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Issue

No. 639

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

The Society is proposing to arrange for it's members, a tour of the Macleay (Insect) collections held in the Chau Chak Wing Museum, Sydney University Sydney. The tour date is to be confirmed. See details overleaf.

Matthew Huan from the Chau Chak Wing Museum has also extended a welcome to all members to attend the lecture on native bees on 10 May 2025. See the details in the link provided overleaf.

Dinah Hales has identified an interesting entomological display associated with embroidery (see details below).

Ross Rickard has provided a few photos of historical interest relating to Graham Goodyers time as contractor and later volunteer with Ross's biosecurity group.

Ross has also provided a snapshot of the 2024 International Congress of Entomology (ICE) in Kyoto, Japan.

Bernie Dominak and Dinah Hales have put together an interesting story on aphids on silver birch trees in Orange. Dinah Hales has also provided some interesting observations on Queensland fruit fly.

We encourage all members to consider that the society, Tarsus and the journal GAE rely heavily on the contributions of members. We need your input to not only populate the society endeavours but to also encourage others to contribute and become members.

Kind Regards

Garry Webb Thomas Heddle

Circular editors

Dear Members of Ent Soc NSW,

The Society is proposing to arrange for it's members, a tour of the Macleay (Insect) collections held in the Chau Chak Wing Museum, Sydney University Sydney.

The council requests members to indicate by return email whether they would be interested in attending.

The $20.00 per person cost would be paid from the Society's funds but any other costs for transport, parking or refreshments (there is a Cafe on site) are at the individual member's expense.

The Society will be arranging for an **'Entomologist' to lead an afternoon tour** of the MacLeay collections.

Arrival time: proposed for 2pm, allowing time to take a coffee or snack before the tour;

Date: Allowing time for member response and a two week booking notice; initial proposal for between late May 2025 to early July 2025.

Tour start: 3pm to approx 4 to 4:30 pm.

There may be access to refreshments/meal after the tour but details need still to be verified.

Also please refer to the Chau Chak Museum website links and map document at the end of this message.

Please indicate by return email to both myself (Robin) & Mary-Lynne your level of interest in attending or any questions you may have regarding access etc.

Council is hoping this will be an opportunity for ordinary (especially new) Members to meet each other and members of Council.

Thank you and looking forward to your responses.

CHAU CHAK
Museum Parking-Bu

Hi all,

I would like to invite your society members to attend our free public lecture on 10 May 2025, Saturday 1-2pm to celebrate Bee Day (which falls on 20 May), co-hosted with ANBA (the Australian Native Bee Association). It will be held in the auditorium of the Chau Chak Wing Museum, University of Sydney.

Dr. Ros Gloag will talk about Australian native bees and highlight new research at the university on stingless bees. I will look into preparing a small display of specimens from our ento collection.

Link below:

Australia's amazing stingless bees - Chau Chak Wing Museum

Cheers,

Matthew Huan | Assistant Registration Officer, Compliance (Mon - Wed)
The University of Sydney
Chau Chak Wing Museum

