as many as 30% of his colonies in severe seasons.

"I'm told that he favored giving all colonies a full open entrance during the winter. His method worked well except in the severe winters. Then his failure to cut down on exposure of the clusters to the elements, and disregard for providing upper ventilation caused him severe losses."

"How do you identify bee diseases?" Andy asked, revealing that he had heard somthing on the subject while working for Mr. Smith.

"It usually takes a little experience," I told him. "The bee inspectors can be helpful in this matter. The magazines and bee books try to

(Continued on page 318)

Rutgers, The State University of New Jersey invites you to attend the Eastern Apicultural Society Conference

ANNUAL CONFERENCE

August 5-8, 1981

Conference Costs

We have made every effort to hold costs to a minimum in these inflationary times. The prices quoted below represent three sample packages which will be available this August. **All prices quoted include three nights lodging, nine meals per person, plus all conference and administrative fees.** Our low cost budget plan for a couple is **$198.55.** A single registrant may attend for **$115.65.** For those desiring air-conditioned accommodations we have a package for two at **$252.55.** This price can be reduced $30. by preparing lunches and breakfasts in your apartment. All of the prices quoted above include the festive Jersey-Shore Dinner.

Children under age 6 may attend the conference for free.

Housing

Three options are available, all conveniently located on the Cook College campus.

Option A: *Starkey Apartments:* fully air-conditioned, with two or four bedrooms, a living room, dining room, kitchen and private bath. Each apartment can accommodate a family of five comfortably. The apartments have a refrigerator and range for your use. Cooking and eating utensils are not provided, so plan on bringing your own. While the facilities are not comparable to a deluxe hotel, you should find them very comfortable and pleasant. Blankets, sheets, pillow cases, towels, soap, and drinking cups will be provided in each room. The rates for these accommodations are as follows: $16.00 per night, per person (two to an apartment); $11.00 per night, per person (three or more to an apartment); half price for children 6-13 years old; and children under 6, no charge. Because of the limited number (100) of these apartments, reservations will be taken on a first-come first-served basis.

Option B: *Voorhees Dormitory* is a modern, air-conditioned facility. Single, double, or triple rooms are not equipped with cooking facilities. Occupants will share a common bath (men and women respectively). A full linen package is included in the rate: $10.80 per night, per person (two or three to a room); $15.50 per night (single); children 6-13, half price; and children under 6 no charge.

Option C: *Woodbury Dormitory* is a modern facility without air conditioned rooms immediately adjacent to the Neilson Cafeteria. Single, double, or triple rooms are not equipped with cooking facilities. Registrants will share a common bath (men and women respectively). A full linen package is included in the rates: $7.00 per night per person (two or three to room); $12.00 per night (single); children 6-13, half price; and children under 6, no charge.

Please note that all reservations are final and cannot be changed or exchanged. All conference attendees should plan on vacating campus housing by 6:00 p.m., Saturday evening, August 8.

Meals

All breakfasts (7:00 to 8:30 a.m.) and lunches (12:00 to 1:30) p.m.) will be served in the Neilson Cafeteria on Cook College Campus. The women's luncheon 12:00 (noon) and banquet (6:00 p.m.) will be served in the Browers Commons on the College Avenue Campus. The festive Jersey-Shore Dinner will be held Thursday evening (5:00 p.m.) at the Log Cabin. **All meal reservations must be made at least ten days in advance** regardless of whether you plan on staying in campus housing or commuting.

Commuter and Camper Information

Commuters planning on attending the conference on a daily basis will be able to do so. A separate rate schedule will be available for those interested in attending only one or two days of the program. Camping areas **are not** available within the immediate New Brunswick vicinity. Those interested in campground information should contact their local KOA agent. August is New Jersey's heaviest tourist month, and those wishing to camp should make appropriate reservations far in advance. **Note that the pre-registration deadline is 4:30 p.m., July 15, 1981.** Your early response makes our planning much easier. Anyone registering after July 15 or at the door will be assessed $12. per person late registration fee. Credit cards will not be accepted for reservations either in advance or at the door. All pre-reservations must be paid in full.

Sessions

All sessions will be held in the modern, air-conditioned Hickman Hall.

Parking

Parking facilities are located adjacent to all housing, dining, and classroom facilities. Space is available for charter buses. Mini vans will be available to shuttle attendees around the campus.

Children/Babysitting

Babysitting will be available for children, toilet trained, over the age of 2. Please indicate the number, age, and sex of the children you will be bringing. An additional charge for babysitting services of $2. per hour, per child will be assessed upon registration.

Beekeepers Short Course

Traditionally, a three-day short course precedes the main conference. This year the Beekeepers Short Course will begin Monday, August 3 at 9:00 a.m. and will run through 3:00 p.m. Wednesday, August 5. The course will be held in the Food Science Building on the Cook College Campus. Those interested in attending may plan on checking into their housing on Sunday evening August 2 or Monday morning August 3. The registration fee for the course this year will be $35. Those desiring housing will be charged the same rates as for the E.A.S. conference and may stay in their designated room for the entire week. Additional information regarding the program schedule for the short course will be provided with your registration confirmation.

Please note: this is not an application form, but merely a request for additional information.

Registration forms are available upon request. To obtain reservation materials, please return attached coupon. Please take special care in filling out your registration form. **Forms not properly completed will be returned.**

If you are interested in receiving registration materials, please return this panel, in an envelope, to: **Mrs. Norma Wanson, Office of Resident Instruction, P.O. Box 231, Cook College, New Brunswick, New Jersey 08903**

Name _____

Address _____

_____

City *State/Province* *Zip*

Anticipated number in your group _____

Pre-registration deadline is July 15, 1981

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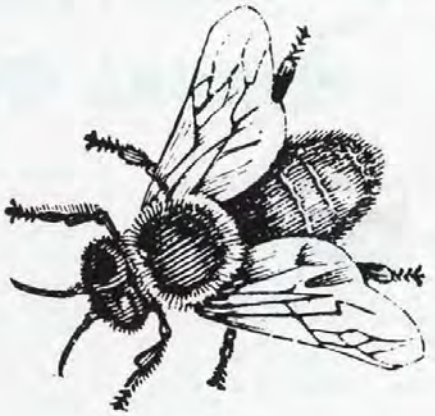

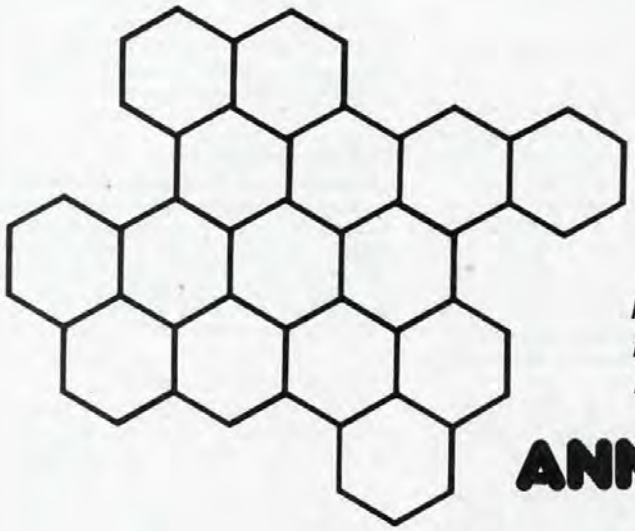

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ANNUAL CONFERENCE

August 5-8, 1981

E.A.S. ANNUAL CONFERENCE

Welcome!

The planning committee of the 1981 E.A.S. Conference is pleased to invite you to the Annual Eastern Apicultural Society Conference. Rutgers University will host this year's program to be held August 5-8, 1981. An exciting and stimulating conference is planned and we urge you and your entire family to join us. To help you make plans for attending, we have compiled information about travel and other matters that may be of interest.

Arrival Plans

Plan on arriving at the registration site in the Cook College Housing Office in time to pick up reservation materials between 12:00 noon and 4:30 p.m., Wednesday, August 5. Housing will be available to those arriving Tuesday night provided we receive notice prior to July 15. The registration site will be open twenty-four hours a day.

Cook College is located in Central New Jersey and is easily accessible by all means of transportation: airlines, railroads, bus stations, and highways.

Location

The conference will be held on the Cook College Campus, an 800-acre tract of land situated off U.S. #1, about 1 mile south of the junction of Routes #1 and #18, and about 1 mile north of the junction of Routes #1 and #130. Maps will be provided with your registration confirmation.

show how American foulbrood looks, for example. But I've known experienced beekeepers who had a bit of difficulty in identifying it. European foulbrood and sac brood can cause a beinner some difficulty in the matter of identification, too."

"What do they mean when they talk about stress diseases"? Andy asked me.

I went on to tell him how lack of good winter food, small clusters, or undue exposure of the inhabitants of a colony to heavy wind and cold weather can so weaken a colony that under the resulting stress it can fall victim to such disease as European foulbrood, sac brood, nosema, and chalk brood.

"Have you ever moved bees on a truck?" Andy asked.

I knew he wanted to learn a few details so I told him about its being necessary often to wait until dark and all flying bees have returned to the hive before loading — unless, of course, one is willing to leave a few bees behind. I explained how to staple or strap the parts of the hive together; about the benefits of moving with open entrances; the significance of moving only during cool parts of the day or night, or else wetting down the hives with water. I told him about the tendency of bees to drift when first unloaded, and of their inclination at such a time to sting more than normally.

We discussed the great boon that the bee blower has become for the operator in removing unwanted bees from extracting supers. I told him, too, of some of my experiences in the use of repellents, and of bee escapes, and the supposed advantages of each.

Andy seemed to be very much intrigued with the mechanical loader that Mr. Smith had used on his truck. I agreed with him that for an individual working alone, such a device helps take much drudgery out of lifting heavy hives on to or off a truck.

Possibilities in the Area of a Mail Order Business

And then Andy revealed to me where one of his chief interests in the beekeeping business lay. It was apparently in honey rather than in bees.

"I've been thinking," he told me, "ever since I worked thoses two summers for Mr. Smith, that a mail order business in honeys should be both interesting and profitable. You're familiar," he explained to me, "with the tremendous volume of mail order business done with cheeses. I see no reason why a similar volume of trade should not be developed in packaging and shipping select honeys of particular color and flavor. Such a business need not be confined to the Christmas season. The contacts made at that time of year could become the reference list for a year round sales program. Many people would appreciate the opportunity to be able to rely on a source of honey that would be reliable throughout the year."

"You work in the library, don't you?" I asked him once more, though I already knew that he did. Then I went on to say in substance that a man's chosen occupation tends somewhat to reveal his talents and his preferences.

"Tell me about it," he asked, showing real humility for the first time."

"When you worked for Mr. Smith he kept you rather much confined to extracting honey, didn't he? He seldom asked you to drive the truck, or change a tire, or wire a frame." I continued, "One doesn't have to be a mechanic in order to be a successful beekeeper, but it helps. A small scale operator is very much concerned with mechanical jobs such as making and assembling hive parts. He must operate all of the machinery that goes with processing the honey from the uncapper to the wax melter, to the filters, to the settling tanks, and the bottling equipment. Any, or all, of it seems to need repair or adjustment."

"You are capable of managing all of these functions, but they don't come too easily for you, do they?"He nodded agreement.

"On the other hand," I said to him, "I've seen some beekeepers who were so mechanically inclined that they substantially confined themselves to the machine part of the operation, and forgot the bees. Some of them would rather devise and construct a new type of uncapper than open a hive to determine conditions of a colony."

I could see that Andy was beginning to understand that while beekeeping is perhaps not the most challenging occupation in the world, it nevertheless calls for the exercise of a high degree of intelligence, plus the application of tremendous energy if success is to be achieved.

I told him that if he wanted to try his hand at it, I'd encourage him to follow his interest in establishing a mail order business in packaging honey of several flavors and from a variety of sources.

Also, I did not discourage too much his eventual launching into commercial beekeeping if he trully felt he wanted to do so. But I tried to show him that what Mr. Smith and others he knew seemed to do so easily, had been learned over a long apprenticeship.

"I'd suggest," I told him, "that you start out with not more than five colonies the first year, and that you add not more than fifty colonies per year for the next four years. Meanwhile you will be earning your living in another occupation. Beekeeping for the first few years should only be an avocation — a supplement to your regular job. Your spare cash will be going into beekeeping equipment and bees. When you have accumulated approximately 500 to 600 colonies, the bees can become your full time work. And working alone, or largely so, it should yield you just about enough to support you and the wife you are likely to have by that time."

"If all goes well, if you discover that you truly enjoy beekeeping, you may want to expand your holdings to 1200 colonies. That would probably compel you to hire a helper for at least part of the year.

"Good planning and good bookeeping should tell you by that time how many colonies you need in order to support your style of life. Good beekeeping will tell you accurately at the end of the year whether your swarm control methods are effective. It will tell you, too, whether your wintering methods over a ten year period are keeping your losses down around the 5% where they belong."

"Some beekeepers," I told him, "depend upon supersedure to control swarming. Of course, it isn't an adequate approach. Many of the same fellows never pack their bees for winter, and they lose 20-40% of them every few years. That kind of beekeeping is neither sensible nor profitable."

Who Loses When A Beekeeper Dies?

If, before his death, a beekeeper has not passed responsibility on to another (perhaps a son, or a son-in-

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Bee Talk

By DR. RICHARD TAYLOR
Trumansburg, NY 14886

"It's not going to swarm, not just yet, because it has no queen."

My friend Walter Kelley has been telling me that I should write something about shallow frame comb honey, and I agree. But first, I have to talk about reducing colonies for comb honey production. It is a system I don't use, although I have, because there's too much work to it. Still, it's a fairly standard procedure which I've never discussed, so it's about time I did. David Marcy, out in Wisconsin, uses it, and he easily makes a thousand dollars net, after costs, from seven hives, raising round sections and selling them for $1.25 each. That is a fairly modest expectation. What is essentially the same system was used by the late Carl Killion, the great Illinois beekeeper, and Roger Morse describes something similar in his comb honey book. So it's nothing new. You can use it for round sections, like Mr. Marcy, or square ones, as Mr. Killion did, or shallow frame comb honey, as Mr. Kelley would recommend.

Here is one way to do it. We assume your colonies are two full stories high, maybe more. When they have built up good and strong, and the honey flows are just beginning — which would be early June in the North — you proceed as follows with each colony: Select the nine combs with the most sealed brood, and put them into a hive, with adhering bees. Be sure there is at least some honey there too. Watch for the queen as you do this, and when you find her, remove her, so that this new hive of bees is queenless. Arrange the combs so that those with unsealed brood are more or less to the center. Leave this queenless colony on the original stand (that is important), and shake most of the bees from the other combs in front of this queenless colony. Add two or three comb honey supers, of whichever kind. You don't need an excluder if you're raising sections, but probably should use one if you're going for shallow frame comb honey.

Now what you've got is a VERY strong queenless colony on the original stand. All the flying bees return to this colony, of course, and besides that you have all the bees you shook off the other combs. Since nectar is available, they begin drawing out the comb honey foundation immediately.

The leftover combs, from which most of the bees have been shaken, can be used to start new colonies, provided you have left enough bees with them to take care of whatever brood is in them. They have the original queen or, if you have destroyed her, you should give them a new laying queen, or a good queen cell. Do not leave them to raise their own. They are not populous enough to raise a good queen.

"Do not leave them to raise their own. They are not populous enough to raise a good queen."

Now back to that reduced, producer colony. It's not going to swarm, not just yet, because it has no queen. But it will immediately build queen cells, to replace the lost queen, and then they will be ready to swarm like mad.

So four or five days after reducing the colony, in the manner just described, you have to go through it and scratch out all the queen cells. Whereupon the bees will again start more queen cells, using the day-old larvae that emerged from the eggs that had just been laid when you reduced the colony. So on the EIGHTH day after reducing the colony, you have to again eliminate all the queen cells, EXCEPT ONE. To make sure you leave ONLY ONE, you must gently shake the bees from each frame this time. Otherwise, you'll miss one, and the bees will swarm. But they will not swarm if there is only one queen cell there. A queen will hatch from that one, get mated, and the colony is then back to normal, but the swarming impulse will by that time have passed — in all likelihood.

