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Amateur
Beekeepers
Australia

THE AMATEUR BEEKEEPER

NEWSLETTER FOR MEMBERS
APRIL • MAY 2022

LABEL CLAIMS
RAW, PURE
UNFILTERED
ORGANIC
COLD PRESSED
CAN YOU CALL IT THAT?

The science
**BEHIND
THE STING**

ESSENTIAL TIPS
How to clean up
a slime out

**200 YEARS OF
HONEY BEES**
A \$2 CELEBRATION

IT'S
MITE CHECK
TIME!
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The *Amateur Beekeeper* is the journal of Amateur Beekeepers Australia (registered in NSW as The Amateur Beekeepers' Association of NSW Inc). It is distributed to members six times a year. Contents are presented for general information only; members should always seek advice tailored to their individual circumstances. The editor will consider adverts from businesses relevant to beekeepers to run free of charge where they contain a special offer to ABA members.

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President's report

As presented by
Sheila Stokes at the
recent ABA AGM



It goes without saying that we have gone through an extraordinary time since our last AGM, held at our last

conference, in 2019.

The ABA executive team has spent considerable time planning, rescheduling, postponing and cancelling AGMs and conferences during the pandemic, and we have finally arrived at this historic event: our first ever online AGM. Whilst we are all disappointed at the missed opportunity to meet face-to-face, we are delighted at the prospect of more members than ever being able to take part.

Our clubs have spent the past two years grappling with video-conferencing technology, QR codes, masks and hand sanitiser.

Our members have spent the past two years trying to understand LGA boundaries and whether they are indulging in a hobby, running a business or providing a public service.

Only our bees have carried on oblivious to our human health crisis, whilst they struggle through bushfire, drought, flood, and finally a chance to recover over a humid La Niña summer.

Through all of this our executive team has continued to support the Association as our membership more than doubled from 2300 members at our 2019 AGM, to over 4700 today.

In that time the ABA has grown to encompass 33 affiliated clubs, as we welcomed nine new clubs, including our first three from outside New South Wales: Albury, Alice Springs, Cumberland, Far North Coast, Gold Coast Regional Beekeepers, Gold Coast Amateur Beekeepers Society, Orange, Orana, Wagga Wagga.

This growth is a testament to the enormous amount of work put in by both the ABA and our club committees to firmly establish our organisation's reputation as a peak body for recreational beekeepers, and maintain our positive relationships with government and the broader industry.

Growth of the entire organisation provides tangible benefits to individual members who have seen their ABA membership fees halved in the same timeframe as membership has doubled.

In spite of this substantial reduction in cost to

CONTINUED ON PAGE 4

Ukrainian Easter eggs



www.facebook.com/Historical.Honeybee.Articles

The art of the decorated egg in Ukraine, or the pysanka, probably dates back to ancient times. Christians embraced the egg symbol and likened it to the tomb from which Christ rose. Pysanky were thought to protect households from evil spirits, catastrophe, lightning and fires. The word comes from the verb pysanka, "to write", as the designs are not painted on, but written with beeswax.

Bees were sometimes depicted on pysanka as a symbol of hard work and pleasantness, and represented all the good insects which should not be killed.

Pysanky are typically made to be given to family members and respected outsiders. To give a pysanka is to give a symbolic gift of life, which is why the egg must remain whole. At least one egg was placed beneath the bee hive to insure good production of honey.

WANT TO CREATE your own eggs using

Posca pens (those same pens used to mark queen bees)? Follow this short video made by Sydney-based embroidery designer and artist Kasia Jacquot.

[instagram.com/tv/CbQszuHABiV/](https://www.instagram.com/tv/CbQszuHABiV/)

[To donate to the Red Cross Ukraine Crisis appeal,](#)

[CLICK HERE](#)

members, we have been able to leverage off our increased numbers to achieve greater benefits for members through bulk discounts particularly in printing and postage of member packs, and in insurance. Notably this year, we have introduced free Personal Accident insurance for all members as a standard membership benefit, and have reduced the cost of our optional members' Public and Products insurance to a record low of \$15.

Since the 2019 AGM we have introduced our popular membership packs. By posting these packs directly to members, we have removed the burden on clubs to receive and distribute membership cards and other materials to their members. The membership packs have proven to be a great vehicle to get biosecurity tools and information directly into the hands of our members.

The scale and scope of work undertaken by the ABA has increased significantly over the past three years:

- We have worked closely with the Department of Primary Industries (DPI) in NSW on ongoing biosecurity initiatives such as Sugar Shake and AFB Awareness months. The ABA funded the supply of sugar shake kits to all our clubs ourselves which enabled us to include members outside of NSW for the first time.
- We have implemented an AFB email alert system, which notifies members when AFB is reported in their postcode area.
- We have continued to publish our bi-monthly journal *The Amateur Beekeeper*.
- We provide IT and administrative support to clubs including email, club websites, and distribution of club newsletters.
- We have rebuilt the ABA Swarm System to allow members to instantly update their availability to collect swarms.
- We now email insurance certificates of currency directly to members and provide access for members to download them on demand.
- We represent recreational beekeepers nationally as a member of the Australian Honey Bee Industry Council (AHBIC).

