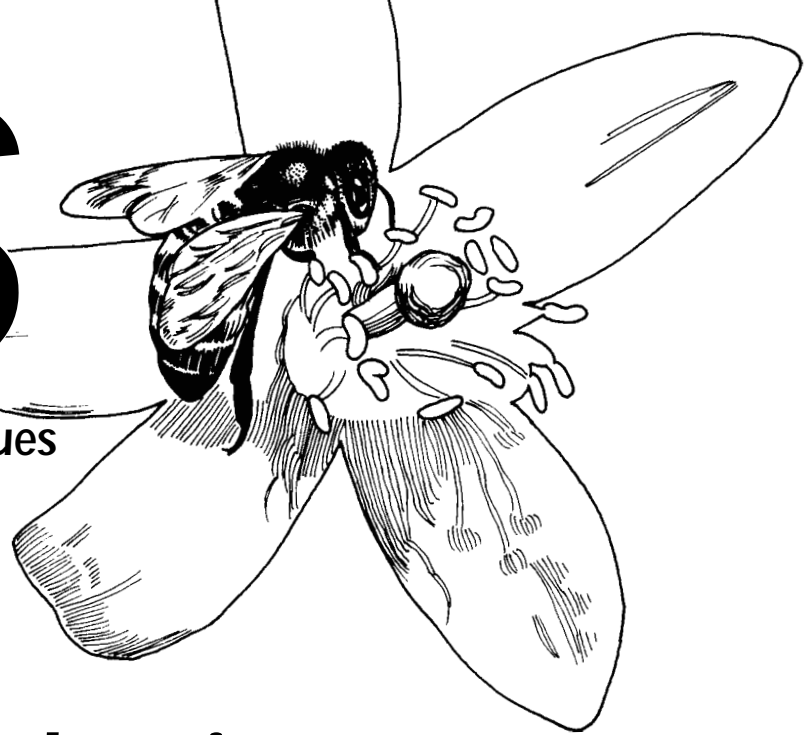


# APIS



## Apicultural Information and Issues

From IFAS/University of Florida  
Department of Entomology and Nematology

April 1997

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APIS Volume 15, Number 4  
ISSN 0889-3764

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## Apiculturists and the European Union

### Beekeeping Without Borders

THE WINDS OF CHANGE are blowing through Europe. They are being seen everywhere and are especially noticeable each May. Every year, on the ninth day of the fifth month, the concept of a united Europe is celebrated with parades, emphasized by the playing of the European anthem, Beethoven's *Ode to Joy*. Two years into the next millennium, this will no longer be an idea, but is expected to become reality. Ongoing efforts now taking place will culminate in a European Union and Common Market with a new currency, the Euro. Most noticeable to tourists and others at present is the prelude to the new Europe — a disappearance of most traditional borders. I recently returned from Spain, for example, and was not stopped nor requested to produce any identity papers leaving or reentering France.

**T**HIS YEAR BEGINS the five-year phase-in period to the year 2000, when the European union of qualifying nations is scheduled to take effect. One local town here in the Provence-Côte d'Azur region is leading the way this May, according to the local paper (*Le Provençal*, May 3, 1997). The little town of Cassis — usually known only for its famous steep, white cliffs (*calanques*) that plunge into a deep blue Mediterranean Sea — has received permission from the French Finance Ministry to conduct transactions in the new Euro (exchange rate: 1.5 Euros = ten French francs) until May 19. The goal is to set an example and quiet some fears about the impending monetary changeover.

Beekeeping will also be affected when the European Union becomes a reality. This was revealed at the recent meeting of the sixteenth annual Feria Apícola (Beekeeping Fair) de Castilla La Mancha in Pastrana, Spain (see [http://www.ifas.ufl.edu/~mts/apishtm/letters/aix4\\_13.htm](http://www.ifas.ufl.edu/~mts/apishtm/letters/aix4_13.htm)). At that event, EDAPI (European Documentation in Apiculture for Press and Information), an organization that cooperates in the publication of many European bee journals, mounted an exhibit. I met some of the principals there and was given an issue of a few of the major journals that are part of EDAPI.

*Continued next page*

## European Union continued

One of these magazines, the Belgian *Abeilles & Cie* (No. 56, January–February 1997), contains an editorial entitled “CARI sans Frontiers.” The author (Luc Noël, president of CARI) discusses the addition of French authors and subscribers to this journal. This, he concludes, is just the beginning of an apicultural information revolution without borders. The issue carries Supplement No. 12 of the European Note-

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This is just the beginning  
of an apicultural  
information revolution  
without borders.

