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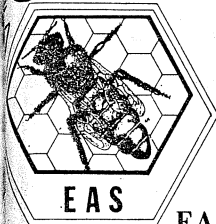
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EAS JOURNAL

EASTERN APICULTURAL SOCIETY OF NORTH AMERICA, INC.

DECEMBER, 1977

A TRIBUTE TO THE LITTLE BEEKEEPER

(Presented at the Eastern Apicultural Society meeting at Newark, Delaware, August 20, 1977 in response to receiving the James I. Hambleton Award).

1. Introduction.

This 23rd Annual Conference of the Eastern Apicultural Society brings back many memories. Memories of other meetings such as this one, memories of many friends, some present and some departed to be with their maker, the different leaders of this organization, the impact that James I. Hambleton had on it, and its impact on the beekeeping industry, its awakening U.S. beekeepers to an awareness of Apimondia the first and subsequent awardees, and many other memories. I want to bring greetings to you from the Tucson Bee Lab. Several of the men there sent regards to some one or another here.

2. Thanks to the Selection Committee for choosing me.

Especially, I want to thank the selection committee for naming me to receive the coveted Jas. I. Hambleton award. There are many others that I could name of whom I would consider more deserving for this honor. When I think of such men as Bud Cale, Bill Stephen, Harry Laidlaw, George Bohart, Jonathan White, Otto Mackensen, Bert Martin, Roger Morse, Frank Robinson, Carl Johnson, M.V. Smith, Gordon Townsend, the Roots, the Dadants, Walter Kelly, Chuck Mraz, and scores of other I feel highly honored and at the same time humble that I am placed alongside my good colleagues Boch, Gary, Fungald, and Rothanbuhler as recipient of this award.

3. Tribute to James I. Hambleton.

When I was notified that I was to be so honored, I could not help thinking that I am the first protege of Hambleton to receive this honor. I had the honor of serving some 20 years in the United States Department of Agriculture under Hambleton. I know some of his philosophies rubbed off on me. Perhaps few of you know the lengths to which he went to get the American Beekeeper more international minded. When the larger beekeeper organization was uninterested in becoming a part of the International Beekeepers' Organizations (Apimondia) he contrived to get your organization recognized as the National American organization. I am proud of you and him for having a large part in getting the first meeting of Apimondia in College Park, MD in 1967, just 10 years ago. Since then our beekeepers have begun to realize that beekeeping elsewhere exists, and the number going to the meeting in Australia this fall is further tribute to him and this organization which he loved so well.

One of Hambleton's attributes, which I so much admired, was his love for the "little beekeeper". While much of the research that he directed promised more benefit for the big beekeeper than the little one, he never forgot the latter. He always felt that it was the little beekeeper who made the most advances for the industry. The larger ones capitalized on it. He frequently stated that more research could be accomplished with a pair of keen eyes and an open mind than with a big budget.

Perhaps some of you may have read the book called "Arrowsmith" by Sinclair Lewis. Arrowsmith was a scientist that was catapulted into an expensive lab with all the pressures to produce, PRODUCE, a commercial product as quickly as possible.

He was supposed to do research but the pressure was heavy on him to come up with some marketable product at once. With all the fancy equipment at his command Arrowsmith was unhappy and finally walked out. He state that he wanted to go where he could work with a "matchstick and piece of string" and with his imagination. That was Hambleton's philosophy. That, he felt, was what the little beekeeper was equipped with.

4. The "Little Beekeepers."

The little beekeeper doesn't have a big research budget, but he does have keen eyes, an open mind, and time to observe. Because he has only a few hives can remember the actions and reactions of each.

The little beekeeper has contributed the basic tools of the industry: the smoker, the extractor, foundation, the movable frame hive, the bee veil and the hive tool. The larger beekeeper has merely refined and mechanized these tools. But long before these things were available he learned to "course" the bees to their tree, remove them to a box hive, and periodically remove a portion of the honey with pan and knife and a smoking rag.

He detected maladies in his bees long before the scientist identified the causative organisms, and he found the first chemical treatment for the disease AFB. Indeed we owe much to the little beekeeper.

Some 40 years ago when I was located in Arkansas the then head of the Entomology Department at Fayetteville made the statement that I have never forgotten. He said that the beekeeper is sharper than the entomologist or the farmer. He said the last two look at the field under consideration - for growth, culture, or treatment for harmful insects, and no farther. He said the beekeeper has to know conditions to the farthest horizon - not only in the field nearby but also the forests, the streams, the hills, the valleys, the crops and the weeds. All of these affect the beekeeper and he keeps an eye on all of them. He has to know not only what is affecting the plants, the soil and the environment but also why.

I am reminded of a time many years ago also when I was walking across the University of Arizona campus with the retired professor of engineering, Dr. G.E.P. Smith. I was indeed proud to be walking alongside this notable figure, but was soon humbled when he pointed down at the sidewalk and exclaimed, "Look at that!" I looked but saw only the sidewalk, no bugs, no bees, no flowers, just a burning concrete sidewalk in the scorching Arizona sun. When I finally admitted that I saw nothing, he looked at me in disgust. "Don't you see that?" He again lectured me and pointed at the sidewalk. When you see those fine hair-line cracks in the sidewalk you know that the cement came from the cement plant at Colton, California. Then I realized that he was looking, not at the sidewalk as such, but at what went into the sidewalk.

That is the way the beekeeper looks at the bees and beekeeping - what makes them tick, so to speak.

5. My book and the Little Beekeeper.

I know that today I am being honored because of the book I wrote for the U.S. Department of Agriculture, entitled "Insect Pollination of Cultivated Crop Plants." In writing this book I was constantly impressed by the great volume of pollination that is

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and has been provided by the little beekeeper. One of the reasons we have a pollination problem today is because in so many areas the little beekeeper has disappeared. More than half a century ago when I began working with bees as a bee inspector there was a beekeeper on almost every farm. Today many of the little beekeepers are in the city. In many places in the country too few of them are present. On crop after crop I came to realize as I was writing the book, the little beekeeper is providing, or has in the past provided the pollination for the crop.

Incidentally as an inspector in the early days if my beekeeping experience we, by law, forced the small beekeeper who had bees in box hives, logs, or even manufactured hives where the combs were crossed from one frame to another, to get the bees into movable frame hives or they would be destroyed. Many destroyed them rather than make the expensive change. I now believe that was a mistake. I know the inspector's argument was that such a hive could not be inspected and it potentially harbored disease. But when I compare the value of that box hive to the community as a pollinating agent with its treat to the bee industry I lean toward its use as a pollinator.