- We are a member of the NSW Bee Industry Biosecurity Consultative Committee (BIBCC).
- We provide testing resources and feedback to the DPI in the ongoing development of their beekeeper registration systems.
- We operate an online shop to provide low-cost biosecurity manuals and equipment to all beekeepers.

I'd like to take this opportunity to thank all those members of the ABA executive team who have worked tirelessly to support an ever-growing community of beekeepers in clubs across three states since our last AGM. Our outgoing committee is: Ana Martin, Jacqueline Lea, Sue Carney, Bruce White, Kathy Knox, Drew Maywald, Kevin Tracy and Sheila Stokes

I'd also like to thank five long-standing committee members who have stepped down from the executive team over the past 3 years: Dave Wilson, Arthur Garske, Lyall Zweck, Len Verrenkamp, Vince Schnyder

I am very proud of the ABA's achievements and growth over the last three years, and excited to see what the future holds for our vigorously blooming association. *See page 16 for details of the new committee.*

Sheila Stokes, ABA President

EXPLAINED

What's in a name?

We've a new name and a new logo

AT THE RECENT AGM, our members voted by an overwhelming margin for the ABA to adopt a new name for all our day-to-day operations: Amateur Beekeepers Australia.

We've updated the logo and will be rolling out the new design on all online communications in coming weeks. We've morphed the outline of NSW into a bold yellow circle, and our familiar, friendly bee is now angled for action! We hope you like it.

Members based in NSW will continue to see the state outline on our logo popping up for a little while yet, as we use remaining stocks of printed resources. Nothing will go to waste!



Amateur Beekeepers Australia

HONEY CLAIMS

But is it *real*?

Consumers want their honey to be 'authentic' and direct from the hive. So little wonder that marketing claims are getting more fanciful by the day. Sue Carney explains how you can accurately describe your honey

HONEY. ONCE IT WAS ENOUGH TO SAY IT'S AUSTRALIAN AND 100% PURE. But with a spate of publicity about 'fake honey' traded on the international market, consumers want stronger reassurance about what's in the jar.

Marketing terms such as *blended, processed, ultra-filtered* or *heated* speak of large factories and industrial might. Whereas *raw, unfiltered, cold pressed* and *hand extracted* convey a warmer, more personal connection and encourage confidence that the honey can be traced back to the hive – with minimal 'interference' along the way.

No wonder then that large producers are borrowing terms that once belonged in the farmers market, and smaller scale producers are raising the stakes with ever more artisanal terms to advertise their point of difference.

SO IF YOU'RE SELLING YOUR HONEY, WHAT CAN YOU SAY ABOUT IT? Legal requirements for honey labels mandate all sorts of things around food safety and nutrition. For instance, the label must show all ingredients, a nutrition panel, batch identifier and the producer's address. It also needs a country of origin panel.

Food standards rules set out what can be called 'honey' (see p6), and require safe handling and processing. But when it comes to general claims about the 'character' of the honey, the rule, under Australian consumer law, is simply that the claim needs to be *true*.

True? Surely then there needs to be a commonly accepted definition for each term?

It's not so simple. Currently Australia's honey producers – large and small – operate with no agreed definitions for terms used to market honey. So one brand's idea of "raw", "unfiltered" or "unprocessed" may not be the same as another's.

While confusion reigns, consumers are left to make their own assumptions about the ever more wholesome sounding claims, and they aren't necessarily getting what they think they're paying for.

Here, to help recreational beekeepers understand various terms – and to encourage all producers to use them accurately – are definitions for some of the more common terms for honey, based on overseas guidelines and common usage.

Raw Honey as it exists in the beehive or as ob-



tained by extraction, settling or straining without adding heat. The honey shouldn't be exposed to temperatures above 40C during extracting, processing, bottling, or storage. Honey is allowed to settle in order to remove air bubbles, wax, and debris. If a strainer is used to remove larger debris, the strainer should be no smaller than 600 microns so pollen is not removed.

Unprocessed Honey in the same form as when it left the beehive and packaged without any treatment, as in comb honey or honey straight from a Flow hive.

Strained or Sieved Honey which has been passed through a mesh (metal or cloth) to remove visible debris such as wax, propolis and bee parts, without removing pollen. Strained or sieved honey can be called raw if it meets other requirements.

Filtered Honey obtained by removing foreign inorganic or organic matter including significant

FOOD STANDARDS AUSTRALIA NEW ZEALAND SAYS:

“While the Code does include a standard for honey, there are no specific permissions or requirements regarding the use of the terms 'raw', 'filtered', 'unfiltered' on labels on honey products, nor are these terms defined. However, fair trading laws and food laws in Australia and New Zealand require that labels do not misinform consumers through false, misleading or deceptive representations. In Australia, this legislation includes the Australian Consumer Law contained in the Competition and Consumer Act 2010, and state and territory fair trading acts and food acts.”

amounts of pollen. Filters are much finer than sieves. Filtered honey should not be labelled raw honey.

Unfiltered Unfiltered honey may have been strained but it must not have been passed through a filter to remove significant amounts of pollen. Unfiltered honey may or may not qualify to be labelled raw, depending on whether it meets temperature criteria.

Pressed Honey extracted from broodless combs using pressure rather than gravity (spinning or draining).