You can get a lot of comb honey that way, if all goes well, and it will be of top quality, because the bees will fill the supers fast.

The reason I don't use that system anymore, however, is that it is just too much work, and of course, it is a bit complex, so things can go wrong. To go into a colony three times, searching each comb for queen or queen cells, and considerably disrupting everything in the middle of a flow, is too much for me, especially since my main comb honey yard is thirty miles from home. I want a system that enables me to go through an entire apiary of maybe twenty-five colonies in less than two hours, JUST ONCE, then super them up and forget them. And I don't want any system that requires me to search for queens and queen cells. Most of my hives I don't have to manipulate at all more than once every two or three years, except to put supers on and take them off, and when I do make splits, to control swarming, I don't have to find queens or search for queen cells. But I've described all that before.

Of course when I shook swarm colonies for comb honey, as I sometimes do, then it is a bit more of an operation. But even then, the colony requires only one manipulation, not three, and the job is done for that season. But I've described all that, too, so need say no more about it here.

Now back to the matter of raising honey in shallow frames, as Mr. Kelley recommends.

I am convinced that this is exactly the way to go for a backyard beekeeper who just wants to raise honey for his family and friends. You get lots of beautiful honey with the least investment. Not only do you need no extracting setup, you need no special equipment at all. You can even get by with very little foundation. A single strip, a couple of inches or so wide, fastened to the top bar is just fine. The bees will make perfect combs starting with that. This is what I tell all my students in my beekeeping courses: Begin by raising comb honey is shallow frames.

But I do not think it is the way to raise comb honey commercially.

Packaging is a problem. You have to cut the combs from the frames, and that is a sticky nuisance, and takes time. And the little plastic boxes you put the cut comb into are expensive. And I have seen too many of these in stores with the honey around the edges granulated. Honey is slow to granulate in the comb, but as soon as it leaks out it is apt to granulate, and that looks bad. Then before long the entire comb granulates.

Of course you can just sell the shallow frame comb honey right in the frame, frame and all, and I've done that. You can even get special cartons, with a transparent window, to pack these frames of honey in. But there are a couple of problems with that too. It is too large a pack for most people. You can't charge as much as it is worth. I used to get three dollars ($3.00) each for them. Maybe I should have charged more. But the same amount of honey (about four pounds) in round sections fetches easily ten dollars ($10.00). And the frame has to have the propolis scraped, which is a difficult and sometimes impossible job. And it is hard to treat frames of comb honey for wax moth damage. They are too large and cumbersome to put into a freezer easily, and fumigants should not, in my opinion, ever be used.

So, I suppose we all have our own ways of doing things. I strongly agree with Mr. Kelley up to a point, and entirely agree that shallow frame comb honey is the answer for beginners. And I agree, too, that commercial production of comb honey in shallow wooden frames is possible — Mr. Kelley has proved this himself, many times. But I am also convinced that anyone wanting to raise comb honey on a truly commercial scale — anything from four or five thousand sections per year to ten times that and more — and do it with the least work and get the most beautiful product, had better go into round sections as I did long ago. □

Beekeeping Technology

By DR. JAMES E. TEW
The Agricultural Technical Institute
Wooster, Ohio

"ROBBING BEES"
Techniques and Devices Employed to Accomplish the Task

RARELY DO BEES amicably yield their surplus honey crop to the beekeeper. Rather specific techniques or specialized equipment must be used to coerce the bees to relinquish some of their crop.

I. Remove Bees Along With Honey.

Probably the easiest and most straightforward technique is to take bees and honey from the out apiary. If a public nuisance does not result, the beekeeper may simply leave the supers uncovered on the truck and "scatter bees all the way home." If this method is employed, it will help speed the process if the truck is stopped occasionally to allow bees to move up and out of the upper most super. I realize this method will be offensive to many beekeepers. Consequently, this discussion should be considered as that and not as a recommendation. The advantages to such a simple technique is fast super removal and low capital investment in removal equipment. Queen excluders should be used or some precaution against losing the colony queen should be taken. It should be noted that the shorter the ride home, the more bees that will make the trip too.

II. Cold Nights

A second simple technique is to wait until a cool night and the bees have clustered. The bees are off stored honey by this time and supers may be quickly removed with practically no removal equipment. Unfortunately, cold honey is difficult to extract. Beekeepers using this procedure must be prepared to operate extractors longer, or make preparation for heating the honey comb back up to about 80°F. or so.

III. Brushing and Shaking

If a few supers are to be removed, bees may simply be brushed and shaken from combs. Combs to be taken are shaken free of the bulk of the bees. Remaining bees are brushed off and the frame is placed in an empty super. In order to prevent bees from returning to combs, a cover is placed over the frames. After the last frame has been taken from the colony, the remaining empty super is raised to hold honey comb from the next colony. The main advantage to this technique is low equipment investment. Bees are occasionally inclined to sting when brushed and the technique is quite time consuming. If the beekeeper elects to speed the process by "bouncing" the bees out, frame damage may result.

IV. Escape Boards

Escape boards can be wonderfully diverse pieces of equipment. Probably the most commonly used escape board is an inner cover with a bee escape in the inner cover handhold. Caution should be taken to insure that the escape route is not blocked by frame bottom bars or other obstructions. Supers being taken off, using escape boards, must be bee tight. Otherwise, robbers will find their way in cracks or holes and methodically rob honey from the supers.

Other types of escape boards consist of hardware cloth passages or screen cones. The Quebec style escape is a series of triangular wooden channels covered by screen. If more information is desired on specific construction of these escapes, I ask readers to correspond with me directly.

Comb honey is removed very well using escape boards if large quantities are to be removed. A second advantage is that beekeepers are not exposed to large numbers of defensive bees with this device. Well known disadvantages are: two trips are required to apiaries to remove the crop (approximately 24 hours are required for escape boards to function), drones or workers occasionally plug the escape entrance preventing bee exits, and excessive heat accumulation may result in supers since they are practically air tight.

The third disadvantage listed may be overcome by using ventilated escape boards. Heavy screen is used where possible in the escape board. These boards are available commercially.

V. Chemical Repellents

Fume boards are commonly used to drive bees from honey supers. Such boards are usually 1-2" deep and are covered with material such as celotex or several layers of cheese cloth. If used during warmer months of the year, they are left unpainted. It is occasionally suggested they be painted black if used during cool weather.

The two common chemical used are benzaldehyde and butyric anhydride ("Bee Go"). Both chemicals should be used according to label instructions. Obviously chemicals should not contact honey or comb. Only very small amounts of the repellent chemicals are required.

On warm, sunny days, chemicals work very well. One man can normally operate approximately five of the boards and remove supers quickly.

VI. Blowers

Bee blowers have become quite popular during the last few years. Unfortunately, their cost may prohibit some beekeepers from using this piece of equipment. The cost ranges from $150 to approximately $310.

The device is basically an impeller type fan driven (in most cases) by a gasoline engine. The commercial devices generate approximately 1500 cfm at 3600 revolutions per minute. The device weighs 48 pounds but lighter models are available.

The basic procedure is to place the colony on a collapsible chute in front of the colony. Alternatively, the super may be set on one end and bees blown out. In either case, it is desirable to have the bees blown

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Gleanings Mail Box

Beekeeper Scouts

Dear Editor:

I wish to thank the A.I. Root Company, Walter T. Kelley, Dadant and Sons, Strauser and Maxant Industries for their help and donation of articles to help Troop 258 of Cornwall, NY with it's entry of beekeeping in the Hudson Delaware Council Scout Show on the 29th of March 1981. Because of their help Troop 258 won the Blue First Place Ribbon, but more important, beekeeping was furthered greatly because of the public's exposure to the display of posters, equipment and an observation hive of live bees. In 1980, twenty two boys nation wide received the beekeeping merit badge, two of these scouts were in my troop and I was the counselor, so you see this display has helped beekeeping greatly.

On May 16, 1981 there will be a district camporee. Merit badges will be shown to show the boys what is available to them. Troop 258 will display the beekeeping merit badge. Hopefully this year 1981, there will be twenty two boys receiving their merit badge in beekeeping in our council alone.

If there are other beekeepers out there, visit a boy scout troop or contact a council, tell them you will help with merit badges in beekeeping. Help further our hobby nation wide. Al Morasky, Asst. Scout Master, Cornwall,NY.

Questions Toxicity

Dear Editor:

I have recently started using an "anti-fly" block with my beef herd. The block contains, in addition to salt, trace minerals, molasses to encourage consumption. The main ingredient is an oral larvacide, trade name Rabon.

The larvacide, 2-chloro-1-(2,4,5 trichlarophenyl)-vinal dimethyl phosphate, passes thru the cattle's digestive system and is deposited in the feces. There the larvacide presumably kills the fly larva after hatching.

I am somewhat concerned that it is being carried to my hives. The bees find the molasses very appealing. At the end of this past season I did not detect a serious decline in the bee population but before the 1981 fly season starts, Rabon is most effective if started well before the flies appear, that the foragers will carry significant amounts to the hive and contaminate the brood.

Does *Gleanings* or do any readers have information on the toxicity of Rabon and if so, since it is a somewhat popular product with beef growers in this area, will you pass it on thru these pages? Richard E. Starkey, Brimfield, Mass. 01010

Building Extractors

Dear Editor:

I would like to comment on a couple of points raised by Clarence Kolwyck in a letter to *Gleanings* of April 1981 regarding an article I had written about a bottom-drive extractor and which was published in the February edition of *Gleanings*.

Mr. Kolwyck speaks of possible dangers of contamination from "large quantities of lead" in both the trash can I indicated for the extractor and the tub used when uncapping. This baffles me for the trash cans and wash tubs are both coated with zinc and not lead. Anyway, it would take a considerable amount of abrasion to put dangerous traces of metal from the extractor or the tub into the honey.

Mr. Kolwyck suggests that I would have been better off to have bought an extractor instead of spending all that time "at $1 or $2 an hour". A power-driven extractor comparable to the one described in my article would run from $300 up. Mr. Kolwyck would possibly learn why we are inclined to build our own if he were to make a visit to one of the supply stores, paying strict attention to the price tags on the machines. This doesn't take into account the satisfaction of creating a perfectly fine extractor out of cast-off materials and simple, everyday things that are readily available.

Mr. Kolwyck also raises the question of "why does every two-frame beekeeper these days insist on a motor-driven extractor?". Well, it's mighty handy to have the previously uncapped frames being extracted while one proceeds with uncapping the next two frames. But even then we might turn to hand-driven machines if we could get really good extractors such as those built in 1925-30, one of which Mr. Kolwyck has. Things have changed. Mel Kirkwood, Seattle, WA 98117

Bee Games

I have found four games for children with a beekeeping theme that might be of interest to some of your readers.

The best by far, but for older children, is the Nectar Collector Game. It is a board game made and sold by the Animal Town Game Company, P O Box 2002, Santa Barbara, CA 93120, for about $16.00 each. This is a great game all about beekeeping. This company sells other interesting board games also. I have bought one of each.

A second game I found is called Spinning Bee Spelling Game, made by Creative Playthings selling in the toy department of a discount store for about $5.00. This is for children age four and up.

A third game I located is called Beez-Up Game, made by the Witman Company for children ages 5 to 10. I bought it in the toy department of a discount store for about $5.00.

A fourth game I have found is called "Tickle Bee" by the Schaper Company; it is for children ages 3 and up. I found this in the toy department of a discount store, and it costs about $5.00.

This list is not complete and I would appreciate hearing from your readers of other games with a bee or beekeeping theme. James Steed, Richmond, KY 40475

Siftings

By CHARLES MRAZ
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Middlebury, VT 05753

"This series of disasters actually started perhaps thirty years ago."

IN THE APRIL issue of *Gleanings* I made the statement that "beekeeping is a series of disasters". I never dreamed when I made a recent trip to the new state of Quintana Roo, Mexico, that nowhere is there a better example of a series of disasters than has happened in certain areas of the Yucatan Peninsula.

This series of disasters actually started perhaps 30 years ago. Twenty years ago, when I first went to Yucatan, I saw the "disaster" starting. It has continued until now these disasters are getting serious. I just spent seven days visiting many of the beekeeping areas of Quintana Roo, Mexico.

For some 40 years the Yucatan has developed into one of the larger honey producing areas. Much of the land area is stony coral rock and not suitable for agriculture but it does grow many honey plants not found anywhere else in the world. Plants and trees with such Mayan names as Campania, Tesac, Sash, Tajonal, Dzdzlche, Jabin, Salom, Tinto and Lago.

Much of this honey could be of excellent quality table honey, but with the present state of beekeeping in much of the peninsula, most of the honey exported is of poor quality, mainly for industrial use. It is high in moisture, up to 20%, that gives it a poor flavor. Most of the honey is extracted "green", before it is ripened. The reason for this involves both the bees and the beekeeper.

The major problem at present is disease; paralysis and European foul brood. Paralysis is commonly called, in Yucatan, "Mal Octobre" (bad October) as this is when paralysis usually causes the greatest loss. Drugs seem to have no effect on paralysis.

Paralysis has been around a long time but is getting worse. Lately, complete apiaries are being wiped out at the start of the honeyflow in October, November and December. We have seen apiaries where the beekeeper had 100 colonies of bees in October-December, 1980. Today, March 1981, they have only a few weak colonies left. Since a hive of bees is worth about $45.00 each, this represents a big loss where the going wage is 20¢ per hour. It takes a lot of hours of hard work for the country people to buy 100 hives of bees.

In the past years the bees managed to build up again, but more and more they just die out completely in a very short time.

"We corresponded some after that but I never saw him again, even though I made several trips to Yucatan, where he lived."

European foul brood is not quite as drastic, but it is more sinister. It kills the young unsealed larvae, usually, in the type found in Quintana Roo. There is another form that seems to kill more of the sealed brood in the pupa stage. Terramycin is the usual treatment, but unfortunately does not have any lasting effect, finally getting to the point where hardly any larvae will hatch.

If this keeps up, between paralysis and EFB, there soon will be no more bees left in Quintana Roo. Fortunately, Quintana Roo is trying to do something about it. Through the past 20 years I have had a lot of experience in Mexico with both paralysis and EFB. It is not too much trouble to clean up a few thousand colonies, but when it comes to cleaning up 20,000 colonies scattered over a large area of wild country it is a bit more of a problem. This is especially true when the beekeepers have little knowledge of "modern" beekeeping and do not even know how to introduce queens. Few of these beekeepers have more than 100 colonies.

It will be interesting to see how the clean-up program will turn out. It will takes a few years but in a year it will be possible to see how successful it will be. It is hard enough for these people to make a living on this rock soil. Beekeeping is one of their most valuable agricultural practices and can give the people greater prosperity for the least cost of any agricultural pursuit. The success of this project will depend on good queens that can produce strong colonies of bees to harvest the many tons of beautiful honey now going to waste. It just goes to prove how right old Elija Gallup was when he said "Upon the queen depends everything in beekeeping."

There was one wonderful experience on this trip. About 20 years ago, when working with beekeepers in Vera Cruz, a Yucateco was also working there. I got to know him quite well as he turned out to be one of the most intelligent beekeepers I have ever met in Mexico. He knew the names of all the honey plants and their value to the bees. He knew more about bee genetics than many a Ph.D. in entomology.

We corresponded some after that but I never saw him again, even though I made several trips to Yucatan, where he lived.

I met his son Francisco on one trip, but missed his father. Two years ago I heard he was killed in a car accident, which was quite a shock to hear.

On this trip to Quintana Roo we tried to find Francisco, because of being a native beekeeper, he would know the country well. We heard that my friend was living near Tulum and drove right down to see him. I walked toward the house. My friend Yucateco saw me, jumped up and cried out "Senor Charles"! We greeted each other as long lost brothers with a "muy fuerte embrazo".

He was our guide to all the beekeeping areas. He not only spoke Spanish, but was even more fluent in Maya. It was fascinating to hear the unusual "clicking" sounds used in the Mayan language. Many of the

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Research Review

By DR. ROGER A. MORSE
Research Editor of Gleanings
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"Sorting through all this I think two factors may be involved."