In fact, even though I worked for several years as a bee inspector in Texas and New York, and did some research on AFB for the USDA, I wonder if our bee disease regulations have become outmoded. Would the funds be more wisely spent in education and demonstration rather than inspecting colonies?

Are our regulations barring entry of colonies of bees into certain States, or prohibiting bee locations closer than a certain distance from other locations really wise? From the standpoint of the individual beekeeper operating in that area, perhaps yes, but from the pollination standpoint an even higher concentration of bees would be better, and where crops are grown on large acreages, needing vast numbers of pollinators at a given moment, the best interest would be served by stimulating migration of vast numbers of bees to the specific crop.

I know that I am on a controversial subject, but I am basing my statements on more than 50 years of observations. I speak for what I believe to be the best interest of the beekeeper and my country.

In any event, as I wrote the book I came to realize that

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of North America, Inc.

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*Of which \$2.00 is subscription to Journal.

much of our pollination problems has been created by the disappearance of the little beekeepers. Years ago he could be found along almost every mile of country road, but now he is largely in the city or suburbs. Even so he still carries much of the pollination load.

Incidentally, when our big beekeepers go before Congress to plea for aid for the beekeeper they usually stress the need for bees for pollination of our agricultural crops, not for the honey that bees produce. And I might add that the bees are also beneficial to ornamentals, plants of the parks and roadside as well as forest and range plant.

6. The Industry and the Little Beekeeper.

Within our own industry we owe much to the little beekeeper. Our bee supply dealers, our journals, and most of our organizations would soon fold but for him. The commercial beekeeper may make his own equipment but the little beekeeper depends upon the supply manufacturer. He also depends upon the bee journals for information or exchange of ideas. These are his vital links with brother beekeepers. He even writes most of the bee journal articles.

7. The Little Beekeeper and the Public.

The best estimate available indicates that there are about 200,000 beekeepers in the United States, of which 1.5 percent are fulltime commercial, 7.5 percent are parttime, and 91 percent are hobbyists or "little" beekeepers. That is a clear majority in any politician's language. And when we get here, in the realm of E.A.S., it is even higher. So never forget that although individually you may be small, in the aggregate you have a lot of clout. He talks bees and honey to all who will listen, he helps remove bees from unwanted places, gives demonstrations rallies to protect beekeepers against Zoning laws and in every way is the bee P.R. Man.

8. There are Problems, However.

These thoughts are all very nice, but they do not mean that the little beekeeper is without problems. Even to the point as to whether he can be considered a permanent part of our society.

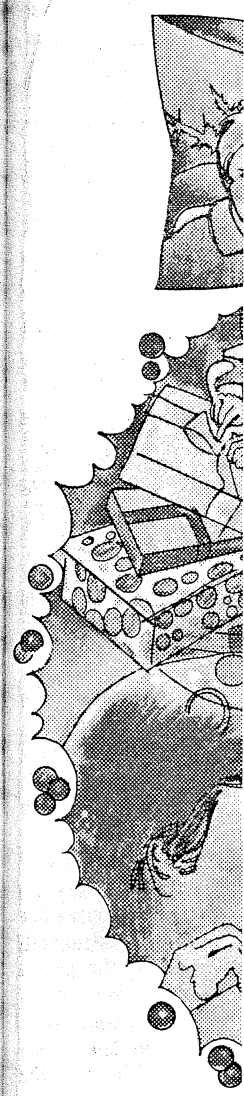
In the FOREWORD of my books Dr. E.F. Knipling, formerly in charge of the USDA Entomology Research Division pointed out the hazards to beekeepers of insecticides, herbicides, monoculture, and other problems that may disrupt the continuity of plants needed to furnish the pollen and nectar for bees. In fact he stated, "Will the amateur beekeeper maintain his interest and enthusiasm for hobby if he cannot obtain at least some material reward for his effort?" Then he asks, "What will be the effect on our agroecosystems if this source of bees disappears?" And he answers himself, "Certainly the nation must give due recognition to the value of the small but vitally important bee industry, and take measures to keep it viable." He concludes that one way is to have a better understanding of the part insects play in plant pollination. I couldn't agree more.

9. What can the Beekeeper Do?

This is the charge I hand to you, little beekeeper! Know the value of your bees to different crops and flowering plants. It really hurts me - and the industry - when I hear a beekeeper make sweeping claims as to the value of bees in the pollination of plants. Please try to remember that many plants are wind pollinated, and may never be visited by bees. Some are pollinated by birds and moths that can reach the pollen and nectar when the bee cannot. Some are self-pollinated, and we are finding that many have a degree of parthenocarpy in them, that is, the ability to fruit even when they are not pollinated.

If you are going to boast the value of your bees, and there is plenty to boast about, I urge you to get such information as I have assembled in the book and determine the value of bees to the plant to which you refer.

If you can't find the information, then fall back on those keen eyes and that open mind of yours and observe. It grieves me that many beekeepers who pollinate crops commercially never bother to observe the activity of the bees on the crop nor their effect on its yield. As you go through my book you will find that many plants are not mentioned, purely because there seemed to be no information on their pollination requirements. If you are concerned about such a plant observe the activities of the bees on it. Bag or tie the blossoms up so bees cannot get to them then observe if they produce seeds or fruit. Darwin frequently worked with only two plants at a time, one that was visited by bees and



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big beekeepers go before Congress to appear they usually stress the need for agricultural crops, not for the honey. It might add that the bees are also plants of the parks and roadside as well.

the Beekeeper. The industry we owe much to the little beekeepers, our journals, and most of our equipment but the little beekeeper is a manufacturer. He also depends upon the beekeepers. He even writes most of the

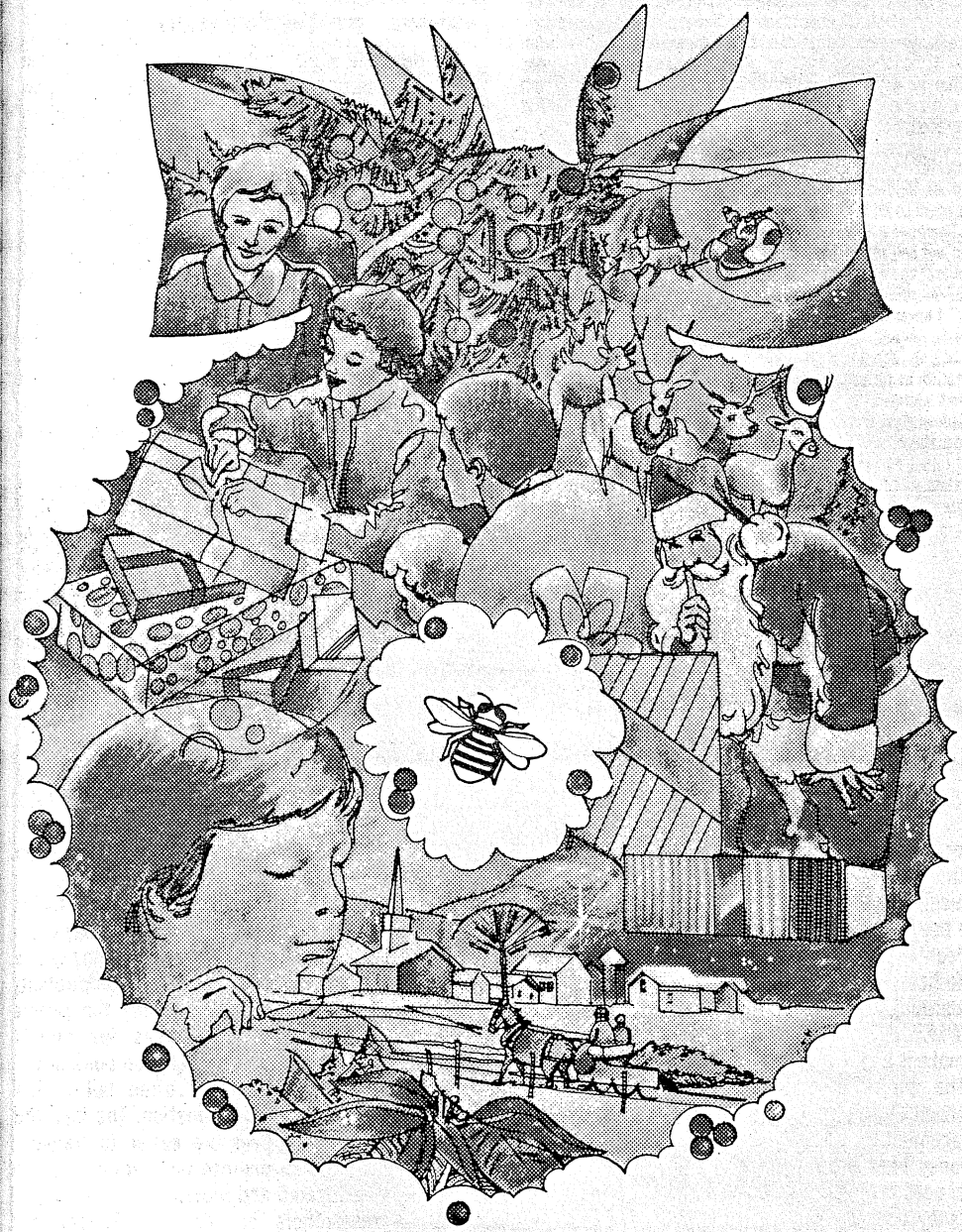
to the Public. A study indicates that there are about 1.5 percent of the United States, of which 1.5 percent are fulltime, and 91.5 percent are parttime, and 91.5 percent are fulltime. That is a clear language. And when we get here, in even higher. So never forget that they are small, in the aggregate you have and honey to all who will listen, the wanted places, gives demonstrations against Zoning laws and in every way

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Holiday Greetings

one screened to keep bees away. Yet he contributed as much as any one man on the pollination of plants. You can do likewise. You have the time, the bees, and the flowers.

Just remember that the flower opens then fades, after which it either sets fruit or sheds, depending largely upon whether or not it was pollinated. Yet this option, often left entirely to chance, can mean the difference between profit and loss to the grower.

And remember also, as I stated in the book, Nature reveals her secrets with extreme reluctance, her sex life being no exception. And sex has become very much in the news of late, so if you want to be in the swing of things here is your chance.

Someone asked me if my book dealt with sex, stating that it would not sell otherwise. I replied, "It's full of sex. I tell all, not just about the flowers and the bees and birds. I describe sexual organs in minute detail, and even have a lengthy chapter on rape." I never did get to explain that I was referring to the parts of the flower and to cultivated crop called rape!

So, in conclusion I would exhort you to my book on pollination as far as it goes, then go from there forward in solving nature's secrets as they relate to bees and pollination. Then share this information with the nation including my highly esteemed friends, the other little beekeepers. You have much more power to get things done than you realize.

I am proud if you, little beekeepers, for what you have done, and are doing for the bee industry. My sincerest congratulations to you.

A Beekeeping Miniquiz

Here is a short quiz to test your general knowledge of beekeeping, especially of sayings that beekeepers and non-beekeepers often repeat. Place a T or F beside each question to indicate whether you think it is true or false.

1. Queen bees mate once with a single drone, the male bee.
2. Mean bees generally produce more honey than gentle bees.
3. Swarming is most often caused by a lack of laying space for the queen.
4. Smoke is a type of anaesthetic for bees.
5. The proper hive and equipment are more important for producing honey than is proper management.
6. Honey bees are not suitable pollinators for red clover seed production in Illinois and other states.
7. Honey bees are the only bees kept by man in hives.
8. You will rarely be stung if you show no fear of the bees.
9. There is never more than one queen in a hive of honey bees.
10. The honey bee is a domesticated animal.

Go back over your answers once more and then look to see how you did. For 9 to 10 correct, you get an A. Eight correct answers rate a B grade, and 7 a C.

FALSE
All the statements in the Beekeeping Miniquiz are

Non-apis Bees-- The Pollinators

Hear the word "bee" and most of us probably flash on a busy little honey maker who co-stars with birds in the story of sex. This is a highly overblown media image.

Honey bees are to bees what lhasa apsos (terriers) are to dogs--one member of a very large family--and all but a select few bees go through life celibate. Furthermore, making honey is not the sole justification for the existence of bees; in fact, few bother to do so.

Pollination is the bee's greatest contribution to humans--perhaps one-third of our total diet is directly or indirectly dependent upon bee-pollinated plants--and it is the non-apis bees (the bees that don't make honey) who best excell at performing this function.

Non-apis bees can be more efficient pollinators than honey bees because they visit plants specifically to gather pollen. Most of the honey bee work force visit plants to gather nectar, only a small portion collects pollen and these specialists only visit plants with lots of easy-to-collect pollen. Also, because honey bees are subtropical insects, non-apis bees exist and operate under much broader environmental conditions.

Non-apis bees not only outperform the honey bees, but they greatly outnumber the honey makers too. There are four species of honey bees in the world and only one of those is in the United States. There are 20,000 species of non-apis bees in the world, 5,000 in the United States, and maybe 10,000 more that have not yet been identified.

Yet for all of their plus points as pollinators, relatively little is known about non-apis bees, and even less is done to utilize their services. Honey bees have gotten and continue to get all the publicity, primarily because honey is something the general public can easily relate to; whereas, few persons outside of agriculture can relate to crop pollination.

Even those in agriculture often fail to look beyond the honey bee for pollination. The idea that the colonizing honey bees are easier to transport than non-apis bees for planned pollination has never been fully investigated and proven.

ARS researchers at the Bee Biology and Systemics Laboratory UMC 53, Natural Resources-Biology Bldg., Rm., 261, Logan, UT 84322, are working to change this situation. The non-apis bee lab is manned by research leader and entomologist Frank D. Parker, and entomologists Philip F. Torchio, and William P. Nye, and it is the only Federal bee lab working with non-apis bees. Its chief function is to find the best possible pollinators for any given insect-pollinated crop, and this search is often worldwide in scope.

Federal programs to obtain pollinators of specific crops have been established with the governments of India, Pakistan, Egypt, Poland, and

Spain. In addition, informal requests for scientists in Sweden, D

When samples of from another country, quarantined to destroy diseases that might be

After the quarantine a bee species is raised in a greenhouse to be pestfree, and to study biology of the bee. This bee is what it has been

Next, a field site confined to a large carefully scrutinized field effects on the environment

The following seasons released from their control observed in a natural setting evaluated. A followup field test results is conducted bees are released to be where they're needed.

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scientists in Sweden, Denmark, and France.

When samples of a desired bee are received
from another country, those bees are immediately
quarantined to destroy parasites, predators and
diseases that might be present.

After the quarantine period, a generation of the
bee species is raised in the controlled environment
of a greenhouse to insure that the insects are
pestfree, and to study and to confirm the basic
biology of the bee. This is done to ascertain that the
bee is what it has been reported to be.

Next, a field study is run with the bees
confined to a large cage. Again the bees are
carefully scrutinized for any undesirable habits or
effects on the environment.

The following season, the field study bees are
released from their cages so that they may be
observed in a natural setting and their performances
evaluated. A followup field study to confirm previous
test results is conducted, and if all goes well, the
bees are released to become established in States
where they're needed.

Once a bee species is established in a State,
the State's government and university scientists take
over and develop proper management practices to
meet their individual needs. The process for testing
and establishing a native species of bee is much the
same, except there is no need for a quarantine. On

the average, the entire process takes 3 to 5 years to
complete.

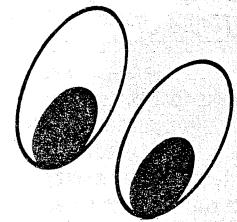
Finding the right pollinator for a given crop can
have a significant economic impact. A recent
example of this is the identification of a native bee -
Osmia lignaria - as an excellent orchard pollinator.

In recent years, many factors have combined to
reduce the number of honey bee colonies available
for orchard pollination and the orchard crop has
suffered for this reduction. Without pollination the
orchard crop would fail and even under the best of
circumstances, honey bees are not well suited to
pollinating orchard crops.

Examining species of bees that visit apple and
prune blooms, Mr. Torchio discovered that Osmia
lignaria far surpasses the honey bee as an orchard
pollinator and is biologically more suitable for the
job. Based on later field test results, industrywide
adoption of Osmia lignaria for pollination purposes
should greatly increase orchard productivity.

Though non-apis bees don't live in hives like
honey bees, the ARS researchers in Logan have
learned to construct multiple-dwelling nesting sites,
somewhat resembling high rise apartments for
insects, that can be transported to fields needing
pollination.

Undoubtedly, as more is learned about non-
apis bees, management practices will be developed
to tap their skills. Right now, the ultimate value of
non-apis bees to range, forest, field, and ornamental



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and orchard crops is impossible to measure, but most bee researchers agree that non-apis bees already contribute economy.

It is expected that the world's population will approach 8 billion by the year 2000. To feed this many people we'll need to get maximum crop production from our available land resources. Non-apis bees can help do that.

Re: Consideration for N.J. as August 1981 Conference Site

At a meeting held on September 30, 1977 at Trenton, N.J., fifteen members of the New Jersey Beekeepers Association Executive Board, voted unanimously to extend a formal invitation to the E.A.S. Sites Committee for their consideration for New Jersey to serve as the Host State for the 27th. Annual E.A.S. Conference in August of 1981 at Rutgers University, New Brunswick, N.J.

Roger R. Locandro, Associate Dean of Cook College, Rutgers University, assured us that they are anxiously looking forward to again having the opportunity to serve the needs of the beekeepers by again hosting the EAS program.

He has also advised us they have a series of dormitories and apartment complex, with air conditioning, and have also to accomplish greater flexibility with their meal program and meeting room accommodations.

I am enclosing a copy of Dr. Locandro's letter of verification for your referral.

Looking forward to serve EAS as the host state in 1981, and anticipating the approval by the EAS Sites Committee, we remain.

Sincerely yours,
Lester Shimp,
President, N.J.B.A.
Liz Rodrigues,
Secretary

W.A.S. is off the ground and well on its way to becoming one of the major hobbyist beekeeping organizations in the western part of the United States. The president-elect is Dr. Norman Gary; Vice-President, Dr. Eric Mussen; secretary-treasurer, Dr. Becky Westerdahl; and the directors elected at this meeting are as follows: Oregon, David L. Cressler; California, Ronald Neese; Idaho, Robert Saunders; Nevada, Thomas J. Muncey; Washington, P.F. Thurber; and Utah, Olive Jones.

The financial status of W.A.S. is as follows: seven life members at \$100.00 - \$700.00; thirty-eight individual memberships at \$10.00 - \$380.00; fifteen couple memberships at \$15.00 - \$225.00; and one family membership at \$20.00; in addition

to \$1,000.00 loaned to W.A.S. from E.A.S. Also at the banquet Saturday night I was able to raise One Hundred and some odd dollars by auctioning off some beekeeping shirts, etc.