Cold pressed As for pressed, and without applying heat to facilitate extraction.

Drained Honey that has been collected from uncapped or broken comb without the use of mechanical force.

Unheated Honey that has not been treated with heat to help with any stage of its extraction, processing or bottling.

Local Honey sold by, or with a direct connection to, the beekeeper in the community where it is produced.

Wild Honey produced by bees that have foraged exclusively on native vegetation in undisturbed or protected natural areas.

Organic Honey that meets the voluntary Australian standard for organic producers, and which may have been certified by one of a number of private organisations that require producers to meet the national standard or a similar set of requirements.

FOOD STANDARDS AUSTRALIA NEW ZEALAND

DEFINITION OF HONEY

Honey means the natural sweet substance produced by honey bees from the **nectar of blossoms** or from secretions of living parts of plants or excretions of plant sucking insects on the living parts of plants, which **honey bees collect, transform and combine with specific substances of their own**, store and leave in the honey comb to ripen and mature.

A food sold as honey must be honey and contain **no less than 60 per cent** reducing sugars and **no more than 21 per cent** moisture

Biodynamic As for organic. The honey must have been sourced exclusively from plants that have grown in soils managed under biodynamic principles.

Unpasteurised Honey that has not been heated above 70°C to kill yeast cells.

Post brood Honey that has been stored in and then extracted from comb that has previously contained brood, as opposed to comb that has only ever contained honey. The term is usually used in relation to honey from Warré hives.

LAUNCH

Celebrating 200 years of honey bees

The Australian Mint has released a special \$2 coin

A commemorative \$2 coin released by the Mint in early April marks 200 years of European honey bees in Australia.

1822 is recognised as the year *Apis mellifera* was successfully introduced into Australia, after several colonies brought out from England on the ship *Isabella* thrived and reproduced in Sydney. (Some honey bees had been landed prior to this but there is no strong evidence to show they survived.)

The centre of the coin features a honeycomb sphere, highlighted in a vibrant golden yellow. Around the edge of the honeycomb are two European honey bees, and eucalypt branches, flowers and leaves.

The design is by Jodie Clark. The reverse is the familiar profile of the Queen, by Aleksandra Stokic. The Mint is releasing 60,000 of these coins. An uncirculated specimen mounted on a display card is available for \$15 at ramint.gov.au





How to deal with a slime out

Here's what to do when small hive beetle overwhelm a hive

There are many wonderful things about beekeeping, but cleaning up a small hive beetle (SHB) slime out is definitely not one of them. Once the weather warms up the damage that the SHB larvae do to the hive from their slime is nothing less than disgusting. The queen and colony of bees will normally be lost, as are the brood frames and all of the honey, so from a financial perspective a SHB slime out can be costly.

If your hive is slimed, immediately block up the entrance and bag it securely in one or more large heavy duty garbage bags. (You may need to break the hive down into smaller components to fit in the bags.)

The easiest way to kill larvae and adult beetles is freezing. Drowning also works but has potential for live beetles and larvae to escape during the process. Drowning can be done in very hot/boiling water, soapy water, or a strong vinegar or chlorine/bleach solution.

The slime contains a yeast which is harmful to humans if inhaled or absorbed through skin, so use PPE. Frames of honey from within a slimed hive are normally also contaminated and should not be used.

Once the live insects are dead, you still need to clean the equipment. Timber frames can be burned or thoroughly boiled to remove all wax and irradiated. Plastic foundation, boxes and equipment can be scraped, thoroughly scrubbed using soapy water and soaked in bleach to remove the slime smell and irradiated.

SHB are attracted to the smell of the slime so will quickly breed up again in any equipment that isn't cleaned properly.

– NSW DPI BEE BIOSECURITY OFFICER
ROD BOURKE

BEWARE OF THE YEAST

- Adult SHB may travel 15 kilometres to a honey bee hive, attracted by its scent.
- SHB carry with them a yeast, *Kodamaea ohmeri*. This yeast has been identified at all stages of the SHB lifecycle and causes honey to ferment.
- Total hive collapse occurs after the SHB larvae feed on the protein stores of pollen and brood.
- Fermentation of the honey by *Kodamaea ohmeri* is colloquially termed "slime".
- Fermentation may cause the queen to stop laying and the colony may abscond.
- Usually all that is left of a once flourishing hive is a number of dead bees surrounded by a mass of gorging SHB larvae in an odorous fermented slime. *Kodamaea ohmeri* dominates the slime.
- *Kodamaea ohmeri* is known to cause breathing problems in immunocompromised people. Beekeepers should be particularly careful when handling SHB affected hives and avoid any cleaning techniques such as high-pressure hosing that could cause the yeast cells to become airborne.
- Wear PPE, particularly an N95 mask when cleaning materials, and launder well any overalls, gloves and other clothing before reuse
- Any beekeeper who has cleaned SHB affected hive materials and who subsequently develops breathing issues should seek medical advice. It is particularly important to mention possible

exposure to *Kodamaea ohmeri*.

For more on external AHB traps: agrifutures.com.au/product/external-attractant-trap-for-small-hive-beetle/



QUALITY ASSURANCE

Could B-TRACE help you?