Insects in the Arts

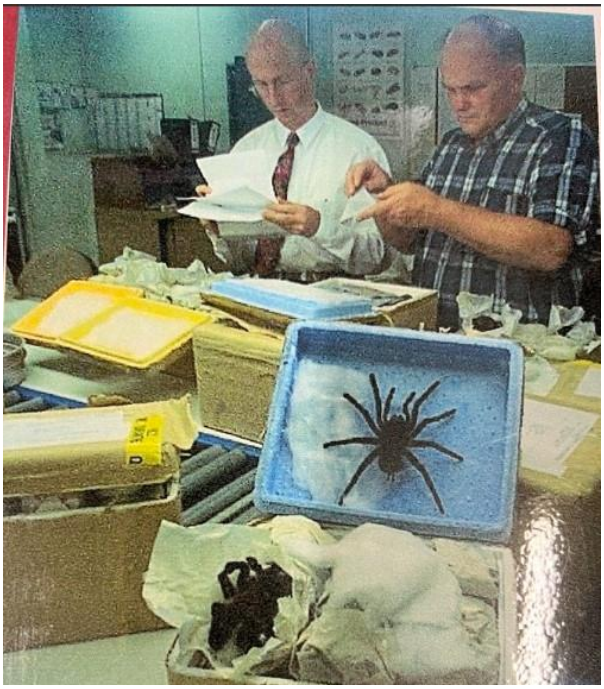
Courtesy of Dinah Hales

The Embroiderers' Guild of NSW is hosting an exhibition of embroidered beetles by Vanessa Newton-Brown. It will be on until 27 May at the Embroiderers" Guild home, Gallery 76, just a stone's throw from Concord West station. There are other exhibitions on at the same time. Entry is free. Open Monday to Friday 9am to 4pm.

A second retirement for Graham Goodyer

Ross Rickard (Assistant Director - Principal Entomologist, Biosecurity) at Department of Agriculture, Fisheries and Forestry in Mascot has kindly provided two photos or historical interest. The first is the recent retirement of Graham Goodyer, who was a contractor and then volunteer in Ross's group from not long after BCRI at Rydalmere closed, some 30-odd years ago (actually February 1997).

An earlier photo shows Graham and Ross checking the import paperwork and the condition of a consignment of dried tarantulas from South America back in the day.



ICE 2024 – Kyoto Japan

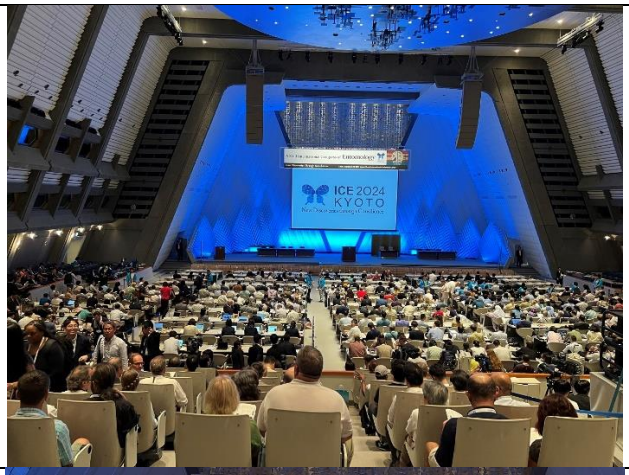
From Ross Rickard

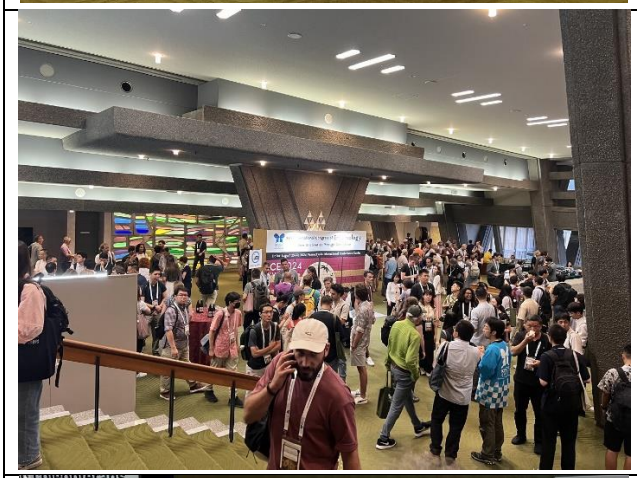
Back in August 2024, I attended the International Congress of Entomology (ICE) in Kyoto, Japan, as a private individual. My last ICE attendance was back in 2004 in Brisbane, so this was a great opportunity to catch up with entomologists who I hadn't seen for many years such as Prof. Myron Zalucki (UQ), Dr Marcos Roca-Cusachs (UNSW), Stephen Doggett (ICPMR) and Gerrit van de Klashorst (private entomology consultant). These congresses have come along way and ICE Kyoto was an amazing experience from the opening to the closing ceremony. There were over 4000 delegates (*plus 250 family members who participated in other activities such as origami and calligraphy etc*) from more than 80 countries. There were nearly 3000 presentations and up to 20 concurrent sessions each day, so choosing what to go to, was a real challenge. Working in the biosecurity space, made things a bit easier, so I was able to attend various sessions on invasive pests such as brown marmorated stink bug (BMSB), *Halyomorpha halys*, tomato leaf miner (*Tuta absoluta*), invasive fruit flies such as the Oriental fruit fly (*Bactrocera dorsalis*), spotted lantern fly (*Lycorma delicatula*), various invasive wasps, borers such as pine sawyers and shot-hole borers and various other invasive pests. The plenary sessions by world renowned entomologists were also excellent and they had the largest collection of entomological gashapon vending machines I have ever seen. ICE 2028 will be in Cape Town, South Africa, which I am assured will be another great entomological event, so get along if you can. Being a private individual allowed me to stay an extra week, and I very much enjoyed taking in the sites such as shrines and museums around Kyoto and Osaka, not to mention the culinary delights of Japan. I even found a shop in Osaka dedicated to selling model as well as live (pet) insects. It was a very memory conference and holiday combined.

