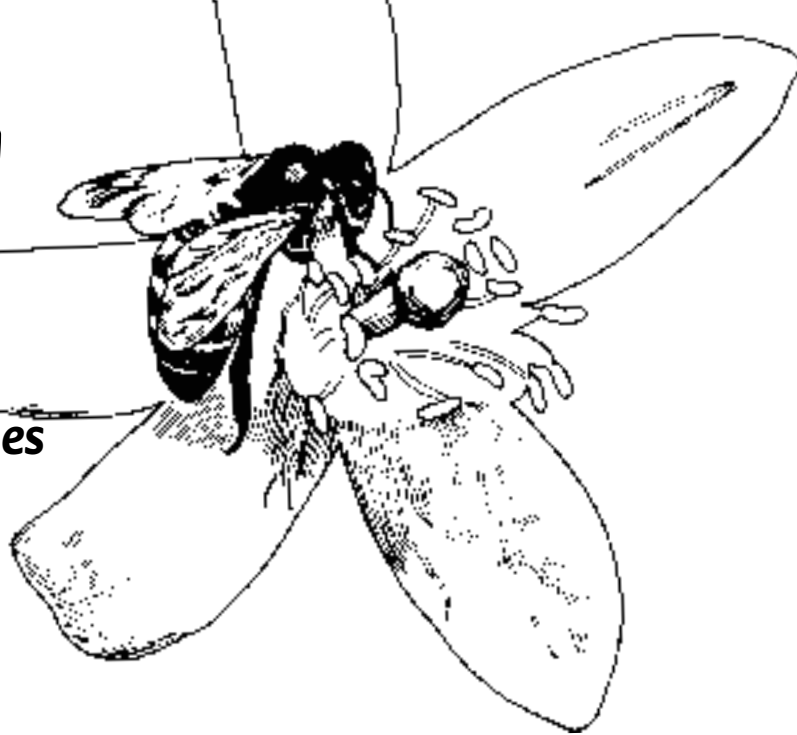


APIS



Apicultural Information and Issues

From IFAS/University of Florida
Department of Entomology and Nematology

December 1999

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Taking Stock In 1999

IT'S AGAIN TIME to stop and consider this year's events as recorded in the pages of *APIS*. This is the 203rd issue published, ending this newsletter's seventeenth year chronicling changes in the apicultural industry. *APIS* welcomes the new century with a continuing commitment to helping beekeepers face the challenges of the future.

For the first time this year it became clear that the electronic version of the newsletter is now dominant, with the printed copy taking a less prominent role. Print has not been forgotten, however, as the hard copy continues to be mailed to a distribution list of about 1,200 in Florida and the web site also has offered .pdf files, exact replicas of the printed version, since 1997. I have not worked up the 1999 web statistics yet, but they soon will be available, along with data from last two years¹. I continue to get good feedback from the guest book feature on the home page².

There are 1,699 subscribers to the electronic APIS-L list at the moment, continuing this newsletter's predominance as the only electronic, interactive publication of its kind in existence serving apiculturists. I am not sure how valuable the beta edition is to the readership, but it has certainly added consistency and quality to the print and web version. I have received a number of excellent suggestions from list members concerning everything from possible political gaffes to misspellings, which are much appreciated. For those not familiar with the web site, I published an in-depth review in the December 1998 edition of "Beekeeping in the Digital Age" in *Bee Culture* magazine (Vol. 126, No. 12, pp. 20-21³).

THE YEAR started with a surprise. Many had precious little hope for approval of the application for a Section 18 emergency exemption to use coumaphos (Bayer Bee Strips®, now called Check Mite+®) against resistant varroa and small hive beetle. However, in what appeared to be a dramatic about-face, it was given the label by the Environmental Protection Agency (EPA) on January 6, 1999⁴. That same article discussed why this approval significantly raised the bar on pesticide use in beekeeping, now that an organophosphate was involved rather than the more benign pyrethroid, fluvalinate, the basis for Apistan®. Why approved pesticides should be treated as precious, limited resources and how one lost its label in France were also treated in that issue⁵. In October, renewal of the coumaphos label for the year 2000 was discussed⁶. *Continued next page*

¹ <http://www.ifas.ufl.edu/~mts/apishtm/stats/stats97.htm>

² <http://www.ifas.ufl.edu/~mts/apishtm/apis.htm#gb>

³ <http://bee.airoot.com/beeculture/digital/1998/column4.htm>

⁴ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjan99.htm#1>

⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjan99.htm#3>

⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apoct99.htm#1>

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At least one scientist sees agriculture in a developed information-based society like the United States as something that is no longer affordable.