Feeding Table Sugar to Control Disease

A note in the *Australasian Beekeeper* indicates that the feeding of sugar syrup (table sugar or sucrose in water) aids in controlling sacbrood, a virus disease of honeybees. On the other hand, the authors also indicate that feeding syrup can cause European foulbrood to increase if it is present.

Dr. Thomas Rinderer of the USDA bee breeding labs in Baton Rouge, Louisiana, did some related research a few years ago. He found that feeding table syrup to bees would aid in the control of hairless-black syndrome, another virus disease of bees. Rinderer's study showed that ordinary table sugar is effective because it contains small amounts of ribonuclease, a naturally occurring enzyme. When he fed diseased bees table sugar from which ribonuclease had been removed, there was high mortality.

Sometimes there isn't much new. Dr. H. Shimanuki, of the USDA's Beltsville laboratory, gave me a reference to an 1882 note in *Gleanings in Bee Culture* in which a beekeeper said feeding sugar syrup would aid in the control of paralysis (a virus disease of adult bees which has recently been shown to be the same as, or similar to, hairless-black syndrome). A. I. Root, then editor, replied, "pure sugar feed is pretty good medicine, and it works well in almost all diseases."

Sorting through all this I think two factors may be involved. First, there is good evidence that ribonuclease is effective against certain viral diseases of honeybees. (I am advised by a friend, a sugar chemist, that this same acitivity is probably not present in isomerose brand and glucose corn syrups because the equipment used in their preparation would probably destroy any enzymes present.)

Second, I have a suspicion that feeding any sugar may stimulate bees to clean cells in preparation for food storage. It is certainly well known that a honey flow will aid bees in cleaning up almost any brood disease. I cannot resolve the question of why the authors of the Australasian article thought sugar feeding caused an increase in European foulbrood, but they did state very clearly that their results are only preliminary. I suggest this aspect of the question needs more study.

Beard, G.A.
Bee paralysis — the new disease and the remedy. *Gleanings in Bee Culture* 10:402. 1882.

Pinnock, D.E. and P.H. Mew
Sucrose therapy for sacbrood disease of bee larvae. *The Australasian Beekeeper* 82:107. 1980.

Rinderer, T.E.
Infectivity degradation by ribonuclease and table sugar of a nonoccluded virus inoculum prepared from the honeybee. *Journal of Invertebrate Pathology* 24: 120-1. 1974.

Marketing Orders

A study by the U.S. Dept. of Agriculture indicates that marketing orders for fruits and vegetables have not led to stable or higher prices for the commodities they cover. Federal marketing orders, that are voted into effect by producers, allow restrictions on the quantity and quality of the marketed product. When a marketing order is issued by the Secretary of Agriculture, the handlers of the commodity are obliged to live within certain trade practices and sales' restrictions. The study cited below covered the years 1952-1979.

In is interesting that despite this information most producers favor continuation of the 47 marketing orders that are currently in effect. These cover some 33 fruits and vegetables.

Marketing orders vary greatly. Some cover the whole US production while others may apply to production only in certain areas. Some of the strongest marketing orders are for almonds and walnuts in California but a great variety of products are affected.

Single copies of this report entitled "Effectiveness of Federal Marketing Orders for Fruits and Vegetables" became available in May. Persons interested in receiving copies may write to: Research Information, ESS, Room 1664-S, US Dept. of Agriculture, Washington, D.C. 20250.

There has never been a federal marketing order for honey, but it has been discussed and questions about it have stirred up considerable controversy over the years.

Development Apiculture Seminar

A two week seminar involving about thirty students and instructors will develop a program to improve tropical and rural subsistence beekeeping in foreign countries. The seminar is being co-sponsored by (IAAD) International Agency for Agricultural Development and the Agricultural Technical Institute in Wooster, Ohio.

Week one will be led by Dr. James Tew and the ATI staff and designed for persons inexperienced in beekeeping.

Week two will be led by Professor Gordon Townsend and the IAAD staff. It will cover relevant topics in development apiculture with a regional application by persons with practical development beekeeping experience in Asia, Africa, South and Central America.

For information write to R. Dillinger, Ex. Dir. IAAD, 3201 Huffman Blvd., Rockford, IL 61103.

The seminar will run from August 10 to 21, 1981 at the Agricultural Technical Institute, Wooster, Ohio. The tuition is $675.00, registration fee $50.00. Registration deadline is April 30, 1981.

Strictly Backlot

By CARL CALLENBACH
135 College Avenue
Elizabethtown, PA 17022

A closer look at observation hives.

OBSERVATION HIVES ARE nicest in February. A prudent peek inside — behind the insulation board covering the glass — renews my faith in Spring. If I look closely, I can see a growing patch of brood, some capped, some in larval stage. If I'm fortunate, I may see the queen, now three years old, with her yellow identification mark, see her scurrying from cell to cell, surrounded by seven or eight somber helpers.

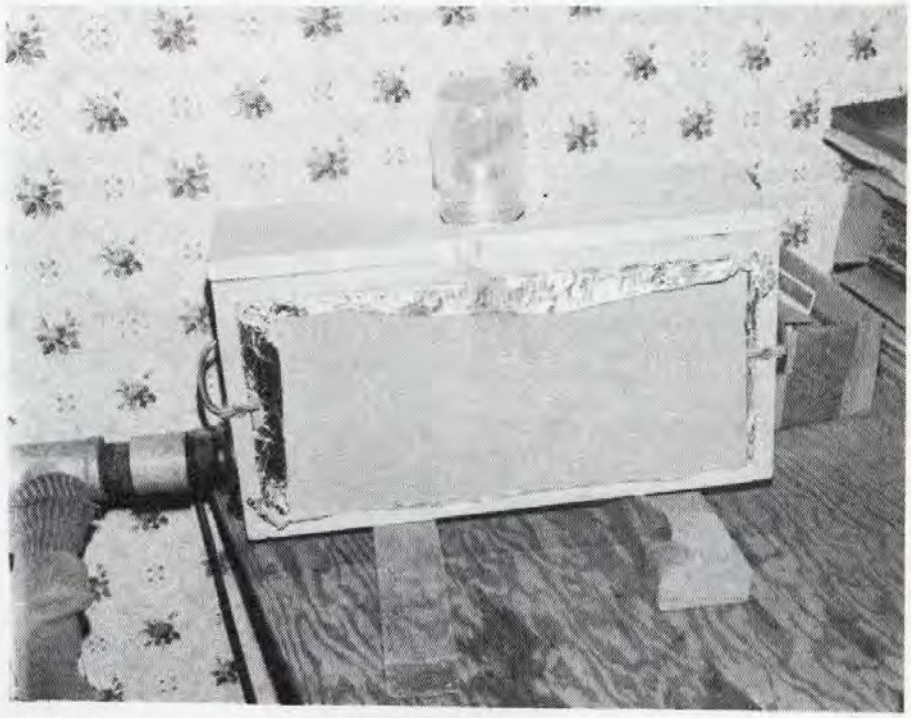
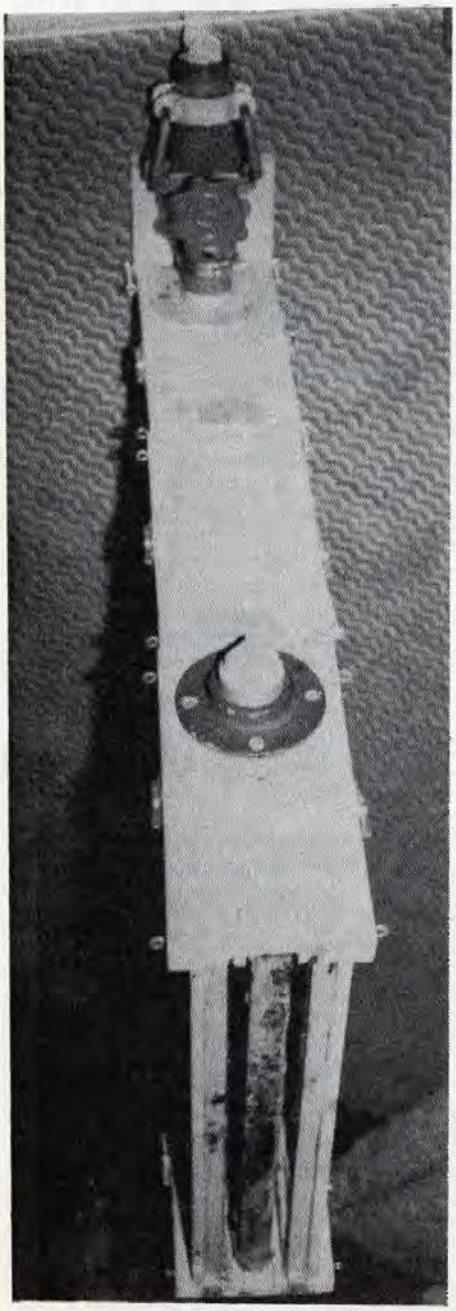


Photo 1

Photo 2



In early April observation hives require a bit of manipulation. The population is burgeoning and it's time to feed some sugar water if the honey stores disappear. Time to transfer the two frames of bees from the wintering observation hive (See Photo 1) to my three-tier hive. This means unpacking the three sections from the plastic bags in which they have been stored in the attic.

This means taking time to photograph parts and pieces so that the many readers who are obervation hive addicts can better see what I've been up to. Some salient features: Each of the three sections is interchangeable. Fastened together with eye hooks and two-inch bolts with nuts, each section has an opening with a 1½ inch pipe flange; each has ¾ inch ventilation holes on ends covered with wire mesh (See Photos 2 and 3). Each section is connected to the others with holes in plywood top/bottom boards, the bottom board being permanently stapled into place (See Photos 4 and 5). Each section can be shut off by inserting metal strips over the holes. Each strip is held in place with a small screw (See Photo 6 for description; Photo 3 for application).

This insertion and fastening of metal strips (as I wrote in an earlier column) is the only awkward requisite for maintaining the hive. This Spring I've cut the problem in half by stapling hardward cloth over the openings, top and bottom, of one side of each section, the entrance side. The bees adjusted very quickly to using the remaining openings. Movement from section to section appears normal; I've seen the queen in all sections.

(Ease in separating the sections is desirable for two reasons: I take the

hive or parts of the hive into elementary school classrooms; the hive builds up continuously from March through August and this means I must remove a frame of bees every three or four weeks to prevent overcrowding.)

A final couple of features: Because of the vulnerability of small hives to fickle honeyflows, I've drilled a hole in the top board (See Photos 1 and 3). And note the wing nuts on the sections. I keep the hive enclosed with insulation board. In winter I add aluminium foil (See Photo 1). The rather imposing hose clamp I picked up at an army-navy surplus store. I can turn off the bees and I can partially close down the entrance during cold weather. Adds bit of suavity, don't you think?□

Photo 3

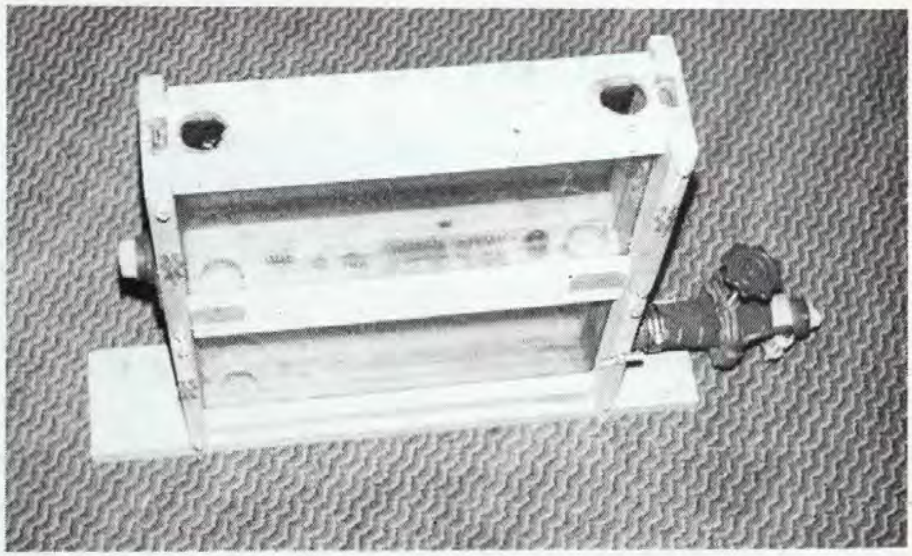
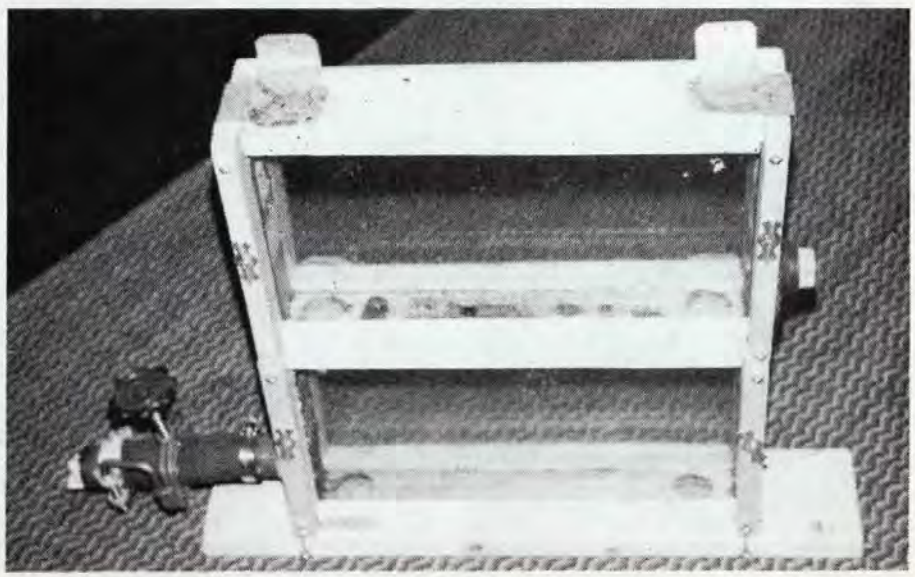


Photo 4

Photo 5

Photo 6



The Ashursts of Imperial Valley

"In 1918 Julian Ashurst, their grandfather, went into beekeeping..."

By JOSEPH O. MOFFETT*
Cushing, OK

THE THREE Ashurst brothers, Everett, Richard and Kenny, are third generation beekeepers operating in the Imperial Valley of California. Their great grandfather also kept a few colonies.

In 1918 Julian Ashurst, their grandfather, went into beekeeping because of the influence of a brother-in-law who had bees. Their father, Devlin, grew up in the bee business.

Devlin Ashurst

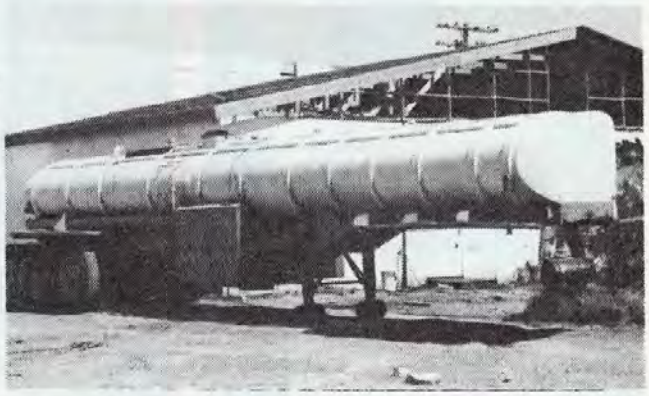
Devlin now owns American Honey Company and leaves most of the beekeeping to his sons. He buys and sells about three to four million pounds of mostly bakery trade honey yearly. Jack Loper, his daughter Marilyn's husband, manages Devlin's Westmorland warehouse. Most of the honey is handled in tanker trucks and barrels.

Richard Ashurst

Richard Ashurst (1948) runs 6,000 colonies mainly for pollination rental under the trade name, "the R.J.A. Pollinating Company". He moves bees for pollination mainly in the Imperial Valley and San Diego areas.

*Updated and modified from "Some Beekeepers and Associates" Moffett Publishing Company, Route 3, Box 175A, Cushing, Oklahoma 1979.

Everett Ashurst hauls his fork lifts on a trailer behind his bee trucks. Everett runs bees in California, Mexico, and Oregon.