Congress Summary (Final Statistics)

Registered Participants **4,041**	Japan	1,084
	Overseas	2,957
	82 Regions and Countries	
Participants included Citizens **4,278**	ICE2024 Participants	4,041
	Citizen	237
All Sessions **205**	Oral	176
	Poster	29
All Presentations **2,817**	Oral	1,752
	Poster	1,065


XXVII International Congress of Entomology
New Discoveries through Consilience
ICE2024
KYOTO


ICE 2024
KYOTO




Coleopterans


Cyclommatus metallifer
メタリフェルホソアカクワガタ


KMY
KMY
INSECT SHOP
タガメサイダー
KMY
INSECT SHOP
11:00-20:00

Aphids on Silver Birch in Orange, NSW

Bernie Dominiak and Dinah Hales

In late April 2025, Bernie Dominiak found aphids in large numbers on flowerpots under birch trees in his front yard. Every autumn, aphid populations develop and deposit honeydew on any cars parked under the tree canopy – very annoying when trying to wash the car. Dinah has an oak tree in her front garden and the problem is the same. If you don't clean the car, the sugary honeydew spots are colonised by sooty mould and become very difficult to remove. The car is then affected by "black spot".

This year, “fallen” aphids were accumulating on a plant pot under the canopy. A lady beetle population was also well-developed with larvae, pupae and adults, suggesting that the lady beetles had been present for some weeks. Bernie exchanged images with Dinah who made a tentative identification of the aphid as *Calaphis flava*. (See https://influentialpoints.com/Images/Calaphis_flava_aptera_c2013-06-28_09-57-22ew.jpg for a picture). At least one winged adult was seen and one brown mummified aphid reminding Bernie of parasitised aphids, observed while he was working on lucerne aphids in the late 1970s. A brown mummified aphid results from parasitisation by an aphidiid wasp.

There are 21 species of aphids known from silver birch and about 5 pages in Blackman and Eastop's key to separate them. Mounted specimens are needed to detect the features used in identification. We didn’t have the time or resources to undertake a full key identification. These aphids on the data available are probably *Calaphis flava*, known to be present in Queensland, New South Wales, ACT , Victoria and Tasmania.

Dinah identified the lady beetle as probably *Harmonia conformis*, the only spotted *Harmonia* widely distributed in Eastern Australia. The ladybird fauna of Australia did not originally have many aphids to eat - we have few native aphid species and they don't form large colonies. Instead carnivorous genera like *Harmonia* depended on psyllids, e.g. on *Acacia.* while some other species specialise in mealybugs and scales. However, *Harmonia* don't refuse a free feed of aphids if they are available! Interestingly it has been suggested that *Harmonia* cannot survive for many generations with a diet of aphids alone, but must have psyllids.

It's interesting to note that the aphids and the trees come from climates colder even than Orange. *Harmonia conformis* is one of a number of ladybird species that overwinters in aggregations in Australia. Ladybird aggregations are often in associated with high areas. Maybe on Mt Canobolas??