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February detailed why resistance to pesticides by mites is a forgone conclusion in most pest management situations. Thus, many were not surprised when treatment of Varroa using fluvalinate began to lose its effectiveness. The appropriate question for most pesticide use, therefore, is not if resistance develops, but when⁷. In March, the use of the term LD₅₀ was described in relation to determining pesticide risk⁸, and a method for determining Varroa populations in colonies developed by scientists working in the United Kingdom (UK) was unveiled⁹. Supplemental protein feeding¹⁰ and the judicious use of smoke were also described¹¹.

APRIL took on the challenges of predicting honey marketing in the future. An important concept is that retail food prices are less and less an indicator of what the producer receives. At least one scientist sees agriculture in a developed information-based society like the United States as something that is no longer affordable¹². Further implications of transgenic plants on bees and beekeepers¹³, reactivation of the honey loan program¹⁴, and a Brazilian honey shortage¹⁵ rounded

out the issue. In May, I reported on the Africanized honey bee find in Jacksonville and how the sudden appearance of these insects surprised everyone¹⁶. In a later issue, I discussed the possibility that they might be poised to begin again their land migration from Texas¹⁷. I also described what has been called the “Nemesis effect,” often-unanticipated consequences of transporting biological material from one ecosystem to another¹⁸.

The June issue described sanitation in the honey house, the first line of defense against small hive beetle¹⁹ and other microbial organisms, which impact food processing in many ways²⁰. It also described efforts to control Varroa using specialized bottom boards (screens)²¹ and added information on the value of feeding protein²².

In July, impact of “new” computer technology to find apicultural information was described, along with the danger of relying only on information from this source at the expense of older, more traditional beekeeping literature²³. I also discussed possible impact of the year 2000 computer bug (Y2K) on beekeeping²⁴, and how the real issues of the new millennium, changes in world trade practices, must be con-

fronted by the beekeeping community at all levels²⁵.

More on Varroa control through bottom board technology²⁶, along with a prognostication of the future of the Texas feral Africanized bee population, as mentioned earlier, were highlighted in the August issue. In addition, I discussed how the worker protection standard might apply to beekeepers and why it cannot be ignored²⁷. September featured a review of certain papers presented at the World Apicultural Congress (Apimondia) in Vancouver. These included a discussion of what Varroa reclassification might mean to beekeepers and researchers²⁸, and the effects of the mite on United States’ beekeeping since its introduction 12 years ago²⁹.

October addressed the situation regarding reissuing the coumaphos label as noted above. I also addressed the consequences of economic adulteration based on a University of Florida study³⁰, how beekeepers might want to think about restructuring their operations in the new millennium³¹, and the results of the continuing Pacific Northwest pollination survey³². November dealt with the problem of American foulbrood, its history and control, including the consequences of resistance to oxytetracycline being found in Canada, the United States and elsewhere. In addition, the topic of honey quality as viewed in the United States and Europe was analyzed in view of the impending referendum to increase the responsibilities of the National Honey Board toward more quality assurance in the United States³³. The Varroa-viral connection was also explored³⁴, along with information on the Y2K 4-H essay contest and availability of a new publication on gardens and bee pollination. ■

⁷ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apfeb99.htm#1>

⁸ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmar99.htm#4>

⁹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmar99.htm#3>

¹⁰ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmar99.htm#5>

¹¹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmar99.htm#1>

¹² <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apapr99.htm#2>

¹³ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apapr99.htm#3>

¹⁴ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apapr99.htm#4>

¹⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apapr99.htm#5>

¹⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmay99.htm#1>

¹⁷ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apaug99.htm#3>

¹⁸ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apmay99.htm#2>

¹⁹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjun99.htm#1>

²⁰ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjun99.htm#2>

²¹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjun99.htm#4>

²² <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjun99.htm#3>

²³ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjul99.htm#1>

²⁴ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjul99.htm#1>

²⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apjul99.htm#3>

²⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apaug99.htm#1>

²⁷ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apaug99.htm#2>

²⁸ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apsep99.htm#2>

²⁹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apsep99.htm#3>

³⁰ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apoct99.htm#3>

³¹ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apoct99.htm#4>

³² <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apfeb99.htm#5>

³³ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apnov99.htm#2>

³⁴ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apnov99.htm#4>

³⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apoct97.htm#4>

³⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#2>

³⁷ http://www.ifas.ufl.edu/~mts/apishtm/apis99/pdf/aphis_risk_ass.pdf

³⁸ <http://www.aphis.usda.gov/ppq/pra/honeybees/nzhbeepra.htm>

³⁹ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#2>

⁴⁰ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apaug99.htm#3>

⁴¹ <http://www.ifas.ufl.edu/~mts/apishtm/papers/TERES.HTM#9>

⁴² <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apsep99.htm#2>

⁴³ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apnov99.htm#4>

⁴⁴ <http://www.ifas.ufl.edu/~mts/apishtm/apis99/apnov99.htm#3>

⁴⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis98/apsep98.htm#1>

⁴⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis96/apoct96.htm#3>

Stock Importation: A Possibility At Last?