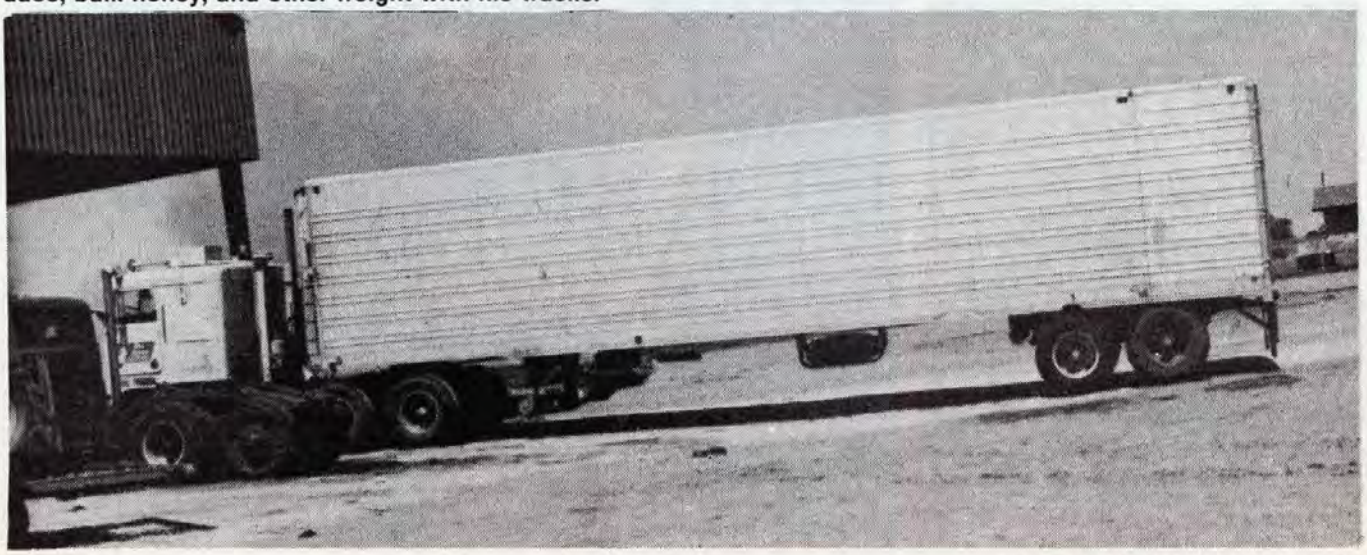


Devlin Ashurst of Westmoreland, California specializes in handling bulk bakery grade honey. This tank truck outside his warehouse is used to transport honey.

Crops pollinated include almonds, avocados, alfalfa seed, citrus, melons, onion seed, squash, and recently a few fields of sunflowers grown for seed. Richard bought James Cowen's bees in Utah several years ago and still has the locations. However, he seldom runs bees there anymore.

Richard and his wife, Karin, have a son, Bryan, and two daughters, Valerie and Kara.

One of six semi-trailer trucks belonging to Everett Ashurst. In addition to his beekeeping, Everett contracts to haul produce, bulk honey, and other freight with his trucks.



Richard Ashurst of Westmoreland, California owns R. J. A. Pollinating Company. He has 6,000 colonies.

Everett "Buddy" Ashurst

Everett Ashurst (1945) operates 5,000 of his own colonies in California and another 1,000 in Mexico. In 1978 he rented 3,200 colonies to Dessert Seed Company for onion pollination. Everett also moves a few thousand colonies to Oregon to pollinate onions and carrots each year. He also pollinates several other crops in California including almonds, cantaloupes, and alfalfa. His charge for almond pollination is $19.00 per colony, while he receives $16.00 a colony for onions and alfalfa pollination. Three and one-half colonies per acre are used for onion pollination. Three colonies per acre are used in pollinating alfalfa.

The colonies are kept on six colony pallets. Fork lifts are used to move the pallets. A truckload of 432 two-story colonies can be loaded and tied down in one and a half hours. The truck can be unloaded and the bees distributed in the orchard in two hours.

Besides keeping bees, Everett owns a fleet of six semi-trailers. With these trucks he hauls produce out of Mexico on contract, hauls bulk honey and other freight, and also uses them to haul his own bees.

Everett also has a 3-axle diesel wrecker, a tank truck, and several flatbed trucks, and employs up to 15 men. He uses Cowan Extracting Equipment.

The cappings are augered into a large storage vat and allowed to drain all summer. With the intense heat of the Imperial Valley summer plus a little supplemental warm air, most of the honey drains from the cappings.

Everett purchased an abandoned cotton gin, located on several acres, for his honey house. He also has built a new house on this acreage. Colonies in some of his desert apiaries apparently collect toxic water or pollen in the spring and suffer heavy losses.

Everett and his wife, Shirlee, have two sons, Dion (1974), and Brock (1976), and a daughter, Melissa (1980). He is a past-president of the California Beekeepers Association.

Kenny Ashurst

Kenny Ashurst (1955) owns 4,000 colonies. He and his wife have a new baby, Branden (1980). The Ashursts all live in Westmoreland, except Everett, who lives near El Centro.

(Continued on page 339)

An apiary and ramada belonging to Everett Ashurst of El Centro. Colonies are often kept under ramadas in the Southwestern desert areas to provide shade for the bees from the hot desert sun.

Wax Foundation — Make It At Home?

"We are now convinced that making one's own foundation...does work."

By J. IANNUZZI
Ellicott City, MD

THE NOVEMBER ISSUE of *Gleanings In Bee Culture* (p 587) carries the following advertisement:

FOUNDATION MOLD PRESS
Metal dies. Rigid construction. You can make your own foundation, using your own wax, at over 20 sheets per hour, full depth. $220 including post. Please send for full details to Leaf Products, 24, Acton Rd., Long Eaton, Nottingham, England NG101FR.

The immediate question is: Is it easy and does it actually work?

With circumspection, we inspected our first two-piece metal folding mold for producing wax foundation at home at the annual meeting of the Maryland State Beekeepers Association at College Park, the home of the respected Dr. Dewey M. Caron, about seven years ago when a Martin Schneider of Niles, Ohio, who was visiting his married daughter in nearby Rockville, Md, appeared at this get-together with one, proclaiming loudly its virtues. He had purchased it "years ago" from Germany by mail and had been making his own wax foundation ever since, all sizes. A visit to his home later, on the way back from the Eastern Apicultural Society (EAS) meeting in Wooster, Ohio, hosted by John Root in August 1979, presented the instant opportunity for seeing the actual product — beautiful sheets — as if they were made commercially on the Root rollers themselves in Medina, Ohio, where the factory had been open for inspection to EAS members and where a surplus set of Root rollers, actually made there, was available for "$2,000." (This same Schneider, incidentally, made his own extractor out of a washing machine tub and kept his 10 colonies in his garage, with only landing-board openings to the exterior, and smoked his bees from a pipe in his mouth, using no veil or gloves.) Well, he was living proof that one could do it. The temptation to imitate was overwhelming.

Accordingly, an 18¢ air letter to Nottingham, England promptly brought back the requested literature along with the names of two "local" apiarists who had purchased the Leaf mold recently: A beelady near Philly and a beeman in downstate New York. Unfortunately, the former had yet to use hers and the latter — we are still awaiting a reply after almost two years.

Photo 1

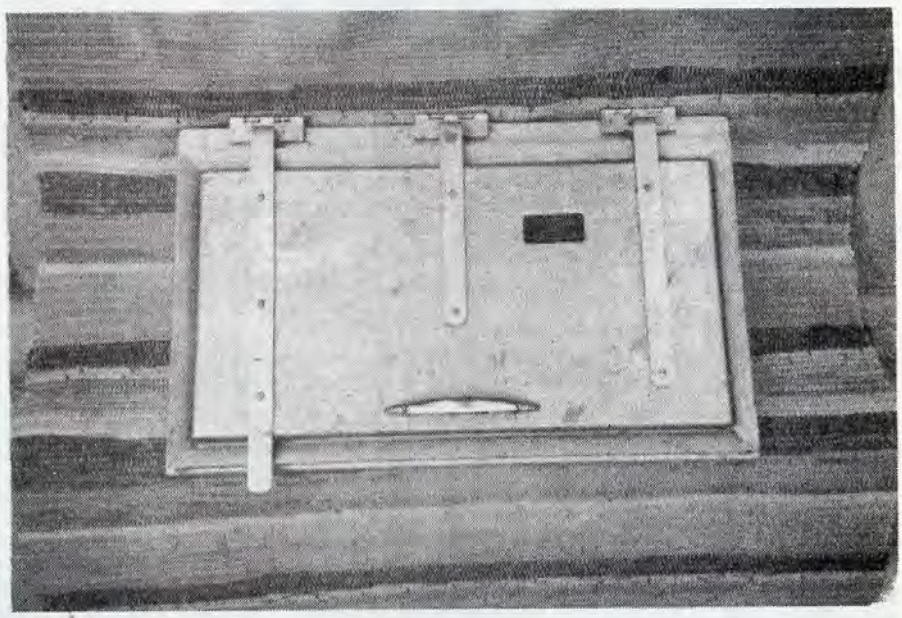


Photo 2

So, after blindly shelling out $136 (the price then!) in tandem with the Beebeard King of Maryland, Donald Pierpont Kolpack, Columbia, the two-piece mold, which opens and closes

like a waffle iron (Photos 2 and 3), deep foundation size, arrived by ship 29 days later, complete with nine pages of mimeograph instructions and boasting.

Our initial use of the mold tended to confirm our worst fears of impracticality because every other sheet turned out to be a gross failure. A bit discouraging, to say the least; however, we were instantly reminded of the feminist allegation that one should not despair because even God Almighty's first try — Adam — was only a "rough draft". And we were following the instructions religiously! "Twenty sheets per hour?" We were lucky to produce four good ones!

After rereading the instructions carefully, the next time around however, from three pounds of clean wax, we were able to turn out sheets

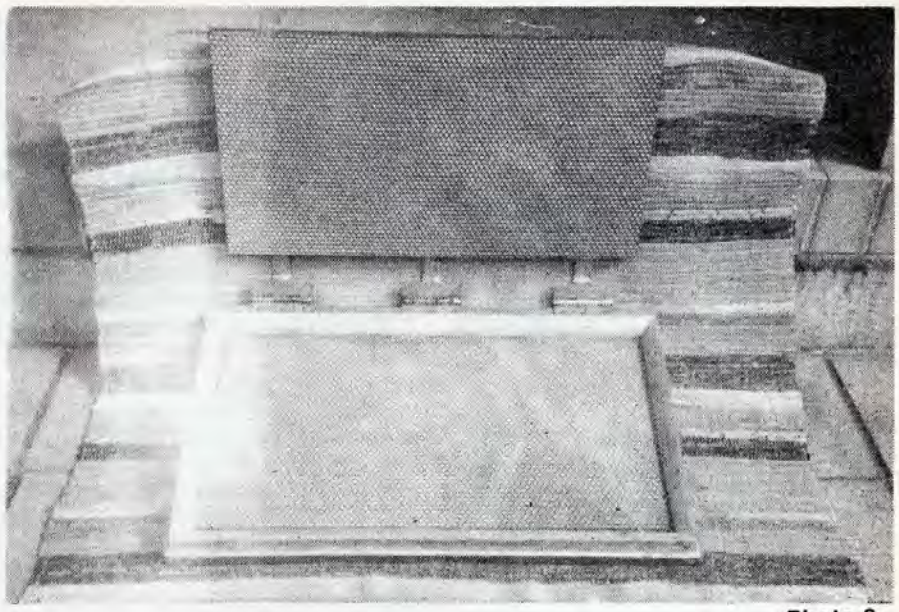


Photo 3

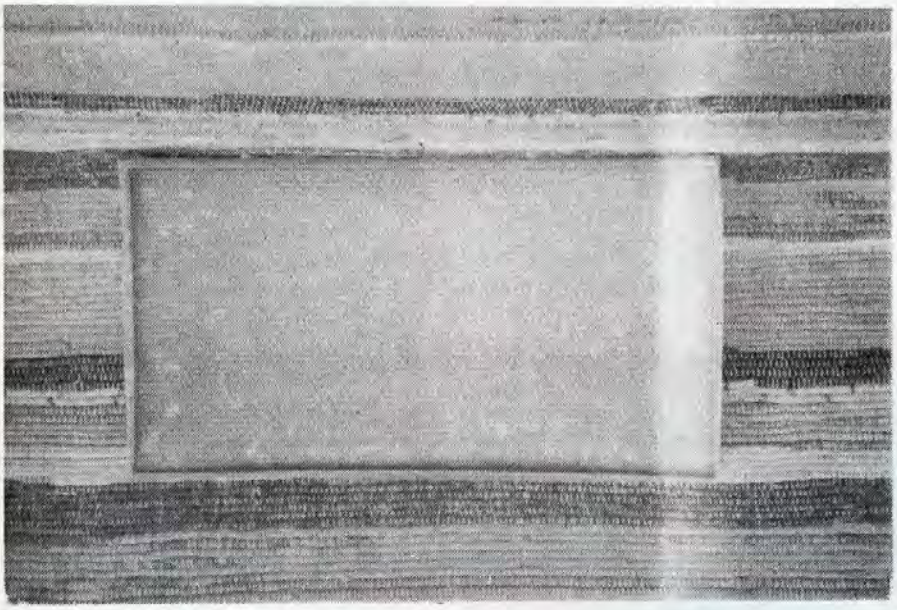


Photo 4

at the rate 13 per hour, all usable as deeps except for the last frame (ran out of wax). And there were **no** failures.

On the next occasion, we manufactures 19 sheets, with only three repeats, primarily because of our own impatience — one must wait a full two minutes for each pouring to congeal and each such should not be more than a cup of hot wax.

We are now convinced that making one's own foundation at home — if one has the equipment, wax, AND patience — does work. But precisely how is it done? Now for the procedures.

Photo one shows all the necessary supplies and equipment, but for the clean wax.

a. Release agent. In one gallon of distilled water (taken from the dehumidifier but refrigerator defrostings should work just as well) mix two tablespoons — shown in the babyfood jar — of dishwater detergent (the instructions actually called for "liquid" but shown in the rubbing alcohol plastic bottle — taken from and shown in the rubbing alcohol plastic bottle — and a half pound of honey, to make a little more than a gallon of release agent. We used two wide-mouth plastic gallon mayonnaise containers for mixing. This is sufficient for about 25 sheets of wax.

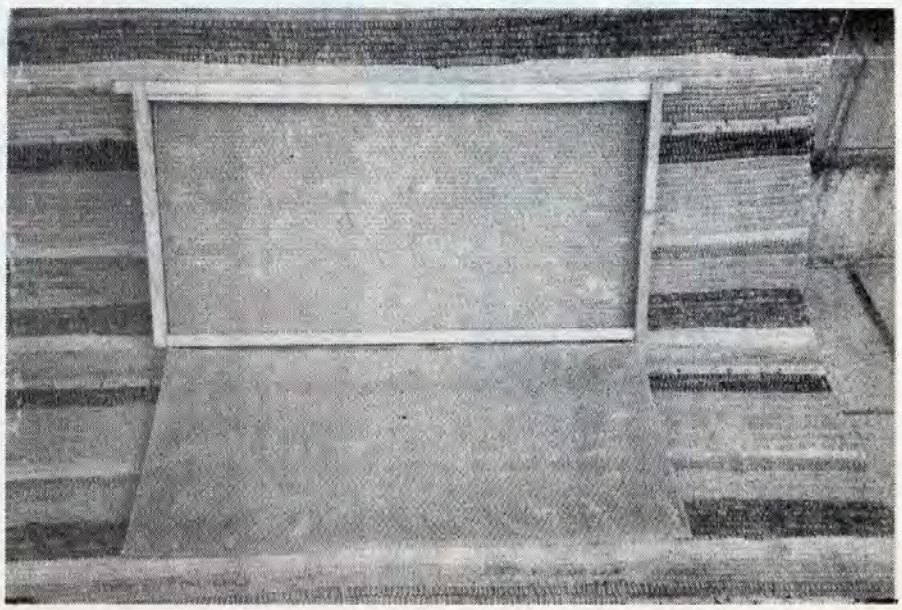


Photo 5

b. Melt 3# of clean wax in the four-quart lidless pressure cooker placed inside of the six-quart one which has water of its own.

c. Open the wax mold (Photos 2 and 3). Using the larger measuring cup, pour sufficient release agent to cover base of mold, lower cover, open and close it half an inch to distribute the liquid thoroughly and, with cover closed, pour off agent back into larger measuring cup for repeated use.

d. Using smaller measuring cup, pour exactly one cup of hot liquid wax — too much will cause messy spill overs and extra heavy rims making raising the cover difficult, and too little will cause holes in the foundation. Pour the perimeter **first** and then the middle, trying not to pour over what is already there. The pouring should be done as rapidly as possible.

e. Close lid immediately — the amount of hand pressure on it determines the foundation thickness.

f. Wait a full **two** minutes — actually, the longer the better — to insure solidifying (90% of the failures disregard this step).

g. The raised lid carries the foundation up with it. Peel it off, starting at the bottom.

h. Place removed product on flat surface over sheet of wax paper; then return immediately to start again at step "c" above.

i. Revert to first sheet (Photo 4) and using template the size of the desired foundation, remove heavy edges with sharp knife, placing surplus back in melting pot for reuse.

j. Photo 5 shows trimmed foundation and then framed. Note that while one sheet is being trimmed, the next sheet is hardening in the press. And if the cutting is not done too speedily, this is just enough time for the congealing process before raising the lid for removal.

