Gleanings in

JUNE 1979

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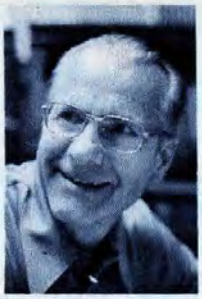

Lawrence Goltz

Gleanings in Bee Culture

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COVER

A drawing by J.G. Stevens, Roanoke, VA. is titled "The Swarm Nobody Saw". In the background is the skyline of Tinker Mountain, a prominent Roanoke landmark visible from the studio window of Mr. Stevens and from 20 miles away on the Blue Ridge Parkway.

CONTENTS

Monthly HONEY Report

LAWRENCE GOLTZ
May 10, 1979

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								
In 60 Lb. Cans	1	2	3	4	5	6	7	8	9
White (per lb.)		.56	.53		.53	.50	.51	.48	.49
Amber (per lb.)		.54	.50		.49	.47	.43	.42	.47
1 lb. jar (case 24)			20.63	18.50		19.50	19.40	18.25	19.05
2 lb. jar (case 12)			19.72			19.00	19.10	18.00	18.50
Retail Extracted									
8 oz. jar	.65	.55	.65			.60	.59	.64	.68
1 lb. jar	1.25	1.08	1.10		1.19	1.05	.98	1.08	1.20
2 lb. jar		1.95	2.19		2.19	1.94	2.22	2.04	2.25
2½ lb. jar		2.48	2.39		2.63				
3 lb. jar		2.75				3.04	3.50	3.00	2.99
4 lb. jar		3.88			3.25				
5 lb. jar	4.95	4.35	4.89			4.50	4.29	4.89	5.35
16 oz. Comb					1.19				
16 oz. creamed			1.89		1.45	1.30			1.27

Beeswax — Light $1.80 — Dark $1.70

Misc. Comments:

Rhode Island-Bees in good condition. No feeding needed with early nectar and pollen flows. Good prospects for early honey.

New Jersey-Bees in fair condition. Some colonies reported weak due to restricted spring flights. Much feeding being reported.

New York-Bees in good condition but were confined during cool wet spring. Comb honey not found in any stores.

Ohio-Cold spring has held bees back. Colony strength a little below normal. Some feeding required.

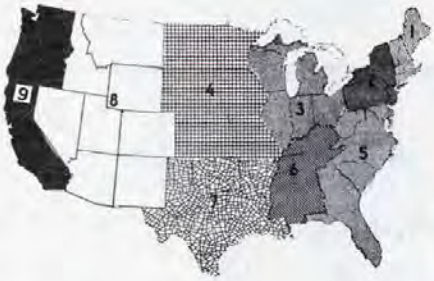
Michigan-Bees in fair condition. Many colonies weak and short of food. Little honey on display in stores.

Indiana-Winter loss about 25%. Higher than last year due to lack of fall honey flow. Bees in fair condition.

Wisconsin-Cold spring. Early nectar and pollen sources about two weeks late. Winter kill 10% to 50%. Brood rearing below normal at middle of April.

Illinois-Heavy rains in early April. Bees in fair condition.

Nebraska-Colonies holding own in spite of late spring. Crop prospects are good. Moisture conditions best in years. Very rough weather in spring.



Virginia-Most colonies wintered well. Building up fast at middle of April despite some cool weather. Bees in good condition and strong. Swarming began early.

West Virginia-Spring was late. Bees building up rapidly. Prospects are for another good year.

Florida-Orange crop is good in central Florida ridge. Poor and below average in Indian River and south Florida. Orange honey is 52 cents wholesale, drums exchanged.

North Carolina-Bees building up and swarming started in late April. Tulip Poplar bloom began in early May, followed by blackberries.

Kentucky-Cool weather with heavy rainfall in first half of April followed by good weather. Excellent honey flow for buildup and colonies are in excellent condition. Tulip poplar has a heavy set of buds in early May.

Alabama-Bees in excellent condition with good supply of package bees and queens. Tulip poplar honey flow began in late April, also crimson clover.

Oklahoma-Cold nights and cool days during April. Bees slow in building up. Food reserves were depleted. Bees in fair condition.

Arkansas-Bees in great condition at end of April. Swarming and honey flow began middle of April, May be an excellent spring for a crop of honey. Glass bottles a problem to find.

Texas-Huajillo started to bloom in south Texas about 20th of April. Mesquite will bloom soon. Plenty of moisture and brush looks promising. Bees in good condition. Honey sales good.

Colorado-Bees gathering pollen and nectar from willows and dandelions at middle of April and temperatures allowing brood nest to expand. Winter losses were heaviest for many years. Bees in fair condition.

Minnesota-Winter loss 20-30%, many weak colonies. Season at least two weeks behind normal. Cool, rainy spring. Not many overwintered colonies strong enough to divide, packages reported hard to find. Bulk honey in short supply.

Montana-Bees bringing in pollen and nectar at end of April. Some feeding necessary during April. Bees in fair to

(Continued on page 317)

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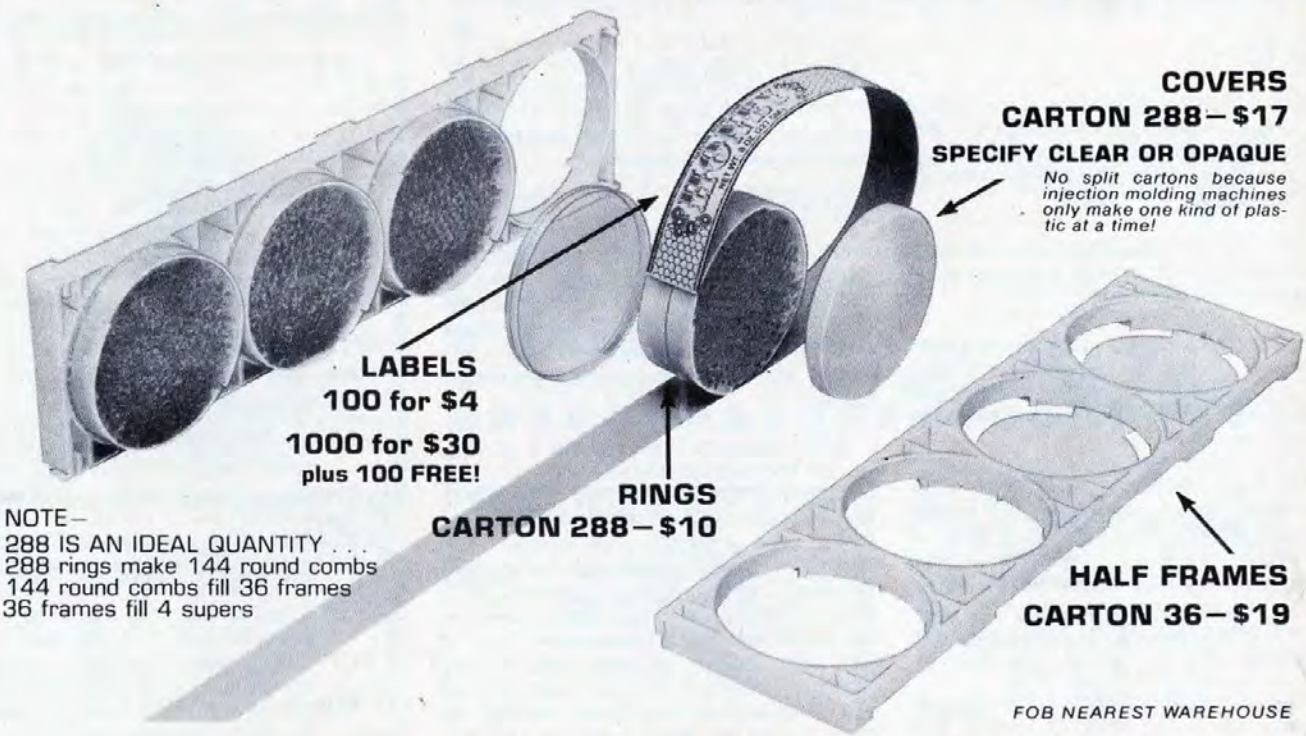

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Gleanings Mail Box

Dear Editor:

I am still enjoying looking at the picture on the back of the **Gleanings in Bee Culture,** March 1979, and wondering if the men are photographed or the work of a genius-artist.

Only one who has experienced such a catastrophe could get the expressions on the faces of those men!

It is the best piece of advertising I have ever seen. I had this happen to me once just because I had used the wrong size nail in a frame. I learned my lesson and use proper nails and glue.

Just read the story "Chinook", page 176 of April issue of **Gleanings in Bee Culture**. Having lived in the deep delta of the Mississippi River it was educational for me. It is so nice to read people's first hand experiences with weather and creatures in other parts of the continent, John Thurston.

I cannot imagine a hot wind 80 degrees blowing up in the dead of winter, and continuing two days and nights. I wonder how many bees were out flying when the weather suddenly came back to winter-normal?

We can lose bees in March or April when 80 degrees normal turns suddenly to 40 degrees cold, or, tornados or hurricanes will drop in on us suddenly.—Serena Lunt, Chalmette, LA.

Dear Editor:

Our bee press has been understanding and supportive in the matter of encapsulates. Bless you—we need every bit of help to get awareness, but I am afraid the awareness is not spreading to our legislators and our cooperative extension agents.

In Washington State we had a hearing by the Washington Director of Agr. The beekeepers—many returning from California to attend and testify—had absolutely solid evidence. Testimony or papers by Atkins, Johansen, Barber and Burgett as well as statistics from ASCS. Were we able to further restrict Penncap-M? **Heck, no!** I feel the decision was cut and dried before we even went to the hearing. Pennwalt, you see, sent a man to our Pesticide Advisory Board meeting the week before the hearing and he gave his pitch there. Our Dr. Johansen refuted everything the Pennwalt man said. It was so blatant—the Director agreed to let the Pesticide Advisory Board see the recommendations prior to publication! Rigged? Bought? Well, I do not know what to think but I do feel we were lucky to keep what we had.

The beekeepers after the hearing, I might add, had a private meeting with our Director and with them was one of our key legislators on the House Ag Committee. At that meeting the Director again refused to accept the ASCS kill figures, scientific information, etc., and in as much as said that when the growers said there was a bee shortage problem then and only then would he believe. His attitude has some USDA people livid!!

Another problem is the deceptions, evasions, half-truths, and outright lies of the Pennwalt people. For instance, the Pennwalt man said that to add red dye to the capsules would be technically impossible or extremely expensive and would call for complete recertification. This was such an obvious lie. I called Dr. Mike Watson of the EPA regional office who contacted Mr. Sanders, the product manager of parathion in Washington, D.C. EPA and he was told that it would take 4-5 days and cost 15 cents plus the letter. Furthermore the EPA would welcome the request for the addition of an approved for growing crops dye. I have letters from both Sanders and Watson confirming this.

So, mad, I went to Hawaii and found

(Continued on page 317)

REWARD PROGRAM AIMED AT THEFTS

THE Tennessee State Beekeepers Association has reinstated a program providing a $100 reward for information leading to the arrest and conviction of apiary thieves and vandals. Rules for participation have been established. Every member of the T.S.B.A. is invited to participate in the reward program. Reward posters have been printed and will be sold for 25 cents each. The reward poster must be conspicuously posted in each apiary belonging to the participating beekeeper, who must be a member of T.S.B.A.

Reward money paid through this program will be drawn from the T.S.B.A. general fund. A $100 reward will be paid to any person or persons providing information leading to the arrest and conviction of any person or person stealing or molesting bees, honey or equipment in properly posted apiaries of participating beekeepers.—From **Tennessee Apiculture**, Published by Tennessee Beekeepers Association, Inc.

The Queen Honeybee

By GRANT D. MORSE, PH.D.
Saugerties, N.Y.

Part II

Natural Selection

NATURAL selection probably plays the largest role in bringing about evolutionary change in the individuals of any species. Fortunately, such selection usually makes for improvement.

We know that every individual of every species, whether it be man or honeybee, is different from every other. (It may not be so obvious to us in the bee as in man.) The difference may be small but it is usually significant enough so that it distinguishes each individual as having a slightly identifying personality.

This difference in each individual of a species is traceable to the fact that the individual is the product of a recombination of genes from parents. Individuals that thus acquire a combination of genes that makes them better able to thrive than their peers are labeled at "the fit", or "the fittest".

In the honeybee species each queen, according to the above formula, is different from her sisters. If she is superior, her progeny may be superior. Unfortunately, her queen progeny may not be numerous enough to bring about a noticeable improvement in honeybees even in the small geographic area of the world where she lives. Her drone offspring may, however, mate with quite a number of queens. And if she happens to be chosen as a breeding queen, her influence for improvement may be quite extensive. Man, accordingly, can play a part in the "natural" selection that occurs in the honeybee world.

Which Worker Bees Seek to Swarm?

Different students of bee behavior often come to similar conclusions for different reasons. Snelgrove says that bees that were of flying age at the time the first swarm issued, but which did not go along, retain their impulse to go out with a swarm. Hence we have secondary and tertiary swarms. Accordingly, he says, if an operator wishes to avoid such supplementary swarms, he must remove the flying bees from the presence of remaining queen cells.

Allen Latham (1949) whom some of you may not know so well as Snelgrove, says that the removal of a quart or so of young hive bees from a colony will deter it from swarming. He believed this because his removal of such bees for assistance in queen production seemed, he found, to deter such colonies from swarming.

Both may be right. Personally, I believe that a colony is somewhat capable of determining whether swarming is likely to succeed. A colony lacking bees in quantity of all ages is not so likely to be successful—and the workers that make the decision know it.

Snelgrove persists in his argument even to the point of suggesting danger in assigning flying bees to a small nucleus headed by a queen cell. He recommends that in cases where a colony has indicated its swarming intent by building queen cells, the removal of the flying bees is essential to prevention.

Supersedure

Most supersedure might be looked upon by the beekeeper as a blessing were it not for two facts; one, it may occur when the colony cannot replace their queen, as in very early spring; two, the queen to be superseded may be genetically an inferior one. Therefore, her offspring are likely to be inferior. Queens needing to be superseded are, percentage wise, probably inferior to queens that accompany swarms.

Some beekeepers regard supersedure queens as superior to swarm queens. I see no reason for believing this except, possibly, that there are usually fewer supersedure cells built. Also, supersedure cells are relieved of the taint of transmitting the impulse to swarm—if queens do transmit such tendencies.

Doolittle (1909) recounts his experience of using a colony with a failing queen as a vehicle over a period of some two months to produce series after series of usable supersedure cells for making up nuclei. One should make certain in such an instance that the quality of the queen in question is high.

Such queen cells should be transferred to nuclei six days after being sealed. Extreme care needs to be exercised in handling such cells. Some breeders carry them in a container lined with soft cotton.

Rearing of Queens

Bees left to their own choices in selecting larvae for use in producing queens will select larvae one day old. Beekeepers who wish to set up conditions under which colonies are compelled to rear queens should make sure that larvae one day old are available.

To help assure that worker bees have available space on the surfaces of combs for queen cell construction, the frames should be separated adequately from one another; otherwise all cells must be built at the bottoms of the frames.

Most queen breeders believe that a proven queen a year old is a good choice from which to rear others.

Queens may be reared in the upper hive body of a stack of four or more supers, provided the queen is not active in the upper two or three, without employing an excluder. This is usually done by elevating a frame of young brood. I would not recommend doing this unless the colony is numerically strong. Such a unit should have a separate entrance. The use of an excluder makes the process even safer.

In instances in which the beekeeper wishes one or more colonies to raise an additional queen, it is better to do so during that part of the year in which the local colonies normally swarm. If any other season is chosen for the purpose, it is a good plan to employ only a populous colony and to feed it liberally with sugar syrup.

Differences Between Workers and Queens

Ribbands (1953) reports that Klein (1904) experimented with larvae of various ages in an effort to determine what larval age is best for queen production. He reports finding no appreciable difference between larvae one and three days old. Personally, I should hesitate to use larvae three days old for queen rearing because they have been fed for a relatively long period on worker fodder.

Klein found the 3-1/2 day old grafts of variable quality, however. Four-day-old grafts he found to develop into creatures very much like workers. This experimenter also compared swarm-raised queens with supersedure-queens by weight. He found not a great difference between the two, with the greater weight being in favor of the swarm-raised queens. I am a bit surprised at this. However, we must realize that supersedure queens are often raised under greater pressure than swarm queens.

Klein concluded that larvae for queen rearing purposes should not be more than 2 days old.

Further Facts About Queens

Further study by Melampy and Willis (1939) revealed that queen larvae 2-3 days

old were consuming oxygen at a 50% greater rate than worker larvae. After all, we know that the queen must be the subject of a shorter incubation period.

Availability of fresh pollen is probably an important factor in producing high quality queens. We know it is essential to the mass production of workers.

Queens vary significantly in the number of drones they produce. Some queens produce few drones even in strong colonies. In a nucleus the same queen will produce almost no drones though she may have been prolific in this matter in a strong colony.

Huber says that in instances in which a queen increases her production of drones due to lack of male sperm—becomes like a laying worker, in fact—such drones are often retained in the hive all winter. Research shows that under normal circumstances strong honeybee colonies will devote 17% of their brood rearing area to drone cells.

Beekeepers often wonder why a queen lays eggs which will become successors to herself. Some attribute this to an instinctual response on her part. But Ribbands quotes Taranov and Ivanova as declaring that they observed workers substantially compelling queens to lay eggs in newly built queen cells by pursuing her.

The second swarm that issues from a colony usually departs about 8 days after the initial swarm. Subsequent swarms usually issue at intervals of a day or two.

Worker bees traditionally feed the queens which they compel to remain in the cells for 2-3 days while the prime swarm is completing the details of its preparation for departure.

Ribbands showed that colonies with queen cells gather considerably less nectar than those lacking them—less than half, in fact. This is probably due to the fact that workers prepare themselves early for an anticipated depature. Also, the queen reduces her egg laying prior to swarming and thereby contributes to her slimming—a practice which some observers believe is forced upon her by the workers. A queen's ovaries constitute approximately 20% of her total weight. During the slimming process the ovarial weight is reduced by as much as approximately 60%.

Huber observed that colonies deterred from swarming by inclement weather frequently tear down their queen cells and fail to swarm when the favorable weather returns. They may, however, hold a virgin in a cell and swarm a little later.

Koch, R. (1934) believed that a surplus of nurse bees is a primary cause of swarming. This is in keeping with Latham's theory previously mentioned in this article.

Both Huber and Langstroth (as reported By Ribbands) believed that the presence of a goodly supply of drones in a colony encourages swarming. It would be interesting to follow up this theory to see if the almost toal absence of drones in a colony discourages it from swarming.

Perepelova reported that when a queen is laying fully, she is fed every 20-30 minutes, the donors all being bees of nursing age. At the end of the summer they stopped feeding her and she then fed herself. (I had not previously heard of such behavior.) An outstanding student in this field tells me it is more likely they reduced feeding.

When the workers of a colony do not have direct physical contact with their queen they become agitated, and usually begin to build cells.

Conclusion

Considering the quite royal appearance of a honeybee queen, and taking into account the unique nature of her existence; and the essential function she serves in the colony, it is quite humbling when speaking as her advocate to have to confess that she is, perhaps, the least outstanding individual in the nest. She does little or no thinking; observes little; lacks complete control over her own behavior.

She is essentially a royal slave—as perhaps all royal personages are.

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A Simple Hive Scale

By WALTER CRAWFORD
Massillon, Ohio

FOR SOME TIME I had been considering the use of a scale to keep a check on the weight of a hive of bees. At first my thoughts were of a scale permanently set up for use on one hive as many others have done. It seemed obvious that such an arrangement would be an aid in management of the whole apiary. One could tell when a honey flow was beginning or ending, and how rapidly honey was being stored or used up in brood rearing. This information would indicate the need for supering and would prompt the beekeeper to get busy and provide room where needed without further delay. A few days delay in a good honey flow could account for the loss of many pounds of honey per hive. Some have used a small platform scale, setting a hive on it for the whole season. Such a scale can sometimes be obtained at farm sales but the cost of it may be more than one would care to spend. Undesirable features of this type are; the fact that it would have to be exposed to the elements all summer or all year, and it would be limited for use on just the one hive. A much more valuable tool would be a scale that could be used to determine the weight of each hive, because no one hive could represent the conditions in the others.

I was quite interested in some of the new low priced hive scales recently advertised in the bee magazines but they also are installed one to each hive. Seeing an article in **Gleanings in Bee Culture** describing the use of a flat bathroom scale I began thinking along this line. I'm a dyed in the wool do-it-yourselfer and get great satisfaction from making useful things from scrap, or whatever is at hand. I was able to get a decent bathroom scale for $2.00 at a white elephant sale. A cheap new one would no doubt be satisfactory, or you may be able to appropriate the one the good wife uses, if you will promise to return it without delay.

The illustration shows a simple, easily made jack for use with a bathroom scale. It can be used on every hive and requires only a minute or two to check the weight of each. Many beekeepers keep a record of the conditions and progress of each hive and the date of the inspection. Adding the hive weight to the record is valuable and needed information. It is necessary to number each hive for identification. I paint the number on the telescoping top instead of the hive body. This makes it easier to keep them in order for with the changing of brood chambers and supers the original number could lose all relation to the original colony. My colonies are arranged in pairs, two to a platform made of 2 by 4's or 2 by 6's and set on bricks or tile at each corner. The platform is set level and the bottom board is sloped to the front by the use of a three-quarter inch cleat at the rear. I never could see the advantage of setting the hives in a row on a couple of rails, sometimes over a foot above the ground.