STOCK IMPORTATION has been on the bee-keeping industry's agenda for a long time. This has been increasingly important now that Varroa mites have been implicated in narrowing the honey bee genetic base in the United States³⁵. Over two and a half years ago, the subject was broached by the Animal and Plant Health Inspection Service (APHIS)³⁶. The wheels have turned slowly since then, but finally there has been some action. Results were published in the Federal Register on December 9, 1999³⁷. In consultation with the Government of New Zealand, APHIS has prepared a draft document titled "Risk Assessment: Importation of Adult Queens, Package Bees, and Germ Plasm of Honey Bees (*Apis mellifera* L.) From New Zealand"³⁸.

This document catalogs diseases and pests found in the United States mainland and Hawaii as contrasted to New Zealand. It states: "Based on the history of honey bee importations into New Zealand, the absence of any reports of species other than *Apis mellifera* or of other adverse subspecies or strains, New Zealand honey bees are considered equivalent to honey bees in the United States." The only real concern appears to be with American foulbrood, however, the document states: "Combining the risk ratings for consequences and likelihood of introduction, we conclude that the overall pest risk potential for *P. larvae larvae* is low. Although this pest already occurs in the United States, its listing as a pest of international importance relative to the movement of honey bees requires caution. Apiary inspection programs in the United States also monitor this pest to prevent its movement in interstate commerce. However, the statutory measures for AFB prevention and control in New Zealand are at least equivalent to those imposed within the United States. Consequently, the inspection and certification program currently used by New Zealand for honey bee exports to other countries where AFB is endemic and under statutory control are adequate for shipments to the United States."

With reference to other possible problems, the risk assessment concludes: "We found no evidence of adverse species, subspecies or strains of honey bees that would be of concern relative to the importation of honey bee germplasm from New

Zealand. Likewise, we found no viruses or other disease organisms that posed significant risk to the import of germplasm.

"We recommend that all queens and package bees exported from New Zealand to the United States be from apiaries inspected and certified by New Zealand regulatory officials as:

1. The bees are a product of New Zealand.
2. The bees are derived from an apiary or apiaries registered and inspected under, and otherwise complying with, the

Varroa-Tolerant Honey Bees

DR. E.H. ERICKSON and colleagues at the Carl Hayden Bee Research Center are now confident that Varroa-tolerant bees are a reality in Arizona (*American Bee Journal*, Vol. 139, No. 12, pp. 931-933). They are using a 65-colony apiary composed of both bees from African and European descent. Although most of Arizona is colonized by Africanized honey bees (AHBs), any colony that is over-defensive is routinely requeened with more gentle stock. The authors have seen no evidence that AHBs are more Varroa-tolerant than European bees. This is in contrast to other areas of the world, including nearby Mexico³⁹. It lends some credence to the idea that the mite may indeed be responsible for why AHBs have yet to expand into eastern Texas and along the rest of the Gulf of Mexico coastline⁴⁰.

The authors report their Varroa-tolerant stock has now survived for nearly five years with an average infestation level of six to seven mites per hundred bees. This is the typical level reported by many investigators in Brazil, where traditionally no chemical mite control is used⁴¹. This is also in spite of the fact that the mites were identified as the more-damaging Russian or Korean haplotype by Dr. Denis Anderson⁴². All this is encouraging, but the report makes no mention of viruses vectored by Varroa, which may also play a role in colony collapse⁴³.

The levels of Varroa reported by the authors are consistently low even during times of stress, and in the 1998 El Niño year⁴⁴, when resources were abundant, colonies averaged 90-pound honey yields. The study will now be expanded in an ef-

fect to determine the factors contributing to tolerance, including hygienic behavior⁴⁵, and adult bee emergence time. An integrated pest management (IPM) research effort will also be mounted based on this information, and should be ready for implementation in the year 2000. The ambitious goal is to hold Varroa infestation below 5 percent by demonstrating that Varroa-tolerant bee populations can be developed from existing stock. In addition, the use of brood combs with smaller cell diameters and natural products with miticidal activity are expected to enhance the IPM program⁴⁶. ■

3. The brood combs in the hives from which the bees are derived showed no clinical signs of American foulbrood on the day of collection."

Comments on this document are solicited until February 7, 2000. Send four copies to: Docket No. 99-091-1, Regulatory Analysis and Development, PPD, APHIS, Suite 3C03, 4700 River Rd., Unit 118, Riverdale, MD 20737-1238. ■

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Threatened Bears in Europe and Florida

THE AUTUMN 1999 issue of *The Beekeepers' Quarterly* (Issue 59, pp. 20-22) discusses efforts to save Europe's brown bears (*Ursus arctos*)⁴⁷. It is not easy for farmers and beekeepers to put down the gun, the article says, but the killing of large mammals to protect human interests is more and more being called into question. Europeans have taken a page out of American and Canadian beekeepers' books and are using the technology that has the best chance of working, electric fences, to protect their apiaries. The LIFE ARCTOS project for brown bear conservation in Greece, according to the article, is completing its first two phases over five years, part of which is electric fencing of apiaries to minimize killing of bears by beekeepers. Of 83 participating beekeepers using electric fences, 94 percent were fully satisfied with the results. The article suggests electric fencing should be 5 to 6 feet high with the bottom strand 6 inches above the ground and a minimum of 12 inches between the other wires. An electrically charged wire netting mat is recommended to extend 18 inches out from the fence, with batteries and controller inside the fence.

Florida's bear population is under the same pressure as that of the European brown bear. The black bear in the Sunshine State is a recognized subspecies (*floridanus*) of the animal found elsewhere in the

United States known as *Ursus americanus*. How threatened the animal is is a matter of controversy. Many consider the species endangered⁴⁸, however, the U.S. Fish and Wildlife Service has not listed *Ursus americanus floridanus* as part of the Endangered Species Act. This has angered many environmental groups, who have subsequently brought suit⁴⁹. The black bear is also a living part of Florida's history, and a festival dedicated to this mammal was held last year in Umatilla, Fla.⁵⁰

A presentation on bears by Tom Eason of the new Florida Fish and Wildlife Conservation Commission⁵¹ on bears at the October 1999 meeting of the Florida State Beekeepers Association presented information on recent efforts to work with beekeepers concerning bear problems. The Commission publishes a nifty pamphlet entitled *Living with the Florida Black Bear*. Research in Tennessee is confirming the effectiveness of electric fences as preventative measures, along with the practice of aversive conditioning. Bears found in nuisance situations are darted and a tooth is pulled. After being treated in this manner, it is thought the experience will deter further visits. Study also showed that bears are opportunistic omnivores. This means they do not actively search out apiaries, but disturb them only

when and if they find them. Bears, like humans, follow the course of least resistance. Thus, placing apiaries out of their path, away from established roads and watercourses, are good location strategies. Electric fences similar to those used in Europe are recommended for any Florida apiary in bear country⁵². Mr. Eason said that beekeepers having problems with bears should contact one of the five regional offices of the Florida Fish and Wildlife Conservation Commission⁵³. Mr. Eason can be contacted at (850) 413-7379. ■

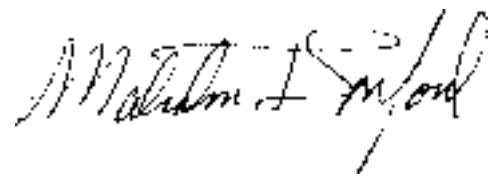
Bee Meetings

THE AMERICAN Beekeeping Federation meets in Fort Worth, Texas, January 11-16, 2000⁵⁴. For information, phone (912) 427-4233 or e-mail info@abfnet.

The Apiary Inspectors of America (AIA) meets at the Sheraton Inn in Gainesville, Fla., January 17-21, 2000. For information, contact Mr. Laurence Cutts, Division of Plant Industry, ph (352) 372-3505 x128.

The annual bee "snowbird" beekeepers meeting at Archbold Biological Station is scheduled for February 12, 2000. For information, contact Paul Cappy, ph (607) 749-2364. ■

Sincerely,



⁴⁷ <http://www.panda.org/resources/publications/species/threatened/BrownBear/index.htm>

⁴⁸ <http://198.240.72.81/flbrfact.html>

⁴⁹ <http://198.240.72.81/pr080399.html>

⁵⁰ <http://www.villagecircle.com/flbearfest/>

⁵¹ <http://www.state.fl.us/fwc/>

⁵² <http://edis.ifas.ufl.edu/AA133>

⁵³ <http://www.state.fl.us/fwc/whos-who/regnoffc.html>

⁵⁴ <http://www.abfnet.org/Convention/schedule.html>

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