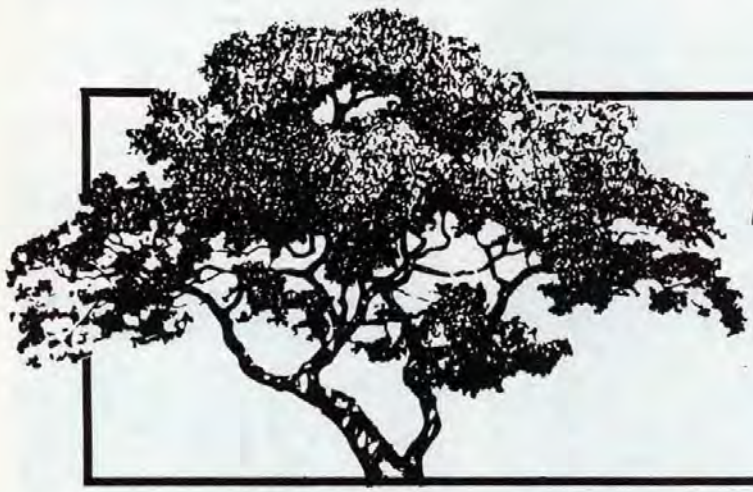
Note also that, contrary to what the instructions say, it is best not to pour off excess wax from the perimeter of the closed mold. It is best left there to form the handling edges. Nor should the sheet be trimmed while still in the closed mold — this damages the dies.

How much produces how much? In one operation, 3¼# of clean wax yielded 13 full sheets and one ¾ sheet with 1½ ozs. left over. The sheets weighed between 3¼ ozs. and 3¾ ozs., the most common being 3½ ozs. (a Root commercial sheet without wires weighs 2.25 ozs.).

But do the bees accept it? In April 1980 they were given one sheet of homemade deep foundation along with 9 commerical sheets. All were fully drawn and filled with nectar but the former comb was thicker than the others (conversely, an experiment at the same time in another colony in which a frame **without** foundation was placed in the center of those with, the former had the narrowest comb of all ten).

Is it cost effective? If one has the clean wax AND the time AND $220 (November 1980 price) AND the patience he can manufacture at home an acceptable product — or he can shell out $9.65 for ten sheets of unwired commercial foundation (Root, catalog No. H-8, 10 sheets, $9.10 plus $1.30 postage) as our beefriend does. Actually there are no losers since the little ladies do not seem to mind which product you give them.

Wax foundation — make it at home? Try it — and you just might like it! □



Now THAT's A Bee Tree!

By EDWIN TATE
Killbuck, Ohio

"It wasn't a big tree, only about sixteen inches in diameter where we intended to make our cut to fell it."

OVER THE YEARS I've helped remove many colonies of bees from various locations: From below ground under stumps, from the trunks and limbs of oak and fir trees, from holes in a cliff face, barn eves, house walls, even a wicker basket.

While deer hunting Dad had found a black oak with bees entering the trunk about twelve feet above the ground. "It's good one!" he said, meaning a strong colony.

We made plans to cut the tree in the morning as the slope was westward and we hoped to be all done before the sun started beating down on us as it would those afternoons.

The tree was on a steep mountainside a half mile up from the river below and a quarter mile down the ridge above. A deer trail around the mountain was the access through timber and brush.

Armed with a cross-cut saw, an axe, our veils, gloves, a couple of buckets, a butcher knife, a hank of binder twine and a ten frame hive, we worked our way through the timber, a

mile from home to the "bee tree".

It wasn't a big tree, only about sixteen inches in diameter where we intended to make our cut to fell it. After a few minutes of sawing our saw was gummed with honey. Maybe we were too high; so we started a new cut two feet lower down the trunk of the tree. We were now a full ten feet below the bees' entrance.

Our saw again gummed with honey almost as quickly as it had in the first cut, but we continued.

We chopped out a notch chip exposing honeycomb and a few bees, then sawed the second cut to fell the tree. The tree came to rest gently up the hill as we'd planned.

Bees were coming out of both ends now but not terribly antagonistic. We smoked them at both ends of the opening with our smoker well fueled with white oak punk and commenced opening the log by sawing and splitting out chunks of the trunk. This was really an easy operation as the sapwood was no more than one and one half inch in thickness and had no heartwood at all.

We now had eleven feet of comb exposed and there was another foot of comb above the entrance and two pails. We filled the buckets with the nicest comb. Home we hiked, to return with two more buckets and two wash tubs and some light rope.

We cut chunks of honeycomb. We brushed the bees into the hive where we had tied sections of comb containing eggs and larvae into the frames with our binder twine, as they can remove it more easily than cotton string. Our tubs and buckets were full of honeycomb. The balance of the brood comb we carried away from the colony after brushing the bees into the hive which we had set up on the now empty log. We leveled up the hive and nailed the cover on.

We cut a slim pine for a pole to which we lashed our tubs in tandem and each of us picked up an end and started home with a hundred and fifty pounds of honey between us.

Our tools and the two other buckets of honey were left for another trip, which we didn't make until later that day when it cooled down some. The bees were clustered all over the hive when we returned so we left them alone.

Our usual procedure was to wait a week before moving the newly hived colony to our bee yard. So, about a week later, with our pine pole and rope, a piece of window screen and a flash light, we hiked around the mountain intending to bring them home.

With careful probing we found beautiful white combs attached to the bottom of the hive.

We'd long before learned never to attempt to work bees at night as they fly to the light, so home we went to return the next day with our bee equipment.

Looking in to the hive, all seemed normal. The chunks of comb were being secured to the frames and new comb was filling the empty area. Below the hive was another matter. Ten new white combs were suspended down into the log from the hive bottom. Home we go for another hive.

Again we tied some of the brood into frames and transferred bees from the log to the second hive and set it up where the first hive had been. The first hive was moved up the log a ways.

A week later we went for them, lashed them to our pole and carried them home.

Apparently we had cut into a two queen colony in the black oak which were about to swarm, although it was much later than usual for swarming.

In any event we ended up with two good colonies, nearly sixteen gallons of honey and eight pounds of beeswax, our pay for our twelve miles of hiking to salvage some bees.

SOMETIMES YOU EARN YOUR PAY. □

About Package Bees

PACKAGE BEES ARE USED to restock hives when the colony has died during the winter, or, to start new colonies of bees in the spring. Queenless packages may be ordered to strengthen weak colonies which have a satisfactory queen.

Package bees should be ordered very early in the year, to be shipped just prior to or during the fruit bloom season. Packages should be fed sugar syrup after being installed unless combs of honey are supplied instead.

A two pound package of bees with a queen will generally build up to an eventual strength equal to a three pound package installed at the same time if conditions are favorable. Often, however, the extra one pound of bees is a distinct advantage.

Package bees may suffer some damage by bee kill if the package is deprived of adequate ventilation or are overheated. If this has happened file a claim with the postal service.

Install package bees in the hive immediately upon arrival if possible. If it is necessary to hold them for many hours be certain they are kept in a cool, shaded place and feed them very thin sugar syrup brushed on the outside of the cage wire.

Package bees provide a source of bees which is nearly free of the risk of disease for stocking new hives and those which have been sterilized.

Many methods of installing package bees in hives are used. Shaking the bees from the cage directly into the hive is the quickest. Queen introduction methods vary also but the most popular way is to use the queen shipping cage to introduce the queen.

Tom Sikes Keeps Bees

"Because of the nearness of his neighbors in the mobile home park, Mr. Sikes had to look elsewhere to locate his apiary."

By ANITA CASSARINO
Box 1402
Pendleton, OR 97801

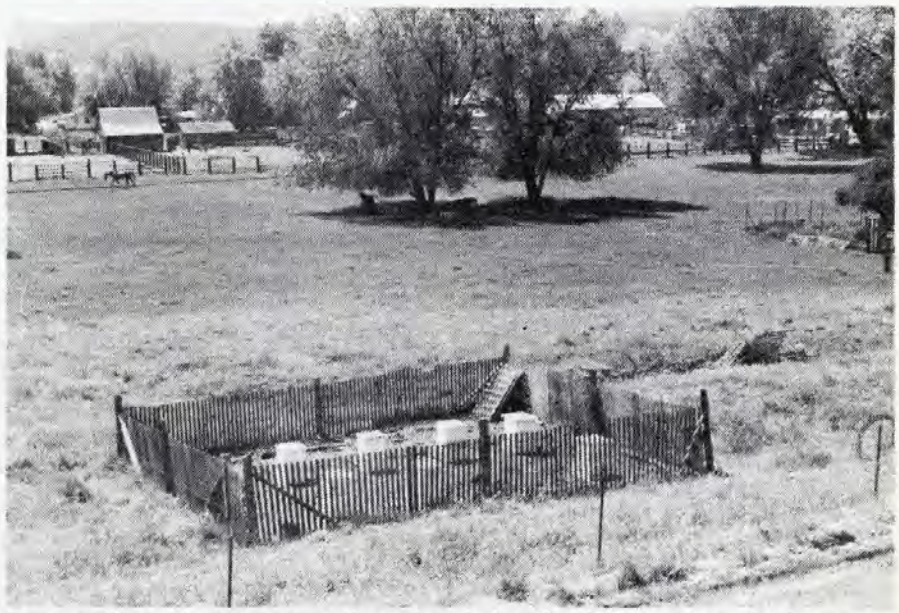
Small Scale Beekeeping in Oregon

WHAT DO YOU DO when you live in the wide open spaces out west and want to keep bees, but do not own much of those open spaces yourself? Ask Tom Sikes of Pendleton, Oregon. Mr. Sikes lives in a neat and trim mobile home located in a mobile home park near the Umatilla River and has managed to establish a little beekeeping operation of his own.

Tom Sikes, a peppy 70 year old with a quick, friendly smile, started working with bees three years ago when a beekeeper acquaintance of his got him interested. Using the book *The ABC & XYZ of Beekeeping* to answer his questions, Mr. Sikes started with a couple of colonies and at present has expanded to seven colonies.

Because of the nearness of his neighbors in the mobile home park, Mr. Sikes had to look elsewhere to locate his apiary. He contacted a local rancher with pasture near the mobile home park. Being that both were long time residents of the area, they made a gentleman's agreement that the hives could be located in the pasture in exchange for a gallon of honey a year. He erected fencing around the apiary to keep the cattle away.

Tom Sikes displays the aluminum shed in which he stores beekeeping equipment in the winter and extracts honey in the fall. Photo by Cassarino.



For a gallon of honey a year, the apiary is located in a local rancher's pasture containing many flowering black locust trees. Photo by Cassariono.

Besides a location, the pasture provides one of the many nectar and pollen sources used by the bees — yellow sweet clover. The bees start the spring by working the dandelions and the fruit trees in the area. As the weeks pass, they add wild flowers, willows, flowering locusts, and the blackberries that crowd along the Umatilla River. Mr. Sikes notes that in the years when the bees are heavily working the locusts, they produce a white, crystal clear honey with a delicious taste.

The bees that fill Mr. Sikes' hives come from swarms that he has caught. Many people around Pendleton know of Tom Sikes' interest in beekeeping, and so starting in May he gets many calls for swarm removal. He arrives at the swarm location with an empty hive body. Carefully he shakes or brushes the bees into it. After dark he returns to remove the hive body with the swarm settled inside.

Frequently he will combine two or three swarms in one colony to give it strength. His favorite technique for combining swarms is the popular newspaper method. He lays a sheet of newspaper between the upper and lower hive bodies. Then before placing the upper hive body onto the lower, he makes several pin holes in the newspaper to give the bees a start in chewing through the paper. In August he requeens those swarm colonies with Italian queens he has purchased.

Honey extraction takes place twice a year — first in August and then in October. For this undertaking, Mr. Sikes has an approach worked out that is well suited to his small operation and space limitations. The extracting is done in an aluminum shed he has set up next to his mobile home. A peek inside the shed reveals that everything is carefully arranged. Honey supers not in use are stacked one atop the other. The small hand-crank extractor is covered over and tucked into a corner.

Mr. Sikes does his extracting at night so that he does not have to compete with the wild bees. Before beginning, he turns on a portable heater to warm the inside of the shed to about 70 degrees so that the honey flows easier. After being strained through a double layer of cheese cloth, the extracted honey is stored in gallon jugs. Mr. Sikes is pleased to note that each year his production improves. Of course once his neighbors and friends learn that he has a new crop of honey, they see to it that it does not stay around for long. "People say I have the best honey

around," he chuckles, "One fellow who bought 3 gallons last year already has an order in for 5."

Mr. Sikes, a retired blue-collar worker, keeps as busy as his bees. This is evidenced by the meticulous garden of strawberries, corn, beans, peas, onion, garlic, and flowers he has in his yard. But it did not seem like such activity would be possible just a few years ago. At about the time Mr. Sikes became interested in beekeeping, he paid a visit to a specialist about a health problem. Tests indicated that he had arthritis. Mr. Sikes recalls that his hands would become so swollen and painful that he would have to soak them in hot water for 10 to 15 minutes before he could even hold a cup of coffee.

"The bees that fill Mr. Sikes' hives come from swarms that he has caught."

The doctor had told him that there was nothing that could be done about the arthritis and he would be crippled in a few years. Mr. Sikes recalls, "I just would not hear of it!" He had heard how bee stings had helped other arthritis sufferers, and so he decided to try it himself. He would work his hives without gloves (and still does), accepting the stings. His condition has improved so that today he can use his gardening tools and manipulate his hives with little difficulty.

Mr. Sikes also attributes his fitness to honey. His wife, Luella, enjoys cooking with it. He is a firm believer in starting the day with two slices of homemade whole wheat bread and some of his honey.

As Tom Sikes prepares to work in his apiary, he adds more fragrant, dried sumac flowers to his smoker and adjusts his veil. From the grin on his face, it is evident he enjoys his beekeeping. He has successfully shown that in spite of space limitations, pleasurable, productive and profitable beekeeping is possible. □

At the apiary site wooden chips cover the ground for easy maintenance. Photo by Cassarino.

Working without gloves, Tom Sikes reverses brood chambers to reduce the possibility of swarming. Photo by Cassarino.

Women In Beekeeping

Somehow I just knew that there had to be women out there who were actively involved in keeping bees...so I asked. Ask was all I had to do too: In came the stories and here are just a few of them!

By SAMANTHA RUSKIN
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Number 203-C
Medina, Ohio 44256

SOME MONTHS AGO I became interested in finding out about women and their involvement in beekeeping. I was sure there were a lot of women out there who kept bees and I wanted to learn more about them. The response to my ad requesting they write me was slow but good. I have heard at varying lengths from more than a dozen women and briefly from even more than that.