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book, “Royal Pheromone,” published by EDAPI and made available to cooperating entities.

Participants in EDAPI include: OIPDA, Office Pour l’Infor-mation et la Documentation en Apiculture (French), *Abeilles & Fleurs* (French), FNOSAD (French; see [http://www.ifas.ufl.edu/~mts/apishtm/letters/aix3\\_23.htm](http://www.ifas.ufl.edu/~mts/apishtm/letters/aix3_23.htm)), APISERVICES (French; see [http://www.ifas.ufl.edu/~mts/apishtm/letters/aix3\\_31.htm](http://www.ifas.ufl.edu/~mts/apishtm/letters/aix3_31.htm)), *Imkerei Technik-IT* (German), *Vida Apícola* (Spain), and *Rivista de Apicoltura* (Italy).

It is significant that the 1997 meeting of Apimondia will be held in Anvers, Belgium, September 1 through 6 (see <http://ourworld.compuserve.com/homepages/APISERVICES>). Brussels is the proposed seat of the governing body of the European Union. At the Pastrana meeting, a number of European leaders met to discuss how some 15 million Euros dedicated to helping apiculture might be partitioned in the New Europe.

Another important debate has to do with how honey quality (labeling) will be treated when the European Union is formed. Of particular concern will be the fate of those premium honeys that have what is called a “controlled label of origin.” This is particularly important in France, which has very strict regulations (see [http://www.ifas.ufl.edu/~mts/apishtm/aix2\\_22.htm](http://www.ifas.ufl.edu/~mts/apishtm/aix2_22.htm)) and does not want to see them weakened.

There is concern that the officials trying to come up with honey rules for the Union would prefer a path of least resistance, given the complexity of the honeys found on the continent. In Pastrana, discussion was focused on a Spanish honey that is seeking European Union support for such a label (Honey of Alcarria).

What form the final New Europe will take is still unknown. However, this phenomenon appears to be just one manifestation of many revolutions occurring world wide that are being nourished by the Information Age. ■

# Transgenic Oilseed Rape

## The Honey Bee Connection

MANY FIELDS HERE in southern France this spring are bright yellow, full of the plant called colza. This oilseed rape relative (*Brassica napus* L. var. *oleifera*) and hybrids are relatively new to this region. They require insect pollination, but the environmental conditions are often unstable when they bloom, meaning many pollinators are simply not available. Enter the one manageable pollinating insect vector, *Apis mellifera*, the honey bee.

This insect is also used in sunflower seed production for oil; thus the event of January 9, 1997, in Toulouse, France, called “Day of Information Exchange Concerning the Pollination of Oil-Seed Crops.” This event was reported by F. Jeanne in *Bulletin Technique Apicole* [No. 93, Vol. 23 (1) 1996, pp. 7–22], published by the OPIDA, F61370 Echauffour, FRANCE, a cooperator with EDAPI (see the European Union article).

This meeting, Mr. Jeanne says, was organized by Association Nationale des Agriculteurs Multiplicateurs de Semences Oléagineuses (ANAMSO). Part of the event was a report of a survey of the ANAMSO

membership concerning use of honey bees. Among those responding, 49.6 percent of colza growers used hybrid varieties, 40.4 percent used the original (classic) plant and the rest used both. Of those growing the classic plant, 32.8 percent saw use of honey bees in pollination as advisable, 8.19 percent considered it mandatory. In hybrid production, 94 percent of growers used bees. For sunflower seed production, 56 percent considered honey bees mandatory in the pollination process.

**N**INETY PERCENT OF HIVES used in colza and sunflower seed production were there at the grower’s request, according to the survey. Eighty-three percent were rented by verbal agreement. The number of hives per hectare (2.47 acres) varied between one and five (one or two most frequent for colza; two for sunflower). The hives were generally moved in at the grower’s request, but located by beekeeper preference. The average price was 136 FF (US \$24) with a range of 50 FF (US \$9) to 500 (US \$89).

Pesticide treatments are necessary in

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Honey bee activity results  
in less risk of accidental  
pollination by  
undesirable varieties or  
related plants.