Dinah remembers an anecdote from the late Victor Eastop, doyen of aphid taxonomy at the Natural History Museum, London. Victor lived in Kew, and in his spare time was a long distance runner. He often exercised in Kew Gardens, and was familiar with every plant, and in season, every aphid species infesting them. There was a small group of birches that he was particularly fond of, because they harboured several different birch-specific aphid species. One day he was shocked to find that these trees had been removed. He asked a gardener what had happened. The gardener replied, "We had to get rid of them. They were always covered in aphids!".

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Observations on Queensland Fruit Fly on Grapefruit and Persimmons in Sydney

Dinah Hales

When we bought our house in the northern districts of Sydney about 30 years ago, it had an established orchard of citrus (grapefruit, lemons, mandarins, oranges) and a persimmon tree. We have since added another lemon and a lime, but, unfortunately had to remove the oranges because the land was needed for building. The following is a remembered account of effects of Queensland fruit fly on grapefruit.

In earlier times (I can't remember the actual dates), we used to harvest the grapefruit in August. Citrus fruits don't ripen after harvest, so they cannot be picked until they are ripe. Over time it became evident that QFF had become a problem in August, so we moved the harvest back to July. And then to June. This year harvest was intended to be May. But the grapefruit, while still not ripe enough for picking, were attacked by QFF in April. We should get some but not a full crop. Maybe we need to resort to control next year.

Meanwhile, the persimmons. We get a large crop and give most of them away. We have noticed QFF stinging the fruit before they are ripe, but the larvae don't develop and the only effect is a black spot a few mm wide and 10+ mm long on and just under the surface. It seems that the unripe fruit contain something that inhibits the development of eggs/larvae. The fruit is fine to eat if you cut out the black spot. However, if you leave fruit on the tree to ripen, the flies sting under the calyx and the larvae develop. Unlike citrus, persimmons ripen after picking and we try to pick them when they are full size and beginning to turn orange, but are not yet soft.

As a footnote on domestic dipterans, we have had a bit of a *Drosophila* plague indoors. We brought a *Monstera deliciosa* fruit inside to ripen. The little red-eyed people love it. Surprisingly, they were very much attracted to the cut surface of a lime. I was curious to see whether the larvae could survive in the acid environment. They could.

New Entomological Research

(**Right Click** on the titles (or **CTRL Right Click**) to see the full articles)

Incredible truth behind 'unsettling' find in woman's bathroom

The manipulative behaviour of a parasitic worm can be gruesome, but it's all part of their lifecycle. An Aussie woman's strange find in her bathroom has led to a fascinating – and rather creepy – discovery that sounds like something straight out of a horror movie.
In central Victoria last week, the woman found a long, brown 'string' next to her bath that appeared to be moving. Curling up on itself, no apparent head or tail can be seen.
Next to the worm was a dead huntsman spider, and while it may not have seemed like an important detail at the time, advice from a local field naturalists Facebook page soon revealed the astounding relationship between the two creatures. The worm is likely a parasitic worm – a mermithid nematode or horsehair worm – using the spider as a host, University of Queensland entomologist Dr Kayvan Etebari told Yahoo News.

This fossilised 'hell ant' found in a Brazilian museum has been hiding a mighty secret

Experts say the 113-million-year-old fossil is the oldest ant specimen ever discovered. Hell ants have previously been found preserved in amber in Myanmar, Canada and France.
Named 'hell ants' because of their peculiar and slightly scary-looking headgear, they have scythe-like mouthparts – known as mandibles – that look a bit like upward-pointing tusks, and a 'horn' on their heads. Until now, the oldest hell ants were dated at 100 million years old. But a new paper in *Current Biology* describes an even older ant. Found in a museum collection, a fossil from northeastern Brazil has been dated at 113 million years old, meaning ants are much older, and specialised much sooner, than we thought.