I have been fortunate enough to hear from a wide spectrum, too. I have heard from hobbyists, sideliners and I have heard from commerical beekeepers. I even heard from an apiaries officer and a couple of master beekeepers. Each woman's story is a little bit different from the one before. ALL of the stories are interesting.....

Lynn Tobias

Let me tell you first about the woman I heard from first: Lynn Tobias. Lynn lives on a 500 acre farm in the foothills of the Shenendoah Mountains in Virginia with her husband, Seph, a horse and thirty head of cattle. I asked her for a photograph and she was gracious enough to send me one of her with her horse. In the background you can see the beautiful country that makes a home for her bees. Lynn's bees certainly have a lovely home with plenty of locust, wild flower and white clover.

Lynn has been married for less than two years and has lived in the area about three years. She is originally from West Chester County, New York. She went to SUNY College of Environmental Science and Forestry at Syracuse. She later decided to move someplace with shorter winters and longer growing seasons. The Jordan River Farm fit the bill. It's 470 acres of rolling to steep pasture with 50 acres of woods. The farm had been neglected for a long time before the Tobias' took over.

Seph and Lynn run the farm in cooperation with two partners (also women). As of last September they were supporting the farm more than it was supporting them. Hopefully that will change for them very soon.

Since they are supporting the farm, more or less, they each work outside jobs too. Lynn runs a woodstove shop and Seph if going to school full time to learn auto mechanics. It isn't easy but for Lynn Tobias it's worth the struggle.

The Tobias' have a very large garden, dairy cows, chickens and grow most of their own food.

Lynn became interested in bees about five years ago. It was then she moved to Virginia. She had a few hives when she lived in Louisiana too. They were left to her by a friend who moved. As Lynn puts it, "They're darn interesting." So she read up on bees and was fascinated by their complex social behavior and organization. She says," we sure could learn a lot from them".

At Jordan River she started out with two hives. The next year she bought two packages and the next year, two more. Last year she had seven hives and caught a few swarms. She was up to fifteen hives when last I heard ....and still growing.

They are fairly dependent on locust trees for their honey crop but there is a moderate summer flow of wild flowers and white clover. She uses a neighbor's extractor and bottles the honey in mason jars. Generally she sells all she has and could sell more if she had more.

Lynn says she got "bee fever" about three years ago when she saw a swarm from the family kitchen. She bounded from the table and out the door, chasing the swarm. She followed it through brambles and bushes, into a creek and across country until it finally settled on a bush. She then raced back and got an empty super and hived her first swarm. (Sounds like a great entry for the How I Heroically Caught a Swarm contest, doesn't it?)

Bees are "an endless source of amazement" for Lynn and I ap-

Lynn Tobias (with horse) on the beautiful Jordan River Farm.

preciate her willingness to share her story with us.

Susann DeCowsky

I have heard from a number of women who share their love of bees and business with thier husbands. Susann DeCowsky is such a woman. Susann's business card caught my eye and I thought it might give others some ideas for similar promotional means. It is the ONLY card I received with the woman's name being the most prominent.

Susann has been keeping bees for the last five to six years. She works about 100 hives now and plans to increase to 3-400. (It has been a while since we corresponded and she may well be on her way to that goal by now.) She and Richard sell honey, pollen, wax and propolis at local farmer's markets.

Susann also lectures to groups on bees and beekeeping. I thank her for being willing to share with us.

Ann Steinlauf

Ann has been involved with bees since 1974. She has worked with bees in Europe, North Africa and Canada. At the time she wrote me she had 6 colonies and planned to expand about now.

She is intereted in other things but says "Nothing supersedes my joy in working with bees." Ann has been a commercial beekeeper for a long time now and is making the transition to hobbyist in Oakland, California. I was very glad to hear from her.

Roberta Glatz

One of the very first women to write me was Roberta Glatz. She is a life long beekeeper who runs over one hundred colonies. She is an excellent writer and lecturer. She is also a member and officer of several beekeeping organizations. Roberta is a master beekeeper at Cornell University. I very much look forward to hearing from her again.

Claudia De Bellis - Di Giovanni

Claudia is married and has one child: Frank, who was born June 17, 1980. (Happy Birthday, Frank)

Claudia told me that her husband was somewhat leary of having a colony of bees in the backyard. Since then he has become an enthusiast over his wife's 60,000 member flock. Charles especially enjoys reaping the benefits of his wife's venture.

Claudia has a BA in Anthropology and a MA in Liberal Studies. She teaches psycho neurologically impaired children and has for the past nine years. She tells me she speaks pitiful French, too.

Her interest in bees began with her Dad's remark about keeping bees when he retired. She decided: Why wait till he retires?

So, Claudia and Charles set out to buy her father bees and bee supplies for Christmas that year. It was a merry chase for two people who knew little to nothing about bees and bee supplies. But all ended well and her Dad was "off and extracting".

Claudia's operation is "strictly on the hobbyist level." She has one hive and extracts by scraping the combs down to the foundation into a kitchen colander. She uses everything.

Claudia closed by asking me why women get so little attention in the beekeeping world and why at conventions they are recognized only a wives of beekeeper on the activities programs. That is, if they are mentioned at all!

I have also wondered about women in beekeeping and why they get so little mention. I have found that women (like the worker bees) play a very important role in beekeeping and always have. I have heard from more women who are interested in beekeeping than I imagined possible and I look forward to hearing from more of you. Maybe one reason women are mentioned so little is that they are heard from so little. Let your voice be heard!!

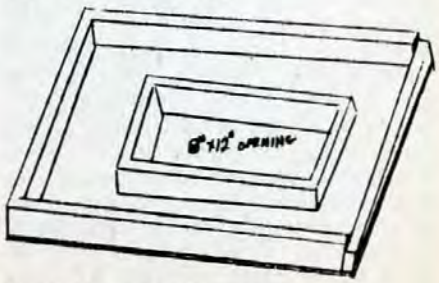
Many thanks go to all the women who wrote me and shared their lives. I have only printed a small portion here and will try to give you some more in the next months. Let me hear from you, too.□

Ventilated Inner Cover

THIS COVER offers plenty of ventilation, which I believe is a must for over-wintering, because of the great amount of moisture present in the hive due to stored honey and the bees themselves. This cover provides a space where dry sugar can be placed for feeding and it acts as a shielded top entrance in case it is needed.

The cover is made by cutting a twelve by eight inch hole in the center of a one eighth or one quarter inch piece of plywood or masonite sixteen and one eights by nineteen and five eights inches. Four strips of soft wood one inch high and from one half to three quarter inch thick are nailed around the opening. Three sides on the outer edge will have a similar edge, only one and one half inches high nailed to the rim. The remaining side, the front of the inner cover, will have a piece only one inch high nailed to it. This leaves a half inch opening, after the telescoping cover is in place, for ventilation and top entrance (see sketch). The corner joints may be butt, miter or rabbet.

From New Jersey Beekeepers Association Newsletter. Idea contributed by Ed. Littig.



Ventilated Inner Cover

Larry Bullis: The Bee-Watcher

"My acquaintance with Larry was beginning to look as profitable as it was interesting..."

By E.Y. LEVIN
Potomac, MD

LARRY BULLIS AND I first met on a bright November day in 1979. He appeared at the door of my Potomac home with his 12 years old son, Eddie, asking about bees. Beekeepers who keep a few hives in the backyard of a suburban home get used to curious neighbors, and I listened with some boredom and forced courtesy as Larry asked some routine questions and mentioned that Eddie was planning a school report on bees. My attitude changes only a little when Larry remarked that Eddie's interest had been stimulated by the presence of a wild beehive in a forsythia bush on his grandmothers lawn.

"Well, probably wasps at this time of year," I commented.

"No no," said Larry, "I know bees from wasps. These are bees."

"Is it a gray, football-like thing, hanging from a branch?"

"No, it's a comb; I know a bee comb from a wasp nest."

"Is the comb horizontal, hanging down?"

"No, these are long, parallel, vertical combs," he said, indicating with his hands. Now it was Larry's turn to be impatient with me. He sounded a lot more informed that any non-beekeeper I ever met, and I was getting considerably more interested.

"Could we go see?"

I tossed a couple of boxes into the Suburban, and we headed through the twilight to River Road, forgetting the camera. The "hive" was as Larry had described, five or six beautiful parallel combs, fixed about four feet high in a hedge next to the long driveway of a new country home. A small cluster of bees huddled around the center comb, shielding their queen against the stiff wind. A few rocks were embedded in the outer combs, evidence of experiments in bee-activation by young friends of Eddie. The hive was almost completely unprotected from the elements (or from small boys), unusual for bees outside the tropics. Carefully I cut the twigs which supported the hive and lifted it free; it was very light, obviously robbed out, and the combs, rocks, attached twigs, and bees could all be easily carried in one hand. I put the mass in two stacked hive bodies, and took the bees and Bullises home.

The hive was almost completely unprotected from the elements.

My first three jobs with these bees were to install them in the basement under a wire screen, deliver a present of honey to the Bullis family, and call the University of Maryland for advice. Dewey Caron, Professor of Apiculture, was something less than encouraging; he estimated the chances of this swarm surviving winter as between slim and none, and he was right. So few bees were present that they couldn't break cluster to feed even in the 68° basement, at least not until I hung a light bulb over the boxes. Even then they took syrup very slowly, though I painted it on the screen to help them, and I had the feeling that they were using up more calories than they were storing. Clearly I couldn't keep hand-feeding them for four months, and on a warm day a few weeks later I installed them outside, over a strong colony as the books recommend. The next day was flying weather, and within 48 hours they had disappeared, either drifted or robbed out, leaving me with only some empty comb, the enclosed picture, and a fascinating memory.

When I reported the bad news to Larry — Eddie had gotten an A on his paper — he sprang his next surprise: a giant bee-tree on the grounds of the private school where he is Headmaster. It was already clear that Larry had unusual powers of bee-observation, and this time I took him at his work, even though it was another two months before weather returned that was warm enough to allow me to do any bee scouting.

I found the bee tree only a few steps from the school tennis courts. It was a giant old sassafrass (I hadn't realized they grew so large), with two or three locust shoots at its base, and a lightning crack running from the ground up about 15 feet. The bees were entering and emerging in a dense stream from a wide place in the crack only about three feet high! Here in early February each bee was loaded with white pollen, at a time when my bees only two miles away (in a beeline) were finding no work.

My acquaintance with Larry was beginning to look as profitable as it was interesting, but none of my

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THE ASHURSTS OF IMPERIAL VALLEY, CALIFORNIA

(Continued from page 329)

Self-spacing frames

The Ashursts keep their colonies on pallets. The bottom boards are built on the pallet. The brood is kept in a single 10-frame Langstroth hive until after the citrus flow. Then a second full depth hive is added for the brood nest.

Their supers are 7¼ inches deep. Eight self-spacing frames with extra wide end bars are used. These eight frames fit snugly into the supers that are wide enough to hold 10 standard width frames. Eight vertical and no horizontal wires are used in these smaller frames. These vertical wires greatly reduce the number of combs that are pulled out of the frames during extracting in the hot desert climate of the Imperial Valley.

"Starting at sundown, the Ashursts sometimes cover as many as 2,000 colonies in a single evening."

Bees bought in fall from N. Dakota

In the fall the Ashurst Brothers have been buying bees and queens from about 2,000 colonies belonging to Dick Ruby in North Dakota. These colonies average about 8 pounds of bees and normally would be killed. The bees are then moved to California.

Colonies covered with burlap

The Ashursts cover their colonies when pesticides are applied when they are on pollination contracts. Most of their colonies are kept under ramadas(covered shades)to help protect them from the desert sun. The entire apiary of between 60 and 84 colonies kept under a single ramada is covered with one very large burlap cover. Starting at sundown, the Ashursts sometimes cover as many as 2,000 colonies in a single evening. As soon as the colonies are covered, the insecticide is applied. The covering is kept wet with a power sprayer pumping water from a water tank mounted on a truck. In the morning the cover is removed. The Ashursts report that they have greatly reduced spray losses from short residual insecticides by covering their colonies.□

HONEY FOR HEALTH

LARRY BULLIS: THE BEE-WATCHER

(Continued from page 338)

friends with chain saws wanted to tackle this monster of a tree, though it was old and rotting, for fear of having it crush the tennis fence. So in early May, at noon of a brilliant flying day in the middle of the honeyflow, I returned to the tree with a caged queen, a frame of brood, and a few hundred house bees in a screened-in hive body.

Mounting a bee escape in the crack, I began wrapping the tree with flexible nylon window screen. At first, every time I sealed a crevice, the bees found another one higher up. The three cinder blocks I had brought as a ladder were inadequate, and I had to stand precariously on the hive body containing the queen as well. Finally all the entrances were sealed, and desperate bees, loaded with nectar and pollen crawled in masses on the trunk, buzzed in circles around its base, and stuffed themselves into the bee escape, but they could gain no admittance.

Carefully I put my queen containing hive body at the base of the tree, the entrance about a foot from it, and opened the screen. A few flying bees began exploring the small entrance, and soon one or two entered it. And then, as if on a signal, a wedged-shaped column of bees began marching slowly and methodically off the tree and into their new home. I ran to the Headmaster's office to bring Larry Bullis to see this marvelous sight; we watched the bees for a while, and I went away to other business.

Next day I returned to look at the new hive: it was jammed with bees, with no room for any one who might be out flying. The bee trap had succeeded beyond my expectations, and I had to add another hive body to allow all the bees inside at night. This made the hive much more difficult to move, and led to a near disaster which might be the subject of another article. Anyhow, the hive was moved soon after, for the weather turned hot and we didn't want to destroy all the bees in the tree by depriving them of water. I removed some of the screen, and within a day or so everything was apparently back to normal — except that I had a new hive at a distant location.

Three weeks later I caught a small swarm, and with this bait I milked the tree of bees again by the same method. After this operation the stream of bees flying from the tree was reduced to a trickle.

"We can easily get rid of them now, it they're still bothering the tennis players," I told Larry. The tennis coach, who had watched our manipulations eagerly, had reported this complaint. Larry must have noticed my distress.

"Most likely yellowjackets," Larry replied kindly. "It would be a shame to destroy such a healthy colony."

He suggested we let the bee-tree population recover, to be robbed again of bees next spring; obviously, Larry had the heart and brain of a beekeeper. I agreed, and now the tree-owner, the beekeeper, and the bees in the tree all seemed happy. Even the tennis coach seemed satisfied, at least after I presented him with a two-pound jar of honey made by "his" bees!

When I took Larry his share of the honey this fall, he dropped his latest bomb. "Why don't we do this to the other bee tree on campus, the one near the creek behind the gym?" It's winter again now, and I haven't seen those bees yet, but I'm sure I will. Meanwhile, I await with pleasure any new surprises about bees Larry Bullis can find me. □

Tennessee Honey Queen

The 1981 Tennessee Honey Queen is Alesia Draper, 20 year old daughter of Mr. and Mrs. James D. Draper of Deer Lodge, TN. A 4-H project started her interest in beekeeping. A graduate of Wartburg High School, Alesia is a Junior in business administration at Tennessee Tech University in Crooksville, TN. She was honored with the queen's crown at the Tennessee Beekeepers' Convention last fall at Pickwick Dam State Park, TN.

Moving Bees: Hints for the Small Beekeeper

"Not to get sting is your aim. And, remember, bees don't like to be jarred ....."

By SUE ANDERSON GROSS
3N681 Bittersweet Drive
St. Charles, IL 60174

MOVING BEES IS NEVER my idea of fun. It's heavy work, and it can lead to a lot of stings. If at all possible, I avoid it. Nevertheless, during the past ten years, my husband and I have moved quite a few bees. Sometimes we've needed to relocated an unproductive yard; sometimes we've been evicted from a location by a nervous landowner or by a housing development; and on occasion we've been forced to rescue hives that have been vandalized. I always hope that "this move" will be the last one, but it never seems to be. My conclusion is that anybody who plans to keep bees on other people's property should be prepared to move them on a moment's notice and know how to do it.