A new scheme is aimed at small-scale honey businesses

IF YOU own or manage fewer than 100 hives and produce or sell less than six tonnes of honey a year, B-TRACE certification may help your business.

B-TRACE is a small-scale version of B-QUAL, the quality assurance programme that was developed years ago by the Australian honeybee industry. B-TRACE is designed for enterprises that sell locally either direct to consumers, or through markets, stalls or food businesses. For an annual fee of \$175, B-TRACE beekeepers have access to a specially designed app designed to assist beekeepers to keep hive record information that satisfies the requirements of the National Biosecurity Code of Practice, and extracting and product records. After passing an annual online desk audit and getting certified, the beekeeper can use the B-TRACE logo on products to demonstrate they meet current industry and regulatory standards for safety and quality.

B-TRACE and B-QUAL are owned by the Australian Honey Bee Industry Council (AHBIC).

For details, go to btrace.com.au



DISASTER

Flood affected hives

The best way to deal with hives exposed to floodwaters

WHEN floodwaters subside, a hive that has been inundated is a sad, sad sight. The boxes may be intact but the contents will need to be dealt with. If you find hives that are not yours, contact your state department of primary industries immediately so it can trace the owner by the identification number (hive brand). In NSW, call 1800 814 647

Alert: Floodwater can contain any manner of contaminants, from petrol to agrichemicals, sewage to diseased or rotting animal and plant material..

Do not try to salvage honey if it has been in contact with floodwater. Dead bees, brood, honey and wax from flooded hives needs to be burned. The same goes for frames unless you have facilities to clean and thoroughly sterilise them. Do not use pressure cleaners on material that has been infested with small hive beetle. (See item on previous page about SHB-related health risks.)

Boxes, lids and boards, if in good condition, may be scrubbed and disinfected for later reuse.

At all times, consider the risks to human health and the possibility of spreading bee diseases.

Always err on the side of caution.

Hive materials should never be sent to landfill or put out for rubbish collection if they carry any known or potential biosecurity risk, particularly AFB.

If you cannot deal with flooded hives immediately, you can wrap them for later clean up. Make sure they are secure against leakage and robber bees.

THE AUSTRALIAN HONEY BEE INDUSTRY COUNCIL will hold the 4th Australian Bee Congress from 8 to 11 June

at Rosehill Gardens, Sydney. The first day is reserved for technical tours, with registrations and trade displays open in the evening. The Congress speaker programme runs through the next three days.

Confirmed speakers are listed on [the website](#).

Tickets if bought before April 22 are \$210 for one day or \$595 for entry to all talks and the trade show. After April 22, the cost rises to \$255 and \$725 respectively. Social event tickets are \$50 for each event, and a congress dinner ticket is \$125.



4th AUSTRALIAN Bee Congress

CELEBRATING HONEY BEES

At the heart of a healthy Australia
www.australianbeecongress.com.au

8 - 11 June 2022

Rosehill Gardens, Sydney, NSW

HOW TO . . .

Mite Check

Australia is a *Varroa destructor* free country. Or is it?

BY KEVIN TRACY

OUR biosecurity forces do all they can to keep this “killer mite” out of our hives. What can we do?

In many countries, the discovery of *Varroa destructor* was too late and the pest had already taken hold in and across honey bee colonies. Simply, people didn't know what to look for or how to see it.

We are without those excuses

We all need to do what we can to help. This means regular and effective testing for exotic (not yet here) mites in our colonies. There are three methods currently in use. (Note: these methods are not for determining the amount – load count – of *Varroa*, merely its presence.)

1. The most efficient check is arguably Drone Uncapping. The uncapping and removal of drone larvae from comb will show the reddish brown *Varroa* mite bodies clearly against the white larvae.

2. Alcohol Wash is similar to Sugar Shake but different. It requires a similar number of bees to be collected and then “washed” in alcohol.

Alcohol Wash is very effective. It can be upwards of 85 per cent accurate for showing the presence of exotic mites, which is well above results from a Sugar Shake.

3. To Sugar Shake, bees are collected in a container and thoroughly dusted with icing sugar. This has been, until recently, the method used by many in preference to Drone Uncapping or Alcohol Wash.

Sugar Shake is nowhere near as efficient as Drone Uncapping or an Alcohol Wash, with an efficacy rate around 60 per cent.

A visual inspection of comb will not give the answers you need to detect *Varroa destructor*.



PROS AND CONS OF TEST METHODS

Sugar Shake

- + Equipment readily available
- Queen needs to be excluded from sample
- + Sample bees returned to hive (but will not necessarily survive)
- Least effective method, especially if bees aren't 'rolled' vigorously enough

WATCH [youtube.com/watch?v=48vomY-lf2Q](https://www.youtube.com/watch?v=48vomY-lf2Q)

READ beeaware.org.au/wp-content/uploads/2014/03/Sugar-shaking.pdf

Alcohol wash

- + Quick and effective
- Sample bees are sacrificed
- + Equipment can be made or improvised. (Mini salad spinners work well)
- Queen needs to be excluded from sample

WATCH [youtube.com/watch?v=leq1-rMCWfc](https://www.youtube.com/watch?v=leq1-rMCWfc)