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colza, but the survey shows that over 90 percent of growers took necessary precautions when bees were present. These included selecting less toxic compounds and applying them when bees were not foraging. Warnings related to bee toxicity were routinely carried on the labels of products used in the field. Participants agreed that all the elements leading to a good pollination effort in colza were not known.

Jacqueline Pierre and Michel Renard, scientists from INRA (the French equivalent of USDA) presented their findings concerning colza pollination at the meeting. Colza is a hermaphroditic plant (has both female and male flowers). The stigma is

receptive before the anthers begin to produce mature pollen. The stigma is good for only about six hours. One male flower produces about 100,000 pollen grains; one hundred are deemed sufficient for self-pollination in classic colza. For hybrid seed, however, cross-pollination is needed between male and female varieties. These are planted in rows, one male to four females. Care must also be taken that competing crucifers, including other varieties of colza, are not nearby to ensure purity in the resultant seeds.

**T**HE MOST IMPORTANT condition for pollination in hybrid colza is synchronized flowering. Thus, it is essential that a complete pollination effort is maintained, according to authors. Honey bees accelerate and stabilize pollination, resulting in less risk of accidental pollination by undesirable varieties or related plants. Nectar-collecting honey bees are those responsible for the pollination; this produces a greater effort in the field than if just pollen collectors were responsible. Because honey bees are generally faithful to one plant, it is advisable not to introduce them into colza plantings until at least 5 percent of the plants are in flower. Purity is essential in colza hybrid seed production; the quality of the seed also depends on choice of parents and conditions under which they are grown.

A paper presented by Minh-Hà Pham-Delegue of INRA described results concerning the relationship of honey bees and transgenic colza. The development of transgenic varieties through genetic manipulation has provided some new properties to plants. These include production of protease inhibitors (PI) which confer resistance to fungi and insects. The overall strategy in this technology is to develop plants that require less insecticide use. In transgenic plants, however, chemicals produced by genes designed to inhibit insect feeding or prevent fungal growth may also affect pollinating insects in two ways, according to the author:

1. Direct effect on colonies from proteins in nectar and pollen.
2. Indirect effect in foraging behavior by modification of nectar, pollen or other volatile substances.

The results of the studies reported by the author indicate significant differences in quantity of nectar found in various

transgenic varieties. Other investigations on pollen composition and structure are continuing. Comparing volatile emissions between transgenic colza and control plants also indicates that genetic transformation can modify existent plant odors. In other studies, analysis of larval intestinal proteins of adult worker bees fed PI does not show a higher than normal level. In addition, no apparent toxicity was found when measuring bee mortality in the same way it is done for pesticides. Finally, no inter-genotypic preference by worker bees was found.

Colza is also now being grown across the southeastern United States. It is called canola and can produce a good honey crop as it does in France. I have seen relatively little information on the plant, but concerns about its culture and pollination are likely to be similar. A chapter dealing with canola is due to be published soon in a book authored by Drs. Keith Delaplane and Dan Mayer.

In a somewhat parallel study on sunflowers, the author found that nectar composition played a role in pollinator selection, principally due to the amount of sweet found. The floral odors were also variable, resulting in the conclusion that selection of both male and female lines with similar

nectar compositions and odors is necessary for optimum pollination by honey bees for production of hybrid seed.

In another paper, "Honey bees and apiculture: their pollination role," F. Jéanne provided a discussion of the essential elements in pollination contracts. He concluded that commercial pollination is not the purview of the amateur beekeeper. The activity requires a full-time commitment from a professional beekeeper who can bring the three constituents of a successful hybrid-seed pollinator together:

1. Strong hives.
2. Availability of colonies when and where the grower wants them.
3. Size enough to put many colonies on a pollination job.

For their own protection, Mr. Jéanne said, commercial pollinators must demand written contracts dictating when colonies are moved in and out and the number of pollinators (pollinating units) expected by the grower. The goal, he said, is not how many hives per hectare, but the number of forager honey bees per unit area. Finally, he concluded that pollinator groupings make a lot of sense and suggested beekeepers study the existent GRAPPS (see October 1995 *APIS*). ■

## Beekeeping in Southern France

### Ancient activity recorded in stone walls

ALTHOUGH A MODERN AGRICULTURAL ENTERPRISE, beekeeping has very old roots in southern France. The straw skeps and cork-oak hives of the past are mostly in museums now, but a catalog of beekeeping history still exists on the landscape in the *murs à abeilles*.

