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More CA Gold

This time it was Nicholas Broffman, a 12-year old 4-Her from San Anselmo, who collected the \$250 check from the American Beekeeping Federation. His essay on "Products of the Hive and Their Uses" was selected tops of the entries sent in from 15 participating states.

Nicholas did a top-notch job of following the use of hive products throughout history to the present. He also described his trip to Asia to learn more about acupuncture and the use of bee venom in disease treatment. His family is involved with a clinic that provides holistic medicine.

This was a very difficult year for the State judge (me) to pick the winner. Nicholas' contribution was excellent, but so were the entries of Terra Finney of Lemoore, and of Sharon and Steven Smith of San Luis Obispo. I wish those entries had been spread out over 4 years. They were all good enough to place in the Federation contest.

Next year's essay, an original story on honey bees appropriate to

be read to a class of second graders, must be submitted to Eric Mussen by February 15, 1995. I will try to contact all 4-H youth advisors at the end of fall so the announcement can be disseminated in a timely fashion.

No '94 WAS Conference

The annual conference of the Western Apicultural Society has been canceled for 1994. The officers were having difficulties dealing with the campus in a timely fashion and the program was not coming together as planned.

I can sympathize with campus problems, because I have been dealing with the Davis campus for the 1995 meeting. We used to be welcomed with opened arms -- the more people who used the campus, the better. Buildings and classrooms rented for \$10 a day, dorm rooms were around \$20 per night, food was under \$10 a day, and we weren't watched too closely.

Only the price of food in the dining commons remains under \$10

per day, but it is prepared and served by a well known commercial food giant that also dictates what types of vending machines can be on campus. They also dictate what food items we can bring to our meeting -- none!

We have to purchase a \$1 million insurance policy to meet on campus, our exhibitors have to turn over 25% of their gross receipts to the campus, and dorm rooms are \$39 per night per person. That is \$78 a night per couple to stay in a dorm room.

Given all that, I have been working with a hotel in Sacramento to get a nice meeting at a reasonable price for August 15-18, 1995. The hotel is about 100 feet from the end of a shopping mall filled with stores and shops of all types, and a great choice of eateries (including some clubs). About 200 yards in the other direction (no stairs, walkway through tunnel under freeway) is Old Sacramento. It has two main roads, with four cross streets, filled with shops and eateries, including clubs. It is a tourist's paradise.

I tend to favor the Train Museum with its simulated train ride, full sized displays, and history movie to the shops, but that is just my preference. Just down the block is another museum of California history that is filled with interesting items.

Old Sacramento was a port, and paddle wheelers still travel portions of the Sacramento River. I will be trying to reserve a ship for a special evening dinner cruise.

The hotel has two of its own restaurants, a free parking garage next door, and the rooms will cost

only \$10 more per night than the campus dorm rooms with shared bathrooms. RV parking is available in a specific portion of the Old Sacramento lot for \$5 per night. The lot is about a ten minute walk from the hotel.

In order to meet off campus, WAS members must vote to change the bylaws to allow off-campus venues. A few years ago, I would never have guessed that we would want to move meetings off campus. But, the economic hard times have pushed the campuses to operate at real world prices, so their advantages have disappeared.

Mead

Perhaps you are sitting on quite a lot of honey that needs a buyer. Your old faithful buyers can't move it. Well, mead makers are a possible option. Meads, in many variations have one thing in common -- they are wines based on fermented honey (2 to 3 pounds per gallon).

The American Mead Association is doing a wonderful job of finding and publishing very useful information on mead production. Their latest copy of Inside Mead lists U.S. Meaderies and Mead Pubs. It lists 5 in California, only 1 of which is familiar to me.

Anyone with a real interest in mead making should join this organization and read all those secrets and techniques that just don't show up in books on the subject. A year's membership is only \$15. Where else can you find the contact for the Maltose Falcons, a mead making club in Woodland Hills, CA?

Contact American Mead
Association Director (Editor)
Susanne Price, P.O. Box 4666,
Grand Junction, CO 81502. [(800)
693-MEAD or (303) 243-9116.]

Genes in mtDNA

Most of the genetic code for honey bees resides in the nucleus of each cell. This is the code that regulates behavior, appearance, and nearly everything else we can think of. In worker and queen honey bees, half the code comes from the queen and half from one of the drones with which she mated. The drones can only have their mothers genes, but her genes came from both her mother and father.

There is another set of genes in bees' cells associated with a subcellular organelle called the mitochondria. The mitochondria are the locations where energy is actually obtained from digested food molecules. While we are not certain what the role of DNA is in the mitochondria, we do know that it is passed from generation to generation in the egg and does not get any genes from the male side. Thus, we can analyze mtDNA and determine the ancestral lines of the bees.

The same mechanism holds for humans, and it was suggested that women all over the world should be examined to determine if humanity developed from one or more "Eves". I haven't heard any more about that idea, but a similar line of logic was pursued with honey bees throughout the southern United states.