A beekeeper can minimize the stress to himself and his bees by chosing the right time and using the right methods to move his hives. But he must also face the fact that he may have to tackle the chore under less than ideal conditions. Late summer, for instance, when the hives are heavy and the colonies strong, is a bad time to move bees. Late summer, when the hives have been knocked over by vandals, so that the boxes are jumbled upside down leaving the frames in a tangle and the bees ready to attack at the slightest hint of human activity, is an even less auspicious time. But those are the conditions we've been confronted not once, but several times in our beekeeping career. Based on my experiences with planned and unplanned moves, I'd like to offer a few hints which might save other small beekeepers some stings when it's their turn to hit the road.

If you can choose your time, move your bees in early spring. The colonies will be light and they will normally be confined to one box. Where we live in northern Illinois, late March or early April is the ideal time. By then the weather has begun to warm up and the spring thaw is over with, meaning that the ground has firmed up enough that we can drive a truck into our yards. I suppose an admonition to "test the ground" would be meaningless to a California or Florida beekeeper, but it's sound advice to any northern beekeeper. Speaking from experience, it's embarrassing to have to ask a local farmer to rescue you from the muck of a muddy pasture with his tractor — particularly when your aim was to move not to mire down!

Obviously, the lighter the hives are, the easier they'll be to move. Moving in one box is ideal. That's the way the migratory beekeepers do it, and if you are handling the chore alone, that's the way you'll probably have to do it. But if you have two people available, you may find it more convenient to move your bees in two boxes, if that is the way you overwinter them. Keeping a hive intact will disturb the colony less. A two-deep hive is not too heavy for a man and a woman to lift in early spring when the boxes are partially empty. A two-deep filled solid with honey is another matter: It's manageable, but barely. If you do decide to knock your hives down, it makes sense to utilize this opportuni-

ty to divide the brood and install package queens to make splits at the same time.

In early spring, when the colonies are weak and the weather cool, you can occasionally make your move simply by hefting one story hive into the back of your truck, driving to your new location, and unloading them. On the other hand, only a fool would try this kind of move with two-story hives or with strong one-deep colonies. Take precautions, and don't take anything for granted is my advice.

Not to get stung is your aim. And, remember, bees don't like to be jarred, so lifting and carrying a hive is going to make its inhabitants mad. It's no laughing matter to be stung thirty or forty or more times within a few seconds, particularly if the stings lay you up in bed and make you miss the next day's work, which happened to me once when I was trying to move a twice-vandalized yard in the middle of November.

What should you wear? My usual beekeeping outfit is identical to what the local farmers in Illinois wear. It consists of high-laced work boots and a slate grey jumpsuit made of heavy cotton, similar to but much less conspicuous than a beekeeper's white jumpsuit. When I'm moving bees, I add a heavy pair of jeans and a sweat shirt underneath, no matter how hot the temperature is. Better to sweat than be sorry. I also make certain to close off my ankles and wrists with rubber bands. Again, better to look silly than be sorry. Veils are a problem. I've never found a truly satisfactory veil, which didn't allow bees to sneak under it for an attack on my neck or nose. But for moving, I at least make sure than my veil fits under the collar of my jumpsuit at the back of my neck, to minimize access. With any kind of beekeeping, preventing the first sting is what counts. Once the bees get the scent of the acidic sting pheromone, they'll be at you en masse. And when you haven't got the option of retreating, as when you're dealing with a vandalized beeyard that has to be moved, it doesn't behoove you to take chances. Don't play macho.

"Or better yet, have a couple of Kitchen footstools ready, and walk the hive up stairs into the truck bed."

Your best insurance against getting stung is to make certain that the bees stay **inside** their hives during a move. How do you do this? First and foremost, make sure that the hives don't fall apart when you lift them. Use strong hive staples to tack the boxes and bottom board together. After this is done, you'll still need to close up the entrances, as well as all the miscellaneous cracks and holes created by broken box corners and the like. I shove grass into the main entrances. It's easy to use, and the bees can eat their way through it in a matter of days if, for some reason, I don't choose to liberate them immediately upon arrival at their new location. Tape is my choice for holes and cracks. Wide (2") plastic tape is preferable to masking tape. Bees can eat their way through masking tape overnight, which can throw off some well laid plans. Masking tape also falls off the hives in a rain. It pays to be generous with tape. Some of the hives I've moved have looked like patients in an emergency ward, swathed

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QUESTIONS AND ANSWERS

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Answers to Quiz. 1-D, 2-D, 3-C, 4-B, 5-C, 6-D, 7-C, 8-D, 9-B, 10-A, 11-B, 12-B, 13-D, 14-D, 15-A.

SIFTINGS

(Continued from page 324

beekeepers in this area are pure Mayan Indians and are excellent beekeepers, until the diseases struck many of them and took away their livihood.

It was a wonderful experience to spend a week together with Camilo and hear all the fascinating experiences he has had beekeeping all his life in Yucatan. One nice thing about beekeeping, there is never a dull moment. The bees make friends for you all over the world.□

MOVING BEES: HINTS FOR THE SMALL BEEKEEPER

(Continued from page 342)

from head to toe. But the tape has kept the bees inside the hives, which is all that mattered to me.

When it comes to fastening down the cover of the hive, you want to tape the inner, not the outer cover. It's almost impossible to secure a bee-tight closure at the overhanging edges of a telescoping cover, while the flat inner cover is easy to seal tight against the top box. Remove the outer cover and set it aside. Smoke the bees down into the top box through the hole in the inner cover; scrape away any burr comb around the hole, and shut it with tape. Then secure the inner cover to the top box with more tape. Now you can either replace the outer cover or move the hive as is. I would recommend the latter. The hive will be lighter to lift. Furthermore, hives without telescoping covers will fit flush, one against the other, in your truck or trailer. Sometimes, therefore, you can squeeze an extra hive or two onto a load. If you have a quantity of colonies to move, you may be able to save youself a trip or two — no mean consideration taking into account the price of gasoline.

Some beekeepers use a piece of screening over the hole in the inner cover, where I am suggesting you use tape. The theory is that the screening provides air circulation and prevents the bees from suffocating. Personally, I don't think screening is necessary, unless it gives you peace of mind. None of our colonies has ever suffered any ill effects from being sealed tight for an hour or two, even on a hot day.

It's smart to staple and tape the hives the day before you want to move them, since pounding the

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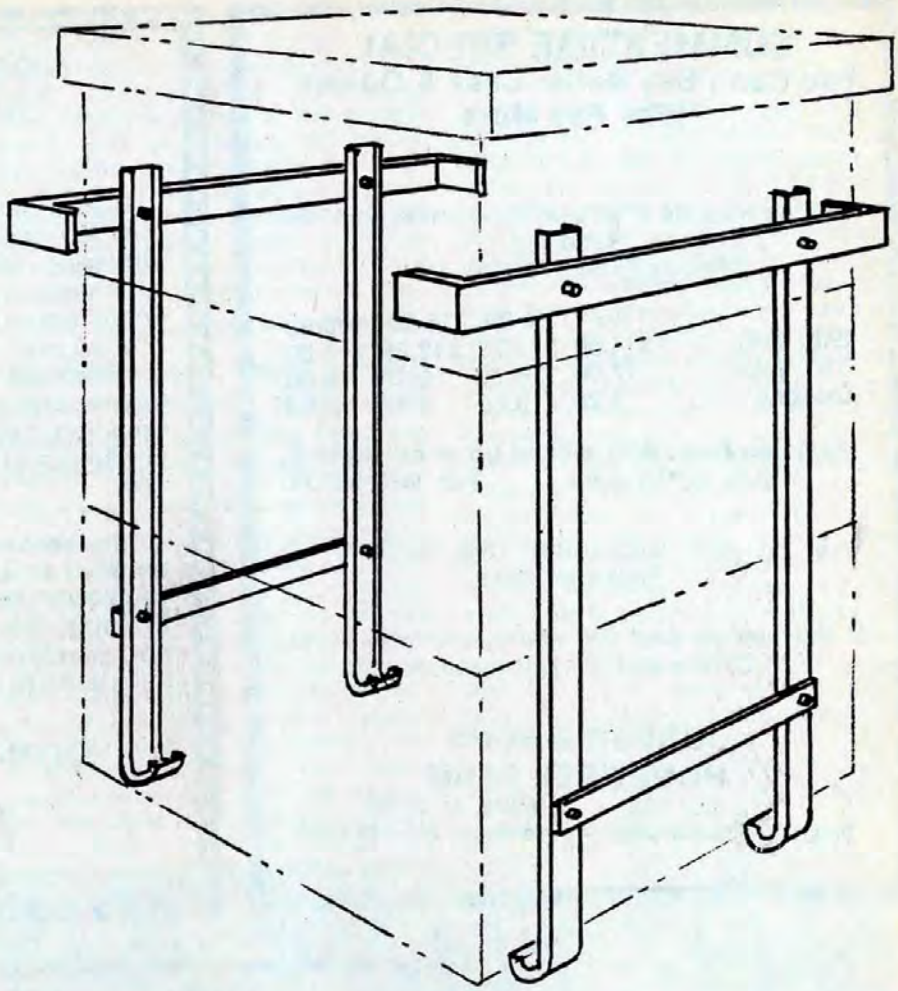
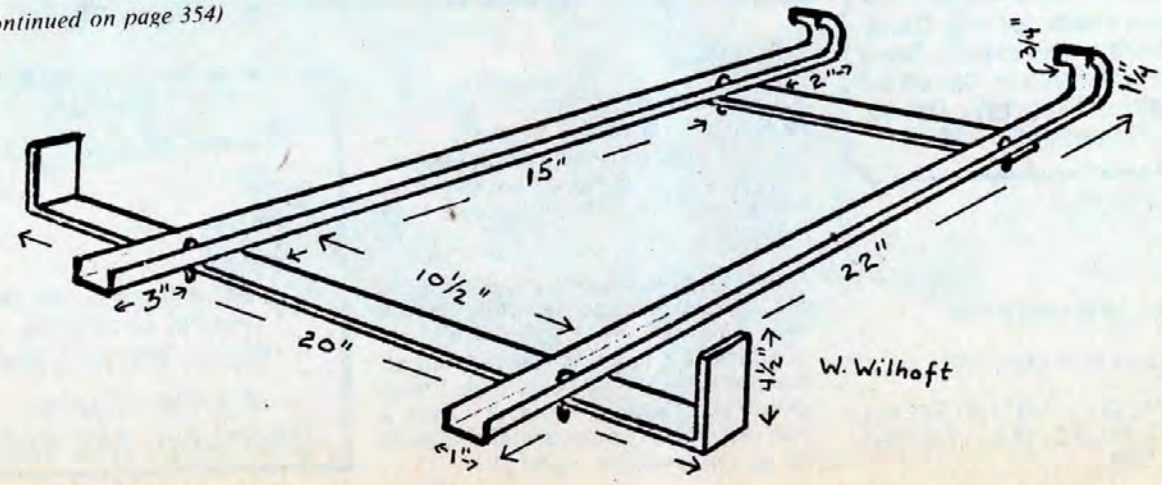


Construction Details

You'll need two frames, one for each side of the hive. They are made of one-inch wide band iron, three-sixteenths inch thick, bolted or welded together. The frames are 22" high, with two additional inches of metal curved into "U" shaped grips at the bottom. The top cross bar is 20" across and has two right-angle arms, 4½" long, which fit around the sides of the hive to keep the frame from slipping. The top cross bar serves as a handle when the hive is being carried.



News and Events

Dr. Dewey Caron goes to Delaware to become Chairman of the Entomology & Applied Ecology Department. He will continue bee studies and teaching apiculture.

MARYLAND
Dewey Caron goes to Delaware

Dewey M. Caron, Apiculturist at the Univ. of Maryland will soon be chairman of the Dept. of Entomology and Applied Ecology at the Univ. of Delaware. In addition to Administrative duties, Dewey will teach the Apiculture Course and will continue with honeybee and yellowjacket research projects.

The Entomology faculty at Delaware numbers 14 including extension specialists. Active research by Delaware faculty include studies on pests of Delaware crops, mosquito control, IPM and biological control of insect pests of crops, insect ecology behavior, host plant resistance and identification of insects. Dale Bray, former Dept. Chairman, assisted by Chuck Mason will continue honeybee extension activities at Delaware and Dr. Mason will continue his research project on bee behavior and pollination.

WISCONSIN
Three Day Bee Program

A three day program running from August 6th through August 8th will be held at the Sheraton Inn in Madison, Wisconsin.

The August 6th session is a course for instructors and advisors. On August 7th a seminar will be held for experienced beekeepers. On August 8th an open house will be held at Russel Laboratories.

There is a registration fee. For more information contact the Agricultural Conference Office, Jorns Hall, University of Wisconsin, Madison, WI 53706. Phone 608 263 1672.

ARIZONA
Carl Hayden Bee Research Center

Dr. L.N. Standifer, because of health related reasons, has requested to be relieved of his duties as the Laboratory Director. We have complied with his request and effective April 20, Dr. Martha Gilliam was appointed as the acting person in charge.

Should you have reason to contact the Center, please address you inquiries to Dr. Gilliam.

ILLINOIS
Illinois State Beekeepers Assn.

The Illinois State Beekeepers Midsummer meeting, July 11, 1981 to be held at the Madison County Farm Bureau Hall, 900 Hillsboro Ave., Edwardsville, Illinois. Accomodations may be made at the Holiday Inn, Box 309, Edwardsville, Il .62025. Phone 618-345-9000.

NORTH CAROLINA
1981 N. Carolina Beekeepers Assn. and Southern States Beekeepers Fed. at Appalachian State University Boone, N.C.

The program will extend from Thursday (1-9 pm registration) July 16th to Saturday July 18th at 12 oclock.

The newly reorganized Southern States Beekeepers' Federation and the N.C. State Beekeeping Association will hold a joint meeting at Appalachian State University in Boone, N.C. from July 16 to 18, 1981.

This meeting is open to anyone with an interest in bees and there will be something for everyone. The program has outstanding speakers, educational workshops, numerous dealer displays, entertainment, honey judging and other contests and an opportunity to visit with a large number of beekeepers.

SPEAKERS

1. Dr. Richard Taylor will speak on *The Joy of Beekeeping*. Dr. Taylor of Trumansburg, NY is well known throughout the beekeeping community for his numerous books and his monthly column in *Gleanings*.

2. Mr. Lawrence Goltz will speak on *Gleanings*: History and Philosophy. Who better to speak on this topic than Mr. Goltz, the editor of *Gleanings*.

3. Dr. John Ambrose will speak on "African Bees and Beekeeping in the Sudan". Dr. Ambrose will discuss his recent trip to the Sudan and his work with the beekeeping industry there.

WORKSHOPS

Cooking with Honey
Beeswax and Candle Making
Bee Diseases & the ETO Chamber
Comb Honey (Cobana Section) Making
Assembling Beekeeping Equipment
Bee Beard

CONTESTS

Honey Judging
Cooking with Honey
Honey Tasting

In addition to the above sample activities, there will also be additional speakers, a banquet, an auction, entertainment with old-time traditional Appalachian music and many doorprizes. The ENTIRE COST for this meeting including the two nights lodging (double occupancy), 6 meals (including the Friday night banquet), and registration will be approximately $44.00 for adults and less than $15.00 for children who share a roon with their parents.

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DEATH OF A BEEKEEPER

(Continued from page 318)

law), the widow may be confronted with a real problem. The whole world knows that she is seldom able to carry on the project herself. Also the necessity for timeliness in performing certain tasks doesn't leave the widow long to effectuate a profitable sale.

There's a natural disinclination for couples to discuss the eventuality of death, and the problems it places on the one who is left behind. This should not be the case. Death is as natural and as inevitable as any other phase of life. It should be discussed calmly and dispassionately. A beekeeper should give his spouse his best advice long before he dies.

Too often the widow is forced into a not-too-profitable sale. Her best safeguard against this is prompt and wide advertising of her holdings. Incidentally, Mrs. Smith sold her beekeeping holdings to a friend of Andy's who had had considerable experience, and who seems to be getting along all right.

Does the community lose when a beekeeper dies? Usually it does if he was a good person and successful operator. It loses him as a desirable neighbor, friend, and participant in the affairs of community. The community's best hope is that the successor be of equally good quality.