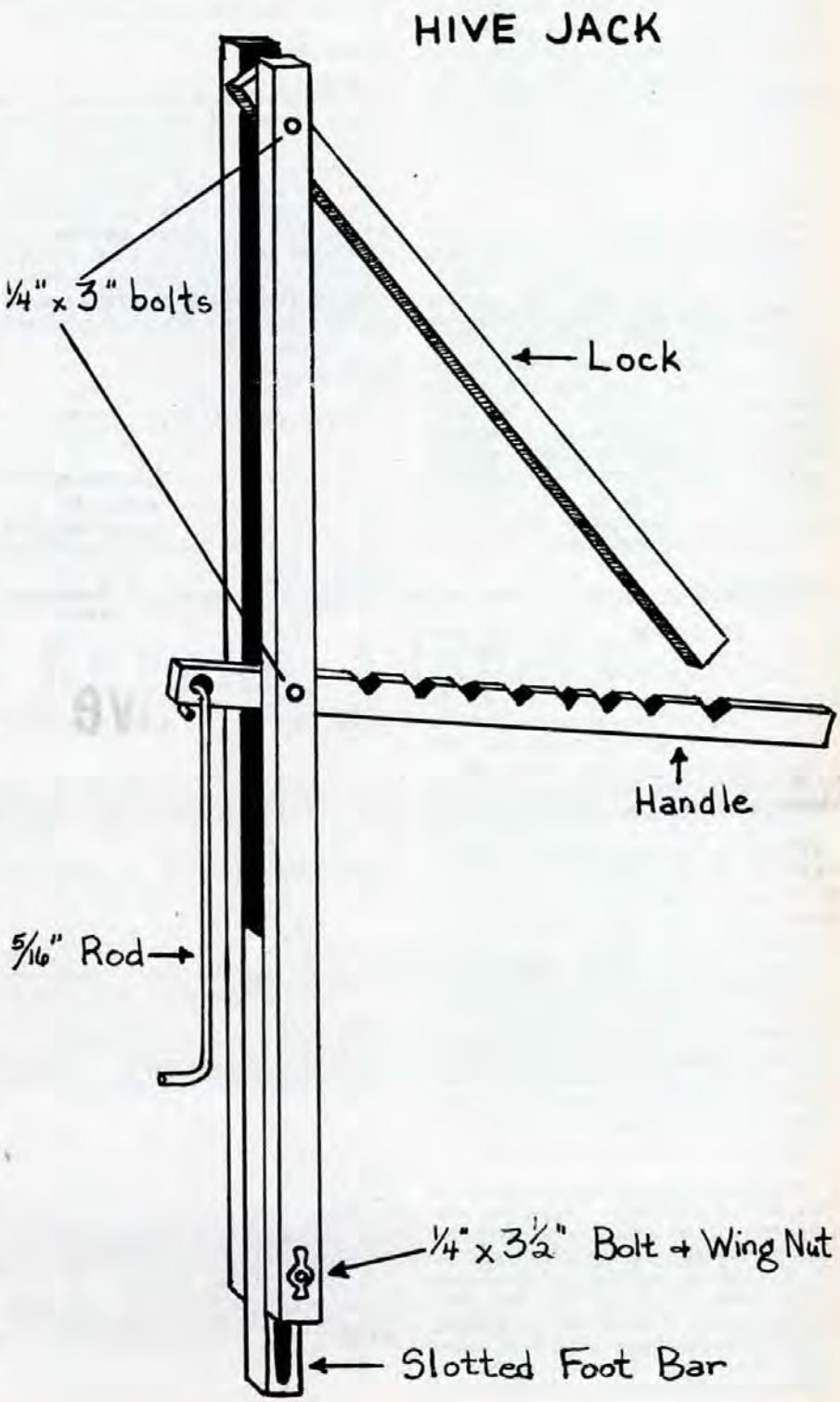
A full depth super of honey is heavy enough to lift on or off when inspection of a double brood chamber is necessary. The additional height of the support is equivalent to lifting the super onto three full depth hive bodies. The proximity of a number of hives in a row confuses queens that are returning from the mating flight and can cause the loss of some by entering the wrong hive. Young bees could also accrue to a stronger hive next to their own. It is much easier to lift a heavy super from the side than from the rear of the hive, and with such a straight row arrangement there is no place to stand at the side. Placing the hives in pairs with six or seven feet of space between, facilitates handling and makes it easier for the bees to identify their own colony.

The construction of the jack requires little expense and many will have the needed material on hand. The frame is made of two identical pieces of wood, 3/4 x 1-1/2 x 40 inches. Three-quarter inch holes are drilled in each piece starting one inch from one end and spaced sixteen inches apart. Quarter-inch carriage bolts, 3 inches long, provide pivots for the handle and lock. Double nuts are used on each to lock them at the proper tension. The handle can be 3/4 x 2 x 18 inches. The pivot hole is drilled four inches from one end of the handle and a 3/8 inch hole is drilled 3/4 inches from the same end. The lifting rod is of 5/16 inch steel, about 14 inches long. Bend an open loop on one end to hook into the 3/8 inch hole. Bend about 1 inch of the other end at a right angle and at right angles to the loop. The handle can be tapered and should be notched on the upper side so the lock won't slip.

The lock is 3/4 x 1-1/2 x 17-1/2 inches with the pivot hole one inch from one end. The other end should be beveled to a point to engage the notches in the handle. The bottom or foot of the jack has an adjustable bar of 7/8 x 1-1/2 x 12 inches wood. A 5/16 inch slot is cut in the center, beginning one inch from end to about three inches from the other end. The foot bar is placed between the frame pieces, and a quarter inch carriage bolt 3-1/2 inches long is inserted through the bottom holes in the frame and the slot in the foot bar. A washer and wing nut facilitates the adjustment of the foot when the distance between the bottom board and the ground varies. Since the foot bar is a little thicker than the handle and the lock, it can be clamped securely when the wing nut is tightened.

To get the correct weight of the hive, the front edge of the hive body should be directly over the edge of the support under the bottom board. Better remove all bricks and stones from the top. Any change in their position will result in a change in weight. Place the scale on the ground at the rear of the hive. Set the foot bar on the scale and adjust it so that the rod can be hooked under the bottom board, the hive raised about one-half inch, and the lock set in a notch in the handle to keep it in that position. The scale will register one-half the weight of the complete hive. If the weight within the hive were concentrated at the front or the rear, an inaccurate reading would result. I have not found this to be the case. Frames of honey or brood appear to be fairly well balanced in this respect. For the practical purposes of apiary management, the scale readings are satisfactory.

After determining the weight of a complete hive with empty combs and estimating the weight of bees and pollen, a fairly accurate record of the amount of honey can be made. This is valuable information as the bees go into winter and throughout the following spring, especially from February until the honey flow begins. If records have been made when they were prepared for winter the remaining food supply of each hive can be determined without guessing.



Bee Poisoning-Current Status

By CARL JOHANSEN
Dept. of Entomology
Washington State Univ., Pullman, WA.

THERE IS **no** question about the most serious problem facing Washington beekeepers. Bee poisoning has been both chronic and severe in our state for many years. When I first started working on bee research in 1953, I asked the beekeepers about the most important item requiring investigation. They said, "**Bee poisoning**—we get useful information about bee management from researchers working with honeybees throughout the world, but no one is answering our problems with bee poisoning."

We soon developed a comprehensive attack on the problem. We advise the Washington State Department of Agriculture about regulations aimed at reducing bee poisoning; revise precautions published annually as a part of the official tri-state Pacific Northwest insect control recommendations; present information about bee preservation to pesticide applicators, fieldmen, growers, beekeepers, and county agents; and conduct specific research studies to obtain data needed to support these programs. However, the **sad truth** is Washington **still** has an extremely serious problem.

Major Factors

Two important facts about Washington beekeeping are: (1) the need for bee pollination to produce a sizable proportion of Washington's crops and (2) the lack of bee forage for colony maintenance. Washington statistics for 1978 show over $480 million farm value is provided by crops dependent on bees for pollination. In recent years, Washington beekeepers have been moving thousands of colonies to California to pollinate almonds during February and March. Pollination rental fees usually pay for the costs involved in moving, but the main advantage to beekeepers is the milder climate and early forage which allows their colonies to build up strength. If everything goes well, the beekeeper will be able to make splits to replace colonies lost to poisoning the previous season. Thankfully, poor weather or misuse of pesticides have only caused a few additional severe losses during the stay in California to date.

More bee colonies are operated in Washington than there is good forage to support. Use of herbicides, although not usually directly hazardous to bees, has aggravated the problem by eliminating sweet clover, trefoil and other bee plants in waste areas, right-of-ways and rangelands. Our beekeepers have been forced to place most of their colonies in diversified and intensive agricultural crop areas to obtain pollen and nectar from peppermint, spearmint, alfalfa, clovers and various vegetable crops. Here they are likely to be damaged by a continual series of insecticide spray operations.

Survey Results

Washington beekeepers have the very dubious honor of receiving the greatest amount of federal indemnity payments for bee poisoning losses for 5 of the last 6 years. Table 1 shows California had a greater number of colonies damaged in 1977, but commercial beekeepers in California operate 5-6 times as many colonies. Note the greatest number of colonies were developed in 1975 and 1976 as the honey price increased. Washington is down 11,000 from the peak and additional colonies are being moved out of our state.

The highest indemnity payment, $22.50 per colony for dead-outs is only 25% of the current value of the bees and hive equipment. There is no provision for lost revenues from pollination service for honey production. Spring dwindling and die-out of colonies caused by insecticide-contaminated pollen collected the previous season also is **not** covered.

Our beekeepers are being faced with the most destructive bee killing insecticide formulation ever devised. Methyl parathion is microencapsulated in a nylon-type plastic by Pennwalt Corporation and

Table 1.

BEE POISONING LOSSES IN WASHINGTON AND CALIFORNIA

		No. colonies damaged or destroyed	Total No. commerical colonies	% damaged
1973	WA	31,000	76,000	41
	CA	30,000	385,000	8
1974	WA	38,000	75,000	51
	CA	34,000	385,000	9
1975	WA	39,000	77,000	51
	CA	31,000	390,000	8
1976	WA	50,000	73,000	68
	CA	46,000	410,000	11
1977	WA	51,000	68,000	75
	CA	73,000	410,000	18
1978	WA	58,000	66,000	85
	CA	52,000	405,000	13

marketed under the trade name, Penncap-M. Residues of this material on plants have "static cling", an exceptionally strong affinity for adherence to foraging bees as they move amongst the flowers. Both capsule size and electrostatic charge are involved in this unique characteristic.

We have long known dust formulations are most hazardous to bees. However, carbaryl (Sevin) dust was the only modern insecticide previously proven to retain its toxicity to bees from one season to the next while stored in contaminated beehive frames. Our data indicate Penncap-M may retain twice as much or more of the toxicant during storage and remain at least three times as lethal to the bees as Sevin dust. This is true even though Sevin was applied at a four times greater dosage per acre and entire fields were treated, whereas Penncap-M was applied to less than a third of the field. It is obvious even a minimal exposure to Penncap-M is extremely dangerous to bees and the slightest misuse is likely to cause severe damage.

Our recent survey shows California and Washington with strong regulations aimed at reducing Penncap-M problems have had reduced losses since the initial severe kills of 1976. However, as the pesticide was labeled for uses in other states, their losses have increased and 1978 was the first big problem year for many. We also found Penncap-M problems continue to be commonly associated with contamination of blooming weeds.

Potential Long-term Reduction of Problems in Orchards

For many years we have prevented serious bee poisoning problems in the orchards of Washington by **not** recommending any insecticide applications during tree fruit bloom. However, with long residual hazard materials like Sevin, azinphosmethyl (Guthion) and Penncap-M, bees are killed during the summer from foraging on contaminated cover crop blooms. We advocate the removal of cover crop blooms, but a better long-term approach for the orchardist is to establish solid grass cover crops.

Protection against freeze damage to the roots is one of the main reasons for a cover crop in our state. USDA agronomist John L. Schwendiman and WSU horticulturist Max E. Patterson at Pullman found fescues were excellent grasses for this purpose. Hard fescue is the best grass for dryland conditions, while tall fescue and creeping red fescue are excellent for irrigated orchards. Old, heavily shaded orchards can be seeded to orchardgrass. Quack grass is impossible to remove from an orchard where it is well established, but can be used as a cover crop with additional nitrogen. All of these grasses are reasonably competitive with weeds.

Robert E. Fye, USDA, Yakima recently showed crested wheatgrass and smooth bromegrass on ditch banks and in orchards reduced the prevalence of lygus bugs which cause catfacing injuries to stone fruits. Non-legume cover crops will also reduce the numbers of leafhoppers which transmit virus diseases, stink bugs and other sucking insects which cause deformed fruits, and even meadow mice which girdle trees during the winter. Legumes also disrupt effective nitrogen management, especially in pear orchards. Franklin J. Howell, USDA, Yakima has shown bertha armyworm, spotted cutworm and other climbing cutworm moths are first attracted into the orchards to lay their eggs on weeds such as lambsquarters and Canada thistle. Therefore, establishment of grass sod cover crops would not only decrease bee poisoning problems, but also decrease damages from sucking insects and climbing cutworms and provide important cultural dividends as well.

Documentation

We have initiated a honeybee monitoring program under the auspices of our extension Integrated Pest Management project. Apiaries will be sampled regularly throughout the season by consulting entomologists paid by the beekeepers. We will obtain data to pinpoint which crops, insect pests, and pest control programs are mainly involved in bee poisoning problems. Information will be recorded on standardized forms for later transfer to a computerized data storage and recall system. Beekeepers desperately need such documentation to provide a basis for improving spray practices and reducing severe bee losses.

Are You Keeping a Journal?

By SIDNEY B. SELF, JR.
Sudbury, MA.

AFTER I had been keeping bees for a short while, I started to realize how badly I needed information about prior years' activities in order to be able to plan for the current year. I was continually needing answers to questions such as:

When will the first pollen start coming in the spring?

When will the apples start to bloom?

When should I have queens delivered for making splits?

When should I start fall feeding?

Now every season is different of course, but usually weather follows certain patterns—if the pussy willows bloom at a certain time, the fruit trees will bloom about 5 weeks later. So, in order to be able to make better plans, I started keeping a daily journal.

I purchased a 400 page spiral-bound 8-1/2 x 11 notebook and dated each page—Jan. 1 thru Dec. 31. I then allocated four lines per page for each year's entry. Thus, a single page will eventually contain the entries for a number of years. At any time I am able to see what was happening at this time in each of the prior years and I can look forward a few days or weeks and see what I am likely to have to do soon.

I can also look back to try to determine what the relationship has been between weather and nectar flow or bee activity.

What do I record? Well, the day's weather for one thing. I have a rain gauge so I record rainfall, and snow amounts in the winter. I also have a maximum/minimum thermometer and I record the high and low for each day. In order to give some meaning to these temperatures I also keep running averages of the highs and lows. There are several ways to do this; my way is as follows:

1. When I started, I recorded the two temperatures each day for 10 days.

2. At the end of this time I added up the 10 day totals for each temperature type and recorded these totals. The average of course is 1/10th of the total.

3. On the eleventh day I subtracted the appropriate 10 day average from each of the readings for the day and added the differences to the totals, giving a new pair of 10 day totals. For example, if the 10 day high-temperature total is 572, the 10 day high-temperature average (rounded) is 57. If the days high temperature is 64, the difference is plus 7, the new 10 day high-temperature total is 579 and the new 10 day high-temperature average is 58.

4. I do this every day; it only takes a minute or so.

Averages for longer periods can also be kept by using a longer base period.

This isn't all I record of course. I keep track of when the various flowers start to bloom and when the birds of different

(Continued on page 327)

An Attempt To Predict Swarming

"....There is a concentration of activity around the moon's synodic nodes, especially the new moon."

By LENORE M. BRAVO
SAN FRANCISCO, CA.

GENERALLY speaking, the average city beekeeper keeps bees for the pleasure of it, for the pleasure of exchange with other hobbyists and for the intellectual stimulation that reading about beekeeping and its extensions into other areas of culture bring. Two supers of honey will pretty well take care of a city household for a year. Based upon observation over a three year period of teaching beginners beekeeping and starting other hobbyists, people who go into beekeeping **principally** for the honey they anticipate do not make the best **hobbyists** if they remain fixed on that goal.

So, since most of us are content with the honey that the bees leave us and our livelihoods are not tied in with honey production we can afford to leave the bees alone and not struggle to suppress their natural desire to reproduce by swarming. One exception may be that the swarm is our chief point of contact with our neighbors who more often than not are just tolerating our bees at best.

Therefore, a lot of energy must be put forth collecting swarms and allaying the fears of one's neighbors during swarm season.

The first time that my bees swarmed I quickly worked up an informational sheet on swarms, another on stings, and copied one received from Ohio State Entomology Extension on the African bee. I leafleted my neighborhood with these with generally good results. People didn't know anything about bees and were glad for the information. The one who reported my bees as a public nuisance even though they hadn't landed in her yard wasn't satisfied and so I was spurred to organizing all of the beekeepers known to Louis Dubay, who had started most of them, into an association with interesting and productive results.

Another outcome was a resolve to learn all about bee swarms and how to avoid them in the future. I also wanted to be able to predict when they might occur because I dreaded the possibility that my bees would swarm when I wasn't at home and land in the recalcitrant neighbor's yard. So, I began the study, now in its fourth year, which is reported here for whatever help that it may be to others. This reports the daily frequency of bee swarms in San Francisco as reported by cooperating San Francisco hobbyists, although principally by Louis Dubay who is the "city swarm collector". He receives calls from the police, health, and fire departments.

All of us who have suffered through statistics, old style, and were told that if we present our data lucidly we wouldn't need to talk about it. I have carried that advice almost to an extreme in the accompanying graphs but will add a few words.

Fortunately for this work I bought an astrological calendar in 1976, referred to later, which indicated apogee and perigee for the moon, a bit of lunar data with which I have never had occasion to acquaint myself. When the data had been put into graph form and I tried to make sense out of it, I found that the nearest correspondence of peaks and valleys of activity resulted in bringing into alignment or near alignment, apogee and perigee positions of the moon from year to year. Close examination indicated that most of the time there was no bee swarm activity on the day of apogee (the point farthest from the earth in the orbit of the moon) and that preceding it. The day of perigee (the point nearest to the earth in the orbit of the moon) would be the next best time to take off a day from answering swarm calls during the season.

Second, there is a concentration of activity around the moon's synodic nodes, especially the new moon. At which node and how much and whether before or after it is inconstant and probably related to the positions of apogee and perigee and other celestial relations.

Beekeeping has taken me many places both geographically and mentally and this investigation was no exception. As soon as I made my discovery about apogee I took my data to the Planetarium at the California Academy of Sciences to find out more about these points which I learned are called the "Anomalistic" lunar calendar. I was referred to **The Observers Handbook**, published by the Royal Astronomical Society of Canada. It is a goldmine of astronomical information, most of which doesn't interest me at this point except that it does have the dates of apogee and perigee for the year. So does the **Astrological Calendar** published by Circle Books, 2739 Elmwood, Ann Arbor, Mich.

On the shelf near the **Observers Handbook** in the Academy bookstore I came across **The Cycles of the Heavens** by Playfair and Hill, published by St. Martin's Press, 175 Fifth Ave., N.Y. Passages on pgs. 33 and 166 give insight into the effects of apogee and perigee which are not listed in the index. Furthermore, it is a fascinating book for people with a lay interest in the natural sciences. Its subtitle is: **Cosmic Forces and What They Are Doing To You**.

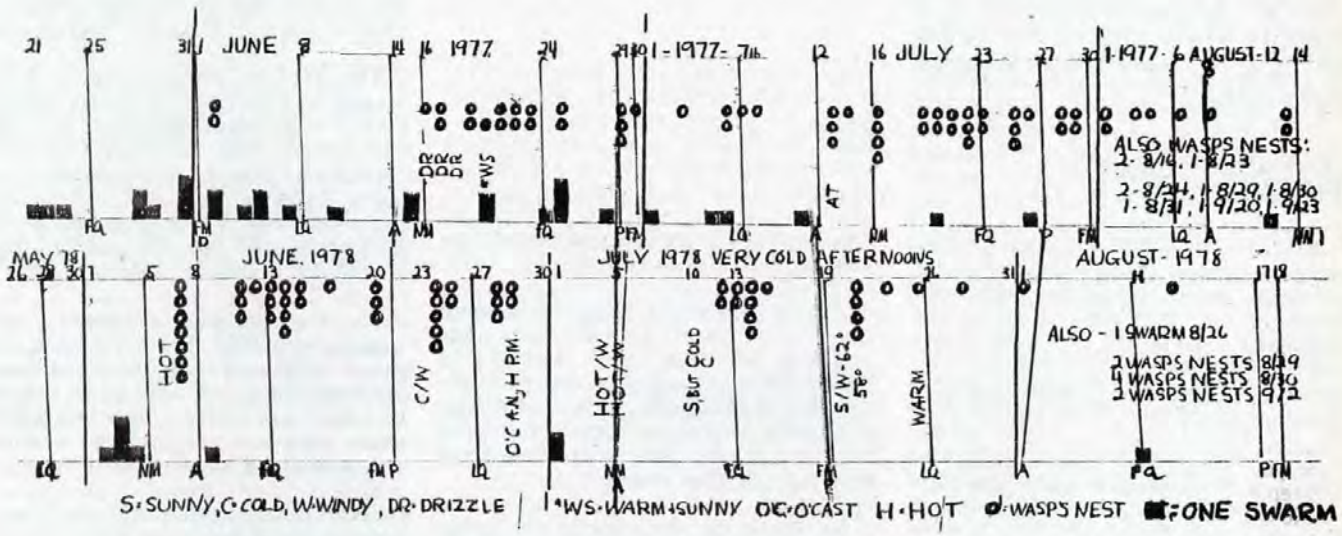
Since urban beekeepers who are called on to remove bee swarms frequently find a wasp's nest I have collected data for those as well and report it here. Seems from this data that they become active around the moon's synodic nodes, especially the first quarter, and, like bees, are quiet at apogee and perigee.

I might add in passing that beekeepers earn a lot of good points in our community by removing wasps nests. We find this useful to bring up whenever we are bargaining to keep our bees in place or to find further sites for them. The beekeeper who rescues a householder from wasps that threaten his peace is indeed the saving angel and someone to keep around even if it means suffering his bees. It should not be unexpected if he makes a charge for removing them since wasps are not a responsibility of beekeeping. This is especially so as city people become increasingly aware of and feel threatened by the use of pesticides. They want unwanted life removed without their use.