According to N. M. Schiff and W. S. Sheppard, in an article in *Experientia* 49(1993) pp. 530-532, there were early imports of Apis

mellifera mellifera, A. m. ligustica, A. m. cypria, A. m. syriaca, A. m. carnica, A. m. caucasica, A. m. intermissa, A. m. lamarkii, and A. m. iberica into North America. The last three named races are from Africa, Africa, and southern Spain, respectively, and have "marker" mtDNA genes that are "African".

If all these bees have been here, what is left? According to the authors, analysis of 422 samples of feral bees collected well north of AHB intrusion showed the following:

1. 77% had mtDNA from "commercial" strains: ligustica, caucasica, and carnica.
2. 21% managed to survive from earliest importations of mellifera and iberica.
3. 1% carried genes from African ancestors, specifically, A. m. lamarkii. This is the Egyptian honey bee, not the race involved with Africanized honey bees = A. m. scutellata.

It will be interesting to see if the 22% of the feral bees with "non-commercial" lineage can survive the competition of AHBs for their feral territory.

Usurpation

One of the mechanisms by which Africanized honey bees (AHBs) inject their genes into the local honey bee gene pool is through the process of "female social reproductive parasitism." This actually is a takeover of an established colony by a new, foreign queen.

Usurpation is a way of life for wasps and bumble bees. But, the competition is usually over limited nesting sites. In these cases alone female is involved in the takeover. Honey bees differ in that small swarms are involved in the takeovers and stored resources (pollen, honey, and brood) may be more important than simply the nesting site. Experiments with forced introductions of small AHB and EHB swarms into full sized colonies of the opposite race of bees led to a few usurpations by AHB queens, but none by EHB queens.

Carlos Vergara, Alfred Dietz, and Adalberto Perez de Leon studied apiaries in southeastern Mexico up to two years to determine if specific factors might influence takeovers. They found that: 1. Queenless colonies attracted small AHB swarms to the apiary -- some were taken over, some neighboring functional colonies were taken over.

2. Usurping swarms showed no preference for weak (1-3 frames of brood), medium (4-6 frames of brood), or strong (6 or more frames of brood) colonies.

In South and Central America usurpation is very important in an area's becoming "Africanized". However, such behavior is not being described in northern Mexico or in Texas.

The full literature citation for this article is: Vergara, C., et. al. 1993. Female parasitism of European Honey bees by Africanized honey bee swarms in Mexico. Journ. of Apicultural Res. 32(1):34-40.

Citrus Leafminer

You've never heard of it? Good. We don't want it! It moves fast. In 1993 the citrus leafminer, Phyllocnistis citrella, was first detected on Florida citrus. It had already spread to 90% of Dade County's newly replanted lime groves and much of the region's local dooryard citrus. All citrus growing counties in Florida are now affected.

If you want more details on the pest, I'll send a copy of Tom Sanford's newsletter that covered the pest. What I would like to share is Tom's information on what controlling this new pest may mean to Florida beekeepers.

Chemical control of the leafminer depends on Agri-Mek + Fe-435-66 oil or malathion + FC-435-66 oil. Agri-Mek is a trade name for abamectin, used for fire ant control. It has the third highest toxicity to honey bees of all the chemicals reported in Table 1, Chapter 26, of the recent edition of the Hive and the Honey bee (best list of Larry Atkin's results). Agri-Mek currently is being used by Florida citrus growers at half strength for rust mite control, and they don't want to increase the dose. High doses speed up the development of resistance in mite pests. Cygon and Supracide are less effective alternatives, but they severely disrupt biological control agents of scale insects and other pests. Applications would have to be made during bloom, in some cases.

Cultural control has been fairly effective in some areas of the world. Growers try to encourage a heavy, lush growth on the spring flush of leaves, when the miners are low in numbers. Summer and autumn growth is

discouraged by reducing fertilizer and irrigation to maintenance levels. Mature trees can sustain much greater populations of leafminers than can young trees or nursery stock. But, even with older trees, yield reduction can reach 50% and fruit weight can be reduced from 120 grams to 70 grams.

Let's hope that researchers in Florida can find some good parasites and/or predators to work on the citrus leafminer. Let's also hope that some careless person does not import the pest into California, soon. We do not need another exotic problem that negatively impacts our honey production.

Pollen Cleaner

Trapping and selling pollen can be profitable, but usually only if the pollen has been cleaned before you sell it. Hand sorting of pollen pellets from other things gets old real fast. So automatic devices are desired.

Most pollen cleaners are modified seed cleaners, or something built to work like seed cleaners. Now the Hance Corp. of Westerville, Ohio, can save you some time. They have adapted one of their seed cleaners to be The Hance Bee Pollen Cleaner. It is said to be able to process 200-250 pounds of fresh, frozen, or dry pollen per hour. A 1/2 hp DC variable speed motor provides the power to the top scalping screen, bottom sifting screen, and internal air aspirator (blows out dust, dead bees, other foreign matter).

For more information, like the price that wasn't listed, please contact the Hance Corp., 235 E.

Broadway, Westerville, OH 43081
[(614) 882-7400.

Needs Books

I received a letter from Moises B. Paradero, who is a beekeeper manager in SIBA (Sibonga Beekeepers Association), an officer in CHAI (Cebu Honey beekeepers Association), and a field technician for NBC (Naga Beekeepers Corporation) in the Philippines. He has a federal appointment to be a sort of extension apiculturist to "Backyard Beekeepers".