Caterpillar or Hummingbird? Bizarre Baby Bird Discovery Stuns Scientists in Panama

A White-necked Jacobin chick may use mimicry or camouflage to avoid predators, resembling a caterpillar with fluffy feathers. Some scientific discoveries take years of research. Others begin with a single curious observation—and, as Jay Falk, a U.S. National Science Foundation (NSF) Postdoctoral Fellow working at the University of Colorado Boulder and the Smithsonian Tropical Research Institute (STRI) in Panama, puts it, sometimes it just takes the right people in the right place. Jay has been studying White-necked Jacobins (*Florisuga mellivora*), a neotropical hummingbird species, for over a decade, though his focus had always been on adults. When Michael Castaño-Díaz, a Ph.D. student, and Sebastián Gallan Giraldo, a research assistant, both based at STRI, spotted a White-necked Jacobin nest along Plantation Road in Panama's Soberanía National Park, they immediately informed Jay.

Australian honeybees are under attack by mites and beetles. Here's how to keep your backyard hive safe

Australia's honeybees are facing an exceptional crisis. The tiny but devastating foreign pest *Varroa destructor* is steadily spreading across the country. The mite feeds on baby bees (larvae), weakening them. It can also spread viruses that eventually destroy entire bee colonies. Efforts to contain its spread have failed, so it looks like Australia must learn to live with this parasite. What's worse, *Varroa destructor* isn't acting alone. In many parts of

New South Wales, the mite's arrival appears to have triggered a surge in another destructive pest: the small hive beetle (*Aethina tumida*). A wet summer in the east has created ideal conditions for beetle outbreaks. This combination is putting enormous pressure on bees and beekeepers alike. Here's how to help support the bee industry and, if you're a backyard beekeeper, defend your hives against attack.

Most bees nest in the ground. Offering rocks and gravel is a simple way to help them thrive

Of the more than 20,000 bee species in the world, 70% nest in the ground. And like many of their counterparts that nest above ground, these bees are facing rapid population declines. But while there has been research into providing habitat for above-ground cavity-nesting bees, the nesting ecology of ground-nesting bees remains largely understudied. This gap in knowledge is concerning. For one, these bees play a crucial role in ecosystems. For another, ground-nesting bee habitats are threatened by land degradation, urbanisation, pesticides and agricultural expansion. Our recent study addresses this research gap. Published this week in Austral Entomology, it examines the soil type preferences of ground-nesting bees and provides a simple, practical approach to enhancing their habitats.

New trial against polyphagous shot-hole borer achieves early success

Just four months into a new chemical trial, the City of Canning believes it has found a way to combat the polyphagous shot-hole borer. In the trial, 131 infested trees were injected with a small vitamin-like capsule containing insecticide and fungicide, and are now showing no signs of live beetles or larvae. The tiny invasive tree-killing pest was detected in 2021 and has since led to the destruction of more than 4,000 trees in the Perth metropolitan area as the state government follows an elimination strategy. It has devastated some of Perth's iconic green spaces, including Hyde Park and Kings Park.

Zombie ants found in Top End

In the remote savanna of the Northern Territory, scientists have made an eerie discovery: zombie ants. These ants are parasitised, possessed and eventually consumed from within by a fungus – possibly a species not yet recorded by modern science. Dr François Brassard, a myrmecologist and postdoc with The University of Western Australia, spotted the ants during a Bush Blitz expedition on Jawoyn country in the Northern Territory. Bush Blitz is a nationwide project focused on cataloguing Australia's biodiversity. "I found this thriving colony of spiny savanna ants, *Polyrhachis senilis*, but there were also many creepy-looking dead ants around it, clamped to grass stalks," he said. "And I thought I recognised what it was – a type of parasitic fungus."

Aussie homeowners warned after pest controller's invasive find in roof insulation

Unwanted bugs and invasive infestations can become seriously costly for Australian homeowners. A pest controller is highlighting the surprising way unwanted bug infestations can make it into your home after receiving multiple call outs to eventually discover outbreaks hiding in a very common material in the roof cavity of Aussie homes. On a number of occasions recently, he's discovered suspected drugstore beetles that have seemingly come from contaminated roofing insulation. "It's a bit of a common problem with new builds, for people who are getting fresh insulation installed. Sometimes it's tainted from the warehouse, but there's a range of reasons," pest controller Christopher James told

Yahoo News Australia. If you don't find the source, "they'll run rampant through the house," the self-described 'Roach Sniper' said.