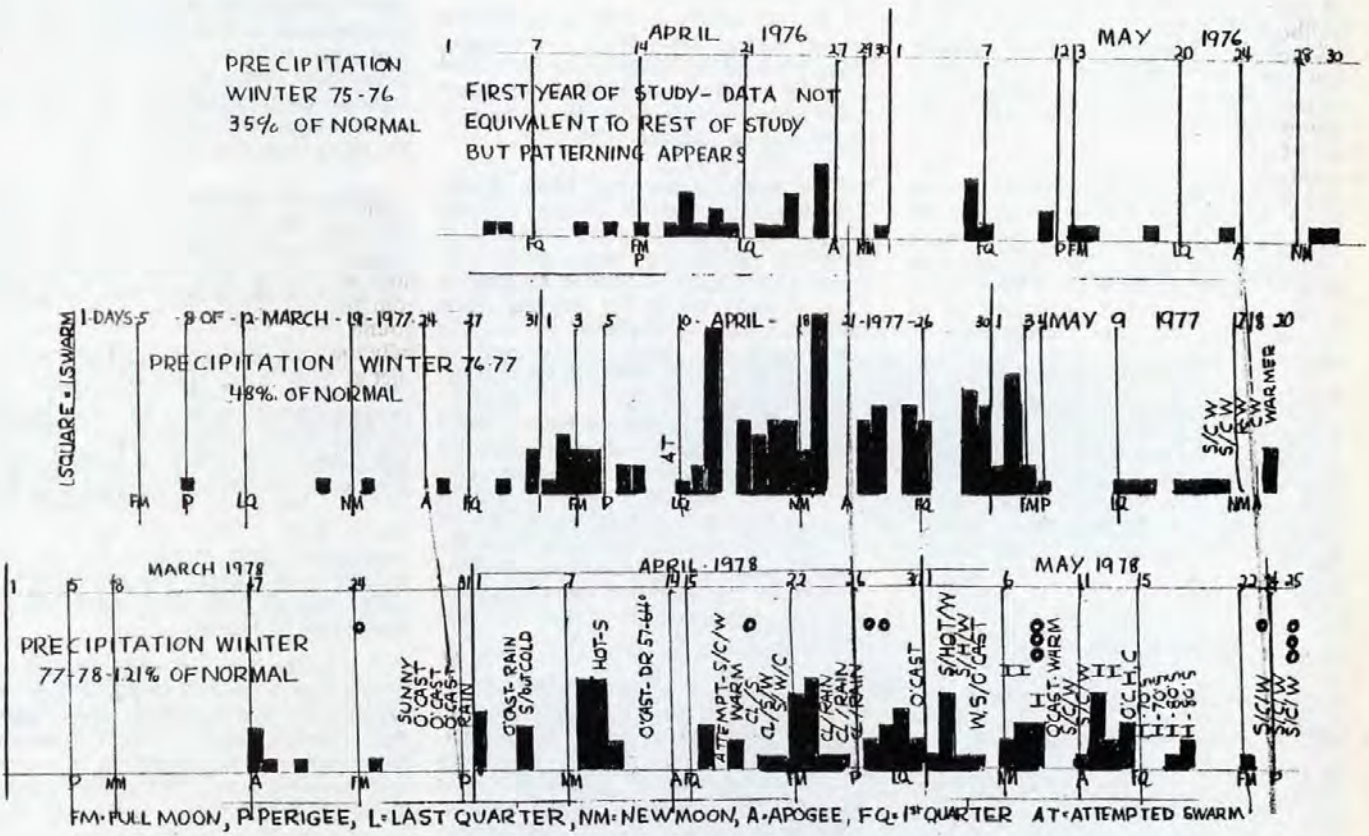
For anyone wishing to repeat my work my method was to work very closely with

the beekeeper to whom most city swarms are referred, Louis Dubay. I received his calls alternately and always sought to establish when the swarm emerged. If I didn't receive the call I frequently went with him to pick up the swarm for the purpose of establishing exact time of emergence. Each evening we worked together on entries in my swarm-wasp calendar listing the exact location, party reporting, characteristics of the settling site and the weather. Unless sure of the date of emergence, the swarm was not recorded. Swarm data received from other hobbyists was treated the same way.

In response to questions that will occur to readers about those external conditions assumed to have an effect on swarming I have indicated on the graphs extremes, for the season, of weather, such that it could be assumed to have had an effect on emergence one way or the other. Where there are no entries, the weather was normal for San Francisco, i.e. warm foggy mornings, warm clear afternoons with the fog returning.



NESTCALLS IN SAN FRANCISCO-1976-1978



PERIODICITY OF BEE SWARMS AND WASP

Making Some of The World's Hungry Into Beekeepers

"It looks like the destitute and hungry of the world are going to have to somehow support themselves."

By TIMOTHY HOSEY
Bloomington, IN.

LUIS ECHEVERRIA, a destitute Panamanian farmer, has new hope in his life because of bees. He and his family were living off of an income of just a few hundred dollars a year. They lived in a shack. They were always hungry. But worst of all they had no hope that their situation would ever become better.

Then Luis made contact with the foreign-aid organization called the Heiffer Project International. HPI gave Luis a hive of bees and taught him how to manage them. Luis quickly split to seven hives. He soon began taking over 100 pounds of honey off of each hive. Now the Echeverria family has extra food to eat. They have extra income from selling honey and beeswax. They have better fruits and vegetables in their gardens because of bee pollination. And, because their hives are constantly multiplying, they have hope of an ever-better life in the future.

Luis Echeverria and his family are just a few of the half billion people in the world who are so poor that they can't even obtain enough food to maintain their health. Many of the world's poor, as in Guatemala, try to raise entire families on incomes of $70 a year. Many have to survive on even less.

The richer countries of the world are trying to help these people in the poorer nations. In fact, the World Bank estimates that foreign-aid from all countries during the next ten years will rise to nearly 160 billion dollars. Even with such vast sums of money being given, though, millions of people are still on the edge of starving to death.

There are two basic reasons why so many people of the world are poor and hungry despite the massive amounts of foreign-aid being sent to them. The first reason is that most foreign-aid goes to governments, large organizations, or institutions in the belief that the given resources will "trickle-down" to those who really need them. But this "trickling-down" effect doesn't seem to happen. Somehow the large organizations swallow up the money for their own needs, and the destitute farmers and peasants usually see very little, if any, of the help.

The second reason is that even the most desperate of people still have some pride and dignity. They don't want to be dependent upon someone else for their survival. So they often resent, or refuse, help when it's given to them as just some kind of handout. They want to somehow earn the help they receive.

So far, only one foreign-aid group seems to have recognized these problems, and solved them. This organization is the American-based, non-profit, Heiffer Project International.

HPI was started in 1944 by an Indiana farmer named Dan West. He began helping people by handing out powdered milk to women and children in Spain during the Spanish Civil War. Shortly afterwards he founded HPI.

Now headquartered in Little Rock, Arkansas, the Heiffer Project spends nearly two million dollars annually in programs for destitute people around the world. West and HPI started by sending cattle to needy people, but they have since expanded their programs to include chickens, hogs, sheep, goats, and of course, bees.

All of HPI's programs have worked extremely well, but it is their bee program that is the most interesting because of its uniqueness. No other private organization has been able to adapt bees to meet the problems of foreign-aid. Even the large government organizations of all the countries engaging in foreign-aid haven't had the success with bees that HPI has had.

The Heiffer Project's success comes from the way they approach the two foreign-aid problems mentioned earlier. To start with, they totally reject the "trickle-down" theory. They give bees directly to farmers and peasants, not to governments or large organizations. They go out into the countryside, no matter how rugged, and find out who really needs their help.

A good example of HPI's "direct contact" principle was a recent bee project involving over two hundred families at the village of Nebaj, Guatemala. After hearing that the village was interested in a bee project, HPI representatives had to climb through the Cuchamatares Mountains for eight hours just to get to the village to set up the program. Then they had to go again to train the people. They had to go again to get the bees in, and they are still going back and forth to check on their new beekeepers.

The Heiffer Project makes initial contact with potential recipients through a world-wide web of individuals and small organizations that cooperate with HPI. Extension workers, missionaries, local farm organizations, and agricultural schools all help. These groups locate the most needy, and then HPI teaches them beekeeping, if they are willing to learn.

For instance, Luis Echeverria made contact with HPI through a local 4-H group. HPI gave Luis a hive and taught him beekeeping. He learned so fast and became so good at it that now he's helping others learn how to keep bees. And he's giving others splits off of his hives.

This kind of helping activity between the poor themselves is how HPI solves the second problem of foreign-aid. The Heiffer Project operates upon another principle which is, "to give a helping hand rather than a handout". In practice this means that HPI has its recipients pass on one split to a needy neighbor for each hive that they receive. The recipients also help those they give the split to by teaching them beekeeping. Helping each other makes the recipients feel like they are more than just charity cases.

HPI's self-help ideas also mean that the bee recipients have to do all the work themselves in the raising of their bees. HPI gives some help and instruction, but the brunt of the labor comes from those receiving the bees.

A recent HPI project in Haiti demonstrates just how effective these new beekeepers can be with just a little help. Instead of the usual packages, HPI sent 600 queens to a group of local farmers. The recipients worked exceptionally hard to start new hives with the queens and native bees. They did all the work themselves, and spent a lot of time helping each other. The result; after a little over a year they marketed two truckloads of honey.

New beekeepers in Solola, Guatemala, after a short period of help had their new beehives stacked with full supers higher than a man's head. Other Guatemalan beekeepers only had to hollow logs to put their bees in, but after quickly learning their new skill they increased their incomes by over twenty-five percent by working just part-time.

(Continued on page 318)

Using a Carton To Capture Bees

By HERBERT W. GRAHAM
Woods Hole, MA.

SUCCESS IN handling bees depends upon an understanding of their behavior. This is especially true in the case of handling swarms or colonies that have been greatly disturbed by the destruction of their shelter as in the case of depredation by bears or in transferring bees from the walls of buildings.

Colonies that have been torn apart for one reason or another often exhibit the same behavior as a swarm. They gorge themselves with honey and cluster on some object with their queen while they send out scouts to seek a new shelter. What the bees desire, whether a swarm or a dispossessed colony, is a dark, weather-proof cavity with a reasonably small opening that can serve as an entrance and can be easily guarded.

When I hive a swarm I do not dump the bees into an open hive. I keep the cover on the hive and place a piece of plywood on the ground sloping up to the entrance. On this I shake some of the bees close to the hive. As soon as these bees realize they are at the entrance of a nice dark cavity they fan back a scent to tell the rest. Then I dump the main mass on the board and stand back to watch the bees rush up the board and into just the kind of shelter they desire. In a situation like this there is no trouble getting the queen to enter the hive. All the bees are fanning and traveling in the same direction.

In transferring a colony to a modern hive from some structure where they have become established, the situation is more complicated. Not only do the workers remember the old location but there is plenty of queen scent there to attract them. Success in this operation depends upon getting the queen to enter the hive. Since it is usually fruitless to look for the queen under these circumstances, one has to rely on somehow getting sufficient bees fanning at the hive entrance to attract the queen so that she will run in of her own volition.

If you are cutting out combs individually and shaking the adhering bees in front of the hive it will be only a matter of good luck if you have included the queen in one of these shakes. Likely as not the bees and queen will move ahead of you as you remove the combs and will be left clustering somewhere near the old location. The usual procedure is to scoop them up somehow and dump them in front of the hive and to keep this up until you are satisfied that the queen has entered the hive, arriving at this conclusion by the fact that more bees seem to be entering the hive than are returning to the old location.

"Perhaps this system could be used for hiving swarms that have settled in such stubborn places as on fence posts or tree trunks."

There is a trick that can be useful in a situation like this. I learned this one day while helping a friend transfer a colony from the wall of an abandoned boiler house. This colony had established itself between the studs of an outside wall. The bees had entered at a point where a four inch pipe had penetrated the wall and were using the space between the pipe and sheathing as an entrance. We exposed the colony by removing this outside sheathing.

We transferred all the brood combs with adhering bees to a Langstroth hive. The combs of honey were collected in buckets after shaking the bees onto a slanted board in front of the hive. When the operation was completed, which took several hours, there were not many bees in the hive, nor could we see many at their old location. Where were they? They were inside the boiler room. As we smoked them and cut out combs they had kept ahead of us and followed the pipe to the inside.

Upon entering the boiler room we found a great mass of bees clustered quietly on the wall. Obviously the queen was with them. How shall we get the bees off that wall? Shall we go through the scrape and shake routine? What assurance do we have that the queen will not fly back to the old location? Well, by this time it was getting late in the day and I was more inclined to ruminate about bee psychology than to do anymore work. I began to recall that clustered bees like to move upward and that they like dark cavities. We happened to have an empty paper carton about 18 inches on side. This we inverted over the cluster, securing it tightly against the wall, and left for the night. Upon our return the next day we found all the bees clustered up in the carton. We removed it gently and dumped the mass in front of the hive whereupon they all marched in. Perhaps this system could be used for hiving swarms that have settled in such stubborn places as on fence posts or tree trunks.

I used this procedure again in transferring a colony from a backyard incinerator. I was visiting in California when my brother-in-law, George Thompson, of Palo Alto, informed me that he was having difficulty in trying to get a colony to move from the incinerator to a modern hive. I offered to help him make the transfer by the drastic method of transferring the combs. This turned out to be quite an operation engaging the assistance of his whole family.

The incinerator had originally been used for burning leaves and other garden trash but had not been used for several years because of California air pollution laws. Early in the spring a swarm had occupied it. It must have been a large swarm as the incinerator was very heavy and the time was only late July. The bees were using a rusted out hole in the side for an entrance. The hinged lid was fastened tight. When we cut this loose with a butcher knife we learned why the drum

Fig. 1. Removing the honey. Photo by David Thompson.

was so heavy. It was full of honey. We cut out many pounds of honey before we came to the brood (Fig. 1). We tied the brood combs in frames and placed them in the hive (Figs. 2 and 3).

Each time we cut out a comb we shook the adhering bees in front of the hive. This started quite a few of them fanning but most of them preferred to return to the incinerator where there was plenty of queen scent. Apparently as we cut the combs the queen kept moving ahead of us so she never got shaken in front of the hive. After all the combs were removed most of the bees were on the incinerator, covering the walls inside and out. To remove the bees from the incinerator we decided to thump it sharply by picking it up and dropping it. To do this on the ground would have killed too many bees so we dropped it on a section of upturned log. About half the bees dropped while the other half took to the air with a mighty roar. The airborne bees soon settled down but instead of going into the hive they, along with the rest, settled on the log. Obviously this is where the queen decided to rest (Fig. 4). Since the empty incinerator probably had plenty of queen scent on it we removed it some distance away.

By now it was time for a lunch break and I decided to try the carton trick. I simply inverted an open carton over the log section supported by the log at one edge and by a stake at the opposite edge. After lunch I found most of the bees had clustered inside the carton which I then shook in front of the hive (Fig. 5). At this point the queen apparently decided to go in as we managed to get the whole colony in with a little coaxing with a dustpan.

An interesting aspect of this operation is that a large normal colony of bees seemed to prefer clustering in an upturned carton to entering a hive which contained all their brood including much that was unsealed.

Incidentally, we transferred 15 frames of brood and removed 124 pounds of honey.

Figure 4. Stubborn bees refuse to enter hive that houses their brood. Photo by David Thompson.

Fig. 2. Tying brood comb in frame. Photo by David Thompson.

Solid honey under the lid. Photo by David Thompson.

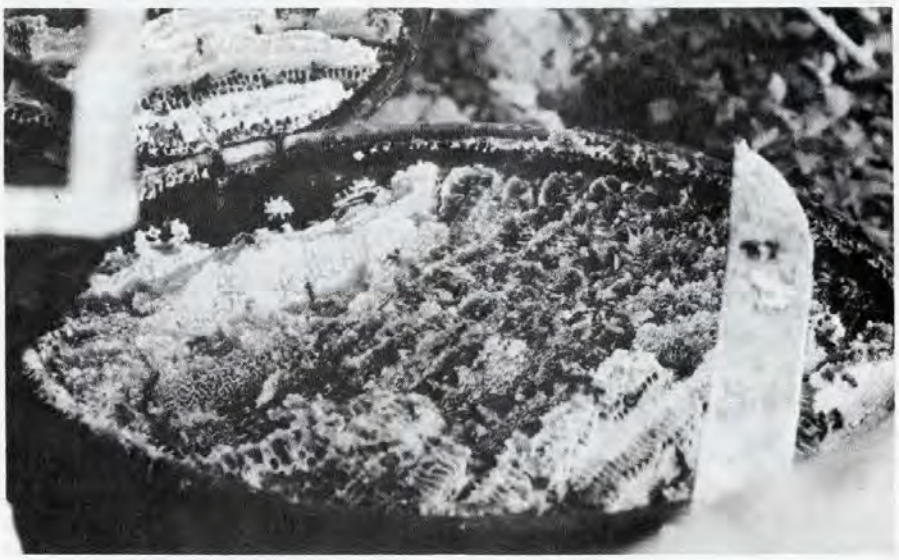


Figure 5. Near the end of the operation. Photo by David Thompson.

Fig. 3. Placing brood comb in frame. Photo by David Thompson.

I Started Beekeeping To Make a Lot of Money

"My own honey tastes better than any I ever bought."

By ROB MILLER
Union, OR.

I FIRST got interested in beekeeping because a professor of mine in graduate school (my major was English) was a beekeeper and had written a book on beekeeping.

Before that, if I thought of bees at all, it was to think of the time my cousin and I on a hot summer day threw rocks at some bees in the wall of an old barn until the bees became understandably disturbed and, after considerable provocation, attacked my cousin. I had to dunk his head in a stream some 50 yards away to get them out of his hair. For some reason they ignored me; maybe that was a fortuitous omen.

The book, **The Art Of Beekeeping** by John Adams, was charmingly and insightfully written. It enticed me to consider beekeeping seriously. Beekeeping fitted into my view of an appropriate occupation, one that did not deplete nor destroy natural resources, and, in fact, returned as much as it required.

I was a writer and looking for a supplemental income that wouldn't require all my time. Beekeeping seemed the answer. I didn't think the exercise would hurt me at all; nor to be overlooked was the fact that I loved honey and bought a lot of it.

So I ordered some beehives and package bees for two hives. I assembled my hives and eagerly awaited the bees. I waited till July. I realized that it was far too late to be of any use to start then.

The next year I ordered package bees again. And here I made my first mistake. I had been living in the same area for about 10 years and thought I knew perfectly well when the first blossoms were out. I should, in fact, have asked one of the local beekeepers just when package bees ought to arrive. This time they arrived just when I requested, the first of April. There was still snow on the ground. They were just about one month early.

My second mistake was trying to feed them with an entrance feeder. Now I know that I should have fed them with a gallon jar of sugar syrup on top of the brood chamber.

First one colony weakened and I couldn't find the queen, so I joined it with the other. Things seemed to go well for awhile; the queen was there and the bees were working, but after a few weeks the bees grew less numerous and I found out there was no brood in the hive.

So again I had no bees. I was just a little discouraged, so I decided to talk with a couple of the local beekeepers—which I should have done in the first place. From them I got some idea of what I should be doing. I had by this time read several more books on beekeeping, books that I still consider valuable, but advice from beekeepers who know the local area is invaluable. From one beekeeper I got a swarm of bees so at least I had one hive.

The next year I ordered two more packages of bees, this time to arrive the last week of April. We were having the usual bad spring. All would still have gone well, I think, except that I was working away from home for the railroad two to three weeks at a time and during a dearth in pollen supply, with no supplemental feeding, both hives starved. One weekend I came home to find them all dead. At first I suspected spray of some kind, but I got a local beekeeper to inspect the hives and his verdict was starvation.

This last year I ordered two packages of bees from California but because of the drought there they were never shipped. I did manage to capture a swarm of bees in a tree. I now have two hives. From them I got enough honey for my family this winter and enough to give to a few friends and relatives.

But for five years of effort and expenditure I haven't made a penny. During that time I've spent about $1,000 on bees and equipment, including an extractor that I got to use this summer for the first time.

But I have learned from one mistake after another (only a few of which I have related here), and I have grown philosophical about bad luck. I certainly realize I still have a lot to learn about beekeeping.

And I plan to keep learning. I don't think my investment has been wasted. For the coming summer I plan to order nucs rather than package bees. And I plan to have honey to sell. But even if I never make a penny, my own honey tastes better than any I ever bought.

PROFESSOR HONORED

PROFESSOR J.W. Stocker of Eastern Kentucky University in Richmond, Kentucky was honored by students when he received a framed print of honeybees on flowers from them.

Mr. Stocker has taught beekeeping at Eastern Kentucky University for many years on a hobby basis. An introduction to the beekeeping course is taught during the spring semester. The class consists of lectures and demonstrations by Mr. Stocker and guests, many of whom are outstanding Kentucky beekeepers. There are also slide presentations, field trips and practical experience in the school's bee yard.

A new beekeeping course has been added by the agriculture department during the summer term and the fall semester. This course, Agr. 325, consists of all practical work, six hours a week under Mr. Stocker's supervision in the school's apiary.

Mr. Stocker has more tenure as a teacher than any professor at the University.

Basics for Building a Small Bee Business

"Tom and Sue took the plunge and both are dedicated to see the business grow."

By JOAN LE MIEUX
Longview, WA.

DIVERSIFICATION, advertising and education are the basic building blocks Tom and Sue Strickland of Castle Rock, Washington are using in their new bee business. Tom Strickland is finally turning a 24 year long love affair with the honeybee into a profitable new enterprise. And the business is building without turning for help to a government who wanted just too much indebtedness.

Diversification was an economic necessity. "There's just no way we could make it on selling just our honey," commented Strickland. With only 200 hives and a small living/shop area housed in a remodeled dairy barn on 9 acres of ground, selling honey alone is not a practical way to go.

Tom know bees. At 33 he is energetic and definitely realistic. "I looked around and figured out what else I could do, along with bees. What else was needed that I could provide?"

The newly organized shop offers beekeeping supplies now. For a minimal investment they are able to offer basic supplies to surrounding area beekeepers.

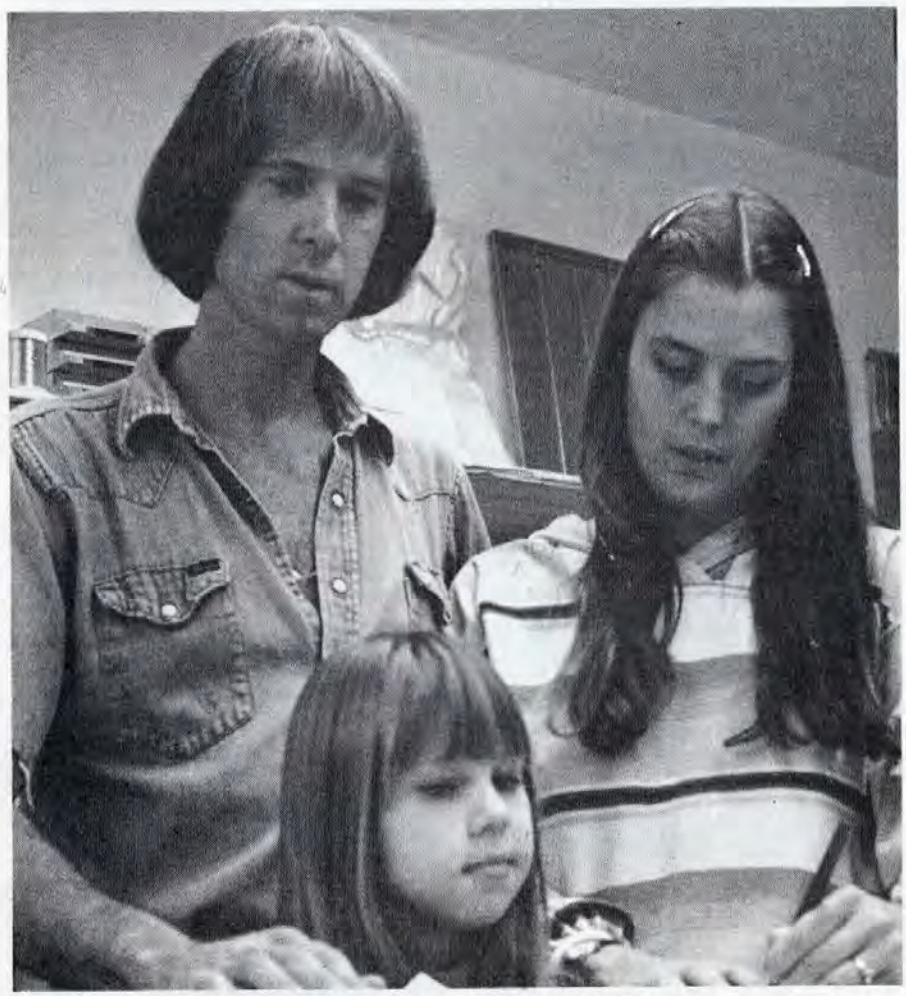
In addition to supplies, Strickland also plans to inaugurate some specialized services. Soon beekeepers will be able to use the extractor room. The small independent bee keepers will then be able to rent both space and equipment.

In addition they will be able to pay part of the rental in honey, thereby filling out the current honey inventory which now barely meets Strickland's retail sales market.

Another service this young business has considered would be offering a service to hold the line against foulbrood. They are hoping to be able to help beekeepers sterilize infected hives so they do not have to be destroyed.

Supplies and services will offer the Stricklands a more solid economic basis than any one would alone. Services and supplies are not enough though to insure a living. A strong and consistent market is also needed.

Advertising and education are needed to develop that market. Advertising for this business has included not only small newspaper spot ads, but also a large road sign clearly locating the shop on the outskirts of town. Appearances at fairs and farmers' markets always include a table full of literature, pictures and samples. Sue has a large coloring book detailing the life and times of the honeybee for the children.



Starting a new bee business is a family affair for the Stricklands.

For packaging they have turned to a consumer awareness of economy and a yearn to return to the "good old days". Much of the honey is sold in re-useable canning jars. The usefulness and wholesomeness of this packaging is a part of their sales pitch.

Both Tom and Sue know that they must not only advertise their honey to local markets, they must also help educate the buying public and the new beekeeper.

Feature stories in local and regional newspapers giving consumer hints and helps to the new beekeeper are a part of this campaign. Tom is also active in local bee groups and hopes to help organize an interest course at a local community college.

In times of inflation and cut throat competition, starting a new business with a small nestegg is difficult. Tom and Sue took the plunge and both are dedicated to see the business grow. Sue has gone back to work in a bank to help out with finances. Acquiring and redoing the barn used savings from work in Alaska. At one time they looked into government loans. But Uncle Same believed in more indebtedness than independent Tom could accept.

"Heck, they wanted to loan me more

(Continued on page 316)

Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT. 05753

APPARENTLY the pure venom allergin for treating people hypersensitive to insect stings is finally coming on the market and should be available to doctors soon. After six or more years of effort it has finally been approved. For almost 50 years the whole body extract of insects, actually the "gut juice", has been used to desensitize against the venom of the sting. The whole body extract does not have any or very little active venom in it and was almost totally ineffective.

This should be good news to many beekeepers. Because of casual contact with the bees and venom, beekeepers' wives and children most often develop an allergy to bee stings. When the family helps with the bees and get stung they become "immune" and no problem develops. It is when the wife or children do not work with the bees that hypersensitivity develops.

So far, this pure venom has proven very effective in almost all cases. After treatment with a competent allergist with the pure venom, immunity can be developed so that a sting will produce a perfectly normal reaction with no allergy. So, any of you beekeepers who know of a family or friends allergic to bee stings it would be wise to tell them that their doctors should now be able to get it. There is no longer any need of anyone to be in fear of dying from an insect sting. It is well to remember that this immunity does not last forever, but they must be either stung or take "booster shots" of venom periodically to prevent allergy developing again.

Roger Morse in April **Gleanings** speaks of, Gypsy Moth Shenanigans, a very appropriate title. We have had the Gypsy moth in Vermont for perhaps 75 years and I've been told it does less damage to the forests than windstorms. In fact, Gypsy moth kills trees only if they are sprayed, believe it or not. Spraying Gypsy moth does not kill them, they just stop feeding and raise a second generation of caterpillars the same season so trees are defoliated twice in one year instead of only once, from which they easily recover. Just another illustration that you cannot fool around with Mother Nature. If you do, eventually you will pay for it.

It appears that the Beekeeping Federation is sponsoring a trip to the International Beekeeping Congress in Athens, Greece in September of this year. Any of you who have never been to an International Congress should by all means plan to go if you possibly can. After all, Greece is not only the cradle of civilization but also the cradle of beekeeping. And it still is, for thousands of years a country of extensive beekeeping.

I believe there is a side trip planned to Romania. You must not miss a visit to the home of Apimondia and the Romania Beekeepers Association. It might be interesting to note that they have a membership of 60,000 beekeepers. In the U.S. the Federation has finally made it over one thousand. So you see we have a long way to go to match their membership.

Most important, the extent, beauty and development of the beekeeping establishment in Bucharest will come as a great surprise to everyone, to actually see something that is so far ahead of anything that we have in the U.S. See the beautiful buildings, beautiful grounds and processing and manufacturing plants to do everything possible with honey and all bee products. Even cosmetics and medicines of many kinds are made with honey, pollen, royal jelly and propolis to an extent that will surprise anyone from the U.S. where almost nothing is being done about it.

Also, there appears to be a side trip to Tulcea, on the Delta of the Danube River where it flows into the Black Sea. There George Puscasu, who spent a season in the U.S. some years ago and who some of you may know, is operating 5,000 colonies of bees in the Delta area. From the Carpathian Mountains to the Black Sea is a large, broad plain with fertile soil that will remind many of you of our own Midwest, both in landscape and the crops grown. Romania is the third largest producer of corn. Sunflowers are now becoming a major crop in this area.

I am sure you will also go on a trip on the "Good Ship Apicola", through the maze of waterways that make up the delta and visit the large apiaries on many of the islands. The Apicola is used to move the bees in barges through the delta.

One of the outstanding sights, at least to me, in Romania is the great plantings of flowers of all kinds. It seems that almost everyone plants beautiful flowers anywhere that there is any empty space, in the gardens, along the sidewalks, roads, everywhere.

I have just heard that some doctors are putting up signs in their office warning mothers not to feed honey to their children under 1 year of age. This is hard to believe when one knows how much better honey is in the diet of infants on bottle feeding than any other form of modifier with milk. It is especially hard to undersand when studying the evidence with six infants, only three of them ever having had any honey, and far as one could tell, none of them had it in their regular diet. It was only used once, or just briefly.

Four of the six had fluroride supplements and one was on a drug, acetaminophen. The reports do not state if one infant was on any drugs. If you go by statistics, as apparently has been done in this case, five, and possibly six of the infants were on supplementary fluoride or drugs, apparently on a regular schedule. When honey was not on a regular schedule, from evidence presented, then the other diet additions should be more under suspect than the honey. There is evidence that drugs can interfere with intestinal flora and digestion, inactivate enzyme activity necessary in food metabolism and perhaps even interfere with protection from botulism poisoning.

The whole conclusion of the study does indeed sound biased when there is no evidence against honey. The fact that honey might contain botulism spores is insufficient evidence against it. Why pick on honey as the only source? I am still convinced from the many experiences I have seen, pure natural, unprocessed honey with all its active biotic material such as glucose oxidase, will prevent, not cause botulism poisoning. Perhaps a trip to Greece will convince some people of the value of honey in the human diet. After all, they have had thousands of years of experience with it. Never has there been any evidence against its use before, for thousands of years.

PATERSONS CURSE FACES ERADICATION IN AUSTRALIA

AFTER long debate and over the protests of beekeepers, one of Australia's principal honey plants is facing eradication. Patersons curse, or Salvation Jane, **(Echium Plantagineum)** is said to provide over 1/3 of the honey crop of South Australian beekeepers. Pollen from this plant is important for building up hive populations.

As of January 30th the Australian Agricultural Council approved release of a biological control, echium flea beetle to prey on the weed.

Another species of this plant is the American honey plant, Vipers Bugloss.

BEE TALK----

By DR. RICHARD TAYLOR
R.D.3, P.O. Box 549
Trumansburg, N.Y. 14886

I'M GOING to get my scale hive set up again this year. I set up my first scale hive seven years ago, when I had the good luck to pick up a fine set of platform scales at an auction on a winning bid of one dollar. The next year I bid seven dollars on another set and got those, too, so I could really set up two scale hives, but there wouldn't be much point to it. I started my original scale hive by hiving a stray swarm in a hive I'd set on the scales, and that colony stayed on the scales for five years, winter and summer, until I had to move the apiary. Now I've got to get another one going. A scale hive not only adds greatly to the joy of beekeeping and the joy of life, but it is also a very valuable instrument for a serious beekeeper.

When I first fixed up my scale hive I thought of it more as a novelty than anything else. I didn't have any special purpose in mind. But that first year I found out just how much you can learn this way. A scale hive is a marvelous barometer of honey flows. You think you can tell when there is a honey flow just by watching the bees and the flowers, and to some extent you can. But you can also get fooled that way, thinking there is a good flow when in fact it doesn't amount to much, or not knowing when a really good flow begins and ends. Appearances can be misleading. But a scale hive tells you exactly. It will warn you when you had better get out to your yards and add another super. Or when you can relax, no need for another super just yet. It also tells you when will be a good time to harvest honey. You don't want to harvest right in the middle of a good flow, because some of the honey might not be ripe, and besides, you might as well leave the bees alone to gather honey while the gathering is good. On the other hand, you don't want to harvest honey when there has been no flow for weeks, because the bees will be cross. So you watch the scale hive, and when the honey flow comes to an end, and you're about ready to extract anyway, then that is just the time to do it. You can also use the scale hive to see how much richer you are getting from one day to the next. If the weight goes up ten pounds in a day, and you've got maybe a hundred colonies, and you're selling the honey at your door for about a dollar a pound, then you can figure the bees have made about a thousand dollars for you that day, and you'll feel pretty good, and want to take your wife or your husband out to dinner that night. It isn't a bad feeling.

A scale hive doesn't have to give accurate weight. But it should register accurately the gains and losses. The old fashioned platform scales do this very well, and they are durable enough to stay outside the year 'round. I cover mine with a tarpaulin in the fall, then oil them up in the spring, and that's good enough. It's very little trouble.

As I look back through my diary, I note that gains of eight or ten pounds a day were not uncommon when the basswood was in bloom. The largest daily gain from basswood was eleven pounds. The records also show that the big gains came on the hot days. Sometimes a single thunderstorm would bring the honey flow to an abrupt end. I'm sure this is why black locust is such an unreliable source—the bloom is profuse sometimes, but it comes early, when there are apt to be rainy days. My records also show that the biggest gains of all are likely to be when the sumacs bloom. During just three days in 1975, ending June 24, when the sumacs were in bloom but before the basswoods had bloomed, my hive gained thirty pounds, fifteen of them in a single day.

The most avid scale hive tender I know is my friend Robert Peters, in neighboring Pennsylvania, who I guess was keeping bees when I was born. He sends me his record for the year from time to time, and here is his latest one, for last summer. Mr. Peters doesn't live in the best beekeeping

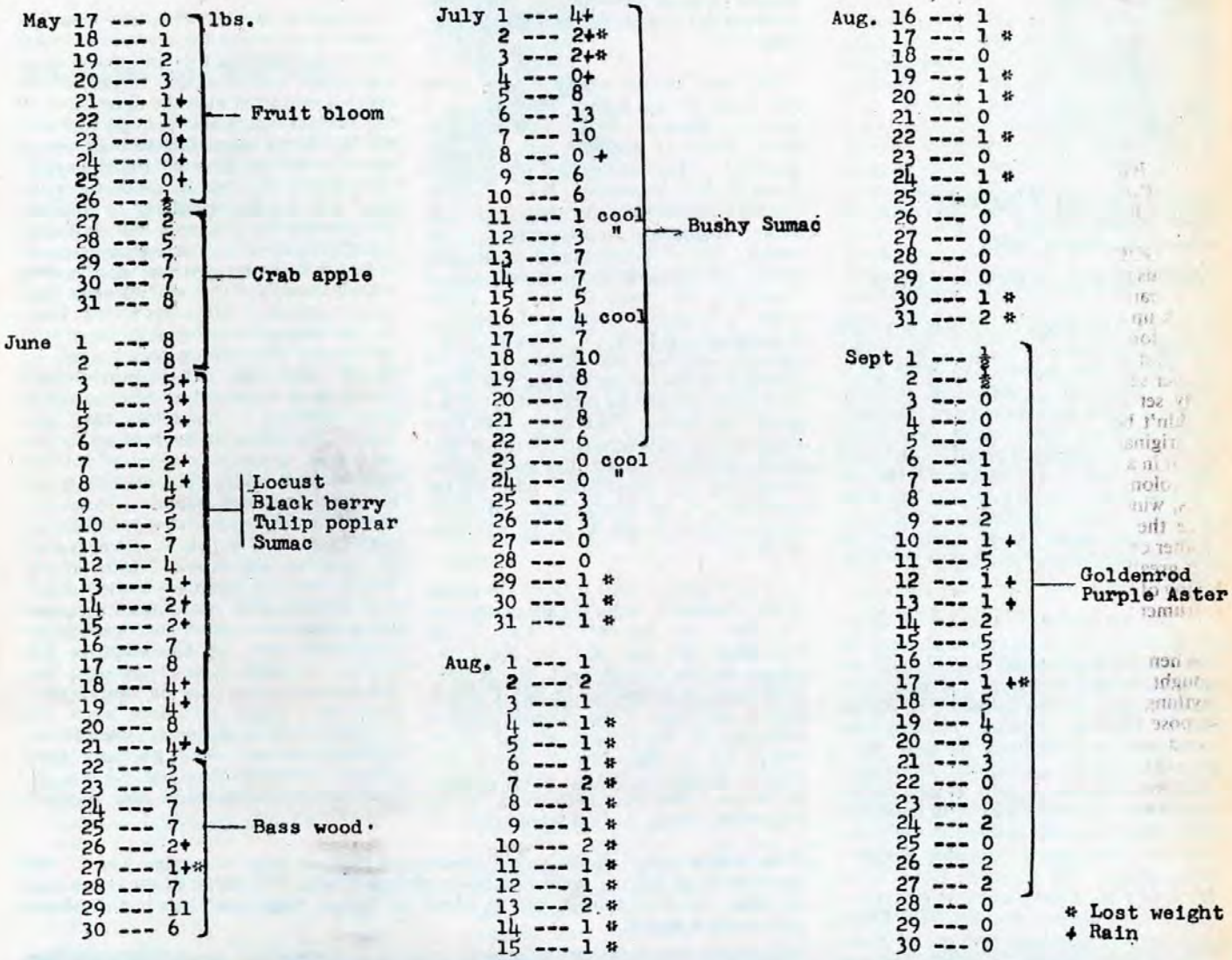
My scale hive in 1972.

area, and besides this has to put up with bears sometimes, but he does rather well, just the same. I notice that he has the basswoods blooming in June and the sumacs in July, and I can't help thinking he might have that backwards. Here the basswoods almost always start blooming about the Fourth of July, when the sumacs have faded. Mr. Peters' record is rather interesting, and conveys something of the fun of doing it, so I'm happy to pass it along.

Amount of Honey Collected Daily from a Colony on Scales.

Robert H. Peters, East Brady, Pa.

1978



Last honey was Sept. 27. First frost Oct. 25, (where I live). Leaves started to fall Oct. 17, 1978.

I averaged 104 lb. per colony in 1978. Average last year, 80 lb. June and July had the best honey flow in my area for 50 yrs. especially July, and mostly light in color.

Top producing colony this year made 287 lb. Last year this colony produced 210 and was second best. Believe it or not this colony has only two 6-1/2 inch supers for a hive body. It was a wild swarm I captured May 15, 1976.

A black bear weighing 300 lbs. visited my apiary on Sept. 13 and upset one colony, visited Oct. 18 upset four, visited Oct. 19 upset four, visited Nov. 3 upset four, visited Nov. 13 upset six. (See pg. 236 May **Gleanings**.) In the five visits the Game Commission and I estimated that the bear ate 214 lbs. honey and 39 lbs. bees, besides 46 frames and 96 brood combs destroyed.

The Game Commission captured him with a snare trap and moved him to Somerset County on Nov. 13, 1978.

KEEP GLEANINGS COMING

BRITAIN PROPOSES TO BAN BEE IMPORTS

THE British Bee Journal reports that by an overwhelming majority the BBKA (British Beekeepers Association) delegates voted for a ban on the importation of bees into Britain. Of concern is the alarming spread of Varroasis disease in the past few years and its discovery in the countries of Europe.

America could be a country excluded from any imposed ban on the grounds that we already have a ban on importing bees and are therefore, theoretically at least, free of Varroa.

From the West

By CHARLES J. KOOVER
1434 Punahou Street
Honolulu, Hawaii 96822

THAT AWFUL HIVE ENTRANCE.

IT'S BAD enough to put bees in a white painted box and put it flat on the ground, so that all their enemies can easily get to them, and then on top of all that give them a clear-across-the-front entrance, right at floor level, under their brood combs. No wonder they suffer and when they can't take it any longer will take off for the trees. We call it absconding. Even a swarm, which is badly in need of a new home, may desert the hive prepared for them if the interior is too hot or too dirty, etc.

I grew up with straw skeps in my native Holland. I wrote an article about it for the **British Bee Journal** in 1972 and I am playing it back to you so you may know what I said. It was called "The Slatted Rack". Here it is in part. Nothing beats a skep as a healthy home for bees, but a brood box with a slatted rack underneath the frames comes as close as you can get to a skep. As far back as I can remember bees have been kept in skeps in my native Holland, and many centuries before I came along. The stubborn Dutch never let go of a good thing when they have it. I know, for I am one of them. The Dutch Government wants the bees out of skeps, without much success. I became aware of that when I visited the bee market at Bennekom some years ago. All the bees for sale were still in skeps.

Here in America skeps and gums are taboo. So the best thing I could do was to use a slatted rack, and to my delight it's just as satisfactory as a skep. How do I know? Well, my bees are healthy for I have no disease problems. I used to have some Nosema and dysentery before I adopted the slatted rack with the Killion four inches wide board nearest the entrance. What about its use in Britain? I can't tell. I have been gone too long, but I have a sneaking notion that it will work as well. It costs so little that beekeepers should give it a try. The rack is nothing but a rim which fits under the brood box. It's grooved so slats can be made to fit into it. The width of the slats is immaterial as also the thickness. But they should be 1/4 inch below the rim to allow for a bee space between the bottom bars and the slats. On the bottomside they should be flush with the rim. The space between the slats should be 1/4 inch also. That's all.

But that 7/8 inch entrance clear across the front of the hive is too big. So I narrow it down to 1/4 inch high across the front, the year around, and it's never changed. And then arrived the letter of John Mills of Vancouver, B.C., Canada. He has used the rack for years and made some worthwhile improvements. He writes, "To eliminate ladder combs and make air flow pattern easier add a 'braddis', like used in O.A.C. pollen traps." He made a drawing of a braddis. It's a stick 7/8 inches x 7/8 inches and it runs the length of the floorboard in the center from the entrance to the rear of the hive below the slatted rack. Let's call it a ladder for bees to climb up on with their loads of nectar and pollen. Without that ladder is it any wonder they build ladder combs on the floorboard and on the underside of the slatted rack? By their actions the bees tell us if we will only observe.

In the February 1961 issue of **Gleanings in Bee Culture** I wrote an article entitled "Is this the Answer?". And I am repeating that one also to make my point...Is this the answer? In the May 1959 issue of **Gleanings in Bee Culture**, Carl E. Killion of Paris, Illinois wrote as follows: "If the readers of this article would try a deep bottom board one season I wonder how many would go back to the ones they have been using. In my inspection work I find thousands of frames in hives where bees have gnawed their combs away from the bottom bars (or never built down to them). In my conversation with the owners they seem to think it natural for the bees to do this. It may be a natural instinct but there is a way either to fool the bees or give them what they want and it will eliminate all this space next to the bottom bar. In doing so there is considerable brood rearing space added to the brood frame."

Instead of saying "what they want", I would like to make the correction "what they need" and base that on the following experience. Like any other readers of this article I wondered what the dimensions of this bottom board were. Luck was with me for I have a copy of the 23rd edition of Langstroth's **The Hive and the Honeybee**, revised by C.P. Dadant, which shows on page 125 two photographs of Dr. Miller's bottom board and bottom rack and gives specifications as to the construction of same. I made up two sets of the deep bottom board and rack and installed them under a couple of hives this spring. Early in the summer I lowered a super with beautifully drawn new combs full of brood onto this new bottom board arrangement and watched the proceedings from then on. The combs had been drawn clear down to the bottom bars of the frames. Everything went well until the first few cool nights when the bees began to carry out dead brood. Inspection revealed no signs of disease but each and every comb had the usual one inch wide slot gnawed the whole length of the bottom bar. If I had known what I know now after reading Mr. Killion's second article about the deep bottom board in the June 1960 issue of **Gleanings in Bee Culture** I could have forestalled this destruction by the bees of their combs. However, I might not have asked the question I am raising now. Bees do not wantonly destroy their perfectly good combs. Is it that they gnawed this one inch wide slot so as to be able to warm

(Continued on page 316)

This shallow rack is similar to one constructed from an inner cover rim. The 4" wide board in front and the narrow entrance prevents exposure of brood in the lower edges of comb. Slats[not shown] may be added for further insulation. This is a California style bottom board.

Research Review

Pesticides Still Kill Bees

By DR. ROGER A. MORSE
Research Editor of Gleanings
Professor Apiculture
Cornell University, Ithaca, N.Y.

"THERE ARE some states where bees don't die a natural death any more, they are poisoned. We pay for that. We just don't believe it. So we take a hard-boiled attitude in some of these items," said Secretary of Agriculture Bergland when he testified before the Senate Appropriations Subcommittee on Agriculture on February 27, 1979.

The Secretary was saying, in effect, that he didn't believe that pesticides were a serious problem for beekeepers. He, and President Carter, want to do away with the indemnification of beekeepers who lose bees because of pesticides.

The indemnification bill is administered by the Agricultural Stabilization and Conservation Service (ASCS), one of the many arms of the U.S. Department of Agriculture. It is ASCS men who visit apiaries and who certify that a pesticide loss has taken place. This must be done in every instance where a beekeeper is paid. Secretary Bergland's words suggest he does not have faith in the men in his own ASCS.

Our nation's beekeepers were paid over four million dollars in indemnification last year. However, I estimate, and others agree, that this amount represents less than one-fourth of the true monetary value of their losses.

Another swipe at our industry was taken by the **New Yorker**, a magazine primarily by and for New York City people, many of whom know little of country life. The April 9 issue quoted a USDA official as saying that ASCS men "don't know bees from hummingbirds." That's not a very flattering statement for an administrator to make about men in his own department!

The **New Yorker** cited figures on payments in the states of Virginia and Arizona as examples (and presumably proof) that something is wrong with the indemnification program. Virginia beekeepers, they pointed out, were compensated to the extent of about four thousand dollars, while Arizona beekeepers received over four hundred and fifty thousand dollars in the last fiscal year, yet Virginia has more bees than Arizona. The real truth is that agriculture is considerably different in the two states, but it is probably too much to expect a city girl writing for the **New Yorker** magazine to understand that. Virginia has many areas where pesticides are not used and where bees may flourish on wild flowers; that is not the case in many parts of arid Arizona. The **New Yorker** article gave no figures on the use of pesticides in these two states (it is very much greater in Arizona), nor on the extent to which bees are concentrated near insecticide-sprayed crops.

What Is The Truth?

The facts are that beekeepers are suffering more from pesticides each year, and other than indemnification, little is being done about it. Dr. Carl Johansen of Washington State University has documented what has happened in his state and across the country.

The pesticide program is complicated by new formulations. For example, Penncap-M, manufactured by the Pennwalt Corporation of Pennsylvania, is the most insidious killer of honeybees (and probably other beneficial insects but no one has yet looked closely enough to tell). Penncap-M is microencapsulated methyl parathion. The insecticide has been used for a number of years and has long been known as a bee killer, but the microencapsulated form, which makes it worse, is a recent innovation. The capsules are the size of pollen grains and are therefore carried back to the hive on the bees' bodies. There they also kill the young bees. Carl Johansen writes about this in **Gleanings** this month.

It is also true that the pesticide companies are doing nothing to alleviate the problem. I approached the Pennwalt Corporation, manufacturers of Penncap-M, and suggested they might pay for some research to determine how we might avoid some of these losses. I was told that if we had an idea that would protect the beekeeping industry against losses from their product they might be interested; however, they would not finance any research which would benefit all companies which made pesticides, including their competitors. Some would say this is a sound economic argument. I think it is an excuse for doing nothing. It is apparent that the pesticide companies will not do anything to help clean up the problems they create until forced to do so.

The Environmental Protection Agency, which presumably should protect beekeepers and others with this kind of problem, has also failed to offer much help. Part of their problem is that our industry has only recently begun to get the facts to them and to apply the kind of pressure which seems necessary to get a federal agency to respond these days. I was interested to see, in the Congressional Record of April 9, that Congressman Wampler, in moving to extend the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), said he wanted to give EPA the FIFRA money for one year instead of the usual two, so that Congress might "Get the attention of officials at EPA." Apparently, even Congress feels it has difficulty in making its desires known to EPA. I understand that EPA will fund some research in Washington State, and this is certainly a beginning.

There have also been more conferences between representation of the beekeeping industry and EPA officials recently and this, too, is helpful. However, we need to get them more involved in the honeybee poisoning problem.

Dr. E.C. Martin of the USDA told me recently that their laboratories have allocated the efforts of three and a half staff positions to the pesticide problem. However, some of those positions have remained unfilled for some months now. Also, none of the persons in these positions is located in any of the four states which have the greatest honeybee-pesticide problem: Washington, California, Arizona and Georgia.

What To Do?

It is important to write Congressmen, Senators and government officials. It is especially helpful if beekeepers, even if they own only one colony, notify federal officials and congressmen whenever they suffer a pesticide loss. Cite as many facts as possible. Handwritten, short, to-the-point letters are the most effective.

It is especially important to call the local ASCS office (there is one in every county) every time a pesticide loss occurs. I've had many beekeepers tell me they didn't want to bother with the paper work, or their loss was small, or they didn't really need the money. Last year one beekeeper, who owns thousands of colonies, told me he had severe losses in

(Continued on page 317)

Fundamentals for All

"ENERGY CONSERVATION BECOMES OBLIGATORY"

By W. A. STEPHEN
Professor Emeritus
The Ohio State University

I AM NOT an "establishment" person. Perhaps it is because of my rural background, where everything was on a small scale; the village store, the rural mail route, the mud roads with occasional surfacing logs which bore evidence of the corduroy roads of my grandfather's and even my father's pioneering days.

Such evidence is gone now. Gravel, and, more recently, hard-surfaced roads are now maintained by tax-supported, paid labor, superseding formerly unpaid statute labor assigned to each land owner. The thirteen days of statute labor assessed to our farm was fulfilled by working with a team and wagon (fitted with a gravel box) to haul gravel from the "hog's back" for graveling mud roads and repairing the puddle holes in those previously graveled. A day, or a day and a half, was allowed for a man and three days for team and wagon for each day spent working on the roads. Sometimes other innovations, such as leveling and seeding roadsides, were included. A path-master, appointed by the township council, would oversee the work and, what is now known as peer pressure, ensured that each farm family did its honest share. It was a kind of community project done during one week in summer.

I remember once when I was in high school performing statute labor by shoveling gravel in the pit. I was unconditioned, though not unaccustomed, to such hard work. The weather was hot. The July sun beat down on the freshly exposed limestones of all sizes. The pit was on the eastern side of the "hog's back", which shut off any breeze from the west and, besides, a kiln of lime was being burned on the other side of the hog's back. The heat from the kiln augmented that from the sun. In my three days of statute labor, I lost thirteen pounds of weight.

Such experiences are not for the rural youth of today. Gone is statute labor. Now, municipally owned equipment, with paid operators, keep the roads in condition in summer and plowed in winter for automobile travel. We jacked up our cars at the first big snowfall and used sleighs and cutters for winter transportation. Gone, too, is the old village store. Mail delivery is maintained, but there is a different route now, because the Cedarville post office has disappeared. The Conn Telephone Company is now part of the Bell System. Horses and milk cows have disappeared from some farms and even the family flock of hens.

As I look back on our community experiences in country living, I cannot help but contrast it with those of today. Some of you came from similar backgrounds to mine and can reflect, with me, on the way rural life has changed.

But the old ways are not gone in all the world. We see on TV the primitive ways of living in the third world countries and associate them with lack of progress. We have learned to equate progress with bigness and have been told that operation on a large scale makes for efficiency. But there are some farm areas which prove the opposite. Throughout America, there are communities where erosion of rural life and bigness have been stemmed. Such communities show no evidence that smallness results in decay. The opposite is true. In fact, they reflect more life and evidence of true prosperity than is found around my former home and in many areas through which I travel today.

In a previous article for **Gleanings** (1), I told about the book entitled, "Small is Beautiful" (2) which has attracted widespread attention. In his book, the author emphasized the need to develop a new life style, with new modes of production and consumption, and a life style designed for permanence. Does that mean going back to using wax candles and wood burning stoves and fireplaces? Perhaps not, as far as lighting the darkness is concerned, but wood piles are quite common around suburban homes today. Firewood is quite expensive and, at upwards of $100 per cord, I can't help but think of the times I have spent in the woods helping to cut wood and supply it, piled, to the local school for $3.85 per cord. A recent TV story tells of a couple in Texas having to pay $300 a month for natural gas. This expense severely restricts their life style. Must we allow ourselves to become slaves to big business? At least one group of people have resisted the pressures of our twentieth century urge to bigness. Their way of life is being studied more and more. Will they be the ones to live comfortably when gasoline restrictions, the price of gas, and the price of store-bought meats and vegetables make life uncomfortable for the rest of us?

Beekeeping, as an important part of agricultural husbandry, has escaped, to a large extent, the urge to bigness. This is because it is unprofitable beyond a certain size, depending on management availability and capabilities. We American beekeepers, however, have become dependent on those same elements which are causing consumers in some areas economic fits. We are dependent on automobiles and trucks for outapiary operation and we use electric uncapping devices, wax melters, and motors for extracting the honey. Those are our "necessities" which some communities quite happily get along without.

A recent study (3) concludes that Amish farmers can cut energy use without reducing yields. This is something even good beekeepers can do only rarely. They are already at the line delineating input and returns. In general, studies on the economics of beekeeping point up that beekeepers lose more money the more colonies they keep. Some of these studies were made when equipment cost twenty-five to fifty percent less than it does today and honey was selling at wholesale for more.

Economically speaking, the only folks who can afford to be beekeepers today are those whose labor costs them nothing. These are the amateurs, not dependent on honey production for a livelihood. They can indulge in the amenities of electricity and the family automobile-cum-truck.

Economic development, in general, has been brought about by (I) intensified human labor, then (II) the use of fossil fuels. As labor has become more expensive, and working hours shorter, we have turned more to mechanization requiring energy produced from non-renewable resources. Now, the cost of fossil fuels is forcing us to think again whether it pays to travel to outapiaries. The cost of equipment and package bees is making it uneconomical to expand operations. For those hoping to make money in honey production, that figure on the bottom line helps bear out the thesis that "small is beautiful".

The Amish interpretation of the Bible precludes their being tied directly to secular society by electrical lines and natural gas pipelines. This results in greater self-sufficiency and strengthens their strong affinity for nature as God's work, and beautiful and orderly.

A revelation of this most recent study of 12 Old Order Amish dairy farms and 6

(Continued on page 317)

Notes from the Straw Skep

By BESS CLARKE
Canton, PA.

THE SIXTH in a series of Shakespeare's plays appeared on our television screens last week and I am sure that a goodly number of you were watching it. The famous—or infamous?—Henry VIII was the last of the 37 plays which William Shakespeare wrote and it spins a web of intrigue and betrayal in high places which was fascinating to watch. Seeing this production was a far cry from high school English class, or even from the movie in which Charles Laughton starred a long time ago.

If you haven't seen any of this season's plays, do try to view the ones which are scheduled for next season. The British Broadcasting Corporation, in collaboration with Time-Life Television, is planning to produce all the plays over the next six years. It is the most ambitious series ever undertaken for television and is a beautiful contrast to so much of the junk which is ever present.

The plays will be shown on PBS stations in this country on schedules similiar to the popular Masterpiece Theater productions.

The English certainly do know how to put on a good show. English actors begin to study Shakespeare at a young age and they practice their craft in repertory theaters all over the country so they are familiar with the plays and eager to project their own interpretations.

It's exciting to hear a familiar phrase coming from the mouths of the kings and cardinals and others in the plays. Shakepeare has dominated our language and his words are as appropriate today as they were when he wrote them back around 1600.

The plays have been cut so that they run less than three hours each. Even that seems like a long time, but I, for one, had no trouble staying awake for the ones we watched, and that is a strong recommendation. I tend to see the opening scenes and the final commercial of a good many television shows.

Honey blends well with the high fiber foods which are currently popular and a good many recipes are appearing in papers and magazines. Try them when you see them and if you find an especially good one let me now, please. This one for batter bran bread is included in a leaflet from Ralston-Purina.

Batter Bran Bread: 2-3/4 cups flour, 2 teaspoons salt, 2 packages active dry yeast, 1-1/4 cups milk, 1/2 cup water, 3 tablespoons margarine, 2 tablespoons honey, 2 cups Bran Chex cereal. In a large mixer bowl combine 1-1/4 cups of the flour, salt, and the undissolved yeast. Combine in a saucepan the milk, water, margarine, and honey. Heat over low heat to about 120-130°F. Stir in the Bran Chex. Add to dry mixture and beat 2 minutes on medium speed of the electric mixer. Add 3/4 cup flour. Beat 2 minutes on high speed, scraping bowl occasionally. Mix in the remaining flour, cover and let rise until double in bulk. Stir batter down and beat virgorously until batter is approximately original size. Turn into a greased, deep 1-1/2 quart casserole. Let rise again until double and bake, in a preheated oven (375°F.) about 40 minutes. The top should sound hollow when it is tapped. Remove from casserole and cool. This bread is good when it's toasted and served with honey butter and/or cream cheese.

Questions and Answers

Questions about bees and beekeeping are frequently asked by telephone, by person in our retail store at Medina or at beekeepers' meetings. No records of course are kept of the names of individuals asking these questions, they are often quite general in nature and the answers must take into consideration that the questioners are usually inexperienced with bees. Not everyone will agree that these are the complete or best answers. Circumstances sometimes dictate different advice in regard to the same questions.

Q. Should I feed my bees pollen?

A. In most instances the questioner has reference to pollen substitutes (soybean flour, yeast and other high protein ingredients). This question is usually asked early in the season which is the period of greatest concern since no natural pollen may yet be available.

The answer is based on three basic concerns: 1) Whether stores of pollen are carried over in the combs from the previous fall. The only way of checking this is to examine the combs. Most overwintered colonies of reasonable strength have at least some pollen stored in the brood area although it is not always visible. A fairly good idea of the likelihood of having pollen reserves can be judged by having watched the hive entrance the previous fall. 2) Whether experience has shown that bees will utilize a pollen substitute in the area. In areas with early blossoming deciduous trees (willows, maples) early blooming wildflowers or an abundance of fall flowers (asters, goldenrod) established colonies of bees may not need pollen substitutes. In another area the opposite may be true: no early sources of pollen and few reserves are available and some manner of supplying pollen substitutes or supplements must be used. They will be taken up eagerly by the bees. 3) Whether the beekeeper is sufficiently experienced with local conditions and bee feeding to select the best feeding method; one which will likely overcome the bees' resistance to pollen substitutes.

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Q. How do I know when to add supers?

A. This decision rests on a sense of timing which comes only with a full season (or more) of experience in an area. Conditions within the hive provide the best indicator of when the bees need supering. A bee population approaching a seasonal high and new, white wax being added to brood combs are conditions within the hive showing that the bees are responding to the promise of, or the beginning of a nectar flow and that supers are needed. Conditions external to the hive such as intensified flight activity at the entrance and watching the honey plants around the apiary will alert the beekeeper when the honey flow is about

to begin. Most experienced beekeepers learn to anticipate the time that the honey flows begin and are adding supers before the bees signal their need for surplus honey storage. Calendar dates alone are insufficient to determine when supers should be added but are a fairly reliable guideline when balanced out with the experience of several years as to when the principal honey flow is likely to begin.

Before supers are added each colony should be given an examination as to strength to judge its capacity to store honey in supers. If colony strength is below average the colony should be examined for the possible cause and combined with another colony. It is useless to add supers to a weak colony, especially if it is the intent to have foundation drawn during the honey flow.

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Q. Should I give my bees medication?

A. This question is often asked (with variations) by beginning beekeepers. In answering we always stress the point that bee diseases are nearly always the exception to the normal healthy condition of bees. This may be contradictory to what they have been led to believe. A low level of infestation in a geographical area does not always call for the wholesale administration of antibiotics to all colonies of bees. Ideally, the use of any medication for bees should be under the advisement of the apiary inspection service but of course this is not always possible. The decision of the beekeeper as to whether to use medication should be based upon the likelihood of his bees having been exposed to infectious diseases in his judgement, or, in the judgement of an experienced apiculturist.

The use of medication for either prevention or the treatment of bee diseases is a distinction that is not always apparent to the new beekeeper. For this reason we advise against a blanket recommendation to give medication as a matter of course to all bees. Preventive and treatment dosages of antibiotics may vary by time and rate of application, additional reasons why medication is best administered with advisement.

An apiary inspection service is available in nearly every state and in many counties. Your county extension agent can advise how to contact your apiary inspector if you do not know who he is. Disease or suspected cases of bee diseases should always be brought to the attention of the apiary inspector.

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Q. Why did my colony of bees die?

A. We are often asked this question by beginning beekeepers. This is of course a very difficult question to offer an opinion on without an examination of the dead colony. A large portion of these inquiries are a result of winter-related losses, a fact which is fairly evident to the most inexperienced. Why the colony should die with adequate stores around them is a little more difficult to explain as the exact circumstances and causes always leave a little doubt when this happens. Evidently an explanation of winter-related causes is not needed as much as pointers on how to prepare a colony for periods of dearth of nectar and long sustained cold periods. Immobility of the cluster during long, cold winters and the depletion of stores are readily accepted as explanations for the death of colonies although the true relationship between low temperatures outside and inside the hive, the acclimation of the bees and the cluster and the role of moisture in the hive are not always understood.

The loss of newly hived packages, newly hived swarms and established colonies during the active season is an entirely different problem to the beginner. New beekeepers, through inexperience, do not always perceive the early warning signals of a distressed colony. The loss of recently installed package bees may be the result of improper handling of the bees or the queen during the transfer from the shipping cage to the hive. This transition is especially hazardous during unfavorable weather when there is little nectar or pollen coming in and poor flying weather. Failure to break cluster, the result of a succession of cold days, can doom newly hived packages to certain death, particularly when the source of food is remote and no drawn combs with honey are near on which to cluster. A queen may be lost to the new colony when she becomes isolated from a cluster and is chilled. A disturbingly large proportion of queens are lost from package colonies, a situation that is not always detected by the beginner until the colony is beyond salvation.

It is not unknown for a populous colony to become depleted of bees as many an experienced beekeeper frequently finds during routine examinations. The inexperienced do not usually realize the importance of a periodic examination of the brood nests (or, at least to investigate a suspicious decrease in activity at the entrance).

The questions about why a colony of bees died has little real relevance unless the circumstances are examined by the questioner or the one to whom the question is directed. This is a common failing on the part of the inexperienced who expect an answer as to why their colony has died. A dead or weakened colony often exhibits contradictory evidence which frequently puzzles even the more experienced. Frequently we hear, "The combs are a mass of webs and debris, the wood is furrowed and the bees have been killed by wax moths." The trouble may have had its beginning with the loss of the queen, for example, and a decreasing bee population allowed wax moths to take over the hive. To say that wax moths killed the colony is misleading. "Ants killed my bees", says another. "They are all through the hive. What can I use to keep them from killing more of my colonies?" Here again the colony was very likely weakened by circumstances not observed by the beekeeper. The ants simply followed in the wake of a diminished population of bees. Except for the southern latitudes bee colonies usually have no trouble repelling ants and wax moths if the population of bees is reasonably strong and all parts of the hive can be guarded.

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Q. How many bees do I need to make a living from them?

A. No matter how many times this question is asked it leaves me fumbling for an answer. I usually begin by explaining that starting with one, or preferably two colonies will determine, after the first full season whether you and bees get along, a very important consideration before investing further in bees. After that trial (and error, if we all be truthful) period the next goal would be to increase to the extent that beekeeping is profitable. Limitations are often imposed by poor locations, lack of management ability or the demands of other interests. As experience with bees increases circumstances largely dictate whether a portion or all of an income can be derived from beekeeping. How many colonies are necessary depends upon the locations of the apiaries, what part of the operation is dependent upon honey production and pollination, the method and efficiency of the operation and many other factors.

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Q. How can I keep from being stung?

A. Bee stings are an inevitable consequence of caring for bees. Except in the extremely rare instance of a true allergy to honeybee venom, stings are comparatively harmless, although painful to a degree depending on the threshold of sensitivity to pain by an individual. Reduce the venom injection by quickly scraping the stinger from the skin surface. Some swelling is to be expected, the extent dependent on the degree of immunity attained. An exposure to several dozen stings over several weeks will often render the average person immune to excessive swelling. You will never become immune to the momentary pain but you will become less concerned about it with experience.

The best defense against stings is to learn through experience the proper and confident handling of bees. A properly operating smoker and a bee veil are absolute musts. All other recommendations are secondary.

Honey Plants

Honey From Tulip Trees

By DEWEY M. CARON
University of Maryland

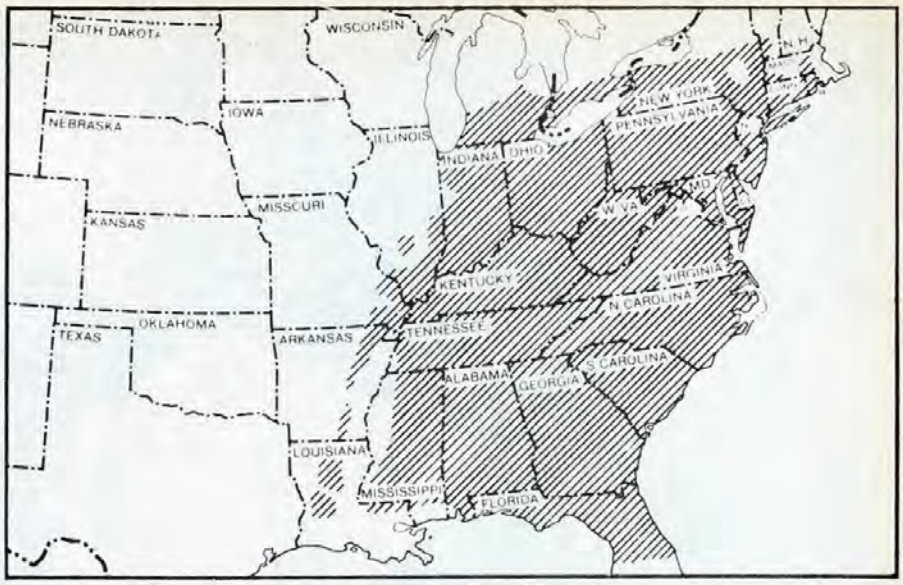
THE TULIP TREE, **Liriodendron tilipifera** (meaning lily-tree with tulip-like flowers), is a magnificent native of Eastern North America. It is a relative of the magnolia but larger. Trees grow fast reaching to 125 feet or more with a 5 to 6 foot diameter at their base. The leaves are large with 2 big lobes and 2 or 4 smaller stem-side lobes. The flowers have greenish-yellow petals with orange internal coloring and resemble tulip flowers.

The tulip tree has many common names. It is known as yellow poplar by foresters; the tree is selectively logged to be used in construction, for furniture in interior finish or as veneer stock as in bushel baskets. In Maryland the tree is usually called tulip poplar or simply poplar. Other names are white poplar, blue poplar, whitewood, cucumber-tree (due to the large leaves), saddle-leaf or fiddle-tree (leaf shape reminds some of a violin) and hickory poplar. It is frequently confused with basswood (**Tilia americana**) although not too similar.