Moises is all set to go, but he feels that his information base is weak and dated. So he wrote to us asking if we had any books or other publications on honey bees that he could add to his library.

If you have older journals that are about to be tossed or an extra copy of a text that has been superseded by a new edition, please consider sending the material to Moises at: c/o Sibenga Cooperative, 6020-Sibenga, Cebu, Philippines.

Thanks for your assistance.

Peace Corps

If you have expertise and experience in agribusiness (some advanced schooling in business administration, accounting, banking, finance, or public administration) you could become involved in the "historic rebuilding of the Soviet Union" - actually, Armenia. The Armenian government has requested six such advisors for two-year assignments, starting this summer, to help with economic development and planning,

privatization, and advising farmers and small enterprises.

Obviously, to do this work you must be free to drop everything and go in a hurry. The Peace Corps does not pay a salary as such, but expenses, health and dental plans are covered. While many Peace Corps volunteers are young in age, the young at heart are acceptable at just about any age, as long as there are no children involved. Spouses are tolerated, as long as they can contribute by teaching English or contributing to the program in some other substantive manner.

If you want to keep real busy and see your efforts lead to nearly immediate consequences, the Peace Corps is an excellent group to contact: (800) 424-8580.

Agronomy Shortcourse

Feeding and Balancing the Soil is a five-day intensive short course in building and maintaining soil for quality crop production. The course will be held July 18-22 at Little Creek Acres farm in Valley Center, a rural northern San Diego County town. Little Creek Acres is a sustainable agricultural demonstration farm supported by a non-profit organization: The Center for Living in Harmony. The farm has over 1000 fruit trees, 80 raised beds, chickens, dairy goats and bees.

This is a space-limited course, so that only 50 people can attend. The cost is \$250 for registration before July 1, or \$275 later. Audio transcripts of the course will be available to participants for \$100, or \$150 for those who do not attend.

For further information call (619) 749-9634. In this case, credit cards will NOT be accepted.

Listing Air Toxics

Two bills passed in CA require the Department of Pesticide Regulation to evaluate the health effects of pesticides which are, or could be, getting into our air. The evaluation is proceeding slowly, with one pesticide, Ethyl parathion, determined to be a type a (CA studies done) "toxic air contaminant". An additional 33 compounds are listed as type b contaminants, since they come from a federal list of "hazardous air pollutants" that have not yet been studied thoroughly. The 33 compounds are: Acrolein, Arsenic acid, Arsenic pentoxide, Arsenic trioxide, Captan, Carbaryl, Chlorine, Chromic acid, m-Creosol, 2,4-D salts and esters, 1,4-Dichlorobenzene, 1,3-Dichloropropene, Dichlorvos, Ethylene oxide, Formaldehyde, Hydrochloric acid, Lindane, Mancozeb, Maneb, Methanol, Methoxychlor, Methyl bromide, Pentachloronitrobenzene, Pentachlorophenol, Phenol, Phosphorus, Potassium permanganate, Propoxur, Propylene oxide, Sodium cyanide, Sodium dichromate, Trifluralin, and Xylene.

If you are interested in commenting on this listing process or chemicals on the list, you should contact Bill Fabre, Department of Pesticide Regulation, Environmental Monitoring and Pest Management Branch, 1020 N Street, Sacramento, CA 95814 [(916) 324-4191]. They will accept comments, letters, etc. until 4:30 p.m. on Friday, July 8, 1994.

Handicapped Farmers

Quite a bit of progress has been made in modifying equipment for homes and offices to enable physically handicapped people to accomplish their chores. But, you don't hear very much about modified equipment to enable physically handicapped people to farm. There is one highly notable exception.

Purdue University has the Breaking New Ground Resource Center. It is devoted to "Lifting barriers for farmers with physical disabilities." Extension personnel at Purdue and researchers in the Agricultural Engineering Department have teamed up to interview handicapped farmers and design equipment, from hand tools to tractors, to meet their special needs. The plans for all the modified equipment are available.

The Center publishes a newsletter called "Breaking New Ground." In my issue there is a short article on the Agriability Project, co-sponsored by 14 states, mostly from Idaho to New Hampshire. They are just getting going with establishing networking contacts and making their availability known.

There is technical report #16, in the "Plowshares" series, that deals with communication devices for home, field, and out buildings.

Included, also, is a brief description of the "Freedom Lift" that is manufactured by Freedom Technologies in Saskatoon, Saskatchewan, Canada [(306) 244-1508]. The lift is somewhat like a "cherry picker" that mounts in the bed of a pickup truck. It can pick up a person in a wheel chair and lift him or her right to the cab of a large tractor, etc.

If you, or someone you know, might benefit from this knowledge and experience in assisting handicapped farmers, please contact the Breaking New Ground Resource Center, Purdue University, 1146 Dept. of Ag. Eng., West Lafayette, Indiana, 47907-1146, [(317) 494-5088]. The newsletter is free from the same address (contributions appreciated) and can be subscribed to on cassette tape.

Sincerely,

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