The deadliest parasites in the world: 10 terrifying creatures you will want to avoid

They may be microscopic but that doesn't mean they can't be lethal. Leoma Williams takes a look at the deadliest parasites in the world, from a zombie fungus to a worm that emerges from your foot. Did you know that around a million people each year die from parasitic infections, let alone all the other unfortunate animals that fall prey to parasitism? These organisms may be very small, but they can be very deadly. But what exactly are parasites? Put simply, parasites are any organism (living thing) that lives in or on another organism - known as the host. They rely on hosts for nutrition and survival, feeding on the living body of the host, either by directly eating their tissues or absorbing nutrients from their body.

This utterly surreal bee is like nothing you've ever seen before – unless you're from Australia

Even Australia's insects are weird, says Stuart Blackman, and different to the rest of the world. Australian animals are famous for being different, says Stuart Blackman. Even the bees refuse to conform to the rules. In almost every respect, this fine specimen looks like a normal honeybee. Except that its stripes are not yellow, but blue – hence the name blue-banded bee. Another quirk is the characteristically intense, shrill buzz it makes in flight. The sound has a practical purpose: the bees perform what is called 'buzz pollination', in which they vibrate their wings vigorously to loosen pollen for collection from flowers. For some reason, the bee seems to have a preference for blue flowers.

This utterly terrifying, armoured, prehistoric centipede was the size of a double duvet and the biggest bug to ever walk the Earth.

300 million years ago, there was a giant bug that looked like a millipede but grew as large as the width of a small car… At 2.5m in length, *Arthropleura* is widely considered *the* largest invertebrate to ever walk the Earth, says Will Newton. A*rthropleura* belongs to a family of bugs known as the myriapods, which includes several other, many-legged bugs such as millipedes and centipedes. While *Arthropleura* and its living relatives may be invertebrates, they're not insects per se. The term 'insect' is used to describe a related but distinct family of bugs known as hexapods. This family includes lots of different types of bugs, from beetles to butterflies.

Real-Life Monster: Scientists Discover Strange Wasp From 99 Million Years Ago

A 99-million-year-old wasp species used a Venus flytrap-like abdomen to capture prey and may represent a new insect family, revealing unexpected diversity in ancient parasitoid behavior. An extinct lineage of parasitic wasps from the mid-Cretaceous period, preserved in amber, may have used a Venus flytrap-like abdomen to capture and immobilize their prey. According to research published in *BMC Biology*, fossils of the species *Sirenobethylus charybdis*, named after the sea monster from Greek mythology known for swallowing and regurgitating water, are approximately 99 million years old and may represent an entirely new family of insects. The physical characteristics of *S. charybdis* suggest it was a parasitoid: an insect whose larvae develop inside a host, ultimately killing it. While modern parasitoids in the superfamily Chrysidoidea include groups like cuckoo wasps and bethylid wasps, *S. charybdis* exhibits a distinctive vein pattern in its hind wings. This unusual feature indicates it may belong to a previously unknown family, proposed as Sirenobethylidae.

Queensland steps up with $24 million fire ant boost – now the feds must follow

The Invasive Species Council has welcomed the Queensland government's $24 million injection to boost fire ant suppression. This new funding will ramp up aerial treatments across large areas in south east Queensland over the next 2 years and includes 12 additional critical frontline contractors to slow the spread of these super pests. 'This is important leadership and action from Premier Crisafulli and Agricultural Minister Perrett,' Invasive Species Council Advocacy Manager Reece Pianta said. 'They have understood that current levels of suppression funding have been woefully inadequate and are stepping up to protect Australia from fire ants. 'This announcement matches directly with what we've been calling for and shows the new Queensland government is listening and has clearly prioritised the fire ant threat. 'Now we need Prime Minister Albanese and Opposition Leader Peter Dutton to do their bit to save Australia from fire ants by matching Queensland's $24 million funding boost.