Tulip tree flowers are attractive but not spectacular. Trees begin flowering when about 15 years of age but the blossoms are high up and not always noticed. The flower is large with petals of 2-1/4 inches high. The flower opening exceeds 2 inches. The tree grows straight trunked and branches close to the ground are uncommon in forested areas. It is seldom the major tree in a forested area even in the center of its range.

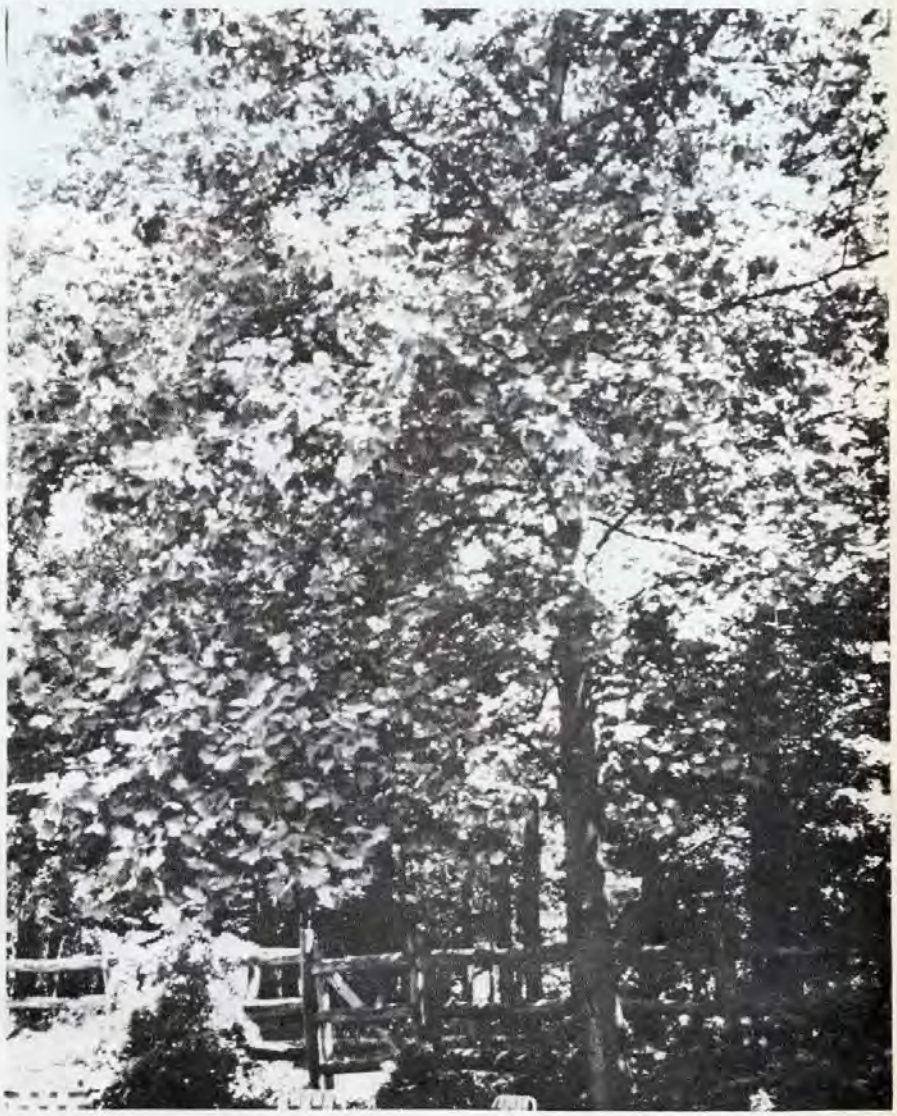
Tulip trees are clean and majestic trees. The fruit form a cone of about 3 inches that somewhat resembles a small cucumber. It is relatively free of insect attack. It is host to an aphid that secretes honeydew and the honeydew rain may be heavy in some years. The trees need constant soil moisture for optimum growth; it seldom occurs in standing water or on exposed ridges.

The tree is distributed from Vermont south to northern Florida and west to Louisiana and Illinois. The major concentration is a line from central New Jersey south along the Piedmont and fall line to northern Georgia. Individual trees reach their greatest height and largest size in the rich sheltered coves and valleys of the southern Applachian Mountains. It is well represented in the Ohio, Tennessee and other river valleys. The honey is dark



Natural range of the Tuliptree

A tulip poplar in full-bloom. Flowers are generally not striking but bees quickly find their treasure.



Close up of the tulip poplar flower and leaf.

but is not particularly strong tasting. It has a beautiful reddish color that it will lose when stored. It also usually gets darker in storage.

Tulip trees bloom early in the season—April or May depending upon location. The first flowers open about three weeks after the average date of the last killing frost. For College Park, Maryland that means about May 10. The heavy bloom period seldom exceeds two weeks. Flowers have a great abundance of nectar with reservoirs frequently evident at the orange color spots. Large trees have a profusion of bloom and one or a few individual trees can result in a considerable nectar flow. One study estimated that a single tree secreted enough nectar to yield over 2 pounds of honey.

That same study found tulip tree blossoms to secrete an average of 1.64 gms. of nectar. When the flower first opens the sugar content of the nectar is 16.7% but it increased to 35.9% by the second day. During favorable weather, tulip tree nectar is so abundant that honeybees and other insects can't carry it away as fast as it is secreted. It can "rain" nectar droplets beneath a tree during a breeze.

A recent study in New Jersey found tulip tree flowers to produce only an average of 6 mg of nectar. The sugar content in this study varied more widely with the highest reading 10 times greater than the lowest. A tree of 3 foot trunk diameter produced over 3 million flowers. The next season practically no flowers were produced by the same tree.

Along the fall line in Delaware, Maryland and Virginia surplus honey yields of 80-100 pounds may occur from tulip tree. A Maryland study of 6 years ('42-'47) resulted in a much lower figure—an average of 27.7 lbs./colony. Four states consider tulip tree their best honey plant and an equal number consider it their second best.

Colonies build up on tulip poplar and not for it. With the early bloom in April or May, too many bee colonies are not of sufficient field force strength to take advantage of the abundant nectar. Management schemes are available; the beekeeper needs only to follow recommendations for building colonies for fruit pollination. Such preparations are not the norm, unfortunately.

Beekeepers who rent bee colonies for orchard pollination in Virginia, Maryland and Pennsylvania probably lose most. The orchard renter attempts to equalize colonies and keep them in one standard or one standard and 1/2 depth for ease in moving. The colonies do not recover from the orchard move in time to store surplus tulip poplar nectar.

Tulip poplar is a fine example of a nectar plant that doesn't require care and cultivation by man. The honey sells well in its natural range despite the dark color. It is a tree we should encourage and protect.

INSECT VENOM TREATS ALLERGIES

THE FIRST kit to use purified venom from bees and other insects, rather than liquid extracted from pulverized whole insects, to treat allergies has been approved for sale in the United States, a government official says.

Dr. Harold Baer, an official of the Food and Drug Administration, told doctors at the American Academy of Allergy meeting here that the kit includes diluted venoms from honeybees, hornets, yellow jackets and two kinds of wasp.

Baer said the kit contains doses of five different types of venom because many people are allergic to different insects.

The venom is obtained either by electrically "milking" the insects, or by freezing them and removing their venom sacs.

Strictly Backlot

By CARL CALLENBACH
135 College Avenue
Elizabethtown, PA. 17022

IT HAS long been my contention that the experts in the bee business have chosen to ignore or evade what I call the Only Hive Syndrome, the OHS, a common malady affecting the beginning backlotter. What the latter tells us is, simply put, that only-hive parents are very likely to be overindulgent, too solicitous, and much too permissive. The OHS, according to one expert, is part of a stage or phase the beginner goes through, like adolescence, distressing and a bit murky, often downright obstreperous; most emerge on the other side into joy and brightness, mature honeybee management. In too many instances the experts, obsessed in their own fashion with honey production, gently spank the beginner: There would be no OHS if the only-hive parent would learn to keep the cover on his hive!

Maybe the best way for you to get aquainted is for me to share with you a snapshot from an old scrapbook of mine. This was my pet nuc.

What I have done recently is try to measure the frequency with which the OHS strikes down beginning backlotters, and to record, if somewhat subjectively, the common symptoms, other than hive-cover mania duly described by the experts; and to analyze how only-hive families have perservered despite being engulfed within the Syndrome. By letter I surveyed 53 only-hive families; I received forty-eight responses, three with postage due. I asked them, owner and/or spouse, did having a new only-hive in their family contribute to marital bliss or did it add trauma to the existing relationship. The results (Are you listening, experts?): Forty-five families who answered the survey said, yes, having a new, only hive brought additional problems to the household. The other three (all spouses who had attached appropriate postage) were not sure which category to place themselves in; they had packed up their bags early in the experience and left. They came home after the new only-hives were returned or sold. Two of the three reported traumatic leave takings; all three described a blissful homecoming, sans bees.

These numbers are shocking, but it is the frantic anecdotes of what I must call only-hive malaise, a major factor in the OHS. A brief sampling: Mrs. A.K. (Pike Co., Kansas) wrote at some length that her husband's deportment deteriorated raipidly with the OHS. "The first day," she notes, "John was deliriously happy with his new only-hive. He placed the caged bees into his new hive, cut the tiny pink ribbon he had stretched across the flight board and smashed a bottle of sugar syrup over the cover. From then on it was all downhill.

"Soon I noticed he would skip lunch to be out with his bees. One night at a card game with our friends he stood up, stretched nervously, and said he had to go home and check the brood pattern. I said to him it was dark as pitch. He said it **had** to be done and he had a flashlight. That night he had his first nightmare."

"They're at it! I can tell." "They're at what?" I asked. "They're building queen cells, I can feel it. Get me the flashlight, Anna."

Mrs. A.K. continues: "This kept up for maybe two weeks. If his hive wasn't secretly building queen cells, it was planning to abscond. "Listen to them Anna," John would say, the both of us bending closely over the hive. "I think they're plotting to fly away."

Another behavior often attributed to the OHS and decried by numerous respondents to my survey is what Mrs. L.H. (Hudson Co., Idaho) calls "Crazy Tinkering", the CT's, with hive and bee equipment. She states that she knew she had had enough when "Harry insisted I needlepoint a 'Home Sweet Home' mat for the flight board of his only hive. I mean I asked him what was the matter with the piece of indoor-outdoor carpet he already had there."

Mrs. M. B. (Franklin Co., Pennsylvania) describes a complicated hive platform dreamed up by her husband "who doesn't believe in messing around with the innards of the hive but gets his puttering in on the outside. Bob has built this revolving platform for his only hive so as the bees can take off into the wind and land with it. It's cute: the little wind sock, the flight board that's lit up at night with fancy red-white-blue Christmas twinkle lights. George is often worried about his bees coming home late, after dark, and getting lost." Mrs. M. B. says she's told her husband that putting up lights may encourage the bees to come in late and that any bee coming in after 9:00 can't put in a good day's work the next day. She continues: "But mostly I tell him that if he'd put half as much time in on the house as he does messing with his bees we'd be living in a mansion."

Mr. B. W. (Roan Co., Georgia), in a postscript on his survey sheet, wondered whether I thought there would be a market among only-hive families for customized hive-body kits. "So far I've drawn up plans for a lovely French Colonial, a primitive log cabin, and I am presently at work on a simple, yet elegant Cape Cod." Mr. B. W. does not mention a wife or family.

How have these only-hive families coped with the OHS? What can the prospective new only-hive parent learn from this sampling of typical backlot

(Continued on page 318)

The Collector's Corner

by DARL and IVA STOLLER

WHAT IS SO rare as a day in June? The poet aptly put it when he penned those beautiful words. Here in the midwest, another severe winter has come and gone and now the trees, flowers and all growing things have burst into new life. Once again, hope springs eternal.

How has your collecting gone this winter? It has been a most interesting winter for us, as we have found quite a number of interesting items with most of them being found in antique shows. The most interesting (which we did not buy) was a collection of 12 plates, circa 1870, and each plate had a different hand painted flower along with two bees in flight. The plates were English, in perfect condition and it was a very lovely and unusual set.

Our good friends, the David McGinnis's, of Tropic Blossom Honey from Edgewater, Florida are planning to write an article on their collection. They have traveled extensively in Europe and have brought back from their travels some most unusual and interesting things. While they were overseas they visited a bee museum in Holland and were most impressed with the many different types of old hives they were shown there. With a glint in his eye, David talked of someday having a museum in their plant. To those of us interested in the fascinating world of the honeybee we hope, David, your dream is fulfilled.

The picture displays two types of items that are adapted very easily to the old fashioned bee skep. The top rows are the beehive candles and we have found some very interesting ones since the picture was taken. The bottom rows show the beehive banks, and they can be found in many different types, sizes and colors.

We have many things to write about in the changing world of the bee collector. Some things that we plan on writing in future articles include the many different types of honey pots marked as made in occupied Japan. Also, honey pots from around the world, with the different types made in the various countries.

Until next time, happy collecting.

A Day In Summer

By JOHN BOLF
Lake Oswego, OR.

THE SUN had retired behind the Coast Range and the valley is being drapped with twilight. The quails chirp their "good nights" as they seek protection in the thickets. Then as the darkness deepens so does the quietness and serenity of the woods.

Oftentimes in the night when I have moments to wile away I stroll to the bee yard. I follow the beaten path under the canopy of spreading fir tree branches back of the house. I can trace my footsteps almost blindfolded, for I have made so many trips there that I can feel

the path under my feet. It winds about clumps of ferns, Oregon grape, and moss blanketed boulders which in all probability still lie in precisely the same position in which they had been left by the recession of the last glacial formation several thousand years ago.

The night subdues all forms and shadows, and I would not recognize any objects were it not that I had perceived a mental image of the surroundings in my daytime wanderings. Just beyond the vine maple, whose outstretched limbs tend to hamper my passage, the trail opens to the cleared area where the hives, heavy with supers, are arranged in a somewhat horseshoe fashion. Here the tall fir trees open to the sky and way above, there is the opening, the stars flicker like tiny candles radiating dim light for the searchers of the night.

I spend quiet evenings with my bees and in these moments when I think of them they become individuals. I can see their dark figures at the entrance and trace their alert movements. They are always there, always on guard for the safety of the colony. The uninterrupted hum within tells of the complete harmony within the hive. Thousands of bees are fanning their wings to ventilate the hive and to ripen the honey. Others moving about the combs, are caring for the larvae, tending to the queen and moving the honey to fill the cells. The bees pitch in to do whatever needs doing and in ratio to the urgency of demand.

There are times for reflections.

There is that euphoric feeling in the shadows which silently creeps in after the sun has set. Rapt quietness surrounds me and the chill enhances the subtle redolence of the firs and ferns and mosses that are green in the day. The birds of the day have sheltered for the night and their quiet chirpings have ceased.

I listen to the nocturnal whispers of the woods creatures and marvel at the wonders and mysteries of the uncivilized kingdom. A dry twig turns or flips under the imponderous weight of some crawling insect. There is the flutter of a moth, the rustle of a meadow mouse nearby, or the scramble of a racoon farther out. But the hooting of the owl is seldom heard in the summer months until the early hours before the break of the new day.

From this secret drama evolve my intimate relationship with nature and maybe some primeval instinct reminds me that there are moments when the pressures of civilization, into which I was born, can be set aside for a while for reflections upon the mundane things. In these moments the murmur of the gentle breeze in the tree tops is a benediction in the night.

However, intense the tranquility it is sometimes shattered by the roar of a motor vehicle on the road below. Then I suddenly realize that ours is not a remote island in the deep woods. It is but a seclusion within walking distance to a modern shopping center.

The trail leads through the rocks and between the ferns and shrubs.

A typical collection of bait hives in a tree in Kenya, East Africa. It is popular to hang many hives in a single tree. They are commonly seen as one drives along the country's highways. Native beekeepers have used hollow logs for hives such as these for many centuries. A single beekeeper may own several hundred such hives spaced along a route many miles long. Honey is harvested twice a year, usually at night. The bees are driven with smoke from one end of the hive and about half the honey and comb is scooped out with the hope that there is sufficient brood remaining for the colony to survive.

New Observations on Bait Hives

By DR. ROGER A. MORSE
Dept. of Entomology
Cornell University, Ithaca, N.Y. 14853

and

THOMAS D. SEELEY
Museum of Comparative Zoology
Harvard University, Cambridge, MA

DURING THE past four years we have extensively studied the proper use of bait hives for honeybees. By "bait hives" we mean boxes used to capture wild swarms of honeybees. Beekeepers in Africa have used bait hives for thousands of years and still rely heavily upon them to acquire new colonies of bees. Beekeepers in Europe and North America, however, have made little use of bait hives. In part this reflects the reliance of modern beekeepers upon artificial colony splitting and/or package bees to build up the number of colonies they own. Also, until recently, little was known about selection of a home site by European honeybees. Our goal, therefore, was to learn enough about nest site preferences of these bees to be able to design an effective bait hive.

We have made considerable progress toward this goal. Now a beekeeper with some scrap lumber, a reasonably tall ladder, and (most importantly) some spare time can use our findings to capture free swarms of bees. Swarm trapping offers more rewards than just the economic one of obtaining free bees. We enjoy our departures from the hustle and bustle of the hotly buzzing bee yard or busy office as we seek out secluded hedgerows to position a new bait hive or inspect one already in place. And one tastes magic whenever a check of a bait hive reveals that that lifeless old plywood box nailed to the tree has burst into life with a golden city of honeybees living inside.

In the May and December, 1978, issues of **Gleanings in Bee Culture** we presented preliminary reports on bait hive techniques. These reports reflected research conducted during the summers of 1975, 1976 and 1977. Formal, scientific accounts of these studies can be found in the papers by Seeley (1977) and Seeley and Morse (1976, 1978a). What follows is a summary of the recommendations stated in the two **Gleanings** articles:

A. Bait Hive Design

1. Entrance Size: 1-1/4 inch diameter
2. Entrance position: near the floor of the bait hive
3. Entrance Shape: not important
4. Entrance Direction: facing south
5. Cavity Volume: 40 liters, or about 1.4 cubic feet
6. Cavity Shape: not important
7. Dryness and Draftiness: dry and snug
8. Color: dark, to reduce bullet-hole vandalism

9. Odor: new wood may be repulsive; a piece of comb does no harm but may do little good

B. Bait Hive Location

1. Height: at least 10 feet above ground
2. Exposure-Visibility: high visibility, with the site out in the open, such as on a telephone pole or a dead tree

The first article on bait hives in **Gleanings** also contains a diagram showing the bait hive design that we use and that incorporates the above recommendations.

All of these recommendations still hold, except the last one. Proper exposure and visibility of bait hives was studied more closely during the summer of 1978. Based on these studies, we now recommend placing bait hives where they are **well shaded from the sun but are still highly visible**. An example of a desirable hive site is the side of a tree with the lower trunk region free of branches and a good, thick crown of leaves above. A bait hive nailed to the branchless trunk area (always at least 10 feet up) would be shaded by the branches above but would still be in the open and would, apparently, have a good chance of discovery by scout bees.

This recommendation of shaded-but-visible sites for bait hives comes from the following experiment. We set out 88 bait hives (all with the recommended properties, except for site exposure-visibility, described above) and then classified the exposure of each hive by placing it in one of three categories: (1) **fully exposed** to sunlight (as on a dead elm or telephone pole), (2) **partially exposed** (at least one face exposed to sunlight, but two or more faces shaded by vines or branches), or (3) **fully shaded** (complete shade all day). Among the 88 bait hives, 29 were of type 1, 16 of type 2 and 43 of type 3. A total of 22 out of the 88 bait hives received swarms, a 25% occupation rate. Thus, if the exposure-visibility characteristics of the bait hives had no effect on the probabilities of being occupied, we would expect the 22 captured swarms to have been distributed among the 3 categories of bait hives with about 7 swarms in the type 1, 4 in the type 2, and 11 in type 3 bait hives. The observed distribution, however, was 1, 6 and 15 for the types 1, 2 and 3, respectively. Thus the bees significantly avoided the fully exposed (type 1) bait hives and occupied the fully shaded (type 3) more frequently than expected.

Another 1978 study (see Seeley and Morse, 1978b) allows us to make a second recommendation concerning bait hive location, this time on the matter of distance from apiaries. Although most swarms captured in bait hives will probably come from wild colonies in bee trees or in the walls of buildings, many beekeepers would probably like to place a bait hive or two near their apiaries to catch swarms emerging unnoticed from their hives. We feel that bait hives can be placed very close to apiaries (even within 60 feet) and still be attractive to swarms from the apiary. We draw this conclusion from tests conducted on a sandy plain in central Florida in which we offered swarms a choice between bait hives 60 and 1,200 feet away. In four out of five trials the swarms chose the nearby bait hive.

Photograph of a painting made by an unknown artist in Nairobi, Kenya, East Africa. The picture illustrates what Kenya beekeepers believe, and we agree, is the best site for a bait hive. The hive is clearly visible and easily found by scout bees but is shaded from the direct rays of the sun.

The final topic of this article is the success rate in swarm trapping with bait hives. This, of course, will vary from region to region, depending on such things as the density of wild colonies that produce the swarms, and on the abundance of hollow trees whose cavities compete with bait hives as nest sites for honeybees. Our experience with bait hives is limited to the region surrounding Ithaca, New York. The land in this area was once heavily farmed, but is no longer so used. The abandoned fields are slowly returning to forests, but now are filled with wildflowers that provide good foraging conditions for honeybees. In this area nest sites may be the principal factor limiting the population of wild honeybee colonies, and if so, this region may be especially good for trapping bees with bait hives.

Our success rates for the summers of 1975-1978 were: 1975, 80% (of 20 bait hives); 1976, 57% (of 42 hives); 1977, 61% (of 82 hives); and 1978, 25% (of 88 hives). Apparently the capture rate can

(Continued on page 327)

Interdepartmental Bee Protection Task Force Meeting

THIS MEETING was held from 9:00-11:30 in Room 422-W, Administration Building, USDA, Washington, D.C. on April 2, 1979. Dr. Bob Riley, Office of Environmental Quality Activities, Office of the Secretary, was chairman. Those present were Phil Gray and Allen Vaughan from Office of Pesticide Programs, EPA; Jim Parochetti, SEA-Extension in charge of training for certification of pesticide applicators; Marie Osborne, Unit Head, Chemicals Coordination Unit, Agricultural Environmental Quality Institute, Beltsville, MD; George Serbinoff, Information Staff, SEA; H. Shimanuki and Bert Martin, SEA-Agricultural Research, Beltsville, MD.

