July/August 1995

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1995 W. A. S.

Two-thirds of the Western Apicultural Society membership traveled to Sacramento for the 17th Annual Conference. Over a dozen exhibitors, from as far away as Vermont, Massachusetts and England displayed bee-related items ranging from jewelry to uncappers and solar powered bee hive coolers.

The weather cooperated beyond our wildest dreams. The 100 degree temperatures broke, so that we enjoyed the riverboat lunch and the field day at the UCD Bee Biology Facility in the mid 80's.

Speakers provided us with information describing research efforts of the USDA/ARS labs in

Beltsville, Maryland, and Tucson, Arizona. The real crowd pleaser was Terri Jensen, an undergraduate student in Wildlife, Fish and Conservation Biology at UCD. She described her efforts designed to improve the nesting success of wood ducks by discouraging honey bees from nesting in wood duck boxes. She showed some beautiful slides of wood ducks and other inhabitants of her study boxes (owls, opossums, paper wasps). Terri tried Teflon® surfaces and Insectape® strips to keep artificial swarms (packages) from nesting in experimental boxes. Bees started combs on the sides of the Teflon coated boxes and did build combs up onto the Teflon at the top. It didn't stop paper wasps, either. The pesticide strip was much more effective, but to the detriment of the swarms. They eventually died.

Dr. Robert Page presented the Outstanding Service to Beekeeping Award to Dr. Eric H. Erickson, Jr., Laboratory Leader at the Tucson bee laboratory. Eric has been active in bee research for 20+ years. He has studied and reported upon inter-actions between pesticides and honey bees and the relation of comb cell sizes to the ability of bees to tolerate mite infestations. Recently, Eric has helped the bee-keepers and general public prepare for and respond to the arrival of Africanized Honey Bee in Arizona. The state regulatory personnel are ready to declare the southern half of the state to be completely "colonized." With that declaration, the state bee program will be reduced only to responses to requests for inspection certificates for interstate transportation of Arizona bees.

A spirited auction ended the 1995 WAS Conference on a very positive note. Because meetings have become much more expensive on college campuses, WAS conferences will include other venues, such as this year's Holiday Inn Capital Plaza in Sacramento and a resort on the Kona Coast of the big island of Hawaii next year. The higher prices are harder to meet especially on fixed incomes, so we will do everything we can to keep prices down next August 5-9. Hope to see you, then, in Hawaii.

WAS in Hawaii

WAS invites you to join them in Hawaii in August of 1996. The annual meeting will be held on the big island of Hawaii close to the center of Hawaiian commercial bee-keeping. A full program of local, national and international speakers, combined with beekeeping tours and visits to the grandeur of volcanoes and

tropical forests, will take place during the period 5 through 9 August 1996. An ocean fronted commercial hotel will be the venue for our meeting.

Efforts to reduce costs are being actively pursued by the WAS Executive Committee and include the possibility of a chartered air carrier. Our hotel accommodations are guaranteed to give us the highest quality for the lowest prices available in our nation's vacation paradise.

In order to prove that the meeting is feasible and to maximize the benefits for this meeting, an early pre-paid deposit will be required. A $200 per person non-refundable deposit must be made before December 1, 1995. We encourage you to join us in Hawaii and so that we may be sure to provide you an unforgettable beekeeping adventure, please send your $200 per person deposit to:

Western Agricultural Society
P.O. Box 681
Woodland, Ca 95776-0681

If you have any questions concerning our meeting please contact the Program Chairman for WAS-96; Dr. Michael Burgett, Department of Entomology, Oregon State University, 2046 Cordley Hall, Corvallis, OR 97331-2907, phone (503) 737-4896 or e-mail burgettm@bcc.orst.edu.

Africanized Bees in California

by Dr. Robert E. Page

Africanized honey bees were first detected in California last fall when they suddenly appeared at a prison near Blythe. Since then, a total of ten colonies have been detected, two near Blythe and the rest in the Imperial Valley. Most of these colonies were determined to be Africanized on the basis of the USDA-ID morphometric method that analyzes 21 different size and body part characteristics. In addition to the standard USDA-ID method, the California Department

of Food and Agriculture pest diagnostic lab anyalzed the mitochondrial DNA of these bees using a technique developed in my laboratory by Dr. Paul Ebert. They found that all of these colonies had African-type mitochondria. The mitochondria in honey bees (and humans) is inherited only from the mother. Therefore, these results demonstrate that the Africanized bees arriving in California are part of a very long maternal line that extends relatively unchanged back to the original introduction of African bees in Brazil in 1956.