READ beeaware.org.au/wp-content/uploads/2014/03/Alcohol-washing.pdf

Drone uncapping

- + Quick and very effective
- Seasonal: drone brood need to be present
- + No live bees removed from hive

WATCH [youtube.com/watch?v=3bSgyUSj-CQ](https://www.youtube.com/watch?v=3bSgyUSj-CQ)

READ beeaware.org.au/wp-content/uploads/2014/03/Drone-uncapping.pdf

10 Ways to Mess up a Mite Check

- Not knowing what to look for
- Not knowing biosecurity protocols, ie. the Code of Practice plus any state requirements
- Assuming there are no mites to see
- Using murky water or a dirty sheet of paper/cloth so you can't spot any mites
- Looking for mites on bees' backs
- Thinking “a couple of mites won't matter”
- Not having the exotic pest hotline number in speed dial (Save it now: 1800 084 881)
- Disposing of samples before getting confirmation of what they are
- Not following biosecurity directives
- But the worst mistake is: Not checking at all

WEB STORE

Shop online and support the ABA

For all your ABA merchandise, essential biosecurity equipment and more, go to beekeepers.asn.au/shop



Beekeeper's Log Book 2021/22 \$15

Want one for each hive? Grab some spare copies now We have limited stocks -- when they're gone, they're gone. A5 size. 60 pages plus cover.

2020/21 edition: last copies available. Special price \$5



Enamel and metal keyring \$10

Featuring the ABA's distinctive bee, framed by the outline of NSW.

On the back, there's room for you to add your ID -- perhaps your beekeeping registration number or a trusty contact. 40mm across

Sugar Shake Kit \$15

Contains all you need to perform a sugar shake test to check your bees for mites. Includes jar, mesh lid, scoop, sugar, instruction sheet and link to demonstration video



Our popular warning signs suit backyard beekeepers. 200mm by 265mm. Made from lightweight UV-stable material similar to that used for real estate signs. With eyelets for easy fixing to a wall, a tree, a post or gate.

Text reads: CAUTION. THIS AREA HAS BEEHIVES. THERE ARE MANY BEES ABOUT. BEES CAN CAUSE A PAINFUL STING. IF YOU ARE ALLERGIC TO BEE STINGS YOU MUST NOT APPROACH THE HIVES AS A BEE STING CAN BE FATAL **SIGNS \$10 EACH**



Enamel lapel pin \$7
Featuring the ABA bee.
Pin with butterfly clip



ABA Bucket Hat \$15

Enzyme-washed cotton bucket hat. In navy with a contrasting sand coloured trim/underbrim, and embroidered logo in yellow. Or sand with a navy trim/underbrim and embroidered logo in black. Available in two sizes



Canvas tote \$15

Quality cotton canvas tote with logo on one side, plain on the reverse. Reinforced shoulder straps. 420mm x 420mm.



AFB brood sampling kit \$4

Make sure you have a brood sampling kit at the ready every

time you open your hives for inspection.

Contains instructions, glass slides, mailers and a laboratory form – all you need to send suspect brood samples off for scientific diagnosis. Versions for NSW/NT and QLD. (The laboratory forms are different for each state.)

Please note: laboratory testing fees are payable. However if you suspect AFB and are a registered beekeeper in NSW, NT or QLD, your state veterinary laboratory will not charge for this service.



Classic Enamel Pin \$6

Biosecurity Manual for Beekeepers \$3.50

This is your essential guide to local pests and diseases, produced by Plant Health Australia. Available through our shop at cost price. 64-page A4 printed manual.





EXPLAINED

Bee venom

All about the sting in the rear

TO DEFEND their nests and honey stores against many potential enemies, honey bees have developed elaborate defense mechanisms involving pheromones. The most notable of these is the honey bee's sting.

The sting apparatus (and to a lesser extent the mandibular glands) produce alarm pheromones that stimulate the stinging response and arouse other worker bees to sting the intruder.

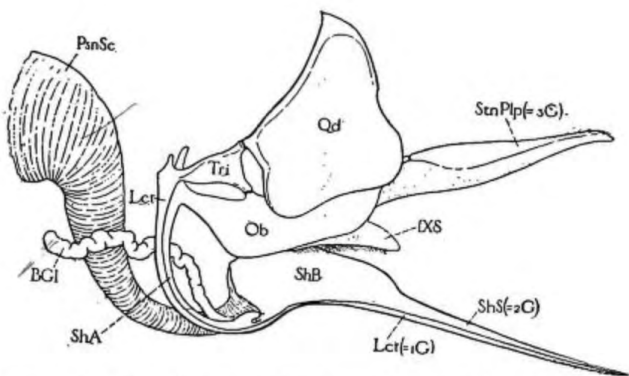


FIG. 36.—Semidiagrammatic view of left side of sting of worker, accessory plates (*Tri*, *Ob*, *Qd*), sting palpus (*StnPlp*), alkaline poison gland (*BGI*), and base of large poison sac (*PsnSc*) of acid gland.