Does the purchaser of the former beekeeper's holding lose out? Seldom. Too often he purchases the beekeeping outfit at a price far below its true value. Of course, if an individual such as Andy allows himself to invest in a beekeeping enterprise for which he has not had adequate preparation and experience — as Andy definitely did not have — he is almost certain to lose. I dislike to see that happen.□

MONTHLY HONEY REPORT

(Continued from page 302)

mising good rains in Tennessess and looks good for clover flow. Bees are strong and swarming a problem.

Region 7

Bees are doing very well in Arkansas with warmest April on record. some excellent yields from spring honey flows. Prospects are for above average temperatures and below normal rain fall for region. No local honey for sale in Oklahoma. Some rain in east central Oklahoma. Bee populations slow in building. With the new government support prices in effect the government may own a lot of honey and this may kill the support price in 1982.

Region 8

Late April rains helped revive range lands in eastern third of Montana but did not break the drought. Other areas have adequate soil moisture and legumes are growing well. Much early bloom but weather conditions prevented bees from working bloom to their capacity. cooler weather causing bees to use stores after early build up.

Region 9

Imports continue to be a factor in the honey market. Colony condition and strength is rated as good. Considerable build up during almond bloom. Good supplies of early nectar and pollen. Bee plants are looking good. Sage honey crop prospects have improved along central California coast, but lagging in southern California. Many colonies moved to citrus orchards during April. Larger than normal out-of-state colonies moved to California this year.

BEEKEEPING TECHNOLOGY

(Continued from page 322)

toward the front of the colony. Bees do not seem to be grossly upset by this procedure. Problems arise if the blower is required to remove bees from uncapped honey. Bees are normally engorging on honey during this process. Being halfway inside the cell makes it difficult to blow the bee out. On occasion, the blower has been responsible for starting robbing in apiaries. If honey is to be removed during a dearth using a blower, some beekeepers take supers along with the bees away from the yard to remove the bees. If large numbers of bees are to be removed, nucleus colonies with caged queens may be nearby to attract the large numbers of free flying and disoriented bees.

Individuals who are mechanically inclined may want to construct a blower. Plans were given in a recent *Gleanings In Bee Culture* (October 1980). Air compressors or vacuums with a directable exhaust may also be used if electricity is available.

Hopefully, this discussion will assist new beekeepers in collecting their honey rewards or possibly help established beekeepers try other techniques.

I hope to write an article next month on equipment and techniques employed by beekeepers that operated 75-300 colonies. Often times, this particular group has unique equipment problems. I would appreciate hearing from beekeepers on such topics as hive lifting aids, improvised wax melters or any other associated piece of beekeeping equipment or procedure. I would also like to hear from equipment manufacturers that have equipment to cater to this size beekeeper. Thank you.□

For additional information and registration materials write:

Southern States Beekeeper's Federation
1403 Varsity Drive
Raleigh, NC 27607

GEORGIA
Beekeeping Course

A beekeeping class will be held at West Georgia College, June 18 to July 23, 1981. The fee is $20. For more information contact W. Calvin Vinson, Rt 3, Box 93, Carrollton, GA 30117. Phone 404-854-4629.

OHIO
Beginning Beekeeping Offered - CCC

A course in basic beekeeping designed to give the beginning hobbyist and sideline professional competence in beekeeping and honey production in northeastern Ohio will be offered by Cuyahoga Community College's Lifelong Learning Center.

To be given at CCC's Western Campus, 11000 Pleasant Valley Rd., Parma on Saturdays, June 6 and 13 from 9 a.m. to 4 p.m., Basic Beekeeping will cost $25.

William Conley is the course instructor. Students can bring a lunch and enjoy the "Campus in the Park" during the break. The class is limited so early enrollment is suggested.

For further information, contact the Lifelone Learning Center, 845-4000, ext. 5075.

CONNECTICUT
Eastern Conn. Beekeeping Assoc.

The recently organized Eastern Connecticut Beekeepers Association met on March 1, 1981 at the Brooklyn Extension Center at Brooklyn, Ct.

President William Gerdsen, Vice President Arthur Blackmore, Secretary Tom Sapos and Treasurer Hannah McNally conducted a discussion about Spring management.

State Bee Inspector, Alan Poole, provided members with information on the incidence, prevention and the treatment of bee diseases in Connecticut.

The next meeting will be held at the Brooklyn Extension Center on June 28, 1981 at 2 p.m.

NORTH CAROLINA
Transylvania — Henderson

In June of 1975, the Transylvania — Henderson County Beekeepers decided on the idea of having a Honey Queen to represent their local association. During that time, President James W. Dickson. Jr. asked Senator Bette Ann Wilkie to help him with the idea. Mrs. Wilkie suggested Miss Sherry Baldwin of Hendersonville to represent the beekeepers as their very first queen. Sherry has graduated from Blue Ridge Technical College in business, is employed as a receptionist at Cranston Print Works in Fletcher, NC and is engaged to be married in June.

The beekeepers really enjoyed Sherry as their very first queen and her smile reflected the sweetness of the bee's honey.

DELAWARE
Killer Bees to be Featured

On Sunday, June 21, 1981, Mr. Ellis Schweitzer will present a program on "Killer Bees".

Mr. Schweitzer, a resident of Newton, New Jersey, and an employee of the Public Relations Dept. of Bell Telephone Labs has been following the progress of the so called "killer bees", and he has given many interesting talks on the subject to various beekeeping and civic groups.

Mr. Schweitzer's talk will be given in Mandell Hall Auditorium, on the Delaware Valley college campus, Route 202, just south of Doylestown, PA. His formal talk will begin at 1:30 P.M. It will be preceded by a bring-your-own picnic lunch to be held in

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(Continued from page 348)

front of Mandell Hall, and it will be followed by an open house at the Delaware Valley College apiary and bee house with refreshments.

The meeting is open to the public. There is no charge, and everyone is cordially invited to attend.

On the following Friday, Saturday, and Sunday, June 26,27, and 28, 1981, the Delaware Valley College three day beekeeping short course will be held. Anyone interested in additional informations should write "bees" Delaware Valley College, Doylestown, PA 18901, or call the College ar 215-345-1500.

MASSACHUSETTS
Federation of Beekeepers

The annual meeting of the Massachusetts Federation of Beekeepers Associations will be held on Saturday June 20, 1980, from 10 a.m. to 4 p.m. on the grounds of the Essex County Agricultural and Technical Institute, located on route 62 in Hawthorne ½ mile west from the intersection on route U S 1 and 62.

The feature speaker will be Alphonse Avitable, associate professor of biology at the University of Connecticut Waterbury Campus and co-author of The Beekeeper's Handbook.

Workshops on section comb honey (square and round) as well as demonstrations with live bees will be conducted (weather permitting).

Frame nailing and smoker lighting contests will be held so bring your favorite hammer and smoker.

Bring a picnic lunch, table and chairs. Essex County Beekeepers Association will provide coffee. All beekeepers and those interested in beekeeping are welcome.

NEW YORK
Cornell Univ. Short Course

A beekeeping short course is again being held at Cornell University, Ithaca, NY on July 17,18, and 19, 1981. Registration will be from 5 p.m. to 8 p.m. Friday evening. Saturday's program is from 8 a.m. to 6:30 p.m. and on Sunday the classes begin at 9 a.m. and run through 3:30 p.m.

Participants will stay in University dormatories and eat in the university dining room. Enrollment will be limited. The total cost in $90 per person. This includes a single room for two nights, three meals on Saturday and two on Sunday, all instruction materials, and advance registration. The fee for double rooms is $5.00 less per person ($85 total). Full linen service provided. Registration forms from: Office of Apiculture, Dept. of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853.

GEORGIA
Beekeeping Short Course

The annual beekeepers short course for beginners and more experienced beekeepers will be held on June 6, 1981, at the University of Georgia in Athens, GA.

Topics and demonstrations will include honeybee biology and behavior, bee diseases, management for honey production, honey house operation, queen rearing and package bee installation.

The teaching staff will consist of several specialists including commercial honey and queen and package bee producers. The course in $20 per person. Advanced registration is requested by June 4, 1981.

Requests for additional information, program and registration forms should be addressed to Dr. Alfred Dietz, Dept. of Entomology, Univ. of Georgia, Athens, GA 30602.

GEORGIA
Middlesex County Beekeepers Assn.

The regular monthly meeting of the Middlesex County Beekeepers' Association will be held Saturday, June 27, 1981 at 2 p.m. at the home of Mr. and Mrs. Sidney Self, 74 Hickory Rd., Sudbury, MA 01776. Phone: 617-443-2955.

Guide to Bees and Honey by Ted Hooper. Blandford Press Ltd., Link House, West St., Poole, Dorset England BH 15 1 LL, 260 pages, hardcover, $12.50. Published April 13th, the book is distributed by Sterling Publishing Co. Inc., 2 Park Ave., NY, NY 10016.

The author brings the expertise gained in over 30 years of beekeeping experience to a sytematic explanation of everything needed to start a successful hive. Bee behavior, management procedures such as controlling swarming and making increase, queen rearing, pests and diseases, harvesting honey and honey plants are topics discussed in the four sections of the book. A bibliography, picture credits and an index complete the book's contents. The photographs, mostly black and white, and the drawings are excellent and numerous.

An earlier edition had been published by Rhodale Press in England in 1977.

Reprinted Papers on Bee Husbandry edited by R. Charles Mollan, The Royal Dublin Society, 42 pages, hardback, IR £3.00 or £ 3.00 (including P and P). Order from Eileen Byrne, Publishing Assistant, Royal Dublin Society, Balls Bridge, Dublin Ireland. This publication is in a series of Royal Dublin Society publications "Studies in the history of Irish science and technology": A series which aims to promote the registration of science to its rightful place in the history of the country.

The papers include "Instructions for Managing Bees" (1733); "A Letter from Arthur Dobbs" (1750); and "The Revd. Mr. Thorley's Directions" (1767).

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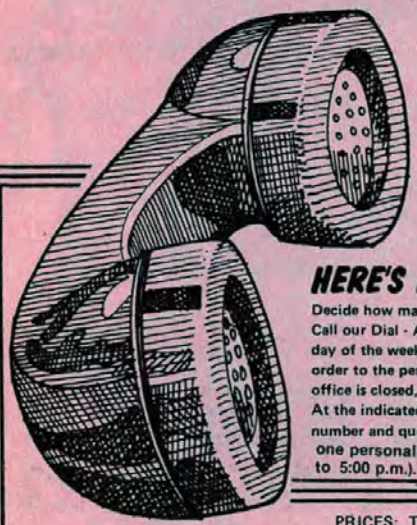

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Bee Class Visits Kelly Company

Professor J.W. Stocker recently took his Eastern Kentucky University beekeeping class on a tour of the Walter T. Kelly Company of Clarkson, Kentucky. Professor Stocker teaches beekeeping at Eastern Kentucky in Richmond.

Professor J. W. Stocker (left) talks to Walter Kelly (center). A student listens. Photo by James Steed.

MOVING BEES: HINTS FOR THE SMALL BEEKEEPER

(Continued from page 344)

staples into the boxes will make the bees angry, and they need time to calm down. Closing up the entrances should, on the other hand, be a last minute procedure. You will probably want to smoke the entrances lightly before you push grass into them. Wedge the grass firmly in place with your hive tool, so it doesn't fall out. Plan to move very early or very late in the day, so that when you close the entrances, most of the bees will be inside the hives.

The central issue in any move is how, physically, to get the hives into your truck and out again. As a small beekeeper, you probably won't have access to a bee boom or other mechanical hoist. That doesn't mean you should simply lean over and heft the hives off the ground. That's a good way to rupture yourself. If you have to move hives by yourself, the most sensible thing to do is to lash

(Continued on page 355)

MOVING BEES: HINTS FOR THE SMALL BEEKEEPER

(Continued from page 354)

them to a hand truck or furniture dolly and pull them up an improvised ramp into your truck. A long-nosed hand truck with a brake might even be a good investment if you do a lot of moving. It will also come in handy for transporting supers from the yards to your honey house.

A hand truck isn't always practical to use, however. It won't work well on rough terrain or in high grass. And if two of you are doing the move, a hand truck isn't necessary. Two people can move hives quite easily using a pair of "hive movers." These are simple metal frames equipped with handles. They obviate having to bend over and lift the dead weight of a hive from the ground. You can't buy these frames, but any welding shop should be able to make you a pair similar to the ones we use following the diagram that accompanies this article. To use them, you tip the hive, first from one direction and then from the other, to position the non-slip curved grips underneath. When the hive movers are in place, you grasp the handles, which are at hip level, and then all you need to do to get the hive off the ground is lift up a couple of inches. You and your partner can then walk the hive between you, almost as if it were a laundry basket with handles on either side. At your truck, you can do a little hoisting. Or, better yet, have a couple of kitchen footstools ready, and walk the hive up stairs into the truck bed. My husband and I have been using our homemade hive movers successfully for many years, and I would recommend them to other small beekeepers. They will take the strain, if not the sting, out of moving your bees.

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THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183,, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: **Bee World,** a quarterly journal for the progressive beekeeper. **Apicultural Abstracts,** a survey of scientific literature from all languages. **Journal of Apiculture Research,** for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copy of **Bee World** $1.50; **Journal of Apicultural Research** $1.50; **Apicultural Abstracts** $2.00, from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England.

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BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription (Sterling cheque 2.22 p.or U.S. $6.) Post paid. The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS.

INDIAN BEE JOURNAL Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists.

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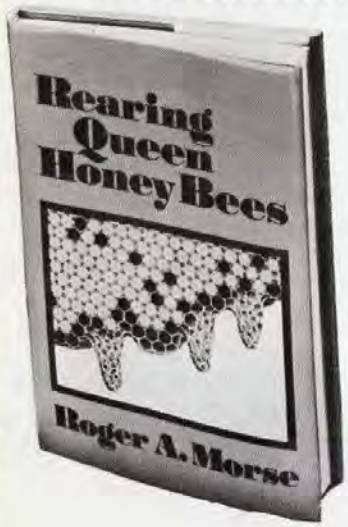

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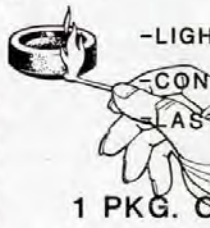

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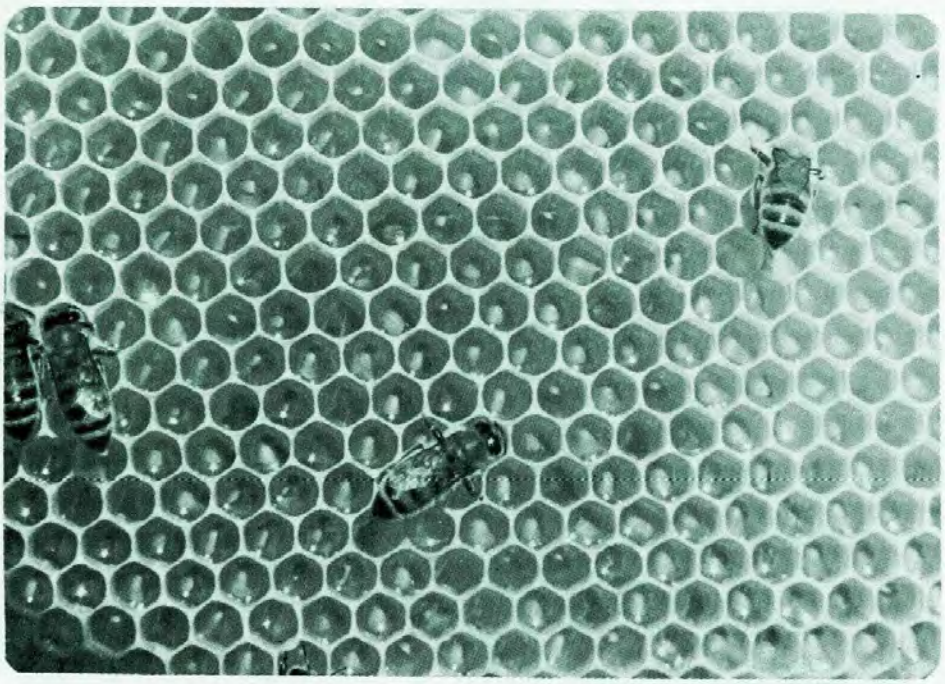

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