These stone walls were originally constructed to protect the fragile, rustic beehives from the weather and predators. Many have disappeared, but those remaining are catalogued in the book *Des Hommes, Des Murs et Des Abeilles*, published by the Musee de Salon & De La Crau, Avenue Roger Donnadiou 13300, Salon-de-Provence, in 1993.

In general, the walls oriented south and southeast and were located in the best honey-producing areas. They were composed of niches to house the hives averaging 19 to 31 inches tall, 23 to 27 inches wide and 12 to 19 inches deep. The examples in the book range from the extremely primitive (Le Mur De La Ferme Des Abeilles near Salon-de-Provence) to a spectacular two-story example at La Chartreuse de Bonpas a Caumont-Sur-Durance. I hope to visit some on these during my travels, but if I don't make it this trip, they no doubt will still be around the next time I visit France. ■

# Minitel — The First Internet

IN THE 1970s, the initial breezes of the Information Age blew through France. This developed into what is called Minitel. In the late 1990s, Minitel is still found everywhere and is a staple of the telephone monopoly, France Telecom. People use it to make train reservations, track addresses and telephone numbers, and find information about a huge variety of subjects.

Beekeeping is no exception. A glance through Volume 23 of the *Bulletin Technique Apicole* (published by OPIDA as mentioned in the article found in this issue on the European Union) proves the point. Issue No. 1, written by M. Bocquet, for example, describes a do-it-yourself test on beekeeping knowledge through a program called Apimedia on Minitel. A menu allows a choice of five levels: Junior, Consumer, General Public, Beekeeper and Professional. There is feedback for both correct and incorrect responses. Issue No. 2 discusses how one can obtain the results of an opinion poll on beekeeping subjects through Apimedia.

In issue three, Mr. Bocquet describes the use of Apimedia to find information in the OPIDA database. The number of publications found there is astounding and continues to grow. A paper index of authors and titles from 1981 through 1990 is six pages long and contains articles on everything from acarions (mites) to venom. Through Apimedia, the full database

can be searched using title, subject or key words. The application reminds one of the computer-based card catalogs now in general use around the United States. Elsewhere in the magazine it is noted that Apimedia received an award in educational excellence from the European Commission in Brussels.

In basic terms, Minitel is a computer tied to a telephone. If that sounds familiar, one only has to look at the latest incarnation of this technology, the Internet. There are significant differences, however. The Internet is worldwide and for the most part inexpensive, often free. Minitel is found only in France and costs about 1.29 FF (US \$.23) a minute to use. The French technology, once so innovative, now finds itself unable to compete. Probably only because it is literally the only game in town has it survived this long.

This is reminiscent of other phenomena engendered by the Information Age. These include the decline of the mainframe in favor of the desktop computer and the recently publicized troubles of Apple Computer, a company that produced an innovative, closed-architecture computer, but was derailed by the open architecture system of the IBM PC.

Fortunately for the beekeeper, the OPIDA electronic database is not totally tied to Minitel in France. The same article in the Bulletin reveals that it is available on disk and that software

## Extension Apiculturist Activities on Sabbatical

I continue publishing information on Apis-L from France. This electronic list now has more than 500 subscribers worldwide. My last three letters were:

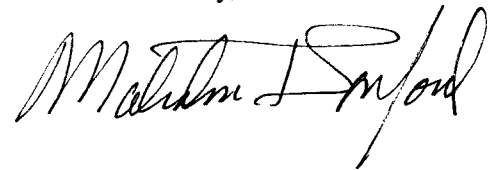
1. April 23, 1997—Account of the sixteenth Feria Apícola de Castilla-La Mancha in Pastrana, Spain.
2. April 24, 1997—Account of a visit to Le Bateau Abeille and discussion of fluvial beekeeping.
3. April 25, 1997—Encounter with Steve Taber, and discussion of his views after living in France for seven years.

For an index of letters, please see:  
<http://www.ifas.ufl.edu/~mts/apishtm/letters/aixind.htm>. ■

called APIBIBLIO, produced by APISERVICES, provides searching capability.

The next step will probably see the presence of this information on the Internet. The only drawback for much of the English-speaking beekeeping world, however, is that it will probably be only *en Française bien sur*. ■

Sincerely,



*APIS*, a monthly newsletter, is celebrating its 15th year of service to beekeepers. For subscription or other information, please write, phone, fax or e-mail.

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