ILLUSTRATION TAKEN FROM THE ANATOMY OF THE HONEY BEE BY ROBERT SNOODGRASS. PUBLISHED IN 1910

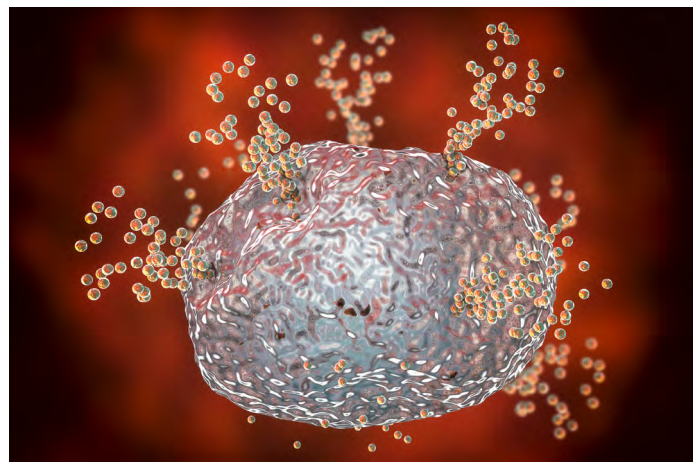
The main component of the alarm pheromone is iso-pentyl acetate which has a sweet smell rather like banana oil and is stored in a specially evolved 'venom sac' located close to the sting shaft.

Honey bees store a maximum of 0.5mg of venom during their lifetime.

Commercially-produced venom is used medicinally for

desensitisation of allergic individuals, and in apitherapy treatments claiming to help a range health conditions including chronic conditions such as rheumatic diseases and multiple sclerosis.

Venom is collected from honey bees using an electrically charged grid with a thin synthetic material (such as taffeta or clear plastic food wrap) stretched



MAST CELL RELEASING HISTAMINE DURING ALLERGIC RESPONSE. 3D ILLUSTRATION

over it. The grid sits on an integral glass plate. This apparatus is placed at the bottom of the hive. When bees alight on it they receive a slight electric shock causing them to sting through the material leaving a deposit of venom smeared on the glass plate. The dried venom is scraped off the plate and the underside of the fabric with a razor blade and then rapidly freeze-dried for storage.

This method allows most of the workers to retain their stings so does not damage the colony greatly, but it does make the bees very irritable and defensive. No smoke can be used when collecting the venom because of the risk of contamination. The venom is also very irritating to the collector who needs to wear a face mask.

On average it takes 20 colonies to provide one gram of venom.

The major component in venom is the peptide mellitin, which releases histamine from the mast cells and ruptures red blood cells causing pain and swelling.

The enzymes phospholipase A2 and hyaluronidase are the components in venom thought to cause allergic reactions. People can die from anaphylactic reactions caused by honey bee stings.

THIS ARTICLE IS REPRINTED FROM

[RESOURCES.BEESFORDEVELOPMENT.ORG/RC/BEE-VENOM](https://resources.beesfordevelopment.org/rc/bee-venom)

ROTARIANS FOR BEES, an initiative of the Canterbury Rotary Club, Victoria, is looking to expand its network.



Interested members can contact John McCoskill at john@jmresources.com.au. John started Rotarians for Bees in 2018 to highlight the vital importance of bees and other pollinators.

INVENTIVE

Make yourself a mini extractor

Cost: \$2.50 Level: easy

THANKS TO Blue Mountains Warré beekeeper Sandra Wolf for sharing this idea for a simple-to-make system for draining honey from a small amount of comb. It requires two empty large yoghurt tubs with lids (use the same size and shape so they stack nicely), a drill, a utility knife, and a paint strainer bag. (Bags can be made, or purchased from hardware stores for about \$7.50 for three.)



STEP 1 Cut a hole in the lid of the first tub, roughly three centimetres in from the edge.

STEP 2 Use this cutout to draw an outline on the base of the second tub. Drill about 20 holes in the base of the second pot, keeping well inside the outline.

STEP 3 Line the second tub (the one with the holes) with the paint strainer. Secure it by tightening the drawstring, or use a rubber band around the outside of the tub.

STEP 4 Put cutout lid on first tub and stack the second tub above it.

TO USE Fill the top tub with burr comb or other comb you wish to drain of honey. Mash it down with a fork, or place a weight on top of the comb. (You can improvise a weight with an unopened can wrapped in food grade plastic. Place the second lid on the top and leave the stack for 24 hours or longer for the honey to drain



into the lower tub.

BONUS USE: White buckets or tubs are just what you need when performing a sugar shake. Fill a tub with water and shake the icing sugar into this water after thoroughly 'rolling' the bees for two sessions of two minutes each. The white tub makes it easy to spot any dislodged bugs.

DO YOU HAVE A LOW-COST IDEA TO MAKE A BEEKEEPING TASK EASIER?

Submit your idea to editor@beekeepers.asn.au, along with a description and photos that show the components and each stage of the construction.

Bee Tech Challenge 2022

Do you have the technology that bees need? Agrifutures is running a contest

The Bee Tech Challenge is searching for market ready technology which provides solutions to key issues facing the industry including biosecurity, hive health, hive safety, and bushfire protection and preparedness.

Facilitated by the AgriFutures Honey Bee and Pollination Program, the Bee Tech Challenge is connecting beekeepers with startups, scaleups and innovators to support a brighter future for our bees.