Flying Toward Extinction: Yale Study Warns of Devastating Reverse "Butterfly Effect"

Mountaintops host some of the world's most diverse butterfly species, but climate change could transform these habitats into ecological traps according to a new study. A Yale-led study warns that global climate change may have a devastating impact on butterflies, transforming their species-rich mountain habitats from safe refuges into ecological traps. Think of it as the "butterfly effect" — the idea that something as small as the flapping of a butterfly's wings can eventually trigger a major event, such as a hurricane — but in reverse. The new study, published in the journal *Nature Ecology and Evolution*, also suggests that the lack of comprehensive global data on insects may leave conservationists and policymakers ill-equipped to address biodiversity loss caused by climate change across a wide range of insect species.

Hordes of genetically modified insects set to be released in Australia: 'They can smell you'

The program involves releasing a genetically bred mosquito that can reduce the insect's population by 95 per cent. Dengue fever is at record levels around the globe, with this trend now beginning to be reflected in Australia as the mosquito species that carries the virus spreads. It means a simple bite could soon trigger symptoms worse than an annoying itch, with victims often experiencing pain behind the eyes, headaches, muscle aches, and nausea for over a week. Surprisingly, elsewhere in the world, one solution to combatting the spread of dengue fever is breeding more of the mosquitoes in large factories. And that's what UK-based Oxitec is now planning to do in Australia as it partners with the country's national science agency, the CSIRO. The company operates the world's largest mosquito breeding factory, which is located in Brazil. Inside are boxes containing thousands of "friendly" mosquitoes that are genetically engineered so only non-biting males survive.

Stinging deaths, back yard poisons and billions spent: model predicts Australia's fire ants future

Australian households will spend $1.03bn every year to suppress fire ants and cover related medical and veterinary costs, with about 570,800 people needing medical attention and 30 likely deaths from the invasive pest's stings, new modelling shows. The Australia Institute research breaks down the impact of red imported fire ants (Rifa) by electorate, with the seats of Durack and O'Connor in Western Australia, Mayo in South Australia and Blair in Queensland the hardest hit if the ants become endemic. Drawing on census data and

earlier studies about the impact of Rifa, the new figures show that pesticides and pest control pose the highest financial cost to households annually, $581m, followed by medical expenses of $233m and veterinary costs of $215m. A co-author of the report warned the "huge" volume of pesticide needed to fight the ants will affect the environment.

Fourth case of flesh-eating ulcer in NSW has health experts concerned

Health experts are warning residents on the NSW south coast to be vigilant after confirming the fourth case of a flesh-eating ulcer. Buruli ulcer is a rare bacterial infection that causes progressive skin and soft tissue infections. Three people in southern NSW were diagnosed with the illness between 2021 and 2023. A fourth case — the first since 2023 — was detected in a resident of the Eurobodalla shire in January and is being treated in Canberra Hospital by plastic surgeons and infectious disease specialists. It comes after research published in PLOS Neglected Tropical Diseases in 2024 identified Batemans Bay, in the Eurobodalla shire, as a potential new hotspot for the ulcer.

'They're just everywhere': Fire ants 'explode' after cyclone

Residents in Queensland's fire ant suppression zone are pleading for help, saying nest numbers and attacks on humans and livestock have exploded since ex-tropical cyclone Alfred swamped the state's south east. Torrential rain forced the invasive insects above ground where they raised their ant hills and joined bodies to "raft" on floodwater to new locations. Since March 1 in South-East Queensland, the National Fire Ant Eradication Program received 60 reports of extreme reactions to fire ant stings requiring medical attention — 23 people required hospitalisation. Logan builder Scott Rider's feet bear nasty sores after being repeatedly bitten at home at Cedar Grove. "They're just everywhere, they're crawling over patios, they're coming into our homes, they get flicked up on the lawn mower, on the tractor," Mr Rider told ABC Rural.