Two years ago Africanized bees were found on the southern and eastern borders of California. I believed at that time that their entry into California was in-evitable and had probably already occurred. My hypothesis was that they would increase in density in that area until they were numerous enough to be captured in a trap, or cause some kind of problem in an inhabited area. The repeated finds of Africanized bees in the Imperial Valley this spring stimulated me to sample bees from that region in order to determine their dis-tribution and relative abundance.

The standard USDA-ID method requires sampling 10 bees from a single colony. Feral colonies are not easily found unless they fly into traps or are a nuisance to someone, so the morphometric method is not good to use as a random survey tool. Mitochondrial DNA analyses, however, can be made on single bees. Therefore, an area survey is possible by simply catching bees on flowers, then determining their mitochondrial type. If Africanized bees are abundant in an area, relative to European bees, then there should be

an abundance of African mito-chondrial types in the sample.

April 13-15, I (along with my 11 year old son, Brian) collected 75 bees from 31 collection sites located in the Imperial Valley and near Blythe, California. We tried to make collections in areas where bees were likely to be feral, although there is no way to tell where the bees came from. Mito-chondrial DNA diagnostics were run on these bees and we did not find any mitochondrial types that are indicative of Africanized honey bees. I interpret these results to suggest that Africanized honey bees are not yet abundant in these areas. My original hypothesis was probably wrong. Africanized bees have not been in California for two years; it is likely that we are truly seeing the very early stages of the “invasion” of Africanized bees. The current method of sampling used by the California Department of Food and Agriculture -- trap lines and reports from concerned citizens -- are better than random sampling methods for early detection of rare Africanized colonies. However, the method of randomly sampling bees and checking their mitochondrial DNA will be the best indicator of the extent of “Africanization” in an area.

Why it has taken them so long to move into California and why they are spreading so slowly remain a mystery. Genetic mixing with commercial bees does not seem to be the answer because the colonies that have been detected have been highly Africanized both in morphometric characters and mitochondrial DNA. Only time will tell to what extent they will spread and how abundant they will become, but for now they have not

made a detectable impact, even in the Imperial Valley.

4-H Essay Contest

Earlier submission dates for the American Beekeeping Federation sponsored Essay contest on honey bees prompt me to describe the contest now, instead of early next year. The contest is open to all active (dues paid) 4-H'ers, unless they have previously placed 1st, 2nd or 3rd at the national level (we have a few of those in California). Winners receive $200,$100 or $50 for placing 1st, 2nd, or 3rd respectively.

This years' (early 1996) topic is "How Honey Bees Ensure Our Food Supply." The sponsors go on to describe what they are looking for: "The object is to develop an essay exploring the role honey bees play, through their pollination of crops, in ensuring a plentiful, varied, and inexpensive food supply for Americans.

The essay should detail the range of crops enhanced by honey bee pollination and the enhancement; i.e., quantity, quality, cosmetics. Also this conundrum should be addressed: If honey bees are not native to the United States, why are they essential to the cultivation of our food crops?"

It is important to the judges that the essayist find a sub-stantial amount of written, factual material to back up the claims made in the essay. Each of these sources must be placed in a 'Resources' or 'Bibliography' list at the end of the essay. If the references are numbered, it is easy to place a superscript number right in the sentence of the text to show exactly which reference contained that fact. Personal (interviews with beekeepers and farmers who utilize honey bees for pollination are valued sources of information and should be documented."

The essay should be 750-1000 words long, not including the references and a mandatory "essayist's biographical sketch." Typewritten, doubled spaced texts, on one side of the paper, only, will be accepted (not handwritten). "Essays will be judged in (a) accuracy, (b) creativity, (c) conciseness, (d) logical develop-ment of the topic, and (e) scope of research, which counts for 75% of an essay's rating."

Make sure all essays reach the office of Dr. Eric Mussen, Extension Apiculturist, Department of Entomology, University of California, Davis, CA 95616 by February 15, 1996.

Pollination Guide

A new, 34 page, 8 1/2 x 11 inch, soft cover publication with a few colored pictures, called "A Guide to: Managing Bees for Crop Pollination", has just become available from the Canadian Association of Professional Apri-culturists.