I am enclosing their program, application for membership, and an information set concerning W.A.S. organizers and the first draft of their by-laws, which is by no means complete.

As a delegate from the E.A.S. to the W.A.S. I was well received and had much input into their organizational meeting. If you have any further questions please contact me.

Sincerely yours,
J.C. Matthenius

Only the Insects May Inject Pure Venom

Pure venom collected from honey bees has never been approved for general use in desensitizing people who are allergic to bee stings. The venom may be used only on an experimental basis by a doctor, and the approved desensitization treatment consists of injections of an extract from the entire body of the insect, not just the venom. Allergic reactions in humans from other stinging insects are treated in the same manner.

The results of a study comparing the effectiveness of pure venom against that of the whole-body extract were reported at a recent national meeting of allergists. According to the report, pure-venom therapy was highly effective in protecting persons against systemic reactions to stings. In contrast, the doctors who made the study suggested that whole-body extract was about as effective as giving the patient a sugar pill, or "placebo." That suggestion made the allergists as angry as hornets, according to Medical World News in its issue of July 11, 1977. Many allergy specialists have used the extract with success for as long as 25 years, with many lives saved as a result. In reporting the failure of the whole-body extract, the doctors suggested reasons why others have deemed it successful, including a natural desensitization of the patient with the passage of time and, in some cases, natural immunity created by the sting.

As reported in Medical World News, the research study showed that 7 of 11 persons treated with whole-insect-body extract and 7 of 12 persons treated with an inactive substance (the placebo) suffered systemic reactions after being stung. Only 1 of 19 venom-treated patients suffered a mild reaction from being stung. The patients in the study were allergic to honey bees, yellowjackets, and two species of hornets.

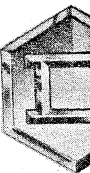
One allergist who has long advocated the use of pure venom for desensitization hopes that the Food and Drug Administration will now be forced to clear it for general use. Another doctor suggested: "Before the killer bees arrive, we'd better get all this straightened out."

How To Pack H Without a

When I started back years ago I was rewarded and no directions anywhere processing it without an ex from the fellow hobbyist developed these water-bath this article. Requests by f comb honey, crystallized and even propolis as tim methods described in this ;

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A Name

Whether you a variety of bee managers and advice. If you free Dadant & pleased with Conveniently I

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to W.A.S. from E.A.S. Also at night I was able to raise one odd dollars by auctioning off ts, etc. their program, application for information set concerning the first draft of their by-laws, complete. from the E.A.S. to the W.A.S. I had much input into their ng. If you have any further act me.

Sincerely yours,
J.C. Matthenius

**he Insects May
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**How To Pack Honey Creatively
Without an Extractor**

When I started backyard beekeeping three years ago I was rewarded with 80 pounds of honey and no directions anywhere in the literature for processing it without an extractor. Based on advice from the fellow hobbyist who started me, I developed thee water-bath technology described in this article. Requests by friends and neighbors for comb honey, crystallized honey, cappings, pollen, and even propolis as time went on led to other methods described in this article.

The first requirement is a clean, well-lighted, bee-tight work space. A basement of or other space away from the living space of the house is ideal. If none exists the kitchen can be used. Next is a table about 40 x 25" which can accommodate a super of honey, a cutting board large enough to hold a frame, two or three small jars for receiving propolis, cappings, and pollen, and at least one large vessel to receive the honey. A card table to one side will be handy if and when some of the honey is set aside on wire grids to be packed as cut comb honey.

The legs of both tables may be placed in cans of water to foil ants. The tops should be washable or covered with washable material. The floor surrounding these tables should be covered with paper to catch drips of honey and bits of wax. Those

bits of wax are the reason for keeping away from the living rooms of the house if at all possible. They end up as little dark marks as dirt gets into them and yield only to a knife followed by a warm ammonia cloth used while on hands and knees. Plan to wear an old pair of shoes that you can step out as you leave the work area to avoid carrying wax spots all over the house.

Keep a pot of hot water on the floor or on a low stool next to the work table in which to dip the cutting knife as it and your hands get sticky. Have some dry clean cloths available for drying. HONEY MUST BE KEPT ABSOLUTELY DRY AT ALL TIMES or it will be in danger of fermenting. If you ever have the bad luck to harvest "wet honey" in which the cappings are coming off and the wet honey is running, don't despair. Such honey may be saved by removing the most drippy area and putting the rest in an "oven pan" into an electric oven at 350 degrees F. where the wax and honey will separate quickly. In the order of one-half to three quarters of an hour the honey will be "dry." If not, you can dry it a little more by putting it back in the oven at a lower temperature.

Out of such a batch of honey that I saved, three pints of it did not respond but remained with its fermented aspect to the very end. Putting it back into the oven caused it to develop a "head" similar to that of beer in the fermentation process.



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The principal equipment for separating wax from honey by this method is a combination of two vessels which will serve as a double-boiler. My cold-pack canner, 13" in diameter and 9" deep is the outer vessel. The inner container holding the honey is an enamel soup pot 12" in diameter and 8" deep with handles that keep the inner vessel suspended in a water bath, thus keeping the honey away from direct contact with the heat. Heat applied directly to the honey comb is damaging to aroma and flavor and tends to darken it.

Two restaurant-sizes jam or lard cans can be adapted to this purpose, as recommended by my first instructor. I have one which is 13" in diameter by 10½" deep which fits into a slightly larger one. The main disadvantage is lack of handles. Whereas I could carry 25 pounds of honeycomb upstairs to the kitchen in the pot with handles, I could carry only 15 in the can. It is necessary also to use a wire grid of some sort to keep the inner can off the bottom, as there are no handles to keep the inner can suspended.

The hobbyist who started me on this method made a permanent double-boiler by soldering two such cans together by means of metal braces so placed that the inner can is held up from the bottom. He then made a hole in the inner and outer cans in alignment and soldered in an ordinary tap which serves as a honey gate. When he has separated the wax and removed it he then ties several thicknesses of cheesecloth to the tap opening and fills his jars easily.

My problem with his apparatus was that I found it too heavy to carry upstairs. He has a low gas plate in his work area which suits such an apparatus.

Start processing by carefully inspecting each frame of honey in a strong light. Well-filled combs that are made from new light-weight foundation are free of pollen and other blemishes such as travel stain, can be left to be processed as cut-comb honey. If some frames contain two distinctly different colors of honey and there is enough of each of honey and there is enough of each to warrant it, especially if one is exotic and/or fine enough, be prepared with a second pan to receive it.

Put the cutting board on top of the large pot so as to have the comb of honey in a good light for cutting out pollen cells with a sharply pointed thin paring knife. Put the pollen into a jar provided.

With the pollen removed, put the board on the surface of the table and cut the comb free of the frame by running a long, thin, preferably warm knife around its attachment to the frame. This is the point at which to cut apart different kinds of honey in the same frame, using separate pots to receive them. Put the comb into the pot, cut off the cappings and put some aside if you have any call for them. Then slash through the inner septum and everywhere else in the comb so as to hasten the melting process. The shorter time that honey is exposed to heat, the

better. Remove the adhering wax and honey from edges of frame, although it is not necessary to remove every bit. When the frames are returned to the bees they'll make use of any honey they find.

I put the empty frames into my laundry tub half full of water where I wash off the remaining honey and then lay them on the floor on newspapers to dry. A large bucket or other container will do. Don't put them outside, you may attract robbers. If it's the end of the season they can be protected from wax moth by tying them securely in a plastic garbage can liner. Or, they can be put back into the empty super which will be ready for reuse.

Now, put the pot full of honey combs into the outside vessel which should be on the largest burner of your range. Fill the space between the two containers with enough hot water to bring it to about 4" from the top of the inner pot, which is securely covered. One advantage of the inner can described earlier is its tight fitting lid.

Bring it to boiling as quickly as possible and then reduce heat so that it continues to bubble but does not splash up over or around the cover. Stir the honeycomb frequently with a hardwood stick or spoon so as to speed up the separation process. When the entire mass is liquid remove the pot to cool.

When the wax comes to the top and forms a solid cake in about 4-6 hours slip a warm knife around the edge of the cake to free it for removal. Various problems are encountered at this stage due to the consistency of the wax, which may be variable. A hard cake is easiest to take off. Simply pick it up, letting the adhering honey drip back into the pot. A soft cake tends to break off and sink into the honey. Utensils found useful for removing the wax are slotted pancake turners, spatulas or very large spoons or cooking forks. Even if you removed pollen from combs as suggested above there will be some still adhering to the cake of wax and this is a good time to remove it. Put the wax into a suitable vessel for melting it. I use a three pound Crisco can. When the can is nearly full of wax it can be safely melted in an electric oven. While hot pour it through a wire strainer lined with a piece of nylon mesh into a flare-sided metal pan the same shape as wax-mold pans sold by supply houses. When cold it can be released by putting over boiling water for a minute and any honey in bottom of pan can be bottled separately and labeled cooking honey. It can be used in baking where heat would destroy values which we strive to save by not heating honey or by heating it for as short a period as necessary to separate the wax from it. Finally, the wax cake can be washed clean of honey, dried and securely tied in a plastic bag to avoid wax moth damage.

The pot of honey can be strained by thoroughly drying the outer pot and then filling it with a large square of linen such as an old luncheon cloth. After pouring in the pot of honey bring the corners and sides together and tie securely so as to make a spill-

proof bag. Suspend this bag over the outer pot and support over the outer pot at a speed relative to its diameter. Certainly overnight will do it.

People who share my method have filtered so I have cut out the filter. I remove any floating bits and they can be removed from the top. Honey comb seems natural to city people the soil and who consider grains to be of health completely removed.)

Now, the empty honey can be bottled from the table and the pot. You'll soon have empty jam and peanut butter those hopeful of honey. The honey washed in soapy water, the rinsed and steamed to separate the wax upside down in whatever hold them. Dry them thoroughly dry, doing this. Painting the lids with enamel or grey enhances the appearance. Labels bought from the bee club are a final touch.

I find a metal cup with a soup ladle convenient for pouring. The jar might break. Hold the jar over the filling, developing the right hand the falling mass of honey into the jar mouth, and practice the dipper. The time to refill empty. Stand the jars in a filling to salvage the spills. Wipe with a damp cloth then pour the jar into a pan with about an ounce of water with a little ammonia to wash thoroughly.

The jars are now ready to be bottled. I type the date and gath the flavor and any unusual notes. Also keep samples of every variety you don't have a scale you can use. Ounces on the label and then fill from this on the basis of the amount of honey you want, or quart of honey water.

Now we return to the method for cut comb honey. SOME WHOLE FRAME AND CARRIER ALUMINUM FOIL. For some honey out of the frame referred to earlier, or, if two fine wire can be used. The wax pack. Place it on a very hot baking pan large enough to hold from all sides of comb. Heat it off on paper towels being neat cut and tend to seal comb into whatever sizes you

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proof bag. Suspend this bag of honey from a strong
support over the outer pot and it will drip through at
a speed relative to its density and composition.
Certainly overnight will do it.

People who share my honey do not want it
filtered so I have cut out that step. Before bottling it
I remove any floating bits of wax but if any remain
they can be removed from the jars where they will
rise to the top. Honey containing a few bits of wax
seems natural to city people who miss their roots in
the soil and who consider the few remaining pollen
grains to be of health value (and not to be
completely removed.)

Now, the empty honey super can be removed
from the table and the pot of honey returned for
bottling. You'll soon have an adequate supply of
empty jam and peanut butter jars and others from
those hopeful of honey. They should be thoroughly
washed in soapy water, the old labels removed then
rinsed and steamed to sterilize by putting them
upside down in whatever vessel you have that will
hold them. Dry them while hot so that they are
thoroughly dry, doing the same for their lids.
Painting the lids with enamel in pale yellow, blue,
or grey enhances the appearance of your pack.
Labels bought from the bee supply houses are the
final touch.

I find a metal cup with a handle or a metal
soup ladle convenient for filling the jars. Glass
might break. Hold the jar over the pot of honey while
filling, developing the right twists of the wrist to
land the falling mass of honey in the center of the
jar mouth, and practice the right timing to refill the
dipper. The time to refill is before the dipper is
empty. Stand the jars in a flat metal pan while
filling to salvage the spills. Next, wipe the jars clean
with a damp cloth then put on the cap. Then put
the jar into a pan with about an inch of soapy water
or water with a little ammonia, wash clean and dry
thoroughly.

The jars are now ready for labeling as described
above. I type the date gathered, the floral sources,
the flavor and any unusual aspect on the label. I
also keep samples of every batch for people to try. If
you don't have a scale you can indicate the fluid
ounces on the label and the weight can be derived
from this on the basis that the average 32 fluid
ounces, or quart of honey weighs three pounds.

Now we return to the frames of honey set aside
for cut comb honey. **SOME PEOPLE MAY ORDER A
WHOLE FRAME AND CARRY IT AWAY WRAPPED IN
ALUMINUM FOIL.** For smaller portions, cut the
honey out of the frame using the sharp knife
referred to earlier, or, if two people work together a
fine wire can be used. The finer the cut, the neater
the pack. Place it on a wire grid over a shallow
baking pan large enough to catch honey dripping
from all sides of comb. Heating the knife and drying
it off on paper towels between cuts will make a
neater cut and tend to seal the edges. After cutting
comb into whatever sizes you have call for, let it drip

until it stops. Up to one pound pieces, a popular
size, will fit into a cellophane sandwich "baggie"
which comes with a tie by which the pack can be
secured. I then enclose the pack in a second bag
with a typed label providing information
recommended above, tie it, and package it in a
window carton provided by the bee supply houses.

You can also pack the cut comb into wide-
mouth jars and surround it with liquid honey.

Some of my comb honey which came in the
early spring from possibly radish, mustard and apple
blossom was of a pale color and with a delicious
flavor. This honey dripped from the comb by the last
described method, crystallized naturally in little
plastic containers and is a prized product.

Cappings are sought by some people who have
read in *The Magic of Honey*, by Barbara Cartland,
that they have high health value. The same may be
said of pollen.

I carry a small jar of pollen when doing bee
education lessons in the lower schools. The children
have read about the function of pollen in brood,
rearing and the adventuresome ones want to taste
the "bee bread". When packed as I do it, the
surrounding honey crystallizes quickly and the
product, a mix of pollen, wax and honey has a
molasses'like flavor that some enjoy on hot toast.

It is possible to react creatively to the lack of
an extractor and in doing to come out with a
product of unique quality not usually available by
commerical methods. Such products are often in
great demand by city dwellers who patronize
"organic" fruit and vegetables stands and health
food stores.

Clean Up; When finished wash all the vessels
with warm soapy water to get rid of the film of
honey. Then lay the vessels on a paper-covered work
table and cut the adhering wax off the sides with a
sharp knife. Pour boiling water into the vessels and
wipe quickly with paper towel to get rid of the
remaining wax.

International Agency of Apiculture Development

Dear Pat:

Thank you for your call last week. After due
consideration the IAAD (formerly IAI) requests the
withdrawals of our request for EAS sponsorship, and
the invitation to EAS to appoint one of its members
to the IAAD board of directors. It is our hope that an
informal and cooperative relationship will continue
to exist for our mutual benefit.

Please convey our thanks to EAS for their
consideration of the subject of "Development
Apiculture" and for a very fine apiculture
conference.

IAAD continues to move ahead in the work of
promoting improved methods of apiculture among
rural subsistence people in underdeveloped areas.

Respectfully,

Rodney Dillinger

Beekeepers Swarm To Short Course

The annual summer Delaware Valley beekeeping short course attracted over 80 persons this year. The beekeepers were of all ages and from all walks of life. They came from 14 different states with the most distant state being Texas. The experience of those in attendance varied from some with hundreds of hives to those just considering taking up beekeeping. There were also a number of school teachers who, although they had no plans to become beekeepers, planned to incorporate the information offered during the short course in their classroom teaching.

The course was under the direction of Dr. Robert Berthold, Assistant Professor of Biology, at Delaware Valley College. He was assisted in the formal lecture portion of the course by Mr. Jack Matthenius, N.J. Supervisor of Bee Culture. In addition to the lecture portion of the course, the College's apiary and honey house were visited twice each day to enable the students to observe first hand what had been discussed.

Due to the success of the course, the College plans to offer two similar type courses in 1978; one on three Saturdays in the spring, and the other late in June. Anyone interested in receiving information on these courses when it is available should write to: Dr. Robert Berthold, Delaware Valley College, Doylestown, Pa. or call him at 215-345-1500.

Received Silver Bowl for Best Exhibit in Cooking Show SHREDDED WHEAT BREAD

2 cups hot water
¼ cup margarine
2 shredded wheat biscuits
¼ cup molasses - ¼ cup honey
2 tsp salt
2 packages active dry yeast
4½ to 5½ cups flour

Soften margarine in the hot water. Place 2 shredded wheat in mixing bowl and pour hot liquid over them. Let set until lukewarm. Add molasses, honey, salt, yeast, and 1 cup flour and beat for 2 mins. with electric beater. Gradually add balance of flour stirring by hand until the dough pulls cleanly away from sides of bowl. Place dough on a lightly floured board and knead for 7 to 8 mins. adding only enough flour to the board to keep the dough from sticking. Place dough in a greased bowl turning over to grease top, cover, and let rise in a warm place until double in bulk. Punch down, remove from bowl and form into 2 loaves. Put in greased bulk. Bake in a preheated 375 degree oven for 35 mins. or until done. Immediately remove from pan and cool on a cake rake.

Mrs. C. Wright
Chester, Conn.

SPARE THE BEES

Farmers have a friend in the bee. Scientists are working hard to maintain that friendship.

Cotton growers, for example, rely more and more on bees to pollinate their plants, especially since high U.S. labor costs have virtually ruled out pollination by hand.

Unfortunately, when insects invade cotton and other crops, farmers must retaliate with insecticides that can be as deadly to bees as the unwanted intruders. In Arizona's Salt River Valley, where cotton is often sprayed 15 or more times a year for 5 to 7 day intervals, bee colonies declined by more than 50 percent over an 8 year period.

Since plants must be sprayed frequently, it's impractical to move the hives. USDA's Agricultural Research Service's bee research laboratories in Tucson, Ariz., and Laramie, Wyo., therefore have developed a way to protect the bees before and after spraying.

Scientists tested 16 separate treatments using 10 colonies per test on a 480 acre cotton field. The most effective was a six-way combination using burlap covering, pollen feeding, shade, a top waterer, bottom board, and sirup.

The burlap covering confines the bees to the hives until 12 hours after the insecticide application while the pollen and water sustain them during confinement. The shade keeps them out of the hot sun and the bottom board, which gives bees additional room at the base of the hive, provides a clustering space for field bees at night and during heat waves and confinement.

After five insecticide applications over 1½ months, bees given this treatment survived and even gained weight. Other treatments failed to prevent heavy bee losses except those using burlap - where the colonies survived but lost weight through the ordeal.