Participants showcase and pitch their technology to beekeepers and other industry professionals at this year's 4th Australian Bee Congress in Sydney. Conference delegates along with an assessment panel will have the opportunity to vote for the technology that they see as most relevant and useful for the beekeeping industry.

Applications close at noon (AEST) 20 April 2022. Go to agrifutures.com.au/bee-tech-challenge for details, including T&Cs.

Swarm clusters adapt to the temperature

Researchers have tracked how honey bees shift to maintain a steady core heat, writes Kathryn Knight

PACKING UP to relocate is always daunting, but imagine uprooting an entire community and setting forth with no final destination in mind. This is the prospect faced by swarming honey bees as they depart in search of pastures new.

Having located a nearby tree, the swarm settles while scouts venture off in search of a new home, yet the cluster continually seethes and churns to maintain a stable temperature within.

Until recently, no one had detailed the precise changes that a swarm makes as air temperatures rise and fall.

To learn more, Jacob Peters and L. Mahadevan from Harvard University, with Orit Peleg from the University of Colorado, secured a box containing a queen bee to an inverted weighing scale and encouraged the colony to swarm around her, to find out how they adapted as the temperature rose and fell.

The team quickly found that they were best conducting their experiments at night. "On warm sunny days the bees would fly off as if to a new nest site," recalls Peters. He and Peleg warmed the clusters from 15°C to 30°C at different rates before keeping the insects warm for five hours.

During that time, the duo took 360° snapshots of the clusters every four minutes by swinging a camera around the cluster and taking a picture every 9°, to build a 3D profile. Then the duo cooled the air around each cluster at the same rate, to find out how the bees reacted. In addition, James MacArthur from Harvard University designed a bespoke temperature sensor for the bees to cluster around that recorded the temperatures experienced within the colony as it churned in response to the changing air temperatures.

Reconstructing time-lapse movies of the clusters, the team could see them become longer and broader as the temperature rose, almost doubling their volume at the highest temperature.

'A quick look at the time lapse showed dramatic and predictable changes', says Peters. However, even after five hours at 30°C, the swarm never achieved a stable structure, continuing to ripple and pulse until Peters and Peleg turned the thermostat down.

Yet, the time-lapse movies of the cooling colonies



CROSS-SECTIONS OF A HONEYBEE CLUSTER AT 15°C AND 30°C. THE CLUSTER IS WIDER AND LONGER AT HIGHER TEMPERATURES. PHOTO: JACOB PETERS

appearing to deflate weren't simple rewinds of the warming expansions. 'The cluster shrinks quickly in response to cooling but expands sluggishly to its original size as it warms back up', says Peters.

The team also noticed that at one point during the heating process the cluster stopped lengthening and began shortening instead, even though the base continued to broaden, probably because there is a stage when the honeybees within are at full stretch and can no longer cling on to

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each other if the cluster continues growing longer.

"This [manoeuvre] allows them to increase their surface area without a dramatic decrease in density," says Peters.

And, when the temperature around the colony fell, the colony shortened more rapidly than it narrowed, probably because it is easier for bees to climb up and down chains of their sisters than it is for the insects to move inwards carrying their colony mates suspended below.

The colonies' pulsating manoeuvres also successfully maintained relatively warm temperatures within

(30–36 °C), while remaining cooler at the periphery.

So, honeybees are able to regulate the temperature within a cluster by spreading apart as air temperatures rise, but they can only go so far before the swarm is in danger of disintegrating. Peters warns that if environmental temperatures continue to rise, the forces within expanding clusters may be too great for resting swarms to withstand, shattering as they attempt to avoid overheating.

REPRODUCED WITH PERMISSION OF THE COMPANY OF BIOLOGISTS. PETERS, J. M., PELEG, O. AND MAHADEVAN, L. (2022). THERMOREGULATORY MORPHODYNAMICS OF HONEYBEE SWARM CLUSTERS. *J. EXP. BIOL.* 225, JEB242234. DOI.ORG/10.1242/JEB.242234



3RD AUSTRALIAN Native Bee CONFERENCE

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The banner features three circular images: a close-up of a honeycomb, a single bee in flight, and a bee on a yellow flower. The text is in white and red on a black background.

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For more info, contact:
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The advertisement features a collage of images related to beekeeping, including bees on a hive, a beekeeper in a suit, and various beekeeping equipment. The design uses a hexagonal pattern and a color palette of yellow, white, and black.

EDUCATION

Pick up extra skills

MAKE a blue banded bee model. Here's an activity for younger children (with some adult supervision). Go to museums.victoria.com.au/melbournemuseum/at-home/play/make-a-blue-banded-bee-model/ for written instructions or sit back and watch the video.