Dr. Riley agreed that representatives of the American Honey Producers Association and the American Beekeeping Federation would be welcome to attend meetings. Notices and reports should be sent to these organizations. He felt that the IBPTF meetings were serving a useful purpose in keeping agencies informed about bee/pesticide problems. The meetings maintained liaison between USDA and EPA and stimulated some action programs. He felt the Task Force should identify and pursue specific courses of action and try to achieve more concrete goals than simply generating understanding and concern.

Jim Parochetti gave a quick showing of the 80 slides put together by Carl Johansen of Washington State University dealing with bee/pesticide problems. The Entomology Department of a State University in each State now has someone responsible for training pesticide applicators for certification. These extension entomologists are known as pesticide coordinators and they are financed by SEA-Extension and EPA. A free set of slides was sent to the pesticide coordinator in each State, to each SEA-AR research laboratory, and to some other extension entomologists. The slides will thus be available for use at pesticide applicator training sessions in every State.

Phil Gray and Allen Vaughan reported that Pennwalt Corporation's petition to reconsider the restricted use classification of Penncap-M (microencapsulated methyl parathion) had been withdrawn March 22. EPA's response to the Pennwalt decision ended the stay of enforcement of compliance deadlines for Penncap-M registrations. This means that beginning next December 26, the pesticide can only be sold to and applied by certified applicators. It is probable that other pesticides will be formulated in the microencapsulated form and, like Penncap-M, remain toxic in pollen in the hive for an extended period of time. However, EPA will be taking a hard look at new applicators for registration of such products in terms of bee hazard.

There was discussion on analysis of bees, pollen, honey and wax for pesticide residues. Phil Gray reported that EPA was developing guidelines for reporting of bee kills allegedly involving pesticides. These guidelines would include information on how to pack and ship dead bees, comb, etc., for analysis of pesticide residues. There is need to identify regional and State labs capable of doing identifications. The difficulties of identifying Penncap-M were noted, particularly the fact that although methyl parathion can be chemically identified, this does not prove the product involved is Penncap-M. There is no good chemical test for the polymer material of the capsule. However, an expert with a good microscope can differentiate pollen from the microcapsules. A positive test for both methyl parathion and the polymer would be a definite identification of Penncap-M.

Mr. Gray noted that Dimilin, a new insect growth regulator, had now been conditionally registered by EPA for use on cotton, as well as for gypsy moth control in non-urban areas. Most researchers agree that Dimilin is not toxic to bees, so it is possible that expanded use of this component may be of help in reducing bee kills.

Al Vaughan reported progress in setting up a standardized protocol for testing the effects of pesticides on non-target insects, including bees. Such testing would be a pre-requisite to registration of a pesticide for specific uses.

Bert Martin commented on the continuing problems with pesticides which differ in severity in different parts of the country. Irrigated areas of the West are hardest hit. Carl Johansen says that 85% of colonies of Washington are damaged to some extent.

In most states extension entomologists develop state recommendations for control of all insects and for practically every harmful insect or mite some pesticide use is recommended. If we had a Federal Extension Apiculturist, he could constantly supply useful information to all State Extension Entomologists on pesticide problems and particularly on how to modify recommendations to reduce bee kill.

As integrated pest management concepts become more accepted, it is important that consideration for pollinators be incorporated into planning, research and recommendations.

It was agreed that the next meeting would take place May 1, with concentration on IPM, aerial application of pesticides, and review of the American Honey Producers Association 1979 resolutions.

How To Get Bees To Work Above a Queen Excluder

By J. G. STEVENS
Roanoke, VA.

SOMETIMES A colony of bees will just refuse to work above a queen excluder while other colonies in the same yard will go right ahead and start building comb and storing nectar above the excluder without the least hesitation. This is tangible proof that a good nectar airlift is under way.

No knowledgeable beekeeper will expect a weak colony to give a good performance through an excluder. Assuming, however, that you have the work force below the excluder, the thing to do is to make the bees **want** to get up there and work.

How can you do this? It's easy enough. Just give them a super containing one or more partly built new white combs containing some fresh nectar. Then drool some honey on all of the top bars. They soon find out there's work to be done upstairs cleaning up that loose honey and they will go through that excluder in a few minutes and really get to work. And they'll fill that super if they possibly can.

A variation of this plan works well when you run short of supers if you are producing chunk comb honey. Cut the combs of sealed honey out of all ten

(Continued on page 327)

NEWS and EVENTS

FLORIDA
Lee County Beekeepers Association

Our next meeting will be on Monday, June 11, 1979 from 7 P.M. to 9 P.M. at the Heritage Room in back of the public library, Lehigh Acres. Everybody is welcome. For further information please contact Walter Lohrey, 107 E. Lake Drive, Lehigh Acres, FL. 33936, (813) 369-5207.

OHIO
Ohio State Beekeepers Assoc.

A bit of history was captured at the spring OSBA meeting at Capital University. Present were most of the past extension apiarists for the State of Ohio, representing years of service to Ohio beekeepers.

Bill Stephens, left, served in the Extension Apiarist position from 1963-72, and was succeeded by Larry Connor (not in photo) 1973-76, (now with Genetic Systems, Inc.). Tom Sanford (second from left) took over last June. On Tom's left is Winston Dunham, who occupied teaching, research and extension positions at OSU from 1926 to 1962. On his left is Charles A. Reese, first head of Ohio Inspection Service & Extension Apiarist, who spent 40 years in official beekeeping positions from 1923 to 1963.

GEORGIA
Beekeeping Short Course

The annual beekeepers short course for beginners and more experienced beekeepers will be held on Saturday, June 9, 1979, at the University of Georgia in Athens, Georgia.

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

The teaching staff will consist of several honeybee specialists including commercial honey and queen and package bee producers. The course fee is $15.00 per person. Advanced registration is requested by June 8, 1979.

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

GEORGIA
North Georgia Beekeepers Assoc.

Our next meeting will be at 7:00 P.M. Monday, June 11 at the Decatur Federal Savings & Loan (Tolo Hills Shopping Center). The theme of this meeting will be "Gadgets That Work". For more information call Geoff Frisch at 256-9587.

PENNSYLVANIA
Northwestern/Vernango Bee Assoc.

A joint meeting of the Northwestern Pennsylvania and Vernango County Beekeepers will be on June 16th at Burgess Park in Titusville, PA. Registration is at 11:00 A.M.

CONNECTICUT
Summer Field Meeting

The Summer Field Meeting of the Connecticut Beekeepers Association will be held on Saturday, June 23, 1979, at Mohegan Community College in Norwich, starting at 10:00 A.M.

The speaker of the day will be Dr. Radcliff Roberts of Rutgers University at New Brunswick, New Jersey, who will discuss honeybee pollination.

The usual potluck luncheon will be served at noon. Bring something you enjoy for the buffet table. Coffee is "on the house".

Further details on the program and directions for getting to the meeting place on campus will be found in the coming June issue of **The Connecticut Honeybee**, the association's journal or by writing to the secretary at 16 Rose Terrace, Trumbull, CT. 06611.

All beekeepers and friends are extended a cordial invitation to attend.

1979 SOUTHERN STATES
Beekeepers Federation Meeting

The Southern States Beekeepers Federation is now accepting invitations from those southern states who would like to host this year's SSBF's meeting. It has been the custom of the SSBF to conduct its annual meeting in cooperation with the summer meeting of one of the Southern State Beekeeping Associations. The SSBF's 1978 meeting was held in North Carolina and the 1977 meeting was in Florida. Invitations for 1979 and/or inquiries should be addressed to: W.B. McIver, President, Southern States Beekeepers Federation, 307 N. Holden Rd., Greensboro, NC. 27410.

PENNSYLVANIA
Beekeeping Short Course

The annual beekeepers short course will be held on the main campus of the Pennsylvania State University from July 30 to August 4, 1979.

Registration fee is $40 for Pennsylvanians and $45 for non-Pennsylvania residents. Fee is payable at the time of registration on July 30.

In considering University housing, registration is from 2:00 to 3:00 P.M., Monday, July 30. Classes begin at 3:00 P.M. Housing reservations must be made before July 23.

To enroll in the short course for the registration form send to Office of Short Courses in Agriculture, 306 Ag. Admin. Bldg., The Pennsylvania State University, University Park, PA. 15802.

Please Note: Bring your own veil and gloves.

NEW YORK
Beekeeping Short Course

A beekeeping short course will be held at Cornell University, Ithaca, N.Y. 14853 on July 20, 21, 22, 1979. ($10 advance registration required).

Participants will stay in student dormitories and eat in the university dining room. Lecture and demonstration rooms are air conditioned; the dormitory, dining room and lecture hall are within a few hundred feet of each other. Enrollment will be limited. The cost is $70 per person. This includes a single room for two nights, three meals on Saturday and two on Sunday, all instruction materials and registration fee. Double rooms are $5.00 less per person (total $65.00). Full linen service is provided. Registration forms may be obtained from: Office of Apiculture, Dept. of Entomology, Comstock Hall, Cornell Univ., Ithaca, N.Y. 14853.

MASSACHUSETTS
Massachusetts Federation of Beekeepers

The annual meeting of the Massachusetts Federation of Beekeepers will take place Saturday, June 16, 1979 in the Hampden County Improvement League Building at the Eastern States Exposition Grounds in West Springfield, Mass. A business meeting is scheduled at 10:00 A.M. Dewey Caron, Associate Professor of Entomology at the University of Maryland will be the guest speaker. A beekeepers' workshop is being presented by the Hampden County Beekeepers Association under the direction of Clyde Light. Members and interested beekeepers are welcome. Hot and cold beverages will be provided. Bring your own lunch.

PENNSYLVANIA
Beekeepers To Meet

The Annual Joint Meeting of the Montgomery County and Bucks County Beekeeping Associations will be hosted by Delaware Valley College on Saturday, June 16, 1979. The meeting is open to the public, and anyone interested is invited to attend. The featured speaker will be Walt Wilson, Apiary Inspector, N.J. Dept. of Agriculture. Mr. Wilson has for many years been involved in beekeeping, pollination, and inspection work, and he will be sharing with us many of the things he has learned during his involvement with the honeybee.

Delaware Valley College is located on Route 202 about one mile west of Doylestown, PA. The formal program will begin at 1:30 in Room 114 Mandell Hall. A bring-your-own picnic lunch will precede the meeting starting at about 12 noon under the trees in front of Mandell Hall. If the weather is inclement, it will be possible to eat indoors. After Mr. Wilson talks, there will be an open house at the College's honey house and apiary.

MASSACHUSETTS
Plymouth Co. Bee Association

The reactivated Massachusetts Plymouth County Beekeepers Association held election of officers Wednesday, April 25th after being in existence for 27 months. President Lewis L. Smith, one of two founders of the new P.C.B.A., was replaced by Arthur Hanson of Middleborough with Clifford Blethen Vice-President, Marylin Brown secretary and Reinhold Hakewessell re-elected to a third term as treasurer.

The P.C.B.A. now meets at Plymouth County Extension office in Hanson but is searching for a larger and more suitable place to meet.

OHIO
Queen Rearing Course

A one-day short course in queen rearing will be held at the Agricultural Technical Institute in Wooster, Ohio, on Saturday, June 30, 1979. The objective of the class is to discuss and demonstrate techniques commonly employed in producing and introducing queens.

Dr. Tom Sanford, Extension Apiculturist, The Ohio State University, and James Tew, Technology Coordinator of Commercial Beekeeping, ATI, will serve as instructors.

For further information, send name and address to James Tew, Agricultural Technical Institute, Wooster, Ohio 44691.

WISCONSIN
Agricultural Breakfast

Wisconsin Agriculture sets a bountiful table and ranking high on the list is pure Wisconsin honey.

Wisconsin Honey Queen Cindy Garbisch of La Crosse recently represented the state honey industry at the Third Annual Agricultural Breakfast sponsored by the Wisconsin Women for Agriculture. The Breakfast was held in the Senators' Parlors in the Capitol building in Madison and over 400 guests took part in the tribute to agriculture.

This was the first year the Wisconsin Honey Producers Association participated in the Legislative Breakfast. The State Honey Queen program provided a platform for reigning queen Cindy Garbisch to meet legislators and other government and regulatory representatives. She had the opportunity to promote the use of honey, along with talking to people in decision making positions about legislation which could affect the entire honey industry.

Cindy Garbisch is the 19-year-old daughter of Mr. & Mrs. D.D. Garbisch of La Crosse and attends the University of Wisconsin in La Crosse. She is pursuing a degree in dental hygiene and works part-time as a dental assistant.

Summer meetings of the Wisconsin Honey Producers Assn. will be held at Eau Claire Lakes on July 16th starting at 10:00 A.M. and at Watertown on July 18th starting at 10:00 A.M.

OHIO
Miami Co. Beekeepers Assoc.

Clara Switzer, daughter of Mr. & Mrs. Albert Switzer of West Milton, Ohio was crowned Miami County Honey Queen by Everett M. Deubner, president of the Miami County Beekeepers Association at Brukner Nature Center on Friday, April 6, 1979.

Clara is a sophomore at Milton Union High School. She is active in the Milton Union Band, Young Spirits, Order of Rainbow Girls and Luther League in addition to helping her father with several colonies of honeybees.

Clara, who was Miami County Honey Princess, succeeds Melissa Ratliff who was crowned Ohio State Honey Queen at Capital University in March.

Clara Switzer-Photo by Hoover Studios.

WISCONSIN
UWEX Sets Bee Programs

Two specialized beekeeping programs, sponsored by the University of Wisconsin-Extension, will be offered in Madison, Wis., in June.

A "Special Course for Beekeeping Instructors and Advisers" is scheduled for June 28 and "Advanced Topics in Beekeeping" for June 29.

Both programs will be held at the Quality Inn, 4916 E. Broadway, Madison.

The instructors' and advisers' course is intended for people who want to teach beekeeping courses or to include bee subjects in natural science courses.

"Vocational-technical and other adult institutions need competent instructors for beekeeping classes", says UW-Extension entomologist Walter L. Gojmerac, director of the program. "One purpose of the June 28 program is to help prepare interested beekeepers to teach beginners."

High school biology and vocational-agriculture teachers who are interested in covering beekeeping or honeybees in their courses will also benefit from the first day's program, Gojmerac says, as will people who must advise beekeepers on bee health and culture problems.

The advanced topics program will include discussions of bee nutrition and behavior, overwintering problems and public relations. Beekeeping experts will be on hand to answer participants' questions about current problems in apiculture, Gojmerac says.

Part of the second day's program will be a tour of the U.S. Department of Agriculture's North Central Bee Research Laboratory in Madison.

Each of the programs qualifies for one-half unit of continuing education credit (CEU). There will be a $25 registration fee for each program.

For more information on each of the programs and on registration, contact the Agricultural Conference Office, Jorns Hall, UW-Madison, Madison, WI 53706.

CANADA
Eastern Apicultural Society

The twenty-fifth annual convention of the Eastern Apicultural Society of North America will be held August 8-11 in Ottawa, Ontario, Canada. Carleton University will be the scene for the events of the convention. With a modern sprawling campus in the suburbs of the city, it boasts all the required modern facilities, along with ample comfortable residence accommodations. Prices for the accommodations have been set low enough to tempt conventioneers to stay on after the convention and vacation in the area—and a more attractive setting for just that could hardly have been chosen. Ottawa is a city of less than half a million people and as the capital city of Canada, it has virtually none of the ills that generally plague larger and more industrialized cities.

Often referred to as "beautiful at any time", Ottawa has miles of open parkland surrounding the core that lends itself to comfortable strolls along historically famous canals and rivers. Those interested in shopping can be well accommodated in just about every region of the city, while occasional fairs as well as permanent shops feature typical Canadian and Eskimo crafts and art.

Night life is well served by the region, with many top-notch nightclubs and discos, and for those with a flair for gourmet meals, authentically prepared ethnic meals are featured by many of the region's restaurants and cafes.

The countryside, referred to as the Ottawa Valley, is a mixed farming area nestled along the Ottawa River and backed by the Gatineau hills. The Ottawa Valley abounds in varied recreational attractions that must necessarily appeal to everyone, be it a beach outing or a backpack trip along wilderness trails to unspoiled lakes and streams.

Not to be overlooked is the fact that Ottawa is only two hours from one of the continent's largest centers of French culture, Montreal, Quebec. A trip there certainly would promise an exciting cultural experience. Five hours from Ottawa in the opposite direction is Toronto, the heart of the Canadian business world.

All in all, this convention could promise not only a fine learning experience, but a unique and exciting vacation as well.

PENNSYLVANIA
Beekeeping Short Course Well Attended

The Delaware Valley College Spring Beekeeping Short Course was well attended with most of the participants coming from Eastern Pennsylvania and New Jersey. The mild sunny weather on the first day of the course made it possible to visit the college apiary where the class was broken down into small groups to work with the skilled personnel teaching the course.

Dr. Robert Berthold, Associate Professor of Biology, and Jack Matthenius, N.J. Supervisor of Bee Culture, attribute the increased interest in the honeybee and beekeeping to the emphasis now being placed on natural foods such as honey. Other factors contributing to this increased interest is the fact that beekeeping can be a backyard hobby and also the beneficial effects of honeybee pollination on fruit, vegetable, and berry production in the backyard garden.

Due to the continued response, Delaware Valley College will again be offering its Summer Beekeeping Course to be held on Friday, Saturday, and Sunday, June 22, 23, and 24, 1979. This course will also be under the direction of Dr. Berthold who will be assisted by Jack Matthenius and a number of other skilled instructors. The summer course has attracted people from all over the United States and Canada who have incorporated the course into their vacation.

For additional information write Dr. Berthold, c/o Delaware Valley College, Doylestown, PA. 18901 or call him at 215-345-6556.

Dr. Berthold opens bee hive during Beekeeping Short Course.

Obituary

WILLIAM WALLANCHES

THE DEAN of Illinois state deputy bee inspectors, William J. Wallanches, died April 5, 1979. Born May 31, 1900, he was 78 years old.

Mr Wallanches was probably the longest-serving bee inspector in United States history. When he retired as an inspector in 1975, he had been an inspector for an unprecedented 50 years. He had become an inspector in north central Illinois in 1925 and had served under four state supervisors of apiary inspection—A.L. Kildow, Charles L.

Duax, Carl E. Killion, and Eugene E. Killion.

Bill had been a beekeeper for 63 years. He became interested in beekeeping as a boy of 16 in 1916, when a swarm of bees settled in a front-yard tree of his boyhood home in Steger, Ill.

Another outstanding achievement of Bill Wallanches has been his continuous active membership in the Cook-DuPage Beekeepers' Association, the 58 year-old, 450 member beekeepers' organization in the Chicago metropolitan area and one of the nation's largest beekeepers' associations. Bill was one of the directors when the association, which was founded in 1921, became incorporated in 1936. Bill and his wife, Stephanie C., are among the 21 honorary members of the association.

Bill has influenced not only the beekeeping activities of the association but also those of his beekeeping family. His son, John W., has succeeded him as an inspector and was elected president of the Cook-DuPage association in 1972-1973 and treasurer in 1968-1971. His daughter, Audrey, was crowned association Honey Queen in 1959.

Bill and his family have won hundreds of ribbons and dozens of trophies for their bees and honey exhibits at county and state fairs in Illinois and national honey shows. At the 1953 Illinois State Fair in Springfield, Ill., the governor presented Bill and Stephanie with the Sweepstakes Governor William G. Stratton Trophy for Display of Bees and Honey. The Wallanches family has exhibited their honey at the Illinois state fairs without interruption for 30 years, from 1947 through 1977.

Another aspect of Bill's love of nature is his 225 acre farm near Plano, in north central Illinois, where he kept a large black Angus beef cattle herd, part of his 500 colony apiary, and about three dozen buffaloes as his "pets". Appropriately, he was called "Buffalo Bill Wallanches", and his homestead, "Wallanches' Beef, Honey, and Buffalo Farm".

Bill's approach to successful long-term beekeeping was unqualifiedly practical and simple. He was unexcelled as a bee inspector and beekeeper, and his always ready words of advice to less experienced beekeepers will be sorely missed.

Bill is survived by his widow, Stephanie; a daughter, Audrey Petras of Downers Grove, Ill.; his son, John of Plano; a sister, Anna Nelson of Downers Grove; and several nieces and nephews.

FROM THE WEST

(Continued from page 300)

their brood when the temperature drops during cold nights because they are unable to do this when brood is located in cells next to the wooden bottom bars? Mr. Killion's improved rack with its four inch wide board at the front end seems to provide this protection against chilling. If this prevents the gnawing of the combs, as Mr. Killion has found, he will have perfected the entrance to the beehive. Furthermore, he will have made a very important contribution to the welfare of the bees and to the pocketbook of each and every beekeeper."

A letter from a beekeeper in Florida induced me to write this article. He wrote, "I was reading in an old **Gleanings** magazine and read an article you wrote on "The Recessed Entrance" but have been unable to find any information on the size and how it is constructed." The answer is a simple one. Order from a beekeeping supply manufacturer, (there are several ones), which makes an inner cover which has a tongued and grooved frame to fit the board in. One manufactures an inner cover with three separate boards and another supplies a Masonite board to put in the frame. I prefer the one with the three wooden boards. Instead of gluing the slats into the frame lengthwise cut them to size to fit crosswise. See the photograph. The wide board at the front is four inches and the rest of them are 3/4 inch. Instead of using nails, use Elmer's glue for it holds like a demon. Check your frame to make sure it is square. Now you have the lightest and strongest slatted rack and your bees won't build ladder combs under the slats. Because as I said before there is only 7/8 inch loafing space under the rack which is plenty. I have used these slatted racks for so many years that I can't remember how long. And I have never lost a colony in all my 36 years of beekeeping. I have found the following benefits for my bees. The ends of the combs nearest the entrance are protected against wind and cold. Robbers who have to penetrate the hive four inches down the tunnel are met by a welcoming committee, as are wax moths. Mice will have difficulty entering this deep tunnel so no mouse guards are needed. Bees take up a line of defense within the tunnel and in normal weather do their fanning inside the tunnel. They do not have to stand out in the rain.

Sure, I have been lucky for never having lost a hive of bees. But don't you think I have made my own luck by giving them a healthy home to live in?

Next month I'll write about follower boards and after that hive stands, and flight boards to help tired bees make a safe landing. These are all goodies we amateurs can indulge in. And believe me the bees enjoy them, and make you a bigger crop of surplus honey. And, that too, is nice.

BASICS FOR BUILDING SMALL BEE BUSINESS

(Continued from page 296)

than I wanted. I didn't want to be in debt that far and for that long. So I guess we'll go it alone."

