Apimondia 2007
Melbourne, Australia

By M.E.A. McNeil

Apimondia, the biennial honey bee conference that moves around the globe, landed in a greening Melbourne, Australia this fall. Well, it was spring for the Aussies, who welcomed us with the same open delight that they had for the arrival of verdant rains after years of drought.

Whether by coincidence or convergence, this year's event, once regarded in the US as more of a European affair, was burgeoning with American presenters (more than from any country but the hosts), who offered a concentration of information rarely found at a US conference. Beyond that, more than 400 talks from over 50 countries were available to choose from – usually three choices every twenty minutes. They ranged widely: biology, disease and pests, technology and equipment, pollination, flora, economics, apitherapy, as well as bees for rural development.

All things *Apis* every day, with an atmosphere more surprisingly electric than the memorable moment when I plugged in my 110 surge protector into the 240 outlet. The hottest subject was what relation Australian package bees may have to a virus and how that may be linked to colony collapse disorder (CCD).

Apimondia is a unique forum; topics were turned like prisms, mostly by researchers, but commercial beekeepers and hobbyists weighed in -- the proceedings kept cordial by the easygoing Danish president, Asger Jorgensen. Off the record exchanges flowed, too, along with the good Australian wines and ales.

CCD is one example of a topic broadened by this global exchange. The observation of Stephen Pernal, head of federal bee research in Canada, is that winter losses there were double last year, but no symptoms matching CCD were found – even though both Australian bees and Varroa have been in Canada for decades. From the UK, Norman Carrack had worked on the cataloging of bee viruses at Rothamsted Research (including the Kashmir Bee Virus complex, of which the suspect virus, Israeli Acute Paralysis Virus is a member). He suggests that an older process of categorizing viruses, serology, would add information to the molecular studies done by the Americans. He thinks the familial relationship of IAPV to KBV, a virus already in the US, may turn out by that assessment, to be very close.

The head Australian researcher Denis Anderson, who has worked with bee viruses, suggests the relationship between KBV and IAPV may be as high as 70%. He agreed with American researcher Jeff Pettis at the conference to exchange bee samples, which he stressed need to be much wider to establish the distribution of IAPV.

Pettis, head of the USDA Beltsville bee lab and an author of the paper in Science describing IAPV as a marker for CCD, pointed out that "marker" is not synonymous with "cause" – emphasizing that his group has not made that conclusion. Its members believe that the causes are multiple, possibly involving nutrition, pesticides, diseases, mites, and beekeeping practices. He agrees with Anderson on the need to broaden the sample base, welcoming the cooperation of his lab, and planning to reach into banked samples that pre-date the arrival of Australian bees in the US in 2004. He was surprised that media coverage focused on the link with Australian packaged bees while ignoring the fact that IAPV was also found in Chinese royal jelly samples.

Rob Page of Arizona State University took a broad view. As an evolutionary biologist, he observed that pathogens and parasites are in an evolutionary arms race against beekeepers, and they are holding all the cards -- having an infinite supply of hosts in close proximity, courtesy of the beekeepers. (Scientific license to mix metaphors to make a point here.)

The French added an account of their own pesticide-caused collapse eight years ago, and so the international exchanges went. For the most part, the subjects echoed those of our own conferences, but with more varied echoes. An example was bee health, with more presentations internationally on American Foulbrood than we typically see. Other subjects had widely differing points of view – like the pros and cons of moving bees worldwide. A number of talks on honey purity dealt with detecting contamination and dealing with crystallization (e.g. physical shock to a container can cause honey to crystallize more readily, and a large drum crystallizes more quickly than a small drum).

The report that *Tropilaelaps*, a smaller, faster, more virulent Asian mite has moved from *Apis dorsata* to *Apis mellifera* was made by Denis Anderson. (A guy who knows his mites, he is responsible for reclassifying *Varroa destructor*.) He pointed out that Varroa was discovered in Asia in 1950, by the 70's it was in Europe, and by '87 it was in the US – just in case we were having too good a time.