LEARN Why is it hard for scientists to determine if honey has been adulterated or if it is the real deal? This background paper explains the current state of scientific analysis, including how Australia responded to the 'fake honey' scandal several years ago. <https://www.nature.com/articles/s41538-022-00126-6>

DISCOVER It is four times bigger than a honey bee and is thought to be the world's largest bee. Read the fascinating story of how this bee was rediscovered in the wild after many years when it was thought to be extinct. <https://www.nhm.ac.uk/discover/news/2019/february/the-worlds-largest-bee-rediscovered-after-38-years.html>

READ For the most detailed guide to the anatomy of the honey bee, you can't go past Robert E Snodgrass' 1910 volume, now available for free online thanks to the Internet Archive. archive.org/details/cu31924003168865

LISTEN Are you a honey bee pest warrior? Victorian Bee Biosecurity Officer Ally Driessen explains what all beekeepers can do to keep Australia free of exotic mites, and how the National Bee Pest Surveillance Program works. Ally gives tips on performing a sugar shake and also drone uncapping (which is mandatory in Victoria). <https://uphnextensionaus.podbean.com/e/episode-15-are-you-a-honey-bee-pest-warrior-with-ally-driessen/>

DO YOU have a recommendation for this column? We welcome suggestions of online bee resources that will interest, educate or entertain members. Contact editor@beekeepers.asn.au



Latest pest incursion

APIS FLOREA IN PORT MELBOURNE

On 6 April, a nest of *Apis florea*, dwarf honey bees, was found on the underside of a vehicle shipped from Thailand. A queen bee, along with 120 workers were destroyed. No eggs, larvae or brood were found. Two of the worker bees had *Euvarroa cf. sinhai* mites on them. (Unlike its cousin *Varroa destructor*, this parasite isn't thought to jump to European honey bee colonies. Nevertheless, Australia wants to keep it and its host the dwarf honey bee from arriving on our shores. *Tropilaelaps* mites, which do infest *A. florea*, are a huge threat to our bee populations.)

A week earlier, a bag of 1500 dead *A. florea* were handed to authorities by the ship's crew. These bees had been collected while the ship was at sea. It's thought they had been treated with insecticide. No mites were detected on these bees.

Immediately after the live nest was found, sweep netting was conducted at two sites with vegetation nearby the port; no *A. florea* were detected.

On 7 April, a further 420 dead (419 workers and one drone), *Apis florea* were found in the trays of utes parked near the one with the nest. Eight dead *Apis mellifera* were also found and examination showed no mites. It is thought that these were local bees.

The cargo from the vessel that was still on the wharf was checked, with no further bees detected. A follow up is being made to determine if any cargo has left the port area.

This is not the first time *A. florea* has turned up on vehicles imported from Thailand.

The Australian Honey Bee Industry Council has been calling for more rigorous inspection of freight where it is loaded to reduce the chance that exotic bee pests, such as *Varroa* and *Tropilaelaps* get to Australia.

Meanwhile, you can do your bit. Do your mite checks carefully and regularly. Not checked recently? Go to page 9 for information and links.

ABA CONTACTS

MEET THE 2022 EXECUTIVE TEAM



SHEILA STOKES

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web@beekeepers.asn.au

ABA president Sheila is a web development professional who builds, maintains and supports all ABA IT infrastructure. She has been on the ABA executive since 2015. "Lobbying is the way to ensure recreational beekeepers' voices are heard."

SUE CARNEY

vicepresident@beekeepers.asn.au
editor@beekeepers.asn.au

Sue is a communications specialist with a lifelong fascination for bees. She started the Blue Mountains Beekeepers club and enjoys collecting books about bees and beekeeping. "Bees know it: cooperation and good communication are key."



KATHY KNOX

secretary@beekeepers.asn.au

Kathy has been keeping European and Australian bees since 2013. She's a community leader with hobby beekeeping associations on the Gold Coast, and has run a series of successful education programmes for kids and adults in the area.

JACQUELINE LEA

treasurer@beekeepers.asn.au

Jacqueline commenced her beekeeping exploits in 2019 and has enjoyed her involvement with the ABA at club level. She is membership officer for Hawkesbury Beekeepers and is now putting her administrative skills to work as treasurer of the ABA.



KEVIN TRACY

kevin.tracy@beekeepers.asn.au

Kevin has a commercial beekeeping background and now trains beekeepers around Australia. He is a queen breeder and an experienced public speaker. "Well managed bees are kept by commercial and recreational beekeepers. Let's all work together for bees."

ANA MARTIN

ana.martin@beekeepers.asn.au

Ana is member of Manning Valley and Hastings Valley clubs. Ana started beekeeping as a hobby in 2015 and quickly turned it into a full-time business. "Supporting beekeepers benefits us all, but also it benefits bees."



DREW MAYWOLD

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Drew is the secretary of Gold Coast Regional Beekeepers, and has a background in education and human resources. He's recently been working on an online resources hub for his local club to help members locate useful information.

MIKE ALLERTON

mike.allerton@beekeepers.asn.au

Mike began his obsession with bees in 2016. Currently engaged in his Cert III Beekeeping at Tocal College and Master Beekeeper Program at University of Florida, Mike gives bee presentations to garden clubs, schools and anyone else interested in bees.



RUNNING THE ABA

The executive team is made up of volunteers who are elected at the AGM. They each take on a range of duties to represent members, provide services to affiliated clubs and individual members, and keep the organisation running smoothly.

The executive meet regularly by video call or face-to-face to discuss projects, policy and current matters that affect recreational beekeepers and our network of affiliated clubs.

Meetings in coming months will cover, among other things, fees and resources for the 2022/23 membership year (beginning in July), planning for events, new services, the ABA's participation in industry forums, and applications from clubs wishing to affiliate.