It's a good bet that this young couple with their knowledge of bees, an interest in people and a good measure of creativity will produce a successful business.

Don't let the big boys fool you. The small independent business is alive and well in rural America. And in this case is buzzing along quite well thank you.

NEW BULLETINS AND INSTRUCTION MEDIA

MEAD by Brother Adam is now in print again. This extremely popular leaflet has been out of print for some years.

The price is 40p or $.95 post free from International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9, ONR, England.

GLEANINGS MAIL BOX

(Continued from page 282)

the same situation. The Director of Agriculture there refuses to face up to the problem. This I know. I had an appointment and I talked with him. To be sure he knew what I was talking about I took reprints to document my statements and left them for him to read before my appointment. I might have been talking to a stump for all the good it did. Mr. Farias, Hawaii's Director, only wants to be let alone and no waves because he wants to be a senator!

I have spent too much money on trying to whip up pressure in Washington and since our little association is hosting the ABF convention in 1981 I hesitate to bill them as requested for my expenses.—P.F. Thurber, Kirkland, WA.

Dear Editor:

Concerning the pollination of Red Delicious apples, April **Gleanings**, and the low yields reported in the East.—

I have had six bearing No. 7 dwarf (2/3 standard size) trees, both "Double Red" and striped, for fifteen years and they **always** have borne the heaviest crop every year of any variety in my orchard.

Since a lopsided apple is rarely found, indicating good pollination, I am certain that my fifteen colonies near the orchard does meet the requirement of extra pollination for this particular apple.

The USDA (Seeds 1961 Yearbook) found that in alfalfa, the honeybee would avoid the pollination mechanism however they do trip a few of the blossoms they visit this way. The bees must be numerous enough to pollinate such blossoms.—Bernie Hayes, 121 Miller St., Wellsville, N.Y. 14895.

FUNDAMENTALS FOR ALL

(Continued from page 302)

"English" farms shows that the English farms use 83 per cent more energy in milk production and also crop production was only 96 per cent of the Amish farms.

As energy becomes more expensive and progressively scarcer, we are forced to re-evaluate our position in the economy of our society. The Amish experience strengthens my conviction that "small can be beautiful". Keeping fewer colonies, managed better, may be the key to the survival of our beekeeping industry. Some few commercial beekeepers have resisted the trend to bigness. They have learned that the law of diminishing returns determines that more colonies do not necessarily mean more profits.

Mounting transportation costs will, undoubtedly, result in fewer outyards, not necessarily less honey production. In fact, the reverse may be true, since more time can be devoted to looking after colonies nearer home. Amish conservation and diligence accounts for their prosperity. Beekeepers can learn much from this lesson.

(1) Stephen, W.A.
"Satisfaction in Being a Small Beekeeper" **Gleanings in Bee Culture**, 104 (3): 103, March 1976.

(2) Schumacher, E.F.
Small Is Beautiful Harper and Row, New York, 1973.

(3) Johnson, Warren A., Victor Stoltzfus, & Peter Craumer "Energy Conservation in Amish Agriculture" **Science**, 198 (4315): 373-378, 1977.

RESEARCH REVIEW

(Continued from page 301)

several apiaries and did not report the problem. He said he had a very big honey crop and would feel guilty taking money from the government. I pointed out to him that by failing to report the loss he was, in effect, saying there was no loss. We must document every loss through ASCS or our representatives in Washington will think there is no honeybee-pesticide problem. This applies equally to beekeepers with one or many colonies. The ASCS will respond to all claims with colony inspections, at no charge to the beekeeper.

MONTHLY HONEY REPORT

(Continued from page 278)

good condition. Winter loss ran as high as 20-30%.

Oregon-Crop prospects are good. Very little honey on hands of producers. Bees in good condition.

Washington-Heavy bee loss in southwest Washington.

California-Excellent conditions for bees during last fall and this spring. So far citrus bloom has been excellent. The month of June will see 200,000 colonies going to Valley seed alfalfa pollination and 200,000 going out-of-state for better honey production and less insecticide use there.

STRICTLY BACKLOT

(Continued from page 307)

experiences? Mrs. C.W. (Pecos Co., Texas) suggests that the family sit down and talk it over and everyone should understand the OHS is not the end of the world. She writes, "Then I insisted he move his only hive into the next county. This seemed to work during the week but it didn't slow him down much over the weekends." Mr. B.P. (Carrol Co., Vermont) states that his wife made him choose between his only hive and her. He adds, "I'm very happy with my choice."

Mr. V.M. (Jackson Co., Illinois) knows he has the obvious answer. "When I found out I couldn't handle an only hive, I went out and bought twenty-three more. Things got much simpler right after that." The family of Mrs. C.W. (Pike Co., Colorado) helped her kick the OHS, "cold bee, so to speak. At first we tried to control Clara's puttering and messing," her husband writes. "We tried to limit it to once every two weeks, but the strain was too great. Her doctor suggested she try canaries."

Another solution to the OHS is presented by Mr. S.V. (Marin Co., California). He argues that something is needed in addition to the only-hive so the beginning only-hive parent can transfer his OHS related compulsive behavior away from the only hive to, for example, a surrogate nuc. "In this way," Mr. S.V. notes, "the only hive does not suffer from overmanipulation, and this, as we all know, will please the experts and with luck, you'll get a honey crop. Second, the only-hive parent suffers less guilt because of overindulgence. Third, it is almost impossible to spoil a nuc. And fourth, in case you're interested, I call my nuc Teddy."

I am interested, Mr. S.V., and I understand as I'm sure most backlotters who have suffered the OHS do. I called my old pet nuc Michael alias Frank Jr.

MAKING SOME OF THE WORLD'S HUNGRY INTO BEEKEEPERS

(Continued from page 292)

The Heiffer Project has established many bee projects in Guatemala. Bees are the most economically feasible "livestock" in countries with so much undeveloped land. They don't take a lot of area to set up, there's always a ready market for honey, they're easy to ship and transport, and it only takes a year for a crop so the recipients can see an immediate return for their labor.

For these reasons HPI has set up bee programs in other undeveloped countries like Korea, Ecuador, Honduras, Haiti, and Panama. Jerry Bedford, HPI's Director of Development, says the Heiffer Project considers the world bee program a great success. This success can indeed be seen in that in 1976 HPI sent 240 hives to Guatemala alone. In 1977 they sent 571 hives and 154 queens to people all around the world. When all the figures are in, the 1978 numbers should be even higher.

Several governments are beginning to see the value of foreign-aid bee projects like HPI's. New Zealand, Germany, and Canada are all operating beekeeping programs similar to HPI's. Turkey decided that beekeeping was such a good way to help the poor that the Turkish Development Foundation is now promoting beekeeping to the poor farmers of their own country in programs like HPI's.

That HPI's bee projects are working can also be seen in the response of the recipients. There is no refusal or resentment of HPI aid. There is only glad thanks. One new beekeeper was so thankful that he had a friend write a "thank you" letter to HPI for him because he couldn't write. Then he spent several hours walking to a post office to spend half a day's wages to mail the letter.

All of the recipients of HPI aid are happy because a way has been found which allows them to accept help without the stigma of charity. They are given resources and instruction on how to use those resources. Then they are allowed to help themselves, and each other.

A foreign-aid official of the U.S. has said that the present methods of foreign-aid used by the richer countries of the world simply are not working. Those who have simply can't feed all those who have not.

That foreign-aid official is probably right. It looks like the destitute and hungry of the world are going to have to somehow support themselves. How they could all be self-reliant is a problem we may never solve, but the Heiffer Project International shows us an excellent way at least part of them can stand on their own two feet. They can be made into beekeepers.

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WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsibe in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

10-frame single story hives ITALIAN bees, young queen colonies in good condition. Pick up dates start mid-April. $50.00 each. Anderson Apiaries, 115 N. Oak, Adell, Ga. 31620. Ph: 912-896-4419.

QUEENS: DADANT'S STARLINE and HYBRID ITALIAN. Bees, nucs and bee supplies for sale. DIXIE HONEY CO., Rt. 1, Box 350, Shallotte, N.C. 28459. Phones: 919-579-6036 & 919-278-6951.

ITALIAN QUEENS AND PACKAGES from April to end of season. Queens 1-5 $5.00, 6-25 $4.75, 26-100 $4.50, over 500 $4.25. 2 lb. packages w/q $14.00 plus package. All packages picked up here. John Rickard, Rt. 1, Box 2241, Anderson, Ca. 96007. PH (916) 365-5551, 365-6556.

PELICAN STATE QUEENS "Italian Type Hybrids". 1-5, $5.50 each - Over 5, $5.00 each. Postpaid, live delivery guaranteed. Clipped and marked on request. MAKE OUR QUALITY CONTROL PROGRAM YOURS. Pelican State Apiaries, P.O. Box 2904, Baton Rouge, LA. 70821. Phone (504) 293-3034 Evenings.

ITALIAN QUEENS: Fred's Bee Farm, 8015 Sullivan Drive, Charlotte, N.C. 28215. Phone: 704-568-5499. Fred Vees the Man with the Bees.

PENNSYLVANIA DOUBLE GRAFTED ITALIAN QUEENS. Northern, hardy stock. Mating nucs fed Fumidil-B. Book now with payment. Live delivery guaranteed! May to September. 1-5 $6.00; 6-up $5.50. Marking .50. James Mentzer, RD 2, New Holland, Penn. 17557. 717-354-8042.

PACKAGE BEES. Pick up St. Paul, Minnesota, April 14. Now booking 1979 orders. Please book early, limited supply. Write or call for free brochure. J.B. APIARIES, P.O. Box 6626, St. Paul, Minn. 55106 612-429-4267.

QUEENS, Italian 1-10 $5.25; 11-25 $5.00; 26 and up $4.75. Roger's Apiaries, Rt. 2, Box 208-F, Rose Hill, N.C. 28458. Phone:(919) 289-2850. Call early morning or late at night.

SOME 9-1/2 and 6-5/8 supers, lots 9-1/8 and 6-1/4 frames with cross wired foundation ready to go. Watry, 403 Walnut Street, Forreston, IL. 61030.

NORTHERN CALIFORNIA Italian queens shipped air mail, postpaid and insured. Summer Prices 1-25 $4.00; 26-99 $3.75; 100 or more $3.50. Live delivery guaranteed. Ken Bachman (Bachman Apiaries) 1801 Calin Lane, Anderson, Calif. 96607. Phone 916-365-4029.

40 DOUBLE Colonies bees with 2 shallow supers $90.00 each. Kenneth Ferguson, Poteau, OK. 74953. 918-647-4181.

BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation, Onsted, Mich.

FOR TOP QUALITY BEE SUPPLIES and advice on beekeeping problems, visit your nearest Root dealer and send for your FREE Root catalog. Satisfaction guaranteed. The A. I. Root Co., P.O. Box 706, Medina, OH 44256.

QUALITY CYPRESS BEEKEEPING SUPPLIES: Manufacturing for those who know the best costs less in the long run — **dovetailed** 9⅝," 6⅝", 5⅛" supers, hives, hive parts, Cobana supers, nucs, beginner's kits, and complete supplies. Write: BEE-JAY FARM, 1524 Drowning Creek Road, Dacula, Ga. 30211.

ROUND COMB SECTION Equipment and Supplies. New and improved. Send for price list. ROSS ROUNDS, INC., PO Box 485, Massillon, O. 44646.

In the WEST beekeepers depend on UNITED BEE CRAFT COMPANY. Your full time—full service dealer. Complete stock of supplies and equipment. Dadant-Maxant-Cobana. Mail phone orders promptly shipped. 600 Harbor Blvd., West Sacramento, CA 95691. 916-371-9340.

WAXMASTER CAPPING SEPARATOR....melts cappings fast with temperature controlled, circulated hot water, electrically heated. Pack fine quality honey with the PAC-KING HONEY BOTTLING SYSTEM. All equipment stainless. Free brochure. HONEY SALES COMPANY, Mfrs., 2817 No. 2nd Street, MINNEAPOLIS, MINN. 55411.

WE MANUFACTURE CYPRESS BEEKEEPING EQUIPMENT and sell other beekeeping supplies. BEGINNER BOOK $1.25. Free list. Forbes & Johnston, P.O. Box 535, Homerville, Ga. 31634.

WHY buy commercial grade when you can buy No. 1 grade at a highly competitive price? Finest quality supers & frame $24.00 per 100. You have tried the rest, now buy the best. Write for price list. Superbee, Inc., 822 S. Fourth St., Montrose, Colorado 81401. PH. 303-249-4666.

WEST VIRGINIA Dadant & Cobana Dealer. Complete line of supplies, including commercial grade woodenware. Large stock. We ship UPS. James H. Johnson, 107 State Street, Terra Alta, (Preston Co.) WV 26764 (304) 789-6011.

WE CARRY A COMPLETE LINE OF BEE SUPPLIES and containers. Write for price list. E & T GROWERS, R. 1, Spencerville, Ind. 46788. (A suburb of Ft. Wayne). Phone 657-5136.

WHITE PINE BOTTOMS and supers. Quality bottom boards assembled, nailed and clinched, tongue and grooved. Real rugged. 5 to 25 $3.00, 30-up $2.75. Reversible type assembled 5 to 25 $2.75, 30-up $2.50. Covers assembled $2.50. Supers 5-3/4 or 6-5/8 KD, 5 to 25 $2.50, 30-up $2.25. Sample sent on request $4.00 postpaid. Write for discount on larger lots. R.B. Swan & Son, 25 Prospect St., Brewer, Maine 04412.

COMPLETE bee operation about 250 colonies plus equipment, 50 frame extractor, wax melter, boiler. 25 years in business with or without real estate. Ellsworth Davis, RFD 3, Cuba, N.Y. 14727.

DOUBLE Screen Dividers for Demaree plan swarm control, dividing hives, etc. $5.50 each; 10-$47; 100-$450. Lee's Bee Supplies, 3405 Tote Rd., Rock Creek, OH. 44084.

FOR SALE

COMB HONEY PRODUCTION, a new book by Roger A. Morse. From WICWAS PRESS, 425 Hanshaw Road, Ithaca, N. Y. 14850. $7.95 postpaid anywhere.

THE HOW-TO-DO-IT BOOK OF BEEKEEPING, clothbound, $9.95, and HOW TO RAISE BEAUTIFUL COMB HONEY, clothbound, $7.95, by Richard Taylor, both for $16.95 ppd. Linden Books, Interlaken N.Y. 14847.

SQUEEZE BOTTLE—24 ounce size with snip top spout and cap. 100 bottles 21¢ each, 200 bottles 19¢ each. U.P.S. Shipping weights 11 pounds and 22 pounds respectively. Samples $1.25. Hollowville Products, Hollowville, NY 12530.

8-FRAME Superior Lifetime EXTRACTOR. Reversible, 12-inch baskets, mint condition. B.F. Faricy, 843 Brown, Pueblo, Colo. 81004. 303-544-7576.

PACKAGE Bees and Queens. Hives of bees with or without supers. Ramsey Jewelry, Pardeeville, WI. 53954. 608-429-3045.

SMALL HONEY BUSINESS—38-40 Two Story Bee Hives, 139 Supers, extracting equipment, Solar Wax Melter, plus extras. For a complete setup. Larry Cordingley, R.3, Tompkinsville, KY. 42167. PH. 502-487-8123.

WILL have single story hives with 1979 queens available in May. Tom Hawman, Lock Springs, MO. 64654. PH. 816-772-3264.

150 COLONIES, very strong and well established, extra hive equipment, 8 frame lifetime extractor, solar heater, stainless tanks, complete operation. Dave Blake 1-602-258-3219 or 275-7759.

EXTRACTOR: Root 50 frame, stainless. SUPERS: Drawn Comb 150 shallow 200 deep. Call: 612-448-5422. Bruce Chaska, Minn.

GREGERSEN power uncapper in new condition $300.00. Carlyle Eversoll, Elizabeth, IL. 61028. 815-845-2520.

150 COLONIES. All or part. $50 each. Harold Ervin, Riverdale, CA. (209) 867-3722.

NEW Packing Honey Liquifier, Universal Extractors, Pac-King Honey Bottler, Used 40 and 80 gallon double jacketed canners. Jones Bee Co., 286 Andrew Lane, Salt Lake City, UT. 84107. 801-262-6079 or 801-355-2033.

TWO 225 gal. stainless steel open top tanks with covers, water jackets, stirring baffels and bottom drains. $500 each. Phone 501-534-1307.

The New Zealand Beekeeper

Quarterly magazine published for the National Beekeepers' Association of New Zealand. Editorial policy emphasizes practical beekeeping, latest research and feature articles with large format and many illustrations.

Subscriptions: $NZ 9 a year, surface postage free.

"N Z BEEKEEPER"
Box 4048, Wellington, New Zealand

NEW OBSERVATIONS ON BAIT HIVES

(Continued from page 311)

vary considerably from year to year. Last summer, for example, the capture rate was strikingly low. We suspect this reflects the unusually high mortality of wild colonies (about 60%, based on long-term observations on bee tree colonies) during the winter of 1977-78; this was a severe winter following an extremely poor summer for foraging. For the previous three winters the mortality among wild colonies averaged only about 20% (see Seeley, 1978).

References:

Seeley, T.D.
1977. Measurement of nest cavity volume by the honeybee (**Apis mellifera**). Behavioral Ecology and Sociobiology **2**, 201-227.

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The nest of the honeybee (**Apis mellifera** L.). Insectes Sociaux **23**, 495-512.

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Nest site selection by the honeybee, **Apis mellifera**. Insectes Sociaux **25**, 323-337.

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Dispersal behavior of honeybee swarms. Psyche **84**,199-209.

ARE YOU KEEPING A JOURNAL?

(Continued from page 289)

kinds return for the summer. I note when I inspect the hives and in general what I find. I record when I split the hives, when hives (hopefully not mine) swarm and when I take off supers. I record my scale hive weight and when I start fall feeding.

I also use my journal for other things such as when I plant vegetables and when I harvest the first crops. I even use it to record when we lose an old pet or get a new one and when we get a major appliance. In other words, just about everything is grist for the mill.

It's surprising how much use I've found for the information I've recorded and the very few minutes I spend on it has repaid me many times over. I strongly recommend the practice even if you aren't as serious about your beekeeping as I am.

HOW TO GET BEES TO WORK ABOVE A QUEEN EXCLUDER

(Continued from page 312)

frames of a super **except** the top one-half inch of comb just under the top bar. Give this super right back to the bees with honey dripping and drooling down from this half-inch of comb. It works like a charm.

When they find out about all this treasure falling like manna from Heaven, they may rush out in great numbers to see where it all is coming from. That is a beautiful sight and I doubt if it does any real harm to the bees. If you wish to avoid all this excitement, wait until late in the afternoon when they have quit flying. The excitement will have subsided by the next morning. Now a word of caution: Do this only during a good honey flow and avoid having any honey dripping on the ground or on the outside of the hives. I have known robbing to ruin a fine apiary of 25 colonies, all caused by careless management by the beekeeper.

BIDS INVITED FOR APIARY SITES

BIDS were invited recently for the leasing of apiary locations on 3 half acre parcels of land at the Defense Depot, Ogden, Utah. Sealed bids were to be submitted to the Department of the Army.

From time to time other sites may be made available by bid by the District Engineer or his authorized representative. Information may be requested from the Department of the Army, Sacramento District, Corps of Engineers, 650 Capitol Mall, Sacramento, California 95814.

INDEMNITY PROGRAM MAY END

THE Agricultural Stabilization Conservation Service (ASCS) Indemnity Program will be good through 1979 but in the 1980 budget the administration is not asking for any money for the ASCS program. Congressional testimony last year showed that most of the benefits were going to only a few beekeepers who had repeated claims. Those who favor continuation of the program point to the differences in the impact of sprays on bees as the reason for large claims in one area and few claims in other areas.

If funding is withheld the payments of claims will cease in October, 1979.

The Revolutionary New HUBBARD Extractor

All the extractors have V shaped sloping bottoms with large center drains. The extractor tank and reel are made of heavy 16-gauge 304 quality stainless steel. Note the continuous weld and reinforced construction on reel and tank.

Note the easy to use controls. The top dial is the speed control; the bottom dial sets the acceleration time

Model Number	2401	4401	8001
Frame Capacity	24 D/44 Shal	44 D/60 Shal	80 Frames
Voltage Required	110 volts	110 volts	110 volts
Motor Type	¼ Hp.	½ Hp.	¾ Hp.
Drain Diameter	2" FPT	3" FPT	3" FPT
Tank Height	34"	36"	38"
Tank Diameter	30"	38"	55"
Reel Diameter	28"	35"	52"
Shaft Diameter	1¼"	1¼"	1½"
Brake Type		Electric Disc	Electric Disc
Warranty	One Year Complete	One Year Complete	One Year Complete
Catalog Number	**HO 61050**	**HO61070**	**HO 61040**
Price	$1250 Net	$1945 Net	$2485 Net

REMEMBER — YOU GET WHAT YOU PAY FOR!!

FRESH PACKED

Pure Bee Pollen

2 lb. Can $12.95

Postpaid in USA - Canadian orders add $1

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For Extractors and Food Handling Equipment. Packed in Tubes for Alemite Guns. $5.50 per tube

QUEENS

1-24 Queens	$7.25 ea.
25-99 Queens	6.60 ea.
100-or more Queens	6.10 ea.

Queens are sent post paid air mail.
Telephone order in for early arrival.

***Prices subject to change without notice.**

THE FOLLOWING ARE NET PRICES — NO DISCOUNT

		9⅛"	6¼"	5⅜"
100	Hoffman Top Bar Std. Frames, Commercial	$38.00	$38.00	$38.00
1000	or more Hoffman Top Bar Std. Commercial Grade	275.00	275.00	275.00
5	9⅝ Deep Bodies, 9⅛ Frame, Commercial Grade			28.85
50	9⅝ Deep Bodies, 9⅛ Frame, Commercial Grade			280.00
100	9⅝ Deep Bodies, 9⅛ Frame, Commercial Grade			375.00
5	5⅛ Shallow Bodies, 5⅜, Commercial Grade			22.00
50	5⅛ Shallow Bodies,, 5⅜, Commercial Grade			200.00
100	5⅛ Shallow Bodies, 5⅜, Commercial Grade			375.00
5	6⅝ Shallow Bodies, 6¼, Commercial Grade			22.00
50	6⅝ Shallow Bodies, 6¼, Commercial Grade			200.00
100	6⅝ Shallow Bodies, 6¼, Commercial Grade			375.00

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For more information about Root extractors visit your nearest dealer or write one of the outlets listed below.

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