The book strikes me as an abbreviated, updated version of the USDA book called, "Insect Pollination of Crop Plants."

There is a quick review of plant biology and pollination; a section on management of honey bee colonies for pollination including informa-tion on: 1. pollenizers, 2. pollen inserts, 3. directing bees to crops, and 4. reducing competition; a section on managing other pollinators; an extensive section on pollination requirements of specific crops; some information on pesticide hazards; and formulae for calculating statistics on the value of honey bee pollination.

As might be expected, the text is oriented toward crops grown in Canada. But, what might be sur-prising is the fact that nearly all the 40+ crops listed are grown pretty much throughout North America.

One U.S. distributor is the Apiary Inspectors of America. A copy of the publication is available from Gary R. Ross, A.I. A. Treasurer, for $3.00 (U.S.; make checks payable to “Apiary Inspectors of America”), at Kansas
State Board of Agriculture, Plant Protection Section, 901 S. Kansas Avenue, Topeka, KS 66612-1281 [(913) 296-2263].

Copies may also be obtained from the American Association of Professional Apiculturists. Single copies are $3.50/copy plus $1.00 postage. Multiple copies remain $3.50/copy plus $3.00 for mailing 5 copies, or $3.50 for mailing 10 copies. Marion Ellis will handle these orders at the Entomology Department, University of Nebraska, P.O. Box 830816, Lincoln, NE 688583-0816.

Scales

Do you think you could use a hanging crane scale, platform scale, or wheel load scale? Intercomp, a company from Minneapolis, MN, has used current technology to shrink the size and power requirements of all these

types of scales to make them portable and battery operated.

Crane scales have upper capacities of 25 to 1,000 lbs. The platform scale weighs 289 lbs., it-self, and can take gross/net/tare weights up to 5,000 lbs. The wheel load scales (either 12x12″ or 22x15″) can handle weights from 5,000 to 20,000 lbs. Using scales in pairs, per axle, one can determine wheel, axle, axle group and gross weights of loads on trucks or trailers.

For more information contact: Intercomp, 14465 23rd Avenue North, Minneapolis, MN 55447 or call (800) 328-3336. Intercomp supplies its customers with "magnetic vehicle signs displaying your company logo," also.

Honey Board Brochures

Funding for the National Honey Board comes directly from honey producers and importers. At times it may seem that the funds just disappear, like other taxes tend to do. However, the Honey Board does have some things that you can use, right now. You just have to ask for them.

Two recent brochures, "Bringing You Nature's Bounty Is Our Line" and "Honey Recipe Favorites: Recipes From Around The Country" contain not only recipes but information on substituting honey for up to 1/2 the sugar in a conventional recipe. Additionally, the Nature's Bounty brochure contains tips for buying and storing honey and some brief information on crop pollination by honey bees.

Both brochures have some color to add to their attractiveness. They are an 8 1/2x11″ sheet of paper folded in thirds. Fair goers, honey customers, owners of apiary locations, friends and relatives could benefit from reading the brochures.

Contact the National Honey Board for information on obtaining a supply of these brochures or many other free or inexpensive pro-motional materials. National Honey Board 390 Lashley Street, Longmont, CO 80501-6010 [800-553-7162].

Tax Exempt Pollen

Not very many of us think much about pollen collecting and sales, especially as it relates to pollen sold for pollinating crops. The July, 1995, issue of Nut Grower Magazine relates the following story of a company's efforts to get a tax exemption for pollen. Tom Ferrari, owner of the Bakersfield-based company Pollen Bank, has won a landmark opinion from the State Board of Equalization regarding the tax status of pollen.

Ferrari's petition to the BOE came after his business was audited and it was determined that all sales of pollen were subject to sales tax. He then fought the ruling, asking the BOE to reconsider the tax status of pollen. Both the Kern County Farm Bureau and the California Farm Bureau Federation supported Ferrari's position in seeking the tax exemption.

In its new ruling, the BOE reversed its earlier decision and stated that pollen is an annual plant and, therefore, sales of it are exempt from taxation.

Ferrari who obtained his doctorate degree in horticulture in 1970, started Pollen Bank eight years ago. An innovator in the area of pollination, Ferrari developed a disinfecting procedure which eliminates the threat of contaminating orchards with pollen-borne diseases. He also invented a pollen dispenser which is installed at the entrance to hives and is constructed so that the bees are forced to walk through pollen as they enter or exit the hive. Ferrari holds a United States patent on the device.

