



COMMONWEALTH OF AUSTRALIA

## Official Committee Hansard

# HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON AGRICULTURE, FISHERIES AND  
FORESTRY

**Reference: Future development of the Australian honey bee industry**

WEDNESDAY, 8 AUGUST 2007

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**HOUSE OF REPRESENTATIVES**  
**STANDING COMMITTEE ON AGRICULTURE, FISHERIES AND FORESTRY**

**Wednesday, 8 August 2007**

**Members:** Mr Schultz (*Chair*), Mr Adams (*Deputy Chair*), Mr Martin Ferguson, Mr Michael Ferguson, Mr Forrest, Mrs Mirabella, Mr Gavan O'Connor, Mr Secker, Mr Tuckey and Mr Windsor

**Members in attendance:** Mr Adams, Mr Michael Ferguson, Mr Gavan O'Connor, Mr Schultz and Mr Secker

**Terms of reference for the inquiry:**

To inquire into and report on:

Honey bee industry in terms of:

1. Its current and future prospects.
2. Its role in agriculture and forestry.
3. Biosecurity issues.
4. Trade issues.
5. The impact of land management and bushfires.
6. The research and development needs of the industry.
7. Existing industry and Government work that has been undertaken for the honey bee industry.

**WITNESSES**

**CANNON, Mr Desmond Robert, Chairman, Honeybee Research and Development Committee,  
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**MONSON, Mr Trevor John, Member, Honeybee Research and Development Committee, Rural  
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**O’BRIEN, Dr Peter, Managing Director, Rural Industries Research and Development  
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**THOMSON, Ms Margaret, Research Manager, Honeybee Research and Development Program,  
and General Manager, Established Rural Industries, Rural Industries Research and  
Development Corporation ..... 1**



**Committee met at 5.23 pm**

**CANNON, Mr Desmond Robert, Chairman, Honeybee Research and Development Committee, Rural Industries Research and Development Corporation**

**MONSON, Mr Trevor John, Member, Honeybee Research and Development Committee, Rural Industries Research and Development Corporation**

**O'BRIEN, Dr Peter, Managing Director, Rural Industries Research and Development Corporation**

**THOMSON, Ms Margaret, Research Manager, Honeybee Research and Development Program, and General Manager, Established Rural Industries, Rural Industries Research and Development Corporation**

**CHAIR (Mr Schultz)**—I declare open this public hearing of the House of Representatives Standing Committee on Agriculture, Fisheries and Forestry for its inquiry into the future development of the Australian honeybee industry. This is the third public hearing of this important inquiry. Today the committee will hear from representatives of the Department of Agriculture, Fisheries and Forestry.

I welcome representatives of the Rural Industries Research and Development Corporation. Although the committee does not require you to give evidence under oath, I should advise you that this hearing is a formal proceeding of the parliament. Consequently, it warrants the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. The committee has received a submission from the Rural Industries Research and Development Corporation. Are there any corrections or amendments you would like to make to your submission?

**Dr O'Brien**—No.

**CHAIR**—Do you wish to make a brief statement in relation to your submission or some introductory remarks?

**Dr O'Brien**—Yes. I would like to briefly outline RIRDC's role and the nature of our investments in research and development and then invite the other members here to make some comments in their areas. RIRDC is an investor in research and development. We are a statutory authority of the government and we invest in research and development in three areas: in new industries because of the government's interest in diversification, and that has us invest in research and development for things as diverse as crocodiles, olives and truffles. Our second area of investment is established industries and we are responsible for a number of levy-paying industries—chicken meat, honey, rice, fodder, pasture seeds, horses and some others. The third area we invest in is national rural issues, the big cross-sectoral issues that range across sectors.

The levy-paying industries, of which the honeybee industry is one, are supported by a levy in this case of 0.8c per kilo, which moved to 1.2c per kilo in July 2006 and will move to 1.5c per

kilo of honey in July 2009. Those levy rates are increased at the request of the industry to support research and development.

The way RIRDC administers research and development is through expert advisory committees that are constructed of producers and experts in the area. In the case of the Honeybee R&D Advisory Committee, we have two honey producers, a honey extension officer retired and a honeybee R&D scientist advising us. They have two important roles. The first is to help shape a five-year research and development plan. That sets out the key objectives and strategies for research and development for the honeybee sector over the next five years. We have provided a copy of the plan for 2007-12. They also advise the corporation on the projects that will best deliver on those R&D objectives. So it is a very important role and we depend on their expertise.

I think that is enough by way of introduction. I would like to invite Des Cannon, the chair of that committee, to talk about the new five-year R&D plan, its objectives and some of the key projects we see being undertaken in that plan.

**Mr Cannon**—If I can just elaborate firstly on how that five year plan was developed. It was done in conjunction with the honeybee industry, initially by means of surveys that were conducted at each of the state conferences. Each state in Australia has its own state conference and then that leads up to a national conference. At each state conference a survey was conducted on what beekeepers saw as the priorities for research and development over the next five years. That then was collated and presented to a national workshop at the national conference in Tasmania last year and then following on from that national conference the five-year plan was developed.

The beekeepers themselves in the development of the plan see the focus for the next five years as being primarily on pest and prevention of incursions and have allocated, from memory, 45 per cent of our funds over the next five years to be devoted to pest eradication, prevention and control. The next priorities are genetics, pollination and extension, each of which will we have allocated 10 per cent of our funding to.

As an indication of the projects that we are associated with, some of the key projects that we have been involved with in the last five years have been production of a publication on honeybee nutrition in Australia, use of temperature manipulation to control small hive beetle, a pest which was detected in this country in 2002 and is having an economic impact on beekeepers' operations, a literature review and a survey of the extent and the management of a protozoan disease that affects honeybees in Australia, *nosema apis*.

The committee has just asked for that project to be extended to include *nosema carinae*, which is being found in Europe and America and is believed to be the cause of a lot of their problems with the honeybee industries in those countries. We have funded a beekeeper tour to New Zealand to look at the New Zealand experience with varroa and to try and learn from their mistakes and from their experience in trying to deal with this pest. We have done a wide-ranging survey of Australian pollens for fatty acid content to work out the impact of different pollens on the nutritional level of beehives. We have also looked at things like nectar production from logged areas of forest to gauge what the effect of logging is on the honeybee industry in terms of nectar production. We are looking at things like antioxidants in honey and the use of honey for therapeutic qualities.

The committee has been able to use the funds that we have to support the industry in as wide a range as possible, but we feel very strongly that there is a lot more work to be done, particularly with regard to making Australian beekeepers ready for the impact of varroa, if and when it gets into this country, and also in the area of pollination, we recognise that beekeepers need to improve the pollination service that they are providing to horticultural industries and that we see as being an education role that fits within our five-year R&D plan.

**Mr SECKER**—It is not just horticulture. A lot of agriculture depends on—

**Mr Cannon**—Yes, and I might add that the impact of varroa, for example, is not only on horticulture; it is also on the pasture industries. The impact in New Zealand has been very heavily on white clover seed production so that after five years they are noticing a marked impact on their white clover pastures and that is now impacting on other agricultural industries.

**CHAIR**—When you say ‘a marked impact’—

**Mr Cannon**—A marked decline in the amount of white clover where seed is being set.

**CHAIR**—Thank you, Mr Cannon.

**Dr O’Brien**—Can I ask Margie to describe the linkages workshop that we organised a little while ago and the work towards a pollination alliance that is now being undertaken with government support.

**CHAIR**—My apologies, I was not meaning to exclude you from making a contribution. Go ahead please, Ms Thomson.

**Ms Thomson**—We were going to hold a pollination workshop—we being RIRDC—in November last year. Our advisory committee met with the Minister for Agriculture, Fisheries and Forestry who invited RIRDC to increase the size of that workshop so that we could bring through as many of the horticultural and plant base industries as possible. We held that workshop in April this year with 75 to 80 delegates who encompassed a number of industries, not just the honeybee industries but everything from lucerne pasture seeds to major horticultural crops. It was not easy bringing those industries to the table. A lot of legwork was required through the process in explaining why they needed to be there. Most of them did not realise the impact that varroa would have, let alone that varroa actually existed.

As a result, the workshop was very successful in educating a number of key industries on the significance of the problem and the implications that will not only be faced by the honeybee industry itself but through a number of key industries. As Mr Cannon has just stated, the impact and the flow-on effects move right through not only in terms of the crops that are dependent on honeybees for pollination, but for livestock industries such as our dairy and our meat based industries, and even the wool industry, anything that is dependent on white clover or other pollinated pasture. From that, we had some key outcomes that were endorsed by all the industries in attendance at the workshop. I should add that most of those industries wrote letters of support to us stating how successful the workshop had been.

Most of them would agree with one key delegate that got up at the workshop and stated, 'This is a bigger issue than water.' As a result, we were asked to approach the minister to see if we could get some further funding to develop an alliance of the various industries to get them to work together and to develop a business plan that we could deliver to that alliance so that they could move forward. We have just received that funding, for which we are very grateful. Trevor Monson might like to also just run through the key pollination issues.

**Mr SECKER**—When you talked about white clover, were you talking about white clover seed production for—

**Mr Cannon**—For pastoral propagation, not for seed propagation.

**Mr SECKER**—So you are not talking about in your normal pasture; you are talking about the actual seed production?

**Mr Cannon**—No, I am talking about reproduction of the white clover pasture.

**Mr SECKER**—On existing pasture?

**Mr Cannon**—Yes.

**Mr SECKER**—Why do you only refer to white clover? There are a whole lot of other clovers which I would have thought—

**Mr Cannon**—There are a whole lot of other clovers but white clover is the predominant one in New Zealand and that is the one that we are using for—

**Mr SECKER**—Because of its use in the dairies.

**Mr Cannon**—Yes.

**Mr SECKER**—So we have not really got any information about Australia?

**Mr Cannon**—No. In terms of honey production, white clover is seen as an important area for honey production in some regions of Australia but in overall terms it is a very minor honey crop.

**Mr SECKER**—What about for seed production for other farmers—like lucerne, white clover and strawberry clover—where the growers grow the plant just to harvest the seed? Have there been shown to be any effects?

**Mr Cannon**—Yes, there have been studies done that show the increase in seed set when honeybees are put onto lucerne crops for pollination.

**Mr SECKER**—That goes without saying. You would not try to grow a lucerne seed crop without having bees on the place.

**Mr Cannon**—No.

**Mr SECKER**—And one hive per acre is the generally accepted rate of having bees. One of the problems we are hearing about throughout this whole inquiry is that there really is not that much funding. I think CSIRO suggested you could spend \$50 million on varroa just on its own. So spending \$678,000 or whatever it is, is really a drop in the ocean, isn't it? What efforts have you made to get support funding from those industries that would be very affected if the whole bee industry were affected quite badly?

**Mr Cannon**—That was the purpose of holding the pollination industries workshop in April. We are trying to set up some means whereby those other industries can contribute to honeybee and pollination.

**Mr SECKER**—Have you had any success or commitments?

**Mr Cannon**—I refer that question to Margie because she is the one handling the funding and the commitments that we are getting.

**Ms Thomson**—In terms of support from the workshop we would have received probably 20 to 30 letters of support from not just institutions but mainly other horticultural and plant based industries to try to further research and development into the future. I think it goes without saying that bringing further funding through RIRDC really demonstrates the underlying importance of R&D. The industries themselves felt it was absolutely key to ensure that there are future productivity gains with or without varroa.

In terms of RIRDC and our pasture seeds program, we actually do have an R&D project looking at leafcutter bees to pollinate lucerne. So there are other programs out there within the RIRDC family which are looking at alternative means of pollination, but there is nothing out there that is going to match the European honeybee.

**Mr SECKER**—Yes, they have been looking at the leafcutter bee for 30 years.

**Ms Thomson**—You are aware of that—yes.

**Mr SECKER**—And they really have not got very far, even though we keep on being told we could almost double our yields if we had the leafcutter bee, especially in the lucerne industry.

**Ms Thomson**—Yes.

**Mr SECKER**—Just as an explanation, the normal bee gets a dong on the head when it pollinates the seed, whereas a leafcutter comes in and cuts the leaf and pollinates it that way. There is no disincentive. What sort of commitment have you had from those industries? It is great to get a support letter but you really need the bucks on the ground.

**Ms Thomson**—The commitment of support is there. It is key in ensuring that we are able to continue to drive this process forward. There needs to be a model to enable the research institutions and the industries to be brought together. That is what we are hoping to do from working through the key outcomes of the workshop and delivering that business plan. It will develop an R&D plan for the pollination industries, or those that are impacted by pollination, down to project level. It will give an indication of what type of model is necessary and how

financial contributions can be provided. But this is a big issue. We know that the impact of varroa will impact on the price of foodstuffs that are available in Australia and the consumer will be paying a lower cost if we can really push through a very strong R&D program as quickly as possible. So the spillover benefits are significant. We are talking about \$4 to \$6 billion industries in Australian agriculture that will be affected by varroa mite.

**CHAIR**—Could you just repeat that; four to six billion?

**Ms Thomson**—Four to \$6 billion of agriculture that will be impacted upon.

**CHAIR**—Horticultural industries.

**Ms Thomson**—Horticultural and plant based industries, the secondary impacts that will come through to the wool, meat and dairy industries.

**CHAIR**—That is a significantly greater figure than we have been led to believe although the figure that we have had in evidence taking has been centred around \$2 billion, which is a direct contribution to the economy.

**Ms Thomson**—I am talking about the size of those industries, not the impact.

**Mr SECKER**—It is not necessarily the effect.

**CHAIR**—Thank you.

**Mr Monson**—To take you down the track a little bit further, you said that one hive per acre is fine for most crops, whether they be pumpkins or whatever.

**Mr SECKER**—I am talking about lucerne. That is the only industry I know anything about.

**Mr Monson**—That is fine, but that was true. In my area, you did not need bees because there were feral bees that lived in the river flats and pumpkins and everything got pollinated. I have been reading some literature lately on the American almond industry because back in the 40s they recommended only one hive as plenty for almonds. Then it went up to as many as three. I tried to find out why they changed. Varroa takes out all the feral bees—we call them feral—or the bees that live around the neighbourhood, so you add another one. So the one hive the acre that was quite sufficient then becomes two.

**Mr SECKER**—Yes.

**Mr Monson**—Because it becomes two, then there are no other pollinators around and everybody wants two hives the acre. To transport them—in my case, 2,000 kilometres—then it is the economic effect, not the supply so much because the beekeepers that are smart that learn and listen to our research pick up what to do, but it is the actual cost of doing it that the consumer pays. That is where the cost is.

**CHAIR**—When you refer to feral bees you are talking about feral honeybees rather than native species, aren't you?

**Mr Monson**—Yes, and that is also something else in this latest colony collapse disorder inquiry in the States. They find not only are they losing their honeybees but also they are also losing their other beneficial insects along the way with it, which alludes to chemical hang-ups as well, which is a different area again.

**CHAIR**—What do you think about the attitude of some governments and territories who are stopping people from putting their hives into public lands and national forests and using the argument that the honeybee interferes with the natural pollination process of native bees?

**Mr Cannon**—The situation in Australia is that 70 per cent of our honey production comes from native flora. That is across the board. That being the case, beekeepers could not survive if they were totally reliant on agricultural land, weeds and agricultural crops for honey production. That is one issue—the sheer amount of honey production. The second issue is honeybee nutrition. Beekeepers who are trying to prepare bees for a pollination contract need access to native flora in order to prepare their bees for that pollination contract. The third issue is the argument that the beekeeping industry can survive without access to native reserves, parkland, national parks and so on. In Queensland, there is a sunset clause in effect which means that after 2024 beekeepers in Queensland will not be able to use native forests for access for their honeybees. The thinking behind that argument is that beekeepers can rely on agricultural land or they can rely on eucalypt plantations. We have an issue with that line of thinking in that eucalypt plantations tend to be a monoculture, they are very intensively planted, the trees in those eucalypt plantations do not flower as well, the trees in the centre of the plantation do not flower, and the trees on the outside of the plantation do not flower well because of the density of planting. They are not producing adequate resources of either pollen or nectar for the bees to use. The corollary of that is that a lot of trees in eucalypt plantations in Australia are not actually suitable for honey production. There are over 600 species of eucalypts and not every species is a honey-producing species.

**CHAIR**—To sum up what you just said: the honeybee industry depends on native flora for about 70 per cent of its honey production.

**Mr Cannon**—Yes.

**CHAIR**—That is the first point. The second point is that the honeybee, rather than diminishing the pollination process within our state forests and public lands, enhances the pollination process for our native flora.

**Mr Cannon**—Yes, studies have been done that show that in some cases native pollinators do not pollinate eucalypts as effectively as European honeybees. There is less seed set per tree and the seed that is set is more viable when European honeybees are used as the pollinators.

**Mr ADAMS**—We are talking about older trees, aren't we?

**Mr Cannon**—Not necessarily. A study that was financed by our committee with New South Wales forestry has shown that it is not necessarily the older trees that produce the most nectar. This study was confined to grey ironbark and spotted gum—*Eucalyptus paniculata* and *Eucalyptus maculata*. In some cases it was the medium growth trees that were actually producing the greatest total output of nectar and concentration of sugar in that nectar.

**Mr ADAMS**—That is what I meant.

**Mr Cannon**—Plantations are not the answer. To give you an example, in New South Wales alone, over 4,200 travelling stock reserves are permanently booked by beekeepers for use as apiary sites. In round figures, 3,750 forestry sites are permanently booked. The travelling stock reserves are used because a lot of them have remnant vegetation. There are only 350 sites in the national park system. We have estimated that about 2,000 sites were lost to the industry because of the policy of excluding beekeeping in national parks in New South Wales once a national park was formed. We have lost a huge resource in the national park arena. We need access to that resource to be able to survive.

**Mr ADAMS**—Do you think we need to get that thinking a little bit better organised? Most scientists that I have spoken to tell me they do not think that any genetic change would take place with honeybees in parks and conservation areas, but there is this persistence in trying to keep honeybees out of park sites and things. Do you think we need to get a bit of a rethinking going on in state bureaucracy?

**Mr Cannon**—Definitely. I see that as part of the education side of our role: to educate not only beekeepers but also the public in this misconception that bees do not have a role to play in the Australian environment.

**Mr Monson**—But let's be honest about it: there are some bee sites in national parks that interfere with the other uses of the park and so—

**Mr ADAMS**—Sure.

**Mr SECKER**—Recreational areas.

**Mr Monson**—So it has to be like a joint approach: give a bit, take a bit.

**Mr ADAMS**—Of course.

**Mr Monson**—In general, I think it is a misconception—if you go down the track of introducing bees, then cows are introduced, pumpkins are introduced, and where do we stop? It is really an education process.

**Mr Cannon**—The other thing that is worth pointing out is that, in a commercial situation, beekeepers will not go into that national park unless there is an excess of nectar and/or pollen in the first place. In that sense, they are not competing because they are only there when there is an excess.

**Mr ADAMS**—I have learnt that beekeepers are very smart; it is all about flowers. I have learnt that they very smart in working out where flowers are and which part of the bush is going to flower this year, and eucalypts only flower some years because of dryness and whatever. There is a hell of a lot of knowledge in beekeepers, and it is not all written down. I think there is a lot of knowledge that we really need to capture from a research perspective. The other thing that you were saying was about bee quality and getting bees ready for the other tasks—

**Mr Cannon**—Pollination.

**Mr ADAMS**—This seems to be a very important part and I think the smarter beekeepers that I have come across are the ones that have a lot of knowledge in that area where they prepare their bees extremely well for the tasks that they put them out to. You are saying that that is the native fauna that usually—

**Mr Cannon**—If I could elaborate on that statement: bees use nectar as a source of carbohydrate. That is why they are collecting nectar. They collect pollen as a source of protein. Bees are like any other animal or human. In order to be at their optimum efficiency they need a balanced diet, and so they will collect their pollen from as wide a range of sources as possible, because not all pollens are as beneficial as others. Paterson's curse, for example, is 33 per cent protein in the pollen. Apple box, *Eucalyptus bridgesiana*, is about 34 per cent. Canola is around 25 per cent, acacia pollen or yellow box pollen is only 11 or 12 per cent. So there is a wide range of protein content within pollens. Bees are trying to collect pollen from as wide a range as possible to satisfy their nutritional needs.

**Mr ADAMS**—How much knowledge do we have of that? Is that well researched?

**Mr Cannon**—The pollen content of Australian natives is very, very well documented.

**Mr ADAMS**—Is the flowering of the trees well documented?

**Mr Monson**—We have got a number of publications that are available that have been done state by state. You are absolute easily spot on with your assumption about the knowledge of when things flower and when it is going to be right to put bees on it. I am a second generation beekeeper and I still say—

**Mr ADAMS**—A young one.

**Mr Monson**—Yes, a young one, and I say that it is one of the hardest things to learn.

**CHAIR**—I will ask you a couple of questions which I do not think we have addressed as yet. They are on the issue of exporting of honeybees into countries like the US and the importance of that to the industry. I ask you to comment on the evidence that we have heard through a previous inquiry that we do not have the technical expertise to continue to build the genetics up in the bee population and, more importantly, we do not have sufficient numbers of people suitably qualified to breed the types of bees that we would expect to export. I understand we not only export bees to the US to assist them with their almond blossom pollination because of problems with the varroa mite in California, but also export bees—which I was amazed to hear when I was there—to Saudi Arabia. We know the honeybee industry is centred around honey and medical products derived from honey and pollination, but how important is that section of the industry to the industry and to the country itself, and what are your views about the shortage of the technicians that are required to breed honeybees in this country? Also, we have heard that we used to have training facilities in some universities and they have disappeared over the years, for obvious reasons. They obviously think that they are not getting enough money out of running the courses, so they dump the courses and that impacts on the industry. Could you comment on those three areas?

**Mr Monson**—There is a whole range of answers to what you have asked. It goes from the apiary advisory committees that lead us within the states. They are not advisors any more; they are only really stock inspectors now.

**Mr ADAMS**—No extension.

**Mr Monson**—Yes. As to the expertise in some of the areas that you are talking about, of resistance or a better quality bee, in dairy or something like that if you can raise production by 10 per cent—

**CHAIR**—Can I interrupt you and ask you to keep your thoughts together on that. We are just being summoned to the chamber for a division.

**Proceedings suspended from 5.57 pm to 6.09 pm**

**CHAIR**—This inquiry is now reconvened.

**Mr Cannon**—I want to come back to a comment I made earlier about the forest plantations not being suitable for honeybee usage. We have got a project at the moment that is looking at that very issue. So that is due for completion.

**Ms Thomson**—It should be available to be published within the next month or so. As soon as we get to final draft we will send an advanced copy to you.

**CHAIR**—That would be very helpful, thank you very much. Mr Monson?

**Mr Monson**—If we want to go down the track of breeding a super bee like you would a super cow or whatever, then we have not got the expertise in this country. We have some expertise but it is not funded or profitable to go down that track. If we want to maintain the edge in the world market with queen bees it is necessary to do that work and some trial work, especially on resistance. Australia should be testing bees for tolerance or resistance to varroa mite before we actually get it. We should be able to do some cooperative research with the US or some other country—we cannot with New Zealand because we have a disease that they have not got. A lot of the people who want to produce these thousands of queens to sell overseas are just workers, but if you want to get into this field you need artificial insemination techniques and all the sorts of skills that go with it. Those super queens then go to breeders who then breed multiple numbers. We are continually being asked about ordinary employees, even on a short-term basis, that may come in from overseas. They need a visa that would give them six months in Australia at one place. I do not know whether it is possible or how it works, but we are lucky we are in the Southern Hemisphere. The Northern Hemisphere does not have any available work, so those people could come to Australia and have that expertise come with them, but we need the proper permits to be able to do that.

**Mr SECKER**—You seem to be saying that it is not a matter of if but when varroa comes to Australia. That is fair enough. What are the most likely ways it will come here and what do we need to put in place to try and stop it coming in—or is that not a feasible option?

**Mr Cannon**—Its most likely entry to Australia will be through a port. We have had a number of incursions of Asian honeybee, *apis cerana*, into Australia and, to date, no varroa destructor has been found coming in with that Asian honeybee. We have only found varroa jackobsoni. For the committee's benefit, there are two species of varroa: one affects the Asian honeybee and the other one affects the European honeybee. It is the varroa destructor that is having the impact in New Zealand, America and the rest of the world. The chances of it getting into Australia are dependent upon the effectiveness of our quarantine controls. We also have a sentinel hive program running in Australia and that includes, at the moment, 80 hives. There are a lot of amateur beekeepers in Sydney and Melbourne who could be incorporated into that sentinel hive program, but again it is a cost-benefit analysis study or mechanism that has to come into effect. The way those sentinel hives work is for Bayvarol strips, insecticidal—miticidal; I should not say insecticidal because that might make you think they are going to affect the bees. It is a miticidal strip. Varroa is a parasitic mite, and the miticide in these strips makes the mite fall off the honeybee and fall down through a gauze base in the beehive. Underneath the base you have a sticky material. The varroa sticks to the material, and you can thereby monitor initially the presence and then the level of infestation of the mite. But there is a cost involved in setting up a hive with the gauze bottom and with these—

**CHAIR**—How much per hive and how many hives would we need?

**Mr Cannon**—You are looking in terms of \$10 to \$15 per hive to have that special bottom with a gauze base, to have the sticky mat in place and to have the Bayvarol strips available. If you are talking \$10 or \$15 per hive—let us say \$20 per hive—for 500 beekeepers in Sydney, if you wanted to get all the amateur beekeepers in Sydney monitoring for it, then it is a multiplication.

**Mr SECKER**—That is a thousand bucks.

**Mr Cannon**—Yes.

**Mr Monson**—We are not saying by any means that Australian quarantine is not doing its job. Australian quarantine is probably one of the best in the world. We are answering that 'not if but when' scenario. New Zealand spent an enormous amount of money trying to get it to stop spreading from the north island to the south island with no success. That is where that 'not if but when' comes from.

**Mr Cannon**—And New Zealand was spending something like \$800,000 a year in surveillance and monitoring of hives, physically examining hives and checking with sticky mats in the south island alone. The beekeeping industry was paying \$200,000 of that. The other \$600,000 was coming from a general levy on ratepayers on the south island of New Zealand.

**CHAIR**—What are we spending?

**Mr Cannon**—My understanding is that we are spending as a country in the order of \$10,000 to \$20,000.

**Mr GAVAN O'CONNOR**—You have partly answered the question I was going to ask about how extensive the sentinel hive program would be and the cost to ratchet it up to a really

effective stage. I think we have an idea of that. How does Australia rank compared to other countries in regard to research and development, advanced breeding techniques and that sort of stuff, just as a general rule of thumb? Who are the good players in this and where are we?

**Mr Monson**—Right throughout Europe is where the big players are—they have whole universities focusing on bees—and also the US and England. They are all way ahead of us. We would probably be just above some of the developing countries. Countries like Israel and Spain are way ahead of us. We are fairly well down there.

**CHAIR**—What you are saying basically is that we should have sufficient research and development funding available to allow us to send our scientists and our experts over there to spend some time in those countries to learn from their experiences about how we should handle or improve our particular system centred around our biosecurity and sentinel—

**Mr Monson**—Yes.

**Mr GAVAN O'CONNOR**—Or should we be concentrating on original research effort in the Australian context?

**Mr Cannon**—I would say that 75 per cent of our effort should be focused on setting up something in Australia. We are the most nomadic beekeeping country in the world. We move our bees more frequently and we obtain our honey from a wider variety of sources. Our beekeepers are a nomadic breed of people and it is a nomadic industry. In places like America and Canada, for example, they will at the most move their beehives two or three times a year. We are regularly moving our bees six to eight times a year. Would you agree?

**Mr Monson**—Yes, sometimes 20. That is because of our flora. Our flora flowers for short periods of time and over a wide area, and trees do not flower every year; they only flower every two or three years. What is applicable to overseas countries is not necessarily applicable to Australian conditions. Yes, we can learn from overseas, but we have to be able to apply that knowledge in the Australian environment.

**CHAIR**—Picking up the point that Mr Secker made earlier about evidence that we have taken so far, particularly from the CSIRO—who say that we need about \$50 million a year into the industry as a whole to undertake the research and development training et cetera that we need to take—would you like to give us a ballpark figure, or would you agree that that is somewhere near the figure that needs to be expended to protect our industry, keeping in mind that we are talking not just about honey but about our food crops?

**Dr O'Brien**—It is very hard to put a figure on that. If you looked across other sectors and their investments in research and development, under the current government model, the levy paying model, the government will match levies up to half a per cent of GVP. So typically you see industries that have a levy in place spending about one per cent of their GVP, sometimes a bit more, on research and development. If you wanted to use that as a benchmark and you said that the size of this sector, the pollination sector, is perhaps \$2 billion as an estimate, then perhaps \$20 million would be a relevant comparison for the amount of research and development you might see to make it consistent with other sectors.

**CHAIR**—But, given the size of the honey bee industry, which produces about \$60 million a year in honey and honeybee products, do you think that is a fair and equitable way of looking at a possible funding scenario to address the issues that we are facing now and in the future? I say that in the full knowledge of the significant contribution that the honeybee industry, small as it is, pays to the pollination process of our food crops in this country.

**Dr O'Brien**—At the moment the research and development is driven by levies paid by the honeybee industry, so it is a \$600,000 a year program, which matches that sort of proportion I was talking about before. I guess what I am suggesting is that, if you just want to benchmark it against other sectors and their research and development spend, and you take account of pollination services and their value to agriculture, then you could argue for more substantial investment.

**CHAIR**—I suppose it will be sympathetic to the honeybee industry because of its size. I am asking you if a \$20 million contribution from the Commonwealth is, in your minds, a sufficient level of funding to address all of the issues that we are currently confronting now and are likely to confront into the future—particularly the incursion of insects and mites that have the ability to destroy a very important part of our agricultural and horticultural economy?

**Dr O'Brien**—That is a very difficult question to answer. I think the work we will do with others as part of the pollination alliance will bring us in the next nine months or so substantially closer to an answer about what resources are adequate for the task, but I would not like to comment at this point—

**Mr SECKER**—And would you have the scientists and the facilities to actually spend that much?

**Dr O'Brien**—That is an issue, because you asked before about whether we needed to have resources to allow our scientists to travel and to be connected to the R&D effort internationally. The funds available here do not support a substantial research and development infrastructure, so there is a capacity building issue here.

**Mr Monson**—At the Honeybee Industry Linkages Workshop we talked about the Eastern Creek quarantine facility for the importation of bees, and I would imagine that \$50 million would include—

**CHAIR**—And research infrastructure.

**Mr Monson**—Yes.

**CHAIR**—State of the art research infrastructure, because that is what we are talking about in real terms, aren't we?

**Mr Monson**—Yes.

**CHAIR**—State of the art equipment, state of the art science.

**Mr Cannon**—I think the capacity exists in Australia. The pollination industry workshop attracted a lot of interest from places like the South Australian agricultural research institute. We have now got the University of Western Sydney.

**Mr SECKER**—You are talking about Waite in South Australia?

**Mr Cannon**—Yes, Waite in South Australia—it used to be Waite. We have now got the University of Western Sydney starting to do work on bee research. Sydney University has a centre of excellence for insect studies, and they have a bee component in that centre. They are doing bee genetic research, some of which is being funded by us.

**CHAIR**—I was interested in your comment about the University of Western Sydney now starting to—

**Mr Cannon**—As a committee, we not had—Hawkesbury ag college did a lot of work in bee research and in the last 10 years has not approached us with a view to doing any bee research; but in the last two years they have.

**CHAIR**—What has stimulated it? I ask the question because, since we did our rural schools inquiry, we have picked up evidence that there was a problem with that sort of facility being available to the industry. In addition to that, that evidence and then us starting this inquiry has stimulated an interest in the honeybee industry that I have never seen in my lifetime.

**Mr Cannon**—I think the interest from Hawkesbury and the University of Western Sydney has come about directly as a result of the incursion of small hive beetle into Australia. That incursion was centred on the Hawkesbury campus apiary, so it is directly affecting them and we are now having research done on small hive beetle by the University of Western Sydney.

**Mr Monson**—Which is really good evidence of what I believe would happen if you did set up this facility because we have a group of Germans coming out to Australia to study small hive beetle. Australia is recognised as being a smart country in a lot of its development and research. I believe, if you did have one of these facilities, you would get overseas people to come to do some research and they would bring their funding with them. They say to us whenever I have visited, ‘You live in Australia with no subsidies from your government on your production and yet you produce X amount of honey and you do all this.’ So we are looked upon as being fairly smart in that field.

**Mr ADAMS**—That is right. We want to keep you smart but we think we need a bit of help. I think the industry needs a bit of help through the next 10 years.

**Mr Monson**—Yes, definitely.

**Mr ADAMS**—The pulling of people together and getting people to focus—the leadership of the honeybee industry is not cohesively driven. Can we improve that? Are there opportunities for the future, do you think?

**Ms Thomson**—I imagine there is always room for improvement. But, despite what may be said about the individual players in other forums, when it comes to research and development

you could not have stronger industry support. Our program is small based on a small industry. It has increased its levy. It will increase again in July 2009. It will actually go above the GVP limit of matching.

**CHAIR**—But it is still chickenfeed, isn't it, in terms of what we really require?

**Mr Cannon**—Yes.

**Ms Thomson**—It demonstrated that (1) through the collaborative model that we utilise within RIRDC, we believe that dollar by two to three matching, once we then go to the various institutions that will provide further money into that research—so what starts off as, say, a \$400,000 or a \$500,000 program can turn into a \$2 million program. That is exactly what we are seeing within RIRDC, which I think we are missing. We believe that if we were able to get a collaborative model together that really focused on pollination—this is not just about the government contribution—it would bring the players together and we would be able to build ourselves so we have an international centre for excellence which we are missing at the moment.

**CHAIR**—On that point, on 5 July, Minister McGauran announced \$300,000 towards the creation of an industry alliance. What steps have been taken towards forming that alliance; which industry groups have become involved; have other industries contributed resources towards the formation of that alliance; and when do you anticipate the alliance will be established? I will ask those questions again if you did not get them.

**Ms Thomson**—Yes. To reiterate—

**Mr ADAMS**—When can you cash the cheques?

**CHAIR**—And we would like to think that our work as a committee stimulated the minister to inject that \$300,000.

**Ms Thomson**—I think it would be safe to say on behalf of all of the industries, not just the honeybee industry, that the support that this inquiry has provided in generating momentum and a greater understanding within the wider community of the problem that we are facing has been greatly appreciated. In terms of where we are at with the program, we have only just received the exchange of contracts; we have not actually got the dollars but that has not stopped RIRDC. We have the work plan—it is in its final stage—and we are forming the steering committee so that we can start the implementation within days, not weeks. We hope to be able to go out to tender for the various components of the outcomes that were brought forward by the various industries and we will be forming advisory committees under that to ensure that we have good industry representation as well as the research organisations that have been very supportive through this process. We hope to do this quickly so that we are able to bring forward an alliance that can carry through with the business plan and give some direction to the pollination industry or those impacted upon or affected by pollination.

**CHAIR**—Just on that point again: you say you do not have the money. Do you have any indication of when you are going to receive it?

**Ms Thomson**—It is not a problem.

**CHAIR**—What effect has that had in terms of expediting your forward planning? If you do not have the money, where is the slowdown point?

**Ms Thomson**—That will not create a problem. We have signed contracts.

**CHAIR**—You are being defensive for the minister, are you?

**Ms Thomson**—Not at all. The staff within the Industry Partnership Program, now Advancing Australian Industries, have been extremely supportive through the process in helping ensure that we could go through the application process quickly. The announcement would be probably one of the fastest turnarounds I have seen. It has been not fast-tracked, but we have worked through the issue very quickly. The industries sitting behind us have been pushing to ensure that we move forward. We feel quite privileged to have the opportunity to make such an important contribution.

**Mr ADAMS**—The original hives that were brought to Australia—the genetic links of Australian bees—do they go back to that?

**Mr Monson**—Yes. Not many people know, but I am working with some of the originals out of the west coast of Tasmania. They are mellifera mellifera, English black.

**Mr ADAMS**—I have heard about them.

**CHAIR**—Bees from the 1850s?

**Mr ADAMS**—This is Sarah Island.

**Mr Monson**—Yes. They went back into the museums and got bees from the 1600s and found that the remnants in Tasmania are the same as those. I have been crossing those with some Russian black with some very interesting results. It is a lovely place to work.

**Mr Cannon**—Perhaps I can come back to a question that you asked before that I do not think we satisfactorily answered—that was, the relative importance of the package bee industry. There is a developing market for packaged bees to go to America in particular. There is some desire by the Americans to have American stock evaluated in Australia for use in that package bee process. One of the problems we have got is with importing stock into Australia. One of the problems we have with importing stock is that we want to make sure that it does not have *Nosema ceranae*. That is why we are funding a project at the moment to make sure that there is no *Nosema ceranae* in Australia.

**CHAIR**—My answer to that is no. You will take our bees, and we will not be taking any of your risk.

**Mr GAVAN O'CONNOR**—I was not here for half an hour because I had to see the industry minister. I might have missed some of your evidence, Mr Monson. You say we are teetering on the brink of success or disaster; which is it?

**Mr Monson**—For the beekeepers that read and absorb the work that we are doing, even though it is probably limited in funds and we could do a lot more, I believe that those that are awake are on the brink of success—and this includes the horticultural industry as well. Whenever this has happened in any other country, that is how it has been. Some New Zealand beekeepers say that varroa is the best thing that has happened to us. I do not want that to be published, but they are saying that.

**CHAIR**—Can I ask a question unrelated to bees but directly related to bees working in New Zealand in the apple industry? Is there a likelihood, should we allow apples to be brought into this country, that varroa mites could come in with the apples from New Zealand? Would you like to make a comment on that?

**Mr Cannon**—No, not possible. The varroa mites can only live for something like three days outside the beehive, so they are just not going to be—another division?

**CHAIR**—We might interrupt the hearing for a short period of time for a division.

#### **Proceedings suspended from 6.35 pm to 6.48 pm**

**Mr GAVAN O'CONNOR**—With respect to your experience in California, what did you observe there and what can be transposed back here?

**Mr Monson**—I would say the almond industry money has driven beekeeping to becoming a business rather than beekeeping. Some of them have lost track of that expertise that we talked about earlier; you need to understand bees, the pollen source and all the rest of it. I think that is part of their problem. There are the chemicals that they use for varroa, the chemicals that are being used for agricultural crops and also they have now found that they have got this *Nosema ceranae* as well. Throw all those in and you have a catastrophe. That is really what I saw.

**Mr GAVAN O'CONNOR**—So is there enough understanding and awareness of the impact of pesticides on the bees here in Australia in your view? Is there enough research being done on it? What is the status of that view?

**Mr Monson**—I am unaware of where we are. I know that in countries like New Zealand you have to register when you are going to spray—taking into account when bees are pollinating, the Kiwi fruit industry and that sort of thing. I do not think that is happening in the almond industry, with the neighbours around the area and that type of thing—although insecticides themselves are not used on the almonds, the neighbours might use them. I submitted a paper with my submission, which talked about chemicals. I think where are we going in this country with chemicals is something that needs to be highlighted and noted, especially for those systemic pesticides that come through the sap. That seems to be the one that—

**Mr GAVAN O'CONNOR**—Is adequate research being undertaken in this country on that issue at the moment?

**Mr Monson**—I am unaware of it.

**CHAIR**—After we have done our report, which will contain recommendations, if we as a committee were successful in getting those recommendations up, would it be appropriate for us to include a section specifically related to pesticide and insecticide use as being part and parcel of any research facility that we might recommend?

**Mr Monson**—I see it as being a little bit separate. It is probably just that something should be written about the registration of chemical use in this country. That is where it should go. I do not think it needs to be involved with a research centre for bees so much. As long as the legislation says that any registration of the use of pesticides includes the effect that it may have not only on our honey bees but on our native insects. It needs to be stronger. It needs to be underlined and highlighted.

**Mr Cannon**—I do see the potential to put an educational component into anything that is set up, to educate growers on the impact of pesticides upon honey bees.

**Mr GAVAN O'CONNOR**—Mr Monson, if we were to put you in the chair as the chief and give you a bucket of money, what sorts of measures would you as a beekeeper implement in the biosecurity area?

**Mr Monson**—In Australia I would take away the borders in the eastern states. I would leave Tasmania and Western Australia separate. A health certificate from Queensland that is applicable for me to have bees in Victoria would be a great help to me as a pollination coordinator, so that I do not have to have three certificates to get across three states. Again, I indicated in some of my papers that some research needs to be done, particularly on large numbers of bees in concentrated areas as far as cross-infection, diseases and the like; they are some of the biosecurity issues. The American beekeepers say, 'If one gets it, we all get it because we all end up in California on almonds in the spring.' That is a real issue.

**Mr GAVAN O'CONNOR**—Are governments and the industry prepared for a serious pest incursion such as varroa?

**Mr Monson**—Partially. I have said a number of times in a number of interviews that CCD in America has been a wake-up call for Australia. I think that the publicity that has been gained, and through this inquiry and the workshop, has highlighted it in Australia. The magazine *About the House*, which printed that first article, alerted parliamentarians and other people who read that magazine. I think that we are more than half way there.

**Mr GAVAN O'CONNOR**—Do you think we take the threat seriously or is it, as you say, that just now there is a growing awareness of the potential problems that might be created and the need to respond?

**Mr Monson**—At this very moment, the threat is being taken very seriously. As you know, Queensland has had a drought—one of the worst on record. They have had some cold weather and frosts on the coast recently which they have not experienced for a long time. I have had beekeepers who all of a sudden are losing bees through hive management saying that CCD is in Australia. They are aware of it. They are on the ball.

**Mr GAVAN O'CONNOR**—I do not know much about people who mess around with bees. What does it take to be a beekeeper? Who becomes interested? How do we ensure the supply of interested and trained personnel into this industry? Obviously we have identified it as a potentially critical one for the future of Australian agriculture. Who gets interested in this?

**Mr Monson**—Anyone who starts out as a hobby beekeeper with one hive of bees, especially if they are young, gets the bug. You just cannot help it. It is fascinating to watch them work—the way they work and experiences like that. At the end of the day, economics plays a fairly big part. With an industry that is going somewhere, as it is at the moment, if you employ a younger person to give you a hand and they experience it, they would then follow on. As I said, we have already done the competency standards. Beekeepers now need to be a bit smarter than they were in the past. We are not nomadic anymore. We occasionally get a chance to sleep in a motel nowadays. Business-wise—with the GST and all those sorts of things—you need a certain number of skills nowadays to be a primary producer, and the beekeeping industry is no exception to that. The knowledge we talked about before is something that just has to be experienced for probably 10 years.

**Mr GAVAN O'CONNOR**—You were going to make a comment?

**Mr Cannon**—I just put my hand up—

**CHAIR**—You wanted to follow something up, didn't you?

**Mr Cannon**—As an ex teacher, I got involved in beekeeping by doing beekeeping for science projects in schools. I became a hobbyist beekeeper and, eventually, a commercial beekeeper. That is where I got involved. Trevor said earlier that he was a second generation beekeeper; I am a first generation beekeeper, but there are people who become involved through that stream.

**Mr GAVAN O'CONNOR**—So there are various interfaces; one is the science programs in schools, and the other is the personal touch that comes from getting young people to work with experienced beekeepers out in the field. There are many pathways.

**Mr Cannon**—One of the hard parts about becoming a commercial beekeeper is that I was told very early that it was a 15-year apprenticeship because it takes about 15 years to build up your botanical knowledge, to build up your biological knowledge of how to get the best out of the bees and to build up your repertoire of sites that you can go to. I would say that is a fairly accurate summation—about 15 years to really get to the point where you can succeed.

**Mr GAVAN O'CONNOR**—I raise this because obviously the issue of entry of labour into the industry, either from overseas or domestically, and the training of it is a complex issue; it is not a simple issue.

**Mr Monson**—Along those lines, I think that all environmental resource studies that are done should include a component on beekeeping. As I said in my submission, somebody who is a rice growers' son needs to know a bit about bees because they might grow canola or something, and I think that would create—

**CHAIR**—I am going to have to interrupt and close, because we have another division. Thank you for your evidence. It has been very, very interesting. I thank representatives of the Rural Industries Research and Development Corporation for your attendance here today. If there are any matters on which we might need additional information, the secretary will write to you. You will be sent a copy of the transcript of your evidence to which you can make editorial corrections.

Resolved (on motion by **Mr O'Connor**):

That this committee authorises publication of the transcript of the evidence given before it at public hearing this day.

**Committee adjourned at 6.59 pm**