Practical information abounded: Pettis urged us to "think inside the box" by adding screened bottom boards to remove pathogen filled debris from the hive. Wyatt Mangum and his wife Suzanne Sumner settled the question of whether to remove attendants when introducing a queen cage: do.

Although it is impossible to speak of overarching opinions at Apimondia, there were many more presentations on bee breeding as a means of combating the problems of disease and pests than on chemical treatments as a continuing solution. According to Australian researcher Peter Oxley, hygienic behavior of workers significantly moderates pathogen resistance. He is part of a team watching 336 hours of video survelience of freeze-killed brood and worker responses. Not great for plot, but it is the character development they are after: The resulting genotype data will be included in a joint American queen breeding program. Americans Tom Glenn and Sue Cobey also spoke on breeding. Cobey, who is at UC Davis, said that by the end of the conference there would be an exchange of Australian and American bees. Page has been successful in breeding for increased pollen storage, earlier foraging, and nectar collection with lower sugar content, which means fewer empty foraging trips.

Gadgets and inventions abounded, from a Hungarian electric rotating hive and an Australian small hive beetle trap made from corrugated cardboard to the old fashioned soft horsehair bee brushes we used to use, brought back by the Koreans.

Bee stories were everywhere for the telling – some larger than others. The motivating idea behind the British group Bees for Development is so simple and profound that it bears mention: Beekeeping is a way to lift people out of poverty. It requires no land and can be done with simple equipment, such as top bar hives. Bees can be kept by sequestered women and in war ravaged areas, with Darfur a case in point. Several presentations at Apimondia made this group an inviting charity.

In the end, we came away with a warm feeling for the Aussies and their sense of humor – the apiary named "Sticky Knob;" the cheesecake guy calendar of beekeepers in the buff courageously holding frames of bees as strategic cover; their renaming of the plentiful but unmarketable nectar source Patterson's Curse honey to Jane's Salvation, which sells. It might seem to us that they live in our golden past -- no Varroa, and the eucalyptus nectar flow filling a super in four days. But a decade of drought has left them scrambling for forage, and most think the mites are a matter of when.

We left some things behind, too, besides some San Francisco Beekeepers hats; we left some outworn ideas. Cobey showed that instrumentally inseminated queens are not inferior to naturally inseminated queens. The Aussies suggested that eight frame deep hives could be all we need. And at Apimondia we left behind any notion that learning about bees ends at our national borders. Foreign had become a tainted adjective – foreign honey undercuts the American market, and foreign pests threaten our bees. But come to think about it, our bees are foreign, and most of the fruits and vegetables they pollinate are foreign, too. The most often kept European bees worldwide are Italian and Carneolan, so there is much to be learned from global exchange.

The conference was remarkably well run, the stumbles few and not for want of planning. Because of the APEC summit of world leaders in Sydney, visas were denied to researchers from some countries. The Australian quarantine system, so successful in protecting beekeepers from invasions that wait mere miles offshore (most famously, Varroa, but the invasive Apis cerana as well), stopped some honey samples and woodenware from entering. Still there was far more than enough to do, multiple simultaneous translators hummed on, PowerPoints were nimbly synched, and in the end a world of bee people dispersed, much the wiser.

The next Apimondia will take place in Montpellier, France in 2009, with the theme "The Bee, Sentinel of the Environment." Perhaps by that time, the United States, which is not one of the 56 member nations, will take advantage of new rules that make it easier to join. The US, though, has joined 21 other countries in a new working group on "Prevention of Bee Losses" that met in the Netherlands this year.

Rolling along in a bus through the greening outback stretched under a full rainbow, "Waltzing Matilda" playing in the background, I picked the rather well inhabited brain of Norman Carrack, the British editor of The Journal of Apicultural Research. Against a backdrop that was quintessentially Australian, this Apimondia experience was rich and global. As it turns out, for better or for worse, the other side of the world isn't so far over there any more – and a world of others who share our interests can make it better. Or at least worth a listen.

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