Ferrari is advancing the concept of progeny testing for pollen, a way to evaluate the effectiveness of pollen applications. Paternity testing of this type is an exclusive service of Pollen Bank, said Ferrari.

'Now, in many orchards, we can tell precisely how much of the crop is the result of supplementary pollen. The analysis relies on genetic fingerprints carried by the pollen. Each nut carries the pollen traits and can be identified in lab tests,' said Ferrari.

'With paternity testing, growers can get a precise measurement of how much of their crop comes from the pollen they apply. Biochemical markers reveal which nuts are from flowers fertilized by supplemental pollen supplied by the grower, and which are fertilized by pollenizers already present in the orchard', explained Ferrari."

Dietary Supplements

On October 25, 1994, President Clinton signed Senate Bill 784, as amended, titled the "Dietary Supplement Health and Education Act of 1994." Space does not permit explaining all the changes to section 201 of the Federal Food, Drug and Cosmetic Act, but some of the major provisions are noteworthy, especially to sellers of pollen and other hive products.

1. A "dietary supplement" is defined as:

(a) a product (other than tobacco) that bears or contains one or more of the following dietary ingredients: vitamin, mineral, herb or other botanical, amino acid, another dietary substance for use by man or supplement the diet by increasing the total dietary intake, or a concentrate, metabolite, constituent, extract, or combination of these ingredients;

(b) a product that is intended for ingestion in tablet, capsule, liquid, powder, softgel, or gelcap form, or if not in such a form, is not represented for use as a sole item of a meal or of the diet; and is labeled as a dietary supplement.

2. Places burden to proof of adulteration on FDA. A supplement currently on the market can be removed only if it presents a "significant or unreasonable risk of illness or injury." A "new supplement" can

be marketed only 75 days after submitting safety information to FDA.

3. Label statements are carefully controlled. To claim a benefit related to nutritional deficiency, it must state the prevalence of such deficiency disease in the U.S. and explain exactly how the product alleviates the condition.

4. Exempts, from labeling requirements, third party publications that claim benefits from such product use. The publications should not mention brand names and should be placed far enough away from the products to not be associated directly with one or more of them.

5. The label must include quite a bit of detailed product description, or it will be deemed "mislabeled."

6. Like cereals, etc. the "goodies" in the product will be labeled in descending percentages by weight. If the ingredients are part of the Reference Daily Intake, the percentage RDI should be listed.

7. Expiration date required.

8. Commission to study label claims.

9. National Institutes of Health (NIH) annually get millions of dollars to conduct and coordinate research on the value of the supplements.

If you want to read all about this, find someone with access to the World Wide Web on his or her computer.

Go straight through: http://vm.cfsan.fda.gov/index,html or using the access: "All Federal Services", then "Food and Drug Administration," then "About the Center for Food Safety and Applied Nutrition."

Beekeeping Tour

Would you like to attend a world renown honey show? The 64th British National Honey Show is being held in London from Wednesday, November 22nd through Saturday, November 25th, 1995.

Harold Liberman of Global Nature Tours, Inc. has organized a beekeeping/sightseeing tour of England from November 21st to 27th of this year. An abbreviated itinerary: Nov. 21 - arrive in London; dinner and reception with Orpington Beekeepers; Nov. 22 -

London: Tower of and St. Paul Cathedral, then Honey Show; Nov. 23 - Free morning, Honey Show, Thanks-giving dinner; Nov. 24 - National Honey Show, afternoon tea; Nov. 25 - National Honey Show, hosted Christmas shopping; Nov. 26 - Half day tour of Windsor Castle; Nov. 27 - Return to U. S.

The cost will approach $2000 per person; less for east coast residents. Desire more information? Contact Harold real soon at (301) 627-4777.

Nut Acreage

The July, 1995, issue of Nut Grower Magazine included some statistics on almond acreage for the twelve years between 1983 and 1994. Over that period of time, total acreage was very steady, fluctuating between 432,700 and 443,300. Bearing acreage increased from around 360,000 to around 400,000 and has remained there for a decade. Meanwhile, the number of beekeepers and managed colonies continues to decline. It appears as though almond pollination prices will remain solid well into the future.

Sincerely,

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