We found a new wasp! Students are discovering insect species through citizen science

Playgrounds can host a variety of natural wonders – and, of course, kids! Now some students are not just learning about insects and spiders at school — they are putting them on the map and even discovering and naming new species. Studies indicate insect populations are declining, and species are going extinct every week in Australia. But scientists have only described about a third of Australia's estimated total of insect species. This means around 150,000 of our insect species do not have formal scientific names. We know little about where they are and what they do in ecosystems — vital information for stopping biodiversity loss. So, our team developed the citizen science project Insect Investigators. We took scientists to 50 regional schools across three states to learn about insects and other arthropods such as spiders. Students of all ages got to survey insect diversity, search for new species, and engage with entomologists and taxonomists throughout the school year. Students helped name new species, including several species of parasitoid wasp.

Not just bees and butterflies: beetles and other brilliant bugs are nature's unsung pollinators

About 90% of flowering plants rely on animals to transfer their pollen and optimise reproduction, making pollination one of nature's most important processes. Bees are usually the first insects to come to mind when people think of pollinators. But many other insects – including beetles, flies, moths and butterflies – also visit flowers to feed on nectar

and pollen. In doing so, they can play an essential role in pollinating plants. Let's take a closer look at some of nature's unsung insect pollinators.

This innocent-looking insect delivers the most painful sting in the world and can leave you in agony for 24 hours or more

It may only be 2.5cm but it sure packs a punch. Here's all you need to know about bullet ants. You'll know it if you get stung by a bullet ant (*Paraponera clavate*), a species named for the fact that the pain from its venom feels like it's been inflicted by a gun shot. Some insect bites are unpleasant but short-lived experiences – not this one. Bullet ants are one of the largest ant species in the world, it's also got one of the longest foraging ranges, and is fiercely territorial. Aside from its extraordinary size (see below), the bullet ant's most striking features are its large mandibles, hairy thorax and long stinger. While it has a classic ant silhouette – six legs and a segmented body – its stinger gives it the look of a wingless wasp. Its scientific name, *clavata,* means 'club-shaped' and refers to the shape of the insect's head.

Sinister threat hiding in photo near quiet Aussie road: 'Homeowners must report'

If deadly fire ants spread further across the country, it could cost Australians billions of dollars a year. An invasive "super pest" deemed worse than cane toads, rabbits, feral cats and foxes is at risk of spreading further around the country after wet weather caused by Cyclone Alfred lashed the east coast. Those affected by flooding in southeast Queensland have been called upon to look out and report fire ant nests in their backyard, local parks, beaches or bushland, which are known to create floating "rafts" which move with the currents. If bitten, the species can cause anaphylactic shock and death in humans.

Bed Bugs Are Evolving: Researchers Uncover Alarming Insecticide Resistance

Virginia Tech researchers discovered a gene mutation in bed bugs linked to pesticide resistance and were the first to sequence the bed bug genome, offering new insights for global pest control. Following World War II, a global bed bug infestation was nearly eliminated during the 1950s, primarily through the widespread use of the pesticide DDT (dichloro-diphenyl-trichloroethane). However, DDT has since been banned due to its environmental and health risks. In the decades since, bed bugs have made a significant comeback worldwide and have increasingly developed resistance to many of the insecticides used to control them. A study published in the *Journal of Medical Entomology* highlights research conducted by a team at Virginia Tech, led by urban entomologist Warren Booth. The team identified a gene mutation that may play a key role in the bed bugs' resistance to insecticides.

The Great Insect Apocalypse: Why Are Bugs Vanishing?

A new paper highlights over 500 interconnected factors contributing to the global decline of insect populations. Insects are vanishing at a concerning pace across the globe, and scientists are striving to understand why. While agricultural intensification is often cited as the primary cause, new research from Binghamton University, State University of New York, reveals a far more complex picture involving numerous, interconnected factors. Interest in insect decline has grown rapidly since a groundbreaking 2017 study reported a staggering 75% drop in insect populations over less than 30 years. This alarming figure has sparked a wave of scientific investigations, each exploring potential causes behind the phenomenon.

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