December 2024

Issue

No. 637

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

Society members Jocelyn Bornemissza and Mike Bouffard have provided a wonderful display of “Tasmanian” christmas beetles (mostly the golden stage beetle *Lamprima aurata*).

We're delighted to announce the publication of our history of past and current entomological groups in NSW, now available on the Society's website to members (authors Dinah Hales and Robin Parsons). Some people have mentioned difficulty in accessing it - you may need to reset your password. This is easy to do following the instructions on the website. The history was written as part of the celebration of the Society's 70th birthday in 2023. During its 70 (now nearly 72) years it had three different names and interesting internal politics. The information included here can be considered as an addendum to the paper.

Dinah Hales has again provided some interesting photos of entomological (and arachnological) interest.

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

A display of what Tasmanians call Xmas beetles (mostly *Lamprima aurata*) designed and constructed by Jocelyn Bornemissza and Mike Bouffard.

History of the Entomological Societies of New South Wales - Addendum

Dinah Hales

One of the matters raised in the paper was the origin of the circular logo now used on *Tarsus* and on the journal cover. We tracked it down to 1995 when it was used on correspondence for a workshop run by Robert Spooner-Hart, but we couldn't find out who had produced the original artwork, or why. We should have run the question past Murray Fletcher. He read the history paper online and gave me the following information: "I believe that the logo, featuring six insects, was designed by Marnie Holmes (Heather Marion Holmes) who was working with me at BCRI at the time. Some of the insects had been masthead images used previously, including the one to the NE which is *Massila sicca* (Flatidae)." Apologies to Marnie for not finding this out before the history paper was published - we tried hard but asked the wrong people. Now we know, we can acknowledge her work and congratulate her on a piece of artwork that has stood the test of time.

Enlargement of the logo as it appears on *Tarsus* rapidly loses resolution. However, now we know the artist's name we can just about make it out written horizontally o the right of the silhouette of NSW.

Unfortunately attempts to contact Marnie for further information have not so far received any response. In particular, it would be good to know what purpose was intended for the logo. Was it for the new format of the journal, used from Volume 28 (1998)? Probably not as it preceded this by at least three years. In 1997, Alan Clift was still inviting ideas for the new format and the logo may have been suggested as appropriate.

The Society, from about 1979 until online publication in 2005, sought to have a new insect as an "emblem" each year, a line drawing preferably by a member. The flatid was the masthead insect on the circular for the year 1985. Looking through past circulars, I found that the north- west insect is the coprosma hawk moth, *Cizara ardenia* (Lewin), also drawn by Marnie and used as the emblem in 1987. And the 1991 insect was the rhipicerid beetle *Rhipicera femorata* Kirby. It appears at the top of the logo and was again drawn by Marnie. The other three insects, in the bottom half of the logo, did not appear as emblems in the period 1980 to 1995. The silhouettes suggest a dipteran, a wasp (?) and an earwig. They were also drawn by Marnie. The reduced silhouettes give no idea of the beauty, detail and delicacy of the original full page drawings. Marnie also produced the 1984 emblem, a carabid beetle, and the one for 1988, a mantispid.

Other "emblems" were drawn by Alan Westcott (1982, ascalaphid lacewing, 1993, cricket, 1994, longicorn, 1995, pie-dish beetle, 2001 scarab, 2002, weevil). Christine Lambkin provided two, in 1996 a 1st instar antlion, and in 2004 a bombyliid fly. One-offs included You Ning Su, 1997, dung beetle, Gith Strid, 1998, alate bulldog ant, John Forrester Clack, 1999, longicorn, Yanni Martin, 2000, psocid, Lindsay Julia Chandler, dung beetle, 2003, Dan Bickel,1986, male dolichopodid, Eren Turak, 1989, a cerambycid. Some of these were

professional artists/illustrators, most were members of the Society, and a few were attendees at Society-run workshops or were entrants in Society-rum illustration competitions. More detail is given in the table below.

Year	Insect	Artist	Afiliation/Comments
1980	*Monochirus multispinosus*	A.E. Westcott	BCRI Rydalmere
1981	*Monochirus multispinosus*	A.E. Westcott	BCRI Rydalmere
1982	*Acmonotus magnus* McLachlan (lacewing)	A.E. Westcott	BCRI Rydalmere
1983	*Othnonius batesi* Olliff (scarab beetle)	A.E. Westcott	BCRI Rydalmere
1984	*Geoscaptus laevissimus* (Carabidae)	H.M. Holmes	BCRI Rydalmere
1985	*Massila sicca* (Flatidae)	H.M. Holmes	BCRI Rydalmere
1986	Dolichopodid male	D.J. Bickel	Aust Museum
1987	*Cizara ardenia* (Lewin) (hawk moth)	H.M. Holmes	BCRI Rydalmere
1988	*Campion* sp. (mantispid)	H.M. Holmes	BCRI Rydalmere
1989	*Phorocantha tricuspis* (longicorn)	E. Turak	Macquarie Univ
1990	*Phorocantha tricuspis* (longicorn)	E. Turak	Macquarie Univ
1991	*Rhipicera femorata* Kirby (beetle)	H.M. Holmes	BCRI Rydalmere
1992	*Paradisterna plumifera* (Pascoe) Cerambycidae	A.E. Westcott	BCRI Rydalmere
1993	*Teleogryllus commodus* (cricket)	A.E. Westcott	BCRI Rydalmere
1994	*Skeletodes tetrops* Newman (Cerambycidae)	A.E. Westcott	BCRI Rydalmere
1995	*Pterohelaeus darlingensis* Carter (pie dish beetle)	A.E. Westcott	BCRI Rydalmere
1996	*Nesydrion diaphanum* Gerstaecke (antlion larva)	C. Lambkin	UQ, Winner in competition held by the Society
1997	*Onthophagus australis* Guerin-Meneville (dung beetle)	You Ning Su	ANU, Entrant in competition held by the Society
1998	*Myrmecia gulosa* Fabricius (alate bulldog ant)	G. Strid	Macquarie University, Entrant in competition held by the Society
1999	*Penthea pardalis* (Newman) (Cerambycidae	J.F. Clack	Practising artist
2000	unidentified psocid	Y. Martin	UQ, Entrant in competition held by the Society
2001	*Aphodius tasmaniae* Hope (pasture cockchafer)	A.E. Westcott	EMAI
2002	*Sitona discoides* Gyllenhal (weevil)	A.E. Westcott	EMAI
2003	*Onthophagus yourula* Guerin-Meneville (dung beetle)	L.J. Chandler	Freelance illustrator
2004	*Atrichochira* sp (bombyliid fly)	C. Lambkin	CSIRO Entomology

New Entomological Research

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

Toxic Male Technique: Engineered Insects Use Venom Proteins to Combat Disease

Scientists have developed a groundbreaking biological pest control method that could dramatically reduce the threat of insect pests, including disease-carrying mosquitoes. This new approach, called the Toxic Male Technique (TMT), offers faster and more effective results compared to existing methods. Published today (January 7) in *Nature Communications*, the technique was created by researchers from Applied BioSciences and the ARC Centre of Excellence in Synthetic Biology at Macquarie University. TMT involves genetically modifying male insects to produce venom proteins in their semen that specifically target other insects. When these modified males mate with females, the venom proteins are transferred, significantly shortening the females' lifespan and reducing their ability to spread diseases.

Disturbing truth about common outdoor occurrence shocks unsuspecting Aussies: 'Had no idea'

Aussies have been exposed to a new soundtrack this summer, and one we can't ignore. The "deafening" chorus of thousands of cicadas chirping at once has filled the air in what's known to be a one-in-seven-year event. While for most of us, the sound is reminiscent of our childhood, with days spent exploring the outdoors, it turns out there's more to the insects than meets the eye. And the revelation has scores of Aussies in utter shock. Walking through an area where there's a large cicada population, you may have felt what could have easily been mistaken as droplets of rain. But the falling liquid coming from above is likely cicada urine, those in the know have revealed. Speaking to Yahoo News, University of Sydney insect and parasite expert Professor David Emery said cicadas "congregate and sing in large numbers". When they do, "the deafening noise reaching over 100 decibels deters predators".

Warning to Aussies as thousands of critters 'swarm' backyards and gardens

Aussies across parts of the country are waking up to find their gardens "swarmed" by little critters with tree trunks, lawns and even inside homes covered in thousands of insects. "Does anyone else have a plague of these outside their house?" a Melbourne man asked on Facebook this week, wondering if he was the only one. "They seem to be nesting in gumtrees," he added. "There are about 5-6 trees in our street covered in them". Photos show what appears to be hundreds of small black and yellow winged insects congregating at the base of a large tree. They were quickly identified as soldier beetles — and the message to Aussies is to leave them be.

Mind-bending, body-snatching, blood-sucking: parasites are bizarre yet vital for life on Earth

Parasite, zombie, leech – these words are often used to describe people in unkind ways. Many of us recoil when ticks, tapeworms, fleas, head lice or bed bugs are even mentioned. Coming across such unwelcome guests – in our hair, on our skin or in our beds – can be a real nightmare.

Some parasites cause horrific deformities and diseases, maiming and killing millions of people and wildlife. Others may help boost immunity or provide the basis of food chains. Parasites are often demonised and misunderstood. But the more we study these oddities and wonders of evolution, the more we appreciate their vital roles in ecosystems and our complex relationships with them. They're essential to life on Earth. As an ecologist with a focus on wildlife and conservation, I wrote this article to share some of my fascination for parasites and the importance of their extraordinary lives.

One of the most important species for science: how the humble fruit fly transformed 4 fields of research

The common fruit fly (*Drosophila melanogaster*), more correctly called the vinegar fly, is a frequent visitor to ripe fruit in households around the world, where it often deposits eggs on rotting flesh without being noticed. We have probably all consumed different body parts of fruit flies – without any known ill effects. But the fruit fly is much more than an annoying house guest. In fact, *Drosophila melanogaster* has been one of the most important species for science for more than a century. Were it not for these flies, some of the most significant scientific discoveries might never have been made. The species has its origins in the woodlands of south-central Africa, where it relied heavily on the marula fruit. This fruit was – and remains – part of the human diet in this region too, leading to fruit flies developing an association with human communities and settlements. In time, this association would lead to fruit flies first spreading throughout Africa, then into Asia, Europe and – within the past few centuries – North and Central America and Australia.

Monarch butterflies are in decline in NