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EAS JOURNAL

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EASTERN APICULTURAL SOCIETY OF NORTH AMERICA, INC.

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Earl Cochran (center) introduces the new President Hugh Macleod and our First Lady Mrs. Doris Macleod, 1974.

Memoriam

It has been learned, as of January 12, 1980, that Mr. Hugh J. Macleod of Scarborough, Ontario, Canada died January 4, 1980.

Mr. Macleod was a very enthusiastic supporter and worker for EAS as well as for Canadian beekeepers. Mr. Macleod was a Past-President of EAS, in 1974. He was a Director representing Canada in 1970 and had attended EAS Conferences to the present. Mr. Macleod served as Vice-President in 1979 with the Conference held in Ottawa.

He was a Life Member of EAS. His service on the Constitution and By-Laws Committee up-dated our present governing set of by-laws. Mr. Macleod had helped steer our organization over some rough times. This helped the organization grow and prosper by his financial advice.

To many of his friends he was known as "Hughie" His friendly interest in many things and stories and good humor will be missed.

"Hughie" bought 10 colonies of bees in 1963. That same year he and his wife, Doris, attended the Eastern Apicultural Society conference at Guelph, Ontario.

He founded the thriving Toronto District Beekeeper's Association in 1975 and served as its President in 1978.

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EAS JOURNAL
The official publication of Eastern Apicultural Society of North America Inc. published 6 times yearly at Litchfield Conn. 06759.

E.A.S.Journal $2.00. Membership in EAS. Single $3.00, Couple $4.00, Family $6.00. Commercial Membership $50.00. Beekeeper Assoc. $25.00. Individual Life Membership $100.00. Membership will include a subscription to the Journal.

Editorial

We note the passing of our good friend Mr. Hugh Macleod. He will be missed for his presence and activities in behalf of EAS. He enjoyed our Conventions and its fellowship immensely.

It seems that Varroa jacobsoni mite has arrived among us according to the present literature. Perhaps our climatic conditions will retard it with the help of beekeepers who now must be on the alert against it.

P.J. Hewitt, Jr., Editor

In the December issue EAS Journal, ref. credit for items on page 10, Toxic Bee Hives, and on page 12, "Hive scale" and "Pollen Traps" credit is due Mr. Elbert E. Jaycox, University Ill.

EAS Journal:

Advertisements and material for publication should be received by the 15th of the month previous to publication; Feb., April, June, July, October, December.

Memoriam Continued from front cover

After 35 years with Canadian Pacific Railways - he concluded his career in the control tower of the giant Toronto Marshalling Yard - Mr. Macleod retired to give virtually his full time to beekeeping and beekeepers.

He was the superintendent of the Honey and Maple Syrup Exhibits at the national Royal Winter Fair and, together with Ed Dickey, established the first colonies of bees to be displayed at the Ontario Science Centre.

But most of all, Hugh Macleod will be remembered as the person who roamed the towns and villages of Ontario and northeastern United States visiting old beekeepers and teaching and encouraging new beekeepers. He was truly a man with thousands of friends.

He was a member of Transportation Lodge, A.F.& A.M., Toronto.

Our sympathies go to Mrs. Macleod and his daughters.

P.J. Hewitt, Jr., Editor
David Hampton

One Scourge of Beekeeping.

From Gleanings in Bee Culture, 12/79, David DeJong and Roger Morse writes and describes the Varroa jacobsoni mite, a parasite which infests honey bees and their brood. This mite is an arachnid (spider family) order of acarina.

This parasite is reddish brown and is shaped like a small clam shell and is difficult to find. It has a smooth body without segments and is wider than long. Its mouth parts and 8 legs extend forward. Their size is about 1.6 mm x 1.0 mm.

The life cycle starts when the Varroa mite female deposits her eggs in a brood cell of a honey bee larva. The larva of the mite emerges from the egg case as a developed 8 legged protonymph instead of the 6 legged nymph grown in the egg case laid by the female.

Upon hatching the larva sucks the lymph of the bee larva or pupa of that cell. After male and female nymphs grow and mature in the brood cell they made and then the females leave the cell and attach themselves to adult bees where they suck blood from the bee through its intersegmental membrane. This method of attachment transports the mite freely about the hive. Also with a swarm that may leave the hive or the bee may drift to another swarm.

The mite infestation in Apis mellifera colonies often reaches 20,000 mites per colony. The brood patern in an infected colony is spotty as the bees remove infested larva and the colony slowly dies. Roger Morse says mites in a bee yard cause all the colonies to die within 2 to 5 years. Diagnosis of mite presence in a colony is about 1 year behind when mites are first in the hive. The death of many mites is during the cold winter months.

The mite is spread over a territory by beekeepers transporting queens and bees, bees drifting, and by swarms infested with mites, and migratory beekeeping. An infested area that is discovered may be 20 square miles or more.

Several possible controls is through chemical vapors such as formic acid in a bottle with an exposed wick for evaporating fumes in the hive. Another possibility is to prevent the queen from laying eggs or confine her to a limited comb area to which the mites would be attracted and then the comb with mites and larva could be destroyed.

This mite originally infests the three Asian honey bees, Apis cerana, A. dorsata, and A. florea. These bees can and do have actions which deminishes the severity of infestation. One is by migration of the entire swarm to a new location and in the cerana bee is to groom each other for the presence of mites.

P. J. H. Jr.

Varroa jacobsoni in Maryland

by I. Barton Smith, Jr., State Apiary Inspector, Maryland Department of Agriculture, Parole Plaza Office Building, Annapolis, Md. 21401

Varroa jacobsoni is a reddish-brown mite that is 1.0 x 1.5 mm in size. Mature females are found on adult honey bees. Females deposit eggs on open brood just before cells are capped. Emerging nymphs feed on the hemolymph of larvae and pupae either killing or deforming bees.

V. jacobsoni has been described as being more serious than any other bee disease including American foulbrood. DeJong recently described the field identification of the mite in the December 1979 issue of *Gleanings in Bee Culture*.

On November 16, 1979, two mites reportedly collected in Maryland on a single drone honey bee were identified as *V. jacobsoni* by Dr. Ed Baker of the Insect Identification and Beneficial Insect Introduction Institute, USDA. This is the first report of *Varroa* occuring in North America.

The drone was collected by University of Maryland graduate student on a flower in Hyattsville, Maryland, during August, 1979. The student did not observe the mites on the drone but in November she noticed the mites floating in the vial of alcohol containing the drone.

The Maryland Department of Agriculture began inspecting all colonies within a 2 mile radius of where the mites were to have been collected. Fortunately, we were able to make inspections during unusually warm weather (60-70%F.) the week after the mites were identified. In addition, Dr. H. Shimanuki, Chief, USDA Bioenvironmental Bee Lab, provided us with a diagnostic aid to examine som eof the colonies for this pest. Dr. Shimanuki suggested a method developed in West Germany of treating colonies with Kelthane to aid in the detection of mites. This method, which has been used successfully elsewhere, is conducted in the following manner: Colonies are sprinkled with a dilute Kelthane solution. A white paper covered with a piece of wire screen positioned ½ inch above is placed on the bottom boards of colonies. After 24 hours the screen and paper are removed and examined for any mites that were killed.

To date, all registered colonies within the vicinity of where the mites ere first collected have been examined. No mite or evidence of possible mite damage was observed. The Maryland Department of Agricultue, in cooperation with the USDA Bioenvironmental Bee Lab, the Animal and Plant Health Inspection Service (APHIS) and the University of Maryland will make additional surveys for *V. jacobsoni* in the spring.

All beekeepers, apiculturists and apiary inspectors are urged to be on the constant lookout for the dreadful disease, varroasis. Any possible finds should be sent to Dr. H. Shimanuki, Chief, Bioenvironmental Bee Laboratory, Building 476, Agriculture Research Station. USDA. Beltsville, Md 20705.

Connecticut Beekeeping Short Course

A short course will be given at the White Memorial Conservation Center and Museum, Litchfield, Connecticut.

The instructor will be Professor Al Avitabile of the University of Connecticut and co-author of the Beekeeper's Handbook.

The course will consist of three Saturday morning and afternoon sesions (bring a lunch). Sessions begin with lectures at 9:30 a.m. immediately followed by field trips to beeyards for demonstrations. The dates for the course will be March 29 and April 5 and 19.

Demonstrations will include: how to hive package bees and swarms, how to rear your own queens, how to divide colonies, how to manage a two-queen system and many other demonstrations related to bee management.

Cost will be $25 per person for the entire course. For additional information contact the Museum 567-0015 or Al Avitabile 757-1231 (ext. 38) area code (203).

Bees & Honey

from the
DEPARTMENT OF HORTICULTURE
COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
Elbert R. Jaycox

"BEE ALERT" LOGOS AVAILABLE

Iowa State University has produced a set of logos aimed at creating an awareness of honey bees among urban and agricultural pesticide users. The logos are suitable for use in magazines, newspapers, and newsletters. They can also be used on T-shirts and stationery. A set of 12 logos of 3 different sizes is available free of charge from Dr. Jerald R. DeWitt, Extension Entomologist, Entomology Insectary Building, Iowa State University, Ames, Iowa 50011. As seen in the sample, each logo includes a honey bee and the words "Bee Alert." There are 12 different cautionary statements about using pesticides. Although the logos include the University's name, they may be used without it according to Dr. DeWitt.

HOW MUCH DO BEES EAT DURING THE WINTER?

Dr. Tibor Szabo has been conducting research on wintering bees indoors and outdoors at Beaverlodge, Alberta, Canada. As you might expect, outdoor colonies used more food but were also better developed in the spring than indoor colonies. The winters last 200 days at Beaverlodge, and food consumption by wintered colonies varies greatly from year to year. Over a 4-year period, the highest average consumption of the outdoor colonies was about 71 pounds (32.4 kg) of stores in 1974-75. The lowest average consumption, during the winter of 1977-78, was about 39 pounds (17.6 kg). Single colonies consumed as little as 22 pounds (10 kg) and as much as 86 pounds (39.2 kg).

Indoor colonies used 26 to 47 pounds (11.7 to 21.5 kg) of stores over the winter. The colonies were probably large ones, since their consumption was considerably above that reported for single-story colonies wintered indoors in the United States. The consumption reported for these colonies was 2 pounds per colony per month, or about 15 pounds during their stay indoors. The consumption of stores by individual colonies wintered indoors in Canada ranged from about 18 pounds (8 kg) to 73 pounds (33 kg).

When wintering bees in cold climates, you must know the maximum possible consumption so you can establish the best weight for colonies in the fall. When the colonies are brought to that weight by feeding syrup or adding honey combs, the chance of starvation is low.

Slide Sets on Honey Bees

The new slide sets are available on honey bees. The sets of 20 slides include an informative text. They were prepared by Kenneth Lorenzen on the Agriculture Staff at the University of California, Davis. One set is behavior and biology (#451). They cost about $25 each and are available from Educational Images, P.O. Box 367, Lyon Falls, N.Y.

Three very excellent slide sets have been available for a couple of years from Bookeeping Education Service, 308 No. Maple Ave., Lehigh Acres, FL. 33936. These slides and script were prepared by Larry Connor, formerly of Ohio State University and now heading the Genetic Systems, Inc. bee breeding proram in LaBelle. The sets cover pollination, bee biology and beekeeping. All are excellent.

EAS member C. Divelbiss has a nice slide series for sale entitled "My Story" by A. Bee. The slides are excellent and the series is very good. Several of the biological supply firms (like Carolina Biological) and educational aids companies (such as Singer) also have slides available for purchase. There are several on honey bees. In addition to these sources of slides that are available for sale, Dadant's offers several slide sets for free rental. See a recent ABJ for the titles of the slide sets and instruction on how to obtain a set for use at your next meeting or course.

Apiculture and Science Research

by Dewey M. Caron

Eastern Branch Entomological Meetings

Several EAS apiculturists joined over 450 colleagues for the 51st annual meeting of the Entomological Society of America Eastern Branch meetings Sept. 26-28 at the Hotel Hershey in Pennsylvania. There were 3 talks and 1 display on honey bees and several papers on related topics including 2 on wild bees.

D. Caron, Maryland, prepared a display on teaching Apiculture for a workshop on teaching various entomology courses. Some of the resources available including use of observation hives were shown.

I. Barton Smith, Maryland Apiary Inspector and Dewey Caron also presented Barton's M.S. studies on the bee louse in a 12 minute paper. Barton found 28% of the apiaries surveyed had bee louse. Lice preferentially selected queen honey bees as hosts in the fall months and some queens had 20 or more lice while few workers or drones carried more than a single louse.

Gloria DeGrandi and Clarence Collison, Penn State, presented the results of honey bee pollination on 6 varieties of birdsfoot trefoil. Foraging was related to availability and the most popular variety, Empire, had the most flowers. Nectar secretion was not significantly different for the 6 varieties in amount or in sugar percent (14.6 to 17.5%).

Elton Herbert & H. Shimanuki, USDA, Beltsville, reported excellent promise in the incorporation of the lipid fraction of fresh pollen in a capsule for mixing with a protein substitute. At 2 and 4 % levels the lipid incorporated capsules prompted honey bees to utilize a whey-yeast substitute and rear as much brook as a diet of natural pollen. This and the other two papers will be published in the December issue of the Jour. of the N.Y. Ent. Society.

Conference Cassettes Available

The Eastern Agricultural Society is pleased to announce that four professional cassette recordings of panel discussions and speeches at the 1979 Ottawa Conference are now available:

No. 1 — "Opening Ceremonies": "Women in Beekeeping" panel with Roberta Glatz, Mary Cary, Isabel Boisclair, Aalderina Termeer and Susan Hopkins; "Management Tips for the Bee Yard" — Roberta Glatz

No. 2 — "Facing the Future" — panel with Dr. H. Shimanuki, Homer P. Powers, Jacob C. Matthenius and Bernard Levac; "Beekeeping in Nova Scotia" — Lorne Crozier

No. 3 — "Weather Changes and Beekeeping" — Dr. Patrick McTaggart-Cowan; "Beekeeping in Quebec" — Francois Beauchesne; "Bee Nutrition" — Dr. Elton J. Herbert

No. 4 — "Bee Venom Allergies" — Dr. James Day; "Pesticides" — Dr. H. Victor Morley; "Production of Queens and Packages" — Phillip Rossman

The average length of the tapes is 1 hour and 30 minutes, and the price is $5.00 each or the complete set for $18.00. Please make cheques or money orders payable to:

EAS Conference Casettes and send to:

EAS Conference Cassettes
The Honey House
R. R. #3, North Gower
Ontario, KOA 2TO

Allow four weeks for delivery.

Electrified Bees

— Taken from the September 1979 MECHANICAL ENGINEERING

For honeybees, flying is electrifying. Moreover, static charges acquired in flight seem to play a role in behavior.

Entomologist Eric Erickson at the University of Wisconsin-Madison began to measure charges on honeybees because of a chance observation of blister beetle behavior: The beetles, which infest the nests of wild bees, spin milk threads when exposed to a change in electric field.

The natural stimulus for spinning appears to be an approaching bee. Young beetles wait in flowers where, aided by silk clilmbing ropes, they climb aboard foraging bees for a ride back to the nest.

Is a beetle's respose to a bee meditated by an electric charge, Erickson wondered? If so, the bee must be charged. Since honeybees lend themselves to experimentation more readily than wild bees, they were chosen for study.

How does one measure the charge on a bee? Erickson simply fixed each of the openings of a specially built beehive with a short length of glass tubing contailing a copper ring connected to a voltmeter. The idea was that a charged bee would induce a measureable potential in the ring as it passed through.

The hive was further equipped so that bees entered some openings and left by others. Bees use their sense of smell as they approach or leave a hive, so by directing a gentle air stream into the exits and out of the entrances, and also hiding the exits from the view of returning bees, Erickson was able to monitor arrival and departures separately.

He found that bees do build up electric charges on their bodies. Bees return to the hive with positive charges as high as 1.8 V, whereas those departing are slightly negative early in the day, but become slightly positive as the charges from incoming bees apparently build up in the hive.

Potentials follow a daily rhythm, peaking about midday. They also follow a seasonal pattern — low potentials in spring and fall, but high during the peak foraging months of summer.

These findings fascinate the scientist, but are the electrical charges of consequence to the bees? Erickson thinks they are.

Honeybees are known to perceive and respond to a variety of electromagnetic forces. When a small potential is applied to a honeycomb, for example, bees congregate at the charged cite, touching it with antennae, tongues, and feet. A larger potential applied to the comb, however, can send them into a stinging frenzy.

Bees also become unusually restless and irritable when exposed to high concentrations of of negative ions in the air — such as occurs before a thunderstorm — or when placed near high-voltage transmission lines.

Under proper conditions, bees demonstrate uncanny sensitivity by aligning combs along the lines of the earth's magnetic field so percisely that the combs can be used to determine the angle of declination (the difference between magentic north and true north).

Besides being detachable, the electric charges honeybees acquire may be useful. Flowers — and pollen — tend to be negatively charged, and Erickson has seen pollen stirred up by an approaching bee, jump to the bee instead of drifting away. On contact, the bee may partly neutralize the flower's charge, perhaps notifying subsequent foragers that the flower was visited recently.

But, honeybees may also have more sophisticated uses for static electricity. Upon returning from a good nectar or pollen source, a bee recruits other workers to that source by performing a dance, the characteristics of which communicate the direction and distance of the source. This is known from visual observations. But bees cannot see the dance inside a dark beehive. Just how they detect is not clear, but Erickson suspects that electric potential is involved.

Continued on page 8

Electrified Bees Continued from page 7

Obviously, there is much to learn about how honeybees detect and respond to electromagnetic forces. To this end, Erickson plans to follow up his observations with detailed experiments. Although realizing the value of his findings to basic science, he is more motivated by a desire to apply them to crop pollination, his primary interest.

Intensive farming methods threaten the availability of pollinating insects — even now, there are too few to obtain maximum pollination — so more efficient use of honeybees is an important goal. One-third of the nation's food comes directly or indirectly from bee-pollinated crops.

How might the findings be used? Perhaps bees can be stimulated to greater activity by properly applied electric fields. Bees near high-voltage lines, for example, are not just restless — they frequently are more productive. Or, measurement of the bee "charge-days," analogous to the meteorologist's "degree-days," might tell beekeepers when pollination is complete and permit relocation of the hive so the bees can pollinate another crop. Now, for lack of a way to assess pollination, bees are kept on crops throughout the flowering period, sometimes preventing timely spraying and cultivation.

Someday beekeepers may be able to direct the activities of honeybees by manipulating charges on the honey-comb — that is, by actually speaking bee language.

Historical Permit

This is a copy of an original permit granted to Mr. Carlton E. Slater, Larchmont, N.Y. and an EAS Member. He has donated it to EAS for its historical records. This Committee meeting was the spark and a beginning which expanded into what is now EAS of North America, Inc.

VILLAGE OF LARCHMONT
Municipal Building
Larchmont, N.Y.

PERMIT NO. 69

PERMISSION IS HEREBY GRANTED TO Mr. Carlton Slater 10 Bronnon Ave., Larchmont, N.Y., for use of the baseball diamond/picnit ground, near Legion at Flint Park in the Village of Larchmont on September 20, 1953 from 1 P.M. to 5 P.M.

Dated:
September 14th, 1953.

Elizabeth C. Lynn
Deputy Village Clerk