First Award for Yeast Rolls CLOVERLEAF ROLLS

½ cup margarine (1stick)
1 cup milk
½ cup honey
2 tsp salt
2 packaged yeast
4 eggs - beaten
6 cups sifted flour

Scald milk. Add margarine, honey and salt. Cool to lukewarm. Soften yeast in ¼ cup lukewarm water. Add to milk mixture. Add eggs. Add flour gradually. Mix thoroughly and knead. Place on greased warm bowl and cover. Let rise in warm place till double in size. Punch down dough and divide in half. Roll into rolls. Shape dough into small balls. Place 3 balls in each greased muffin cup. Allow to rise until double. Bake 400 degree 15 to 20 minutes. Makes 2½ dozen.

Mrs. C. Wright
Chester, Conn.

First Aid and Medical (INSECT S (Bees, Wasps, Yellow When a person h

1. Remove the stinger if the honey bee leaves its stinger off stinger with fingernail. The venom will be squeezed fr with forceps or fingertips.

2. Cleanse the sting site with soap and water or antiseptic.

3. Apply ice packs or cold packs to slow down absorption of venom.

4. Watch for an allergic reaction such as swelling of the face, to breathing, etc.

5. Use Medihaler-Epi if there is an allergic reaction. More of the following symptoms: the lips, eyelids, or tongue swelling; difficulty breathing; wheezing; difficulty swallowing; hoarseness; abdominal pain; nausea; marked weakness; confusion; dizziness.

6. Watch for a severe allergic reaction (anaphylaxis) and shock. Symptoms may differ from typical allergic reaction (swelling, asthma). Within minutes the victim experiences a sudden flushing followed by a weak, thready pulse, a fall in blood pressure, visual changes. Collapse, convulsions, abdominal cramps, urination or defecation may occur.

Symptoms of anaphylactic shock may be in the form of a severe allergic reaction may appear as anaphylactic shock has passed.

Immediate Medical Aid is Required

7. Maintain the airway open and plastic airway device if necessary.

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BEES

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oney and salt. Cool to cup lukewarm water. s. Add flour gradually. ace on greased warm m place till double in icide in half. Roll into balls. Place 3 balls in w to rise until double. minutes. Makes 2½

Mrs. C. Wright
Chester, Conn.

First Aid and Emergency Medical Care For INSECT STINGS

(Bees, Wasps, Yellow Jackets, or Hornets)
When a person has been stung-

1. Remove the stinger if one is present. (Only the honey bee leaves its stinger.) Carefully scrape off stinger with fingernail or knife blade. More venom will be squeezed from stinger if picked off with forceps or fingertips.

2. Cleanse the sting site against infection with soap and water or antiseptic solution.

3. Apply ice packs or cool compress to slow down absorption of venom and lessen local swelling.

4. Watch for an allergic reaction, e.g., hives; swelling of the face, tongue, throat; difficulty breathing, etc.

5. Use Medihaler-Epi® and Chlo-Amine® if there is an allergic reaction which involves two or more of the following symptoms: hives; swelling of the lips, eyelids, or tongue; tightness in the chest; wheezing; difficulty breathing; difficulty swallowing; hoarseness or thickened speech; abdominal pain; nausea; vomiting; dizziness; marked weakness; confusion; feeling of impending disaster.

6. Watch for a severe allergic reaction (anaphylaxis) and shock. Symptoms of anaphylaxis may differ from typical allergic reactions (hives, swelling, asthma). Within minutes after the sting, the victim experiences apprehension, faintness, flushing followed by the paleness, rapid heart action, thready pulse, a fall in blood pressure, and visual changes. Collapse, unconsciousness, convulsions, abdominal cramps, and involuntary urination or defecation may occur.

Symptoms of anaphylactic shock and typical allergic reactions may be intermixed. Typical allergic symptoms may appear after the initial phase of anaphylactic shock has passed.

Immediate Medical Attention is Required!

7. Maintain the airway. Use artificial respiration and plastic airway device if necessary until a

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CLUSTER FRAMES

HASZARD ASSOCIATES
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Wenham, Mass. 01984
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physician of qualified paramedic can administer specific medication.

Medication for anaphylaxis-

Epinephrine by injection (.3 cc to .5 cc for adults, either subcutaneously or intramuscularly) is the treatment of choice for anaphylaxis.

Medication for allergic reactions-

Two medications are suggested: Medihaler-Epi (epinephrine bitartrate) and Chlo-Amine (chlorpheniramine maleate). They should be used if the sting victim develops an allergic reaction, as in step 5 above.

Medihaler-Epi, an aerosol of epinephrine, is an effective bronchodilator. The Medihaler® releases equal amounts of inhalable epinephrine each time the vial is depressed against the oral adapter.

Chlo-Amine is a chewable antihistamine.

Medihaler-Epi

Dosage: Start with two inhalations immediately after the onset of an allergic reaction. Repeat treatment after 1 minute if symptoms persist. Thereafter, two to four inhalations every 20 minutes should be the maximum needed for treatment. Use the least number of inhalations which produce relief. Rarely will more than four inhalations be required.

Action: The value of epinephrine as an anti-allergic agent is well established. Epinephrine in aerosol form quickly reaches the lungs where acute asthmatic reasons to insect stings often produce serious effect. It relaxes bronchial spasm and relieves the constricted feeling in the chest. Some is also absorbed by the blood and further counteracts allergic reactions.

Chlo-Amine

Dosage: Chew and swallow four 2-mg tablets after two inhalations of Medihaler-Epi.

Action: Chlo-Amine helps nullify the effects of histamines released by the body during allergic reactions. It provides relief from and reduces the spread of many allergic symptoms. It is readily absorbed from the intestinal tract into the bloodstream and released to the tissues.

First Award for Quick Bread HONEY NUT BREAD

| | |
|-------------------|----------------------|
| 2 tbsp. margarine | 1½ cups flour |
| ¾ cup honey | ¼ tsp salt |
| 1 egg | 1/8 tsp soda |
| ½ cup buttermilk | 1 tbsp baking powder |
| | 2/3 cup nuts |

Cream the margarine and add the honey. The more air you can beat into the honey and butter the fluffier your bread will be. Add the beaten egg and mix well. Sift the dry ingredients together. Add the dry ingredients and the buttermilk alternately beginning and ending with flour. Add the nuts last. Place in greased loaf pan. Bake in moderate oven over 350 degree about one hour.

Mrs. C. Wright
Chester, Conn.

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