

## Submissions to the Bed Bug Code of Practice

The following are the submissions on the draft Code of Practice for the Control of Bed Bug Infestations in Australia; thank you to all who contributed. The submissions are in chronological order based on when they were received by myself. The date of the submission is listed followed by the name of the submitter, their affiliation and address (if supplied), and then the submission, which is highlighted in italics. The submissions have been copied from the original email verbatim, with only salutations removed. Following each submission is a reply of my own, which is in square brackets as such [SD: reply] and remarks stating why or why not the submission was used to modify the Code of Practice. Please note that my statements represents my own opinions and not necessary that of those on the Bed Bug Code of Practice Working Party.

Thank you again for those who have contributed to the development of the Code of Practice for the Control of Bed Bug Infestations in Australia.

Stephen Doggett  
Senior Hospital Scientist  
Department of Medical Entomology  
ICPMR, Westmead Hospital.  
23/Mar/2006.

The following provided submissions to the Bed Bug Code of Practice, click on the name to go directly to the submission.

**Stan Wesley**, Senior Consultant, AHA Facilities Management, NSW.  
**Dean Cooper**, Chairperson, Backpacking Queensland, Qld.  
**Glenis Lloyd**, Environmental Health Branch, NSW Health, NSW.  
**Rachael Sellars**, Public Health Unit, Cairns City Council, Qld.  
**Clive Boase**, the Pest Management Consultancy, United Kingdom.  
**Peter Ferguson**, Exopest, South Melbourne, Vic.  
**Pest Controller**, (anonymous), Cairns, Qld.  
**Dr Anne Hoggett**, Lizard Island Research Station, Qld.  
**Bob Ryan**, BOC Limited, Wetherill Park, NSW.  
**Simon de Montemas**, Precision Pest Control, Maroubra, NSW.  
**Allen Schofield**, Allen Schofield & Associates, Hervey Bay, Qld.  
**Geoff Harcombe**, WA Department of Health, WA.  
**Gary Byrne**, RAPID Solutions, Cardiff, NSW.  
**Wayne Williams**, Eurogem Australia, Jamoree Heights, QLD.  
**Ion Staunton**, Pestech Australia, Hope Island, Qld.  
**Dr Michael Lindsay**, WA Department of Health, WA.  
**Brian J. Cabrera**, University of Florida, USA.

24/Oct/2005

**Stan Wesley**, Senior Consultant, AHA Facilities Management, (Consulting Building Services Engineers), Hornsby, NSW.

*"I have sighted a copy of the draft and congratulate you on the work carried out. My field of knowledge is in regards to building engineering services and in this case, hot water systems used for heat sanitising purposes, eg. clotheswashing. It is noted that the Draft indicates on page 21 a temperature of 45 deg C for clotheswashing purposes to help eradicate bed bugs. As you may be aware, the Asthma Foundation are advocating a temperature of 55 deg C minimum for this same purpose. Your advice on the temperature requirement would be welcome as consideration is currently being given to supporting the requirement currently given in the Australian Standard AS/NZS 3500.5 for the temperature of water for clothes washing purposes for domestic applications be specified as 60 deg C min rather than recommended be 60 deg C min."*

[SD: The temperature in the bed bug CoP is based on publications that show that the insect dies quickly when exposed to >45°C. 55°C would certainly kill the bugs and it would be reasonable to recommend that temperature in the final release of the CoP to coincide with the Asthma Foundations recommendations.]

14/Nov/2005, Follow up reply from **Stan Wesley**:

*"Thank you for that information. It will be referenced in the submission to be sent to Standards Australia re AS/NZS3500.5."*

31/Oct/2005,

**Dean Cooper**, Chairperson, Backpacking Queensland, Surfers Paradise, QLD.

*"I had the time to read the draft CoP on the way to a meeting in Airlie last week, I must say this is a great document and one that could assist many operators unfamiliar with this sector. I have circulated to some senior staff here for comments / feedback and will pass on accordingly if necessary. My only comment personally is that it would take a brave operator to contact previous guests to advise of possible infection."*

[SD: Thank you Dean and I agree with your last statement. On the other hand, there could be dire consequences if a hotelier does not inform a past guest about a bed bug infestation; this is a potentially very difficult situation indeed.]

9/Nov/2005

**Glenis Lloyd**, Environmental Health Branch, NSW Health, PO Box 798, Gladesville, NSW, 2111.

*"After seeing that "Sex in the Bush" ABC prog tother week about the sexual practices of bed bugs I look at them with increased horror!*

*Can't really offer much comment on the CoP - am a bit content free on pest control. However a few points you might wish to consider:*

*1. There doesn't seem to be a clear dissemination strategy for the document. Assume it would be for and through industry? However there are sections relevant and probably written for accommodation workers - how will they know to access the doc? Is there a plan to disseminate either this doc or a factsheet something or other to the accommodation industry in parallel to the pesties bit?*

*2. The term "hotelier" is used. Perhaps a more inclusive term for the accommodation industry could be used - not sure that a backpacker owner/operator would identify with the term. Similarly it might convey to pesties that it's only hotels that need attention. In business terms, particularly in tourist areas there's work to be had in pesties approaching backpacker joints as well as hotels. Maybe mention backpacker in the term?*

*3. Similarly with house keeping staff, might also want to use term cleaner.*

*4. There is mention of training for housekeeping staff and pest managers (p 11) but no indication where such training could be obtained - might be useful to put in some contact numbers. And if not already up and running might be an idea to develop simple training, either through a ppt. easily self delivered in small sites or with a pesties as part of other pest issues for the accommodation or through the industry training body.*

*5. Is it likely that either pesties or accommodation folk would want any public health advice about them? If so might need to put together a fact sheet. Along the same lines should there be simple advice for travellers about their gear - would putting their backpacks in a black garbage bag in the sun for xx time knock em off? Or what?*

*It's a great job - but still makes me feel a little squeamish! Leave it in your capable hands."*

[SD: Thanks Glenis for your comments, I will address each of your points.

Point 1. A dissemination strategy was not included in the document, however there was wide notification by email of the document to all the major accommodation bodies, including the HMAA, AHA, YHA, BTAP, QRAMA, BOA, as well as housekeeping organisations, EHOs, Health Departments, Councils., Entomological groups, and of course pest controllers, both locally and internationally. The CoP has now been mentioned in numerous industry

periodicals and we will be looking at further strategies to disseminate the document once finalised.

Point 2. I did struggle coming up with an all inclusive generic term, hence the definitions section. 'Backpacker' is now included in the definition.

Point 3. Included in definitions.

Point 4. I agree that training is essential and considerable work is needed in developing appropriate courses. The Bed Bug CoP Working Party will be attempting to address some of these needs but it is unlikely that they will be incorporated into the CoP at this stage.

Point 5. Public health advice was considered beyond the scope of the CoP. There is information available on the Department of Medical Entomology website at [www.medent.usyd.edu.au](http://www.medent.usyd.edu.au) or further information through the Department's publication in "Pests of Disease & Unease". The CoP currently has information for travellers. There is little scientific evidence to indicate the effectiveness of black garbage bags and so is not included in the CoP.]

4/Jan/2006

**Rachael Sellars**, Environmental Health Officer, Public Health Unit, Cairns City Council, Cairns, Qld.

*"Thanks for all of the work you and the working party have put into the draft Code of practice. I believe it will be a very helpful document.*

*I wish to submit the following comments for consideration. These comments are lodged on behalf of myself not on behalf of Council.*

\* *pg7 - the review committee, should the qualifications/experience/field for the University representative be further defined. I believe the committee should also include a representative of the accommodation, hotel or hostel industry.*

*- Could contact details for PestCert be included in the definitions or in the appendix have a list of contact people who can provide further information.*

*- under the definition for Pest Manager please include a note advising that the legislation in each state may give the licensed operators a different title. eg in QLD they use to be Pest Control Operators and are now referred to as Pest Management Technicians.*

\* *pg9 - could the target groups please include reference to the campervan hire industry.*

\* *pg14 - OH&S change the wording of 'wearing personal protection measures' to 'wearing personal protection equipment', also were it advises operators to refer to the 'label' also include the 'MSDS' for safety instructions. Hotel maintenance staff should assist with removal of carpet, bed heads, cupboards etc not just the electrical items (help protect the pest manager from liability - claims of excessive damage etc). Include, ensure the 'hotelier' is aware of the need to remove all of these items in the room(so they directly have a greater appreciation of the difficulties)*

- \* *pg16 - client prep: request client provides a building layout plan to assist the pest manager in determining which rooms should be treated etc. and record where infestation is detected.*
- \* *pg17 - figure 1: describe where the photo is (floor, wall, carpet junction)*
- \* *pg 24 - 13.2.3: refer readers to appendix for more info.*
- \* *pg - 25 client: I found the second point a little confusing. Please clarify in a little more detail, when should the client vacuum? Should the room be vacuumed immediately after the pest manager carries out the first inspection (and before chemicals are applied) and then again after 10-14 days?*
- \* *pg27 - 16.1.2: recommend operators do not permit sleeping bags into the guest rooms. Bag and tag them and store them in a separate storage room. Also placing up signs advising why the hostel has this rule in place.*
- \* *pg 33 appendix b client checklist: - include a note at the top advising the client that not only the room infested should be treated, but all adjacent rooms should be treated at the same time. Include an additional check box for 'provide a building layout plan and details of the activities carried out in each room'. After treatment: add an additional check box for 'do not occupy the room for 10-14 days - until a follow up inspection and treatment has been carried out/ room has been cleared by the pest manager'. also record on this page the premise name and the room number of the rooms treated.*
- \* *pg 34 appendix c: - under the information for client: add check box for 'advised should treat adjoining rooms' and leave space for the clients comments (i.e. refusal to treat the other rooms). Allocate a space to record the clients name, address, contact person, premise name (Trade name) and the room numbers completed.*
- \* *pg 35 include space to record the premise name and the room numbers. Also record, date of contact been received, date of first inspection, date of treatment (chemical, moving furniture etc), date of follow-up inspection, date of 2nd chemical treatment. Also expand the last check box item to specify linen & mattress store rooms and laundry rooms. Add a check box for rooms adjoining, above and below the indicated infested room.*
- \* *pg36 under the nonchemical treatment: add 'treated curtains'.*
- \* *pg 38 appendix d: Thought I would mention to you, that I have a copy of a document dated 1999 produced by the National Environmental Health Forum titled "Guideline for the control of public health pests". In this it refers to the use of Malathion, Dichlorvos and Pyrethrins with piperonyl butoxide for treating bed bugs. The document appears to have been produced in South Australia. I could not find these chemicals listed in appendix d. As the document is several years old I assume they are no longer approved/accepted as effective..... The document does not specifically state if they were 'approved' for use or if they are just suggestions.*

*I hope these comments are of use. Please feel free to call me if you require further clarification on my comments.”*

[SD: Thank you Rachael for your extensive comments. I will attempt to address each point as you listed per page number.

Page 7. It can be difficult to further define the qualifications of the University representative; ideally it should be a researcher with a recent publication history in the field, unfortunately for Australia this is not always possible.

The working party is regularly consulting with the accommodation industry.

The PestCert web site is listed under definitions, which has all contact details.

A reference to the fact that states differ in the name for pest managers is included in the definitions.

Page 9. Included in the CoP.

Page 14. 'Measures' changed to 'equipment'. The label includes all the safety instructions for spraying. However, a reference to the MSDS is included under section 9.1.5 "Insecticide Usage".

The point on protecting pest managers from liability claims is an excellent suggestion and is included under section 11.1 "Pest manager preparation" rather than under OH&S. Making the hotelier aware of the need to dismantle a room to treat all harbourages is now included under 11.1.

Page 16. Included.

Page 17. Included.

Page 24. More information on insecticide efficacy is not included in the appendix.

Page 25. Clarified.

Page 27. The storage of sleeping bags has been added to the CoP, although it is probably preferable that the client is explained why this is needed rather than having signs to state why.

Page 33. Note at top of page added. Checkboxes for plan and keeping the room vacated added.

Page 34. Check box added. Client comments can be included under 'Inspection Notes'. Additional spaces added.

Page 35. Appendix reworked to include all the suggestions.

Page 36. Added.

Page 38. The document mentioned is limited & out of date. Many of the products mentioned are no longer registered. Piperonyl butoxide is a synergist, not an active, and is used in many formulations.

Thank you again Rachael for your excellent and detailed submission.]

10/Jan/2006

**Clive Boase**, the Pest Management Consultancy, United Kingdom.

*"Thank you very much for sending me a copy of your Code of Practice for the Control of Bed Bug Infestations in Australia (Draft). Congratulations on the idea of a national Code of Practice for bedbug control, and all the work you have put into it.*

By way of background, in the UK we are experiencing problems that sound similar in principle to those in Australia. Very briefly, the problems here are:

- bedbug infestations appear more difficult to control than previously,
- the rate of appearance of new infestations is increasing.

We feel that these two points are probably inextricably linked. If we could substantially improve the treatment success, the 2<sup>nd</sup> point would soon cease to be an issue.

Regarding feedback on your document, there are a number of comments below. Take these as from someone who knows bedbugs here, but has never been to Australia. Much of this may be inappropriate under Australian conditions!

### **Comments on CoP:**

#### **Overall tone of CoP.**

The document is full of useful detail. However it is also relatively wordy, and contains extensive discussion and analysis of various points. If this was a UK audience, we would start to lose some readers partway through, but maybe your readers have more staying power than ours! In order to help busy readers to stay with it, might it be worth considering trying to:

- slim it down
- make it punchier
- make the process and recommendations stand out, perhaps with bullet points, boxes, flow diagrams etc.

(I know this is done from an on-the-job checklist angle in the Appendix. )

### **1. Introduction**

Many people have claimed that the withdrawal of the organochlorines is a contributory factor to the current bedbug problems. We are not convinced of this because:

Organochlorine resistance was widespread in bedbugs before the OCs were withdrawn.

There was a lag of around 20 years (probably different in Australia) between the withdrawal of the OCs and the rise in problems in the late 1990's.

### **2. Aims**

If as hoped, the CoP brings about improved bedbug control, then a major outcome would be a reduction in the rate of appearance of new infestations. **The quicker that infestations are detected and eradicated, then the less opportunity they have to spread elsewhere.** This might then push the current situation into a downward spiral.

### 9.1.3/4

*The agreement between the pest control organisation and their client is fundamental in setting the stance of the pest control work carried out. In our opinion an experienced client who understands bedbugs and knows what they want out of the work, is good for the pest control industry. Some of our more forward-looking hotel chains are establishing their own bedbug contracts that demand verified and guaranteed eradication of the infestation, that they put out to tender. This forces the pest control company to examine and fine-tune their procedures. This comment also ties in with comments under 14.2 below.*

### 9.2.1 Guest complaint / bedbug detection

*Should guests be moved (if a vacant room exists) automatically if they complain of bedbugs? There is a view that if a hotel keeps guest in a room which the guest considers is infested, and the guest is then bitten again, then the hotel is liable. It is likely to be good practice to move a guest when they complain, rather than wait for a pest controller to inspect the room first (even if it is later the same day).*

*The accommodation manager should be aware that inspection of adjoining (vertically and horizontally) rooms is a standard part of the inspection process (it also mentions this in 12.3, but it may be worth repeating here also). Finding one infested room, often leads to finding a cluster of infested rooms, which can then all be treated together.*

### 11.1

*The client should be told to expect re-visits at intervals after treatment.*

### 12.3

*Do ensemble beds in Australia also sometimes have drawers within the base? We commonly have them here, and there are often bedbugs hiding within the frame of the drawers, and around the runners etc on which the drawers slide.*

*Don't know where this best fits into the document, but is it also worth mentioning inspection and treatment of bedbugs in vehicles, e.g. trains, buses, boats etc? I am guessing this is also an issue in Australia.*

### 13.1.5

*There is no mention of a temperature and duration. The published information indicates that >2hr at -17°C is required to kill the adults, so they would need a good deep-freeze. If the item is dense, then it may take several days to ensure the centre is cooled to the right temperature.*

### 13.2.1

*I can't see a mention of treatment of rooms immediately adjoining those known to be infested, even if no bedbugs are seen in these adjoining rooms at the time of the initial inspection. Here we often treat adjoining rooms, based on the*

*experience that very often infested rooms are in a cluster, and it is better to treat the adjoining room at an early stage, than have an infestation reported a couple of months later, and have to start all over again.*

### 13.2.2

*Work is underway in the UK to look at insecticide resistance in field strains of bedbugs. The indication so far is that there is widespread resistance. Of course the issues in Australia may be very different, but we would suggest:*

*Categorising the list of insecticides at 13.2.2 by chemical class, or mode of action.*

*Technicians should assume that resistance may be incipient or even present, and consider using a resistance management strategy (Of course this is a thesis in itself, but nonetheless we should aim to provide some practical advice). For example:*

*The initial treatment should be with one chemical class, the 2<sup>nd</sup> treatment with another chemical class.*

*Where the technician is called back to re-visit a possible treatment failure, then they should consider using a different chemical class to that used previously.*

*Do not repeatedly use the same chemical class at the same site*

### 14.2 / 15

*We would strongly recommend that post-treatment inspections are carried out up to at least 3 months after treatment. In our experience it is very easy to miss a few 1<sup>st</sup> instar nymphs at an inspection at 10 days after the initial treatment. We regularly see rooms that were infested, then treated, declared free of infestation after 10-14 days, and then develop an infestation some weeks or months later. I would rather these surviving bedbugs are identified early, and then treated, than wait for the client to call back.*

*Our view would be that a successful outcome cannot be established until at least a few months after treatment.*

### 16.1.9 (also applies to 8.2)

*We feel that this part is extremely important. Very often infestations are first reported when they have reached moderate/severe levels, by which time they have had several months to spread to adjoining rooms, and spread via guests etc to other hotels and homes. We feel that pro-active inspection is the best way to identify and eliminate infestations while they are still relatively small and localised, and before they have had a chance to spread.*

*We would strongly recommend that hotels put in place a regular inspection regime, carried out by the normal room staff, who have been given some training and a protocol. The inspection is carried out as part of the routine hygiene / cleaning / linen changing in each room. Inspections should be carried out at 2 – 4 weekly intervals, and the outcome entered on the hygiene record sheet for each room. The inspection would be supervised by the hotel's hygiene supervisor. Obviously any suspicious signs or actual bedbugs are reported and dealt with through their normal pest control system.*

*That's all. Obviously, don't hesitate to contact me if you would like to discuss or clarify any of these points.*

*Again congratulations on the document, and I hope you manage to finalise it before long."*

[SD: Thank you Clive for your very detailed submission. The following addresses each of your points.

1. The reasons for the bed bug resurgence are undoubtedly multifactorial and may never be fully elucidated. Your comments about the withdrawal of the OCs possibly not being a contributing factor are noted and the CoP has been modified accordingly.

2. Excellent point about the CoP improving bed bug control leading to a downward cycle of infestations; the aims have been modified accordingly.

9.1.3/4. I am in totally agreement with your comments and have modified Section 8.2 (Training of Accommodation/housekeeping staff) with your comments in mind.

9.2.1. Moving the guests immediately upon a bed bug complaint has been inserted into the CoP. A note about inspecting adjoining rooms has been mentioned under Section 9.1.3 (Service Contracts).

11.1. Added to CoP.

12.3. Very rare that beds have drawers in the base (in fact I have never seen this in a bed bug infestation).

Yes bed bugs are a problem in vehicles in Australia and they are now briefly mentioned.

13.1.5. Freezers generally operate around -20°C and a time frame has been added.

13.2.1. Added to the CoP.

13.2.2. Insecticides are now listed by chemical groups. Unfortunately currently we have so few insecticides registered from different chemical groups in Australia that we are unable to formulate an effective resistance strategy. For many of those products that are not in Group 3A there are odour problems with the product and so many pest managers are rightly reluctant to use these in and around sleeping areas. We urgently need more products registered to control bed bugs in Australia!

14.2/15. The timing for post treatment inspections seem to be a contentious point and not universally agreed upon. For example, the University of Minnesota

([www.ipmctoc.umn.edu](http://www.ipmctoc.umn.edu)) in the US recommends two weeks for a post treatment inspection, while another major company in the same country finds that one week is adequate. As conditions in Australia tend to be warmer than the UK, I expect that a bed bug infestation will become apparent sooner. The pest managers on the working party felt that the times listed were appropriate for the Australian situation.

16.1.9. I agree with your comments and have strengthened this section. Thank you again Clive for your detailed review – very much appreciated.]

10/Jan/2006

**Peter Ferguson**, Exopest, 80-86 Buckhurst St, South Melbourne, VIC, 3205.

*"I must congratulate you on the draft I had already read Stephens paper previously and implemented some of these recommendations. We have already performed information sessions for cleaning staff at backpacker facilities. The most difficult thing that most industry struggle with is the 7-10 days the area has to be vacated. Its loss of revenue is too great as they don't understand the need to eradicate all forms egg nymphs & adults and the risk of litigation as is evident in some of the recent law suits occurring in grand old USA. I think we should add things about modes of transport these days which include a lot of sleepers boats planes trains which can help spread infestations to all forms of accommodation not just backpackers."*

[SD: Thanks Peter, the desire to make the document not too unwieldy has meant that some information such as basic ecology and methods by which bed bugs are dispersed has been omitted.]

14/Jan/2006

From a Cairns Pest Controller who wished to remain anonymous.

*"All the following comments are my own beliefs and not that of any other pest controllers or stakeholders. My name is \*\*\*\*\* and at present I work for a large company in Cairns where we are called on to treat many rooms and locations each week for Bed Bugs. I am happy to have my comments published however please do not print my name."*

*Having read the CoP I make these following points and submit them for consideration.*

*The draft CoP is by all means a well thought out and researched paper, however if this is accepted in its current or similar form then I believe the industry both accommodation managers and pest controllers will find the directions and guidelines way over the top to control this problem. It will lead to poorly managed infestations and will not I feel assist in reducing the overall problem. We do not*

*have the support by any law enforcement to ensure managers will first be able to pay for the treatments and sustain the rental losses once bed bugs have surfaced in a room.*

*I am not aware how the bed bug problem is going anywhere else apart from Cairns so my comments are based on my success and what I see here in Cairns. The Bed Bugs have shown up in 5 star to slum type rooms in back yard accommodation . This means in a lot of cases that there will be plenty of people (managers) which care and a large selection that just don't care and only do something if it gets bad enough.*

*What we need is to have 2 CoP's*

*The first step I believe is that the industry must enforce this CoP and if they do not then the accommodation license will not be renewed.*

*For the managers of accommodation sites a set of guideline to first bring their establishments and along with staff to a level of acceptable management for the prevention and control of Bed Bugs. This will include the treatment procedures when they are found. This CoP will have some history on bed bugs and its possible treatments.*

*For the Qualified pest managers – A CoP to properly treat the problem.*

*By going through the following points I think you all will be able to see where I feel we should be heading.*

*Re p6.2 AIMS*

*Fundamental aim should be to provide our customer “the stakeholders” with a set of directions and standards to aspire to which will reduce the risk of Bed Bugs becoming a problem. Bring the establishments and staff up to a qualified and certified standard and we will be a long way down the track to effective control.*

*Note: we should be focused on prevention not just what to do and when.*

*Re p8.6 Scope of this CoP*

*I believe that this CoP should be aimed at only our clients not the pest managers or technicians. We are providing a service to a problem – Bed Bugs . Do not attempt to train our clients as how we are supposed to do our work. A CoP for pest managers on the other hand is needed once the industry has signed of on what they will do. Don't forget we tailor a service to each client according to how they present their problem and in their surrounds. By giving information on treatments we do not teach the level of understanding nor how to enlist staff to have an interest in what they are doing. Therefore what we are doing is giving people a choice to try before calling in a qualified pest manager. This in all cases I see leads to a bigger problem and at the end of the day more a cost to the industry.*

### *Rep11.8 Training*

*I see too many pest managers doing these treatments due to the fact it is work and money – They really don't want to do them. You must want to do these treatments and have a level of desire to do them well. –“hard to find that person !!” Answer lies in having to get Pest Cert and then a Pest Cert accepted course in Bed Bug treatments and management.*

*Make it a special treatment and courses would be required so then only qualified people will conduct the treatments and give advise.*

### *P11.8.2*

*All accommodation staff would be required to have training in this subject. This is what we should make the industry accept. Without trained staff we cannot start to prevent an infestation from starting or from getting a stronger hold.*

*Re p12.9 Bed bugs would under the CoP would become a reportable item to the industry. This is needed to determine hot spots and who is in need of help to better Train and manage their accommodation. For an establishment with problems then guests would not be referred to or accepted from those sites. It is no different from closing down a restaurant from a cockie or health issue. Fall in line with the CoP and if a room is in need of treatment then have it treated and your ratings will remain. I would suggest that when the reportable item is made then when a Pest Management technician is employed the Technician will report this and the reportable item would be considered finalized unless otherwise informed. This needs to be refined I know but I think you get what I am aiming at. Now the rest of the CoP is as I said well presented. However there are so many items in it that can be expanded on and without what I feel a mandatory visit to Cairns from the CoP team members, then how are you all going to make a true and workable CoP.? We have for example a room with 4 bed – 3 of which are in use and the manager suspects there may be bed bugs. We walk in and touch nothing but look without moving anything and first look up and see at least 10 to 20 on the cornice. There were more in the pores of the brick work and that would only be the straglers not getting to the hiding places.*

*This room had people not being effected at this time.*

*I could spend many more pages explaining what we find in Cairns and how we treat them, and what we would like the industry to provide us with but if the industry is looking to take directions from a CoP developed by a group and perhaps some input from local people like myself then without better research from a working (pest managers) group going to work out in the field instead of a study room and internet in Brisbane or Sydney then how are you going to assist our industry . What works down there does not always work up here.*

*Enclosed is a pic of a Flat in Cairns where the landlord said “ If you see anything don't say as I don't want to scare the customer off” “ we will just treat the ones*

*you find if they are there” The biggest help you must do now is to push for the chemical companies to come up with registration for Non repellent chemicals to be registered for use. And get the group up to Cairns for some practical treatments.*

*We do have answers but without acknowledgement of our conditions and degree of problem you will never take on what we have to say.*

*Without the acceptance of the ideas in this submission then I feel it will be a CoP that could greatly affect the industry in Time, Money and Still the problem will persist unchanged.*

*If not a working visit then have a series of regional visits to collect data and hold a discussion with people concerned.*



*From the room with 4 beds and 3 people 13/01/06.”*

[SD: “Thank you for your comments on the Draft CoP, they are greatly appreciated. As you would not be aware of the meetings that occurred before the draft CoP was released, I thought I would respond to some of your comments.

The apathy of many motel managers is something I have also experienced and it will only take possible legislative changes to ensure facilities will to have their infestations properly controlled. Having said that, many in Qld do consider bed

bugs a pest and that a facility can be forced to ensure that their premises are clean of bed bugs. Training of environmental health officers (EHOs) is important with this respect and I have undertaken training of some of the EHOs in Cairns Council and they are now familiar with the problem. Have you suggested to guests who have been bitten to contact the local council or health department to lodge an official complaint? This may help as a starting point.

In terms of splitting the CoP in two, we initially considered 3 documents; one for pest managers, one for the accommodation industry and one for the transport industry. It was felt there would be a lot of overlap between the documents if there was more than one and that a unified document would be more powerful. This would then act as a reference document whereby smaller articles, if need be, could be derived.

We in the pest industry can do nothing about ensuring that hotel managers have to comply with the CoP - we have no control over legislative framework and no government Minister on earth would come up with the suggestion that a facility would lose their licence if they did not comply. This is just too controversial & the tourism/accommodation industry lobby is too powerful for this to happen - they are far more powerful than the pest control lobby! The CoP was developed by pest managers to some extent to protect their own industry by providing the best & most current control strategies.

I totally agree with you about having a PestCert certified course for training and this is likely to occur soon. However, as PestCert is not yet mandatory, we have to be realistic and concede that other organisations are offering training in bed bug control (even if suspect!). One of the aims of the CoP is to ensure that it will form the basis of any training course on bed bug control. It is difficult to find good people who can undertake successful bed bug treatments, in that, I agree with you there.

I agree about the training of accommodation staff but we have no control over their industry. You however, can always offer a training package and some pest managers are doing this now and make good money out of it.

I think it would be impossible to make bed bugs reportable or notifiable. They don't spread disease/s and so the health sector would not be interested. Again, the accommodation industry lobby is too powerful for this to occur. If one country was to do this, then all countries would have to do this otherwise tourism would be affected within Australia, which again this makes bed bug infestations being reportable as not appropriate. It is also unlikely that the manager of a hotel would be willing to self notify bed bug infestations to an outside body.

In terms of visits to Cairns, ok I will admit I have not been to bed bug infestations in Cairns, but I have spoken to groups in Port Douglass and have undertaken site inspections in facilities in that area, as well as been consulted by the local

industry. Both Gary Jones (on the CoP working party) & I spoke at a bed bug forum in the Whitsundays and have seen many bed bug infestations in that area & I have now been up there on more than one occasion. I will also be up in Cairns later in the year and perhaps you may be interested in taking me on a tour of the severe bed bug infested sites? FYI, the working party does comprise a mix of representatives and includes many pesties who work in the field, with representatives from Qld, Vic, NSW, & WA, those from insecticide companies, an AEPMA representative, some who are based in a 'study room' and one international PCO; a well rounded group IMHO!

There have been, in the past, some discussions about holding another bed bug forum, but this time in Cairns, although I have heard nothing lately. This can only occur if people like yourself push the issue forward (which is why the Whitsunday meeting occurred). If you think that this is appropriate, you could be the starting point. Contact the local EHOs both in council & the public health unit, the local accommodation industry & tourism council, AEPMA and the insecticide industry, about your interest. You need to remember that the bed bug CoP working party all have jobs and have volunteered their own free time to develop the document. If you need someone from the working party to attend, they would thus have to be sponsored.

I am impressed by your photo; that is a stinker! The worst I have seen to date was from England whereby the resident was bitten so often he died from blood loss. The bed bug carcasses where up to an inch thick in places!

I agree we need more non-repellent insecticides registered; unfortunately the facts are that the registration process in Australia is expensive & the returns to small for many companies to justify the expense. I have widely mentioned to companies that we have bed bug colonies available for testing and have had only limited interest to date.

Of more concern to me is that we have too few insecticide classes available and this will encourage the development of insecticide resistance.

Anyway, thanks again for your comments. FYI, you are one of the few pest managers to offer any comments on the CoP! We need more like you.]

18/Feb/2006, follow up by the same pest controller who wished to remain anonymous:

*"Thankyou for the reply to my submission. I have taken onboard the comments and now would like to submit my final line of suggestions and comments on the Draft Cop.*

*I would strongly suggest that all, very carefully give consideration to the following comments as if this draft gets it wrong then more damage can be done than good. There could be a case not to proceed with the Cop if it were not able to have some impact on the problem which is present.*

*I would like to remind all that the Pest Control Industry is now becoming a regulated industry due largely to the problems from many who seek the quick buck and care little for the consequences. Therefore to produce a Cop which could be used by managers of accommodation to first try a self treat like that of a licensed pest manager would be a step backwards. To date I do not know any establishment that can successfully treat the problem themselves. They will in most cases make matters worst before calling in a pest manager.*

*All Pest managers who value the principles of doing the right thing and have a valid interest in what they are doing will have no problem and in fact do support the regulating of our industry and to the latest move of Pest Cert.*

*I see the role of AEPMA in setting up this working party to develop a Cop is taking on a role which the accom industry does in fact need but without proper funding, a CoP without the input from more than just a few is not going to be able to supply the answers. I know I do not have the answers but I do know what is not the answer and that is to supply the industry with a set of guide lines that could do more harm than good. On the other hand AEPMA in setting up this working party should support those who will support the efforts of those who put together the CoP. This will only be done if the CoP is developed for Pest Managers of at least AEPMA and or Pest Cert members.*

*In Cairns there are Pest technicians who do have a very good record in dealing with the problem and those people now have clients who listen to them and they have establishments which are controlled. However the whole industry will need to have the same or better success to turn the BB trend around.*

*Telling the accom and trans industry what to do is best done when we have our own back yard in order first.*

*Therefore what we do need is*

- 1. A CoP for the accom & tran industry*
- 2. A CoP for our own Pest Managers*

*The highest priority is to delay the CoP for the Accom industry and properly teach and instruct the pest managers by way of Pest Cert and an approved course and CoP.*

*The way to best get feedback from pest managers is through Pest Cert and Aepma. Emails work well.*

*I only know of this draft CoP because I do regular research and have a copy of the industry mag.*

*I have not had any information from pest cert or Aepma.*

*Lets get behind our industry and that means getting behind AEPMA / Pest Cert . this is not mandatory but if we do then all standards are lifted. It becomes a flow on effect.*

*I feel should the Cop be finialised and presented to the industry in a form close to the draft then not only will the industry have a problem in supporting it, but many pest managers will find it to be .....*

*These are my own thoughts and I in no way intend to offend anybody nor intend to dampen the efforts you all are putting into this subject. I feel strongly about this and at the end of the day if it all gets out of shape what many people will do is just elect not to treat bed bugs (pest managers) ... its that simple and the reality is there is just that much work out there if things are not worth it ( the effort) then the industry will put their efforts into something else that pays better without the hassle.”*

[SD: Most of the points were raised in my previous reply. FYI, there has been wide circulation of CoP; it has been mentioned in all the industry publications – if a pest manager is not aware of it then they must not be undertaking further self education.]

10/Feb/2006

**Dr Anne Hoggett**, Director, Lizard Island Research Station, QLD.

*“The Lizard Island Research Station (LIRS) is a facility of the Australian Museum. It is located at Lizard Island on the Great Barrier Reef, 270 km north of Cairns, Queensland. LIRS provides accommodation and research facilities for coral reef researchers and student groups from around the world. It provides accommodation for up to 30 visitors at a time in four self-contained houses.*

*Bed bugs were unknown at LIRS from its inception in 1973 until 12 January 2004. Our experience in dealing with that and two subsequent infections is relevant to the draft Code of Practice.*

*In January 2004, an infestation of bed bugs was found in two bunks of a four-bunk room. Initial attempts at eradicating the infestation were unsuccessful. We disposed of the infected mattresses and bedding, wrapped all other (apparently uninfected) mattresses from the house in black plastic and put them in full sun for days, thoroughly cleaned the whole house, dismantled the pine beds, scrubbed them and left them in the sun, sprayed the bedrooms and the dismantled beds several times with pyrethrum, and kept the infected room unoccupied for 8 days.*

*A small number of bed bugs were detected six weeks later (on 26 February 2004) in the bedroom next door to the one that was infected initially. It appeared that we had got the adults but not the eggs. The whole process was repeated and the house was left vacant for longer this time. Again, about six weeks later (on 9 April), bed bugs were found again in the original bedroom. It was clear that something different had to be done.*

*Research on the web indicated that bed bugs are susceptible to heat so we reasoned that steam cleaning may be the answer. We purchased a commercial Saeco brand steam cleaner and used it on everything in the house – walls, floor, ceiling, door and window frames, furniture, the lot. As well, we took great care not to spread any eggs. For example, the person who did the cleaning would shower and wash all clothing in hot water after being in the infected house. It took a lot of time and effort but it was worth it because bugs have never reappeared in that house to date.*

*The second infection occurred in July 2004 in a house about 300 m from the original one. We believe that this was really a continuation of the first infection. The same group of people who had been in the original house in January returned to LIRS in July, bringing with them an article of bedding that had been in the original house at that time. Between January and July, that item had been stored in the person's house in Townsville. Our now extremely vigilant staff noticed a line of bites on one of the people staying in the second house and examined that person's bed. A few very young bedbugs were found on the mattress that had the bedding from Townsville on it. The affected room was steam cleaned and bed bugs have not recurred there.*

*The third infection was found on 20 December 2005 in a bedroom of a third visitor house, just after the room had been vacated. It had been occupied since 24 October by the same individual. He noticed some bites in the weeks before he left, but put it down to mosquitos or sand flies. When he departed, LIRS staff found a small infestation of bed bugs in his mattress. Immediately prior to 24 October, the room had been occupied by members of a student group that had been staying in backpacker accommodation in Cairns and Magnetic Island – the possible culprits. The steam cleaner was put to use again and we are hoping it has again been successful. We will feel secure if there are still no bugs by the end of this month. Until someone else brings some more.....*

*LIRS is moving to metal-framed beds and has in place many of the other practices recommended in the draft Code.*

*Our experience relates to the draft Code of Practice in the following ways:*

*1) It is possible to eradicate bed bug infestations by steam-cleaning carried out by people who are well-informed about the biology of bed bugs but who are not formally trained in pest control. The draft Code would be improved by recognising*

*this as a suitable method of dealing with the problem under certain circumstances.*

*2) It is not always feasible to call in the experts repeatedly, especially in remote locations. The airfare between Cairns and Lizard Island is \$560 return and with only one flight a day, any visit involves an overnight stay. It would have been prohibitively expensive for LIRS to deal with its bed bugs in the manner described in the draft Code. A self-help control method for use in remote locations would be a welcome addition to the Code.*

*3) Information on the biology, especially the life cycle, of bed bugs enabled us to crack the problem effectively at LIRS. This was gleaned from research on the web where wheat had to be sorted from chaff. The draft Code would be improved by a section that provides this useful information from an authoritative source.*

*Thank you for recognising and addressing the recent increase in bed bug infestations, and for the opportunity to contribute to the Code of Practice.”*

[SD: Thank you Dr Hoggett for your comments. The following are replies to each of your points.

Point 1: Steam is already recommended within the CoP as a technique for managing bed bugs, and like any technology, as you state, is only as good as the operator's knowledge. The problem with steam is that it has no residual effect, and as it is always impossible to guarantee that every harbourage is treatable, a follow up insecticide treatment is always recommended. The success of the treatment will always depend on room type; infestations in sparsely furnished rooms tend to be easier to control.

Point 2. I feel this information is already in the CoP. Whether in a city or a remote location the procedures are the same, although it is acknowledged that some insecticides can only be purchased and used by a licensed pest manager.

Point 3. I agree that knowledge on the biology of any pest is essential for control, however the CoP is already rather large and it was felt that this is covered in other documents; see [www.bedbug.org.au](http://www.bedbug.org.au) and the papers on the site for information on bed bug biology.]

14/Feb/2006

**Bob Ryan**, Manager Market Support, BOC Limited, 428 Victoria Street, Wetherill Park, NSW, 2164.

*“The application of fumigants to treat the mattress, pillows etc which could be recycled has not been addressed. The treatment of the above with "residual insecticides" are a potential OH&S issue if the treated items are re-used.”*

[SD: Only those insecticides that are currently registered for use on mattress can be applied and usually there are safety guidelines under such circumstances,

such as the placement of a mattress cover on the treated surface. I have never seen a bed bug on a pillow, but they can be placed into a freezer, thus avoiding all insecticides.]

14/Feb/2006

**Simon de Montemas**, Biologist, Precision Pest Control Pty Ltd., 67 Torrington Rd, Maroubra, NSW, 2035.

*“Some comments on the COP:*

*Steam treatments - work fine but only on those bugs which are treated directly (as stated in the COP). I think the COP needs to make more of the need to have some form of residual chemical spray in addition to the steam, i.e. steam on its own will very rarely meet the customers requirements of extermination.*

*We have carried out a number of steam treatments, which certainly work well, but it is not possible to treat all harbourages with steam alone. Hence the need for chemical as well.*

*Heat treatments - dry heat works fantastically well on bbugs, but again only in combination with chemical. More than happy to have you on site for one of our heat treatments.*

*Treatment of clothing / linen: our experience shows that adding XP24 to the rinse cycle of a hot wash improves the overall success of the treatment. As does making sure that the clothing / linen is totally dry before it is then treated for a further 45-60 minutes on high in the drier.*

*Drying times vary greatly depending on the make & size of the dryer and the quantity of clothes / linen being dried. If the clothing / linen go straight from the washing machine to the dryer, they may not spend long enough at the hot end of cycle to actually kill off all of the eggs & any possible remaining bbugs.*

*Trust the above is of some use. The COP is a very worthwhile document & we are already using it. Thank you.”*

[SD: Thanks Simon, the comment about steam without a follow up insecticide treatment is already in the CoP. Dry heat can spread bed bugs if the heat is not rapidly applied. The use of steam has been published and is an accepted management (but not control) tool, whereas heat is not commonly used and thus not in the CoP. I have no experience with XP24, but again this is not in common use and so can not be included in the CoP. Ideally the washing machine uses hot water, which in motels is set to the levels recommended for the control of dust mites (see first reply) this will also kill bed bugs. Note that if publications indicate

the efficaciousness of a new/novel treatment or are shown effective through common practice than they will be incorporated into future updates of the CoP.]

15/Feb/2006

**Allen Schofield**, Allen Schofield & Associates, Hervey Bay, Qld.

*“Whilst browsing the COP I failed to notice any reference made to Insect Growth Regulators (IGR’s). As bedbugs are social insects, adults, nymphs and eggs can be located close together. The addition of an IGR to an adulticide may help prevent further build up of mature bedbugs.*

*Maybe IGR’s should be discussed, or at least mentioned, in the COP.*

*Finally, the potential for microencapsulated insecticides may be of some use in this situation. They generally provide a long period of protection as they slowly break down. Of course they have to include bedbugs on the label, and secondly, they have to be placed carefully so as not to contaminate people or their clothing or belongings.”*

[SD: Unfortunately no IGRs are registered for bed bug control - hence their initial exclusion from the CoP. In actual fact, stardust is still registered but just not readily available. Likewise for the microencapsulated products – none are as yet registered.]

15/Feb/2006, Follow up by **Allen Schofield**:

*“You are quite right, there are no IGR’s or microencapsulated products registered as of today for bedbug control.*

*However, products will soon (within 12 months) emerge that do encompass bedbugs.*

*If you mention the formulation or the mode of action then it has been considered. If you omit, then you have to do a review when new labelled products emerge.*

*I appreciate that mentioning the above may lead to off label use.*

*So damned if you do and damned if you don’t.”*

[SD: A mention of IGRs has been made in the CoP].

14/Feb/2006

**Geoff Harcombe**, A/Senior Scientific Officer, Pesticide Safety Branch, Environmental Health Directorate, Health Protection Group, Health System Support Division, Department of Health, WA.

*“Some time ago I responded to the draft COP via Greg Mills and indicated that the COP was a bit too wordy and queried who the intended audience was. If it was directed at the pest management industry I believe many would not take the time to read it, I still hold that view. Rather than a COP, a short readable brochure or booklet for the public and the licensed industry would have been more appropriate. I am not convinced that bedbugs warrants a specific COP at this stage. However if industry would like to adopt it as industry best practice that's fine.*

*In the middle of 2005 Mark Sheppard who owns P.E.S.T. put together a short training course for the pest management industry on bedbugs with encouragement from me. I was happy to provide some input into it and it has now been running for more than 6 months. This info is also available for TAFE in WA to use in the training of Technicians.*

*Both Mark and I have met and presented to the WA Tourism Council's Backpackers Committee in 2005 showing them the short course as well as a number of Perth based Environmental Health Officers. Channel nine has also interviewed the Dept of Health in recent days following the reports emanating from the eastern seaboard. We were able to put a very positive spin on the proactive approach taken in WA to Curb bedbugs, without causing undue alarm or financial hardship to the accommodation industry and tourism, which is important for Western Australia and Australia generally. Apart from developing a brochure, we believe the strategy adopted to date is the correct one, although acknowledging more research into this public health pest is important.”*

[SD: Currently the bed bug problem is spiralling out of control and there is no evidence to suggest that the situation will improve in the near future. One of the major problems I see is the failure of individual pest controllers to adequately treat these pests; not only treatment failure can ensue but the infestations can rapidly spread. In one case with a staff accommodation block in a major Sydney Hospital, what started out as an infestation in one room, lead to spreading of the pest due to poor pest control; what should have cost ~\$500 to treat ended up costing ~\$50,000. Virtually every week I am involved in a bed bug treatment failure and the industry is clearly wanting, and a lack of available information is the main reason and thus a CoP is urgently required.

Yes the CoP is long, although the control section itself is only 8 pages. However, it is the obvious that the industry needs direction and my feeling is that if a pest manager does not want to read the document then they should not do bed bug treatments. In fact the less the number of pest manager doing bed bug treatments, the better off the industry will be! Clearly pest managers need

information; they need to know best practice and unfortunately this does take space. I feel it would be highly remiss of us to offer only a partial document to the industry, hence the detail and completeness of the CoP.]

16/Feb/2006

**Gary Byrne**, Technical Manager, RAPID Solutions, 5 Pavilion Place, Cardiff, NSW, 2285.

*“Most of us at RAPID Solutions Technical and RAPID Training have reviewed your Draft Bed Bug Code of Practice. We all agree the Pest Industry and their Clients as well as others are greatly in need of this document. We are satisfied with it and provide the following minor comments which may be of assistance.*

*Page 22 & Page 37 - stapling of bed base (ensemble) bottom covers – If Pest Manager is not competent in this activity it should be a Client responsibility and noted on the Appendix B Checklist for the Client, as for re-instating carpet to carpet straight edges.*

*Page 24 - change to chemical name Pirimiphos Methyl to read "Pirimiphos-Methyl" as per the APVMA web site.*

*Another group that could be targeted for specific training could include Customs Baggage Checking Officers and AQIS Quarantine Officers (Airports and Passenger Ship Facilities)*

*We feel it is a well thought out and comprehensive document and look forward to seeing the final Code.”*

[SD: Thank you Gary for your comments and the points you make are addressed below;

Page 22 & 37. In the CoP it is now suggested that the client should do this.

Page 24. Insecticide name changed as recommended. AQIS officers if they find a bed bug in luggage will insist that the item is treated. Unfortunately as this insect is already in the country and that they are so effective in hiding in luggage, it is unlikely that further training will reduce the incidence of bed bugs.]

16/Feb/2006

**Wayne Williams**, Eurogem Australia, 9 Marconi Close, Jamoree Heights, QLD, 4074.

*“As Eurogems elected spokesman on bed bug treatments, I thank you for the invitation to comment and submit input in relation to the proposed AEPMA/FAOPMA draft on the Bed Bug Code of Practice*

*Sections 12 and 16 have excellently formulated procedures and responsibilities for hoteliers. Early detection of bugs and strict cleaning procedures are important in minimizing bug breeding.*

*However we cannot support the CoP draft in full for a number of reasons.*

*Firstly I find your Section 5 "Limitations of the CoP" quite puzzling, especially your reasoning for exclusion of steam treatment.*

*The CoP states that for alternative eradication methods, to be considered, that they must be supported by Publication Papers or that they be in practice.*

*Yet, the CoP refer to Articles compiled mainly by Mr. Meeks another American entomologist who attests to the effective killing of both bed bugs and their eggs by steam application.*

*Articles also refer to steam application being a standard practice by some American companies.*

*Surely what is classified as a standard publicized practice in the rest of the world, for the same bed bugs, should satisfy your conditions for inclusion into an Australian CoP*

*Anyway, I have not read any published research papers or studies that report the findings of chemical treatments of bed bugs and the side effects on humans.*

*Are these findings trade secrets by chemical companies, or were their conclusions drawn by visual evidence only?*

*If the latter is the case, than how does this differ from visual evidence, witnessed and relayed to me by hoteliers who claim, to have eradicated the bed bug breeding cycle, by the use of steam treatments.*

*Sure, further arrivals of traveling bugs can confuse this claim. However as you are aware, certain conclusions on timing can be drawn from the absence of the various 5 nymphal stages to maturity.*

*To establish in Australia, a World first CoP without promotion of all known practices, could lead to embarrassing professional ridicule, especially if it was later claimed that these alternatives should have been included.*

*I would have thought that with the recording of Eurogem and American success that steam treatment qualifies as an established Practice and therefore should be included.*

*Eurogem, as you are aware, distribute various types of steam only and steam with vacuum cleaners with quality and continuous steam making capabilities.*

*We also have attended many seminars and back packer AGMs, to promote steam treatments.*

*There are now numerous hoteliers who, with the aid of our steam machines, are completely on top of the problem.*

*Daily checks and observations by cleaning staff are vital in detecting evidence on new arrivals.*

*These are people who have tried extensively to cure the scourge with failed chemical applications.*

*They now enjoy odour free rooms, flexibility to respond with their own treatment, much more harmony at the reception, and many more benefits.*

*If the CoP is adopted, you then go on to say it would have to be modified regularly to accommodate future insecticide solutions only.*

*How can Eurogem support this action?*

*There are many unqualified and obvious incorrect dispersions reported in the CoP on the practices of dispersion of steam.*

*I agree with the statement that there is no residual killing effect on bugs, after the steam has re-condensed back to water.*

*Unlike chemical treatments, there is no need for steam to have a short term residual life, as steam, when diligently applied, results in a 100% kill rate of both bugs and eggs in most premises and furnishings.*

*Steam treatment success.*

*Apply plenty of continual steam, cover every square inch in a systematic fashion, use the correct tools and have dedicated cleaning staff who take no shortcuts.*

*No doubt, just about the same application criteria for a good chemical treatment?*

*Once cleaning has commenced on a sealed off room, it must be completed systematically without disruption.*

*We have developed solutions for ensembles, power points, bed heads and cane furnishings etc.*

*Effective killing of bugs and eggs can be achieved at a much faster rate than the report indicates.*

*The CoP has made no mention of the need for alterations to various State Health and Tenancy Acts that could be revised to incorporate the bed bug.*

*A Queensland health inspector informed me that they have no fixed guide lines to follow.*

*It is interesting that in the Chessels v Woods hearing, the NSW Tribunal had no trouble in handing down a decision from the Residential Tenancies Act which had no mention of bed bugs in it.*

*Is it a concern, and should it be address in the CoP that unlicensed hoteliers are administering their own chemical treatments.*

*Until the AEPMA/FAOPMA directs you to present steam treatment as an alternative process in the CoP, I would be reluctant to share sensitive details and records of my clients that would be invaluable.*

*Is it possible, considering the credentials of the majority of your committee, to satisfy our requests?*

*Eurogem in the mean time will continue to lobby independently if necessary, to have steam accepted as an alternative treatment and if necessary, be included in any CoP proposal. The same would apply if regulations are necessary to the various Health and Tenancy Acts.*

*If your body is successful in having a CoP installed, it will assist those hoteliers who are on top of the problem and also for Health Inspectors, in forcing the entire accommodation industry to make a more concerted effort.*

*Good luck with the valuable effort you are contributing to education the tourism industry of this potentially crippling bed bug scourge.*

*Of course I have no problems with reproduction of this reply. One condition however is that the entire article be used and not extracted parts."*

[SD: This submission demonstrates the need to fully read a document before making any public comments, particularly if one is a spokesperson for a company as this (using Mr William's own words) could lead to "...embarrassing professional ridicule". The suggestion that steam treatments have been excluded is obviously false; an extensive discussion on the technology is in section 13.1.4, pages 21-22. Steam as a technology for managing bed bug populations was even in the document from which the CoP was initially derived (see *Doggett S. 2005. Chapter 7. Bed Bug Ecology & Control. in Pests of Disease & Unease,*

*Synopsis of Papers, Westmead Hospital, Westmead*, pg. 36). Perhaps when the spokesperson reads the document fully, Mr Williams & Eurogem will support the CoP.

As to the other comments;

There are publications reporting on the efficacy of insecticides and these are in the literature and do not take a great effort to find. Having said that more work needs to be undertaken in light of the recent bed bug resurgence.

For the registration of any insecticide a thorough review process of the safety of the product (including both acute and chronic toxicity to mammals) is undertaken by the Australian Pesticides & Veterinary Medicines Authority. Consult the APVMA if more information is required.

It is important to note that with any technology there are always potential dangers, for example with steam machines there is potential for burns and scalds and electrical devices have inherent risks. It is always necessary for any organisation to undertake risk assessments with any tool or product employed.

As noted, the CoP does not attempt to discuss every technology proposed for bed bug control, only those where there is independent evidence testifying to the veracity of the technology or where there is evidence of efficacy through common practice. The fact is that there has been only one independent published article on the successful use of steam for bed bug control (Meek F. 2003. *Bed bugs bite back. PCT, 31: 43-52*), and even this author (Frank Meek, who is on the working party) advocates the use of insecticides in conjunction with steam in all cases. It will always be easier to accept the results of an independent study rather than the subjective claims of a company.

As with any control technology successful elimination of a pest can only be achieved if the person undertaking the control has a thorough knowledge of the insect pest and its ecology. I have seen many control failures when insecticides have been used inappropriately but also when steam has been used inappropriately, largely because all harbourages had not been treated. If used incorrectly, steam can even disperse bed bugs; a too high a flow rate will blow bed bugs about along with their exuviae which can contain eggs and young nymphal stages. Thus the tool is only as good as the operator. The CoP does encourage all to undertake an integrated approach towards bed bug control using both non-chemical and chemical approaches. It is however, dangerous to assume that you will treat all harbourages with one application (be it with an application of steam or insecticides) and in all cases an insecticide application must follow using a residual product to kill those bed bugs initially missed.

The CoP has no control over Legislative Acts. Nor can the CoP tell people what not to do; it is already stated the only registered products can be used legally. It

is worth noting that if an hotelier is able to purchase a product off the shelf then they can legally apply the insecticide themselves.].

17/Feb/2006

**Ion Staunton**, Pestech Australia, Hope Island, Qld.

*“You have done a first class and comprehensive job on the CoP. Having treated bedbugs maybe close to a hundred times for Flick and Co in the late fifties, I can vouch for your attention to detail. I can only add just a couple of thoughts:*

*1. I've seen plenty of bedbugs in the joints of the old metal beds and in the coil springs of the mesh which supported the mattress. There shouldn't be any of these beds still in service, however having seen plenty clamber over metal (even if some may have fallen off), I pause to suggest you may reconsider your reference to their lack of metal/smooth surface dexterity; reading your comment may influence some stakeholders to be less vigilant. I say, let 'em worry about every possibility!*

*2. somewhere in 13.1.4 (heat treatment) you may consider the use of microwave ovens for non-metallic items. They work wonderfully on eggs as well.*

*3. Somewhere around 14.1 there could be mention made of caulking gaps, crevices and any other non-fabric harbourages. Caulking is a preventive measure and could be performed before there is any indication of bedbugs and also to prevent reinfestation after a completed eradication. Definitely not to be attempted during the actual treatment process.*

*I hope these comments help. I hope I get to see a finished version; it will be helpful as I rewrite the 'Urban Pest Management' text book. I'm sure I'll be in touch many times during that rewrite because of your up-to-date and extensive knowledge.”*

[SD: Thanks Ion for your comments and I will address each point.

Point 1. I have seen bed bugs walk over metal as well but they do have trouble climbing smooth vertical surfaces; not surprising considering that the insect evolved from bat bugs that live in caves. Thus metal beds can help to contain an infestation.

Point 2. There has never been any published article on the use of microwaves, although I am sure they work. The danger of including microwaves in a CoP is that it may encourage people to place any item, including those made of metal into a microwave, which can destroy such equipment; we do wish to be blamed for such incidences! Microwaves are of course limited in size and there are other more practical technologies available for controlling bed bugs.

Point 3. This is already in the CoP under section 16.1.1 (Preventative Measures).]

27/Feb/2006

**Dr Michael Lindsay**, Medical Entomologist, Mosquito-Borne Disease Control Branch, Environmental Health Directorate, Health Protection Group, Health System Support Division, WA Department of Health, WA.

*“Here are some brief comments on the Bed Bug Code of Practice.*

*The document is a useful and highly detailed information package and a welcome addition to the available literature on bed bug management. You and the committee are to be commended on your work.*

*However, I am not certain that the document will be embraced by the pesticide industry because of its length and complexity. It may be that a shorter brochure or info-note, with point-form instructions, is more likely to be read and utilised by individual operators. The Treatment Schedule that you produced a couple of years ago was a functional document because of its simplicity, and perhaps this level of information is more appropriate for the intended user. The information in the detailed document (the draft CoP) should continue to be available as a resource, perhaps on the internet (as it is now) for those wanting further information (e.g. pest control company managers, people training the industry, etc).”*

[SD: most of these points are addressed in detail under the submission from Geoff Harcombe, also of WA Health. My intention is to keep the CoP available as a resource to all on the internet].

27/Feb/2006

**Brian J. Cabrera**, Asst. Professor of Entomology, & Extension Specialist, University of Florida, USA.

*“I have read the CoP and only have a few minor comments. I'm impressed on the thoroughness of this document and have referred several colleagues and pest control operators to your web site. Hopefully, they have submitted comments as well. My own comments:*

*Section 9.1.4. mentions the term "bed bug friendly" in regards to a room. Perhaps add reference to sections 16.1.5 and 16.1.6 here.*

*Section 11.1.1 Are there any recommendations for attire to be worn by the pest mgr. performing the inspection? E.g., long-sleeve vs. short-sleeved shirts, wearing latex or similar type gloves. Also, include a note that the person performing an inspection should avoid prolonged contact with the bed, drapes, furniture, etc.*

*Section 11.2 Include recommended length of time that will ensure kill as in 13.1.5.*

*Section 13.1.3. Destroying the contents of the vacuum bag by heat is mentioned but no recommendation on how to do this is given. However, at the end of 13.1.4, the CoP does not recommend placing items in a black plastic bag and leaving it in the sun. If there is a preferred method, it should be included.*

*Section 13.2. Any comments on IGRs?*

*Section 16.2. Would keeping luggage in a sealed plastic bag (white) be practical?*

*Also, in your experience, have you seen or heard of associations between bed bugs and pets? Any evidence of bed bugs located in or near pet areas?*

*'I'm looking forward to seeing the final document.'*

[SD: Dear Brian, thanks greatly for your comments they are very much appreciated. I will attempt to address your comments below.

Section 9.1.4. Referral to other relevant sections of the CoP included.

Section 1.1.1. Attire was not included, nor other aspects, if they were standard pest control procedures employed in the control of any pests. A note about avoiding potentially infested materials was added to the CoP.

Section 11.2. I presume you are referring to the time that items should be laundered in hot water. In Australia there are set guidelines for the hotel industry whereby laundry must be washed above 55°C to kill dust mites. A standard hot wash cycle and dry cycle would kill all stages and so it was felt not necessary to include an actual length of time.

Section 13.1.3. Incineration is the best method although not an option for most people as backyard burning is banned in Australia. Disposal in the bin is the only reality for most.

Section 13.2. We have none registered in Australia. Also there is very little published information on their efficacy.

Section 16.2. The suggestion of keeping luggage in a sealed bag, preferably white, is a practical and presumably beneficial idea and is now added to the CoP. I have never seen an association between bed bugs and pests in my experience - the bugs are always concentrated on and the around the bed.

Thanks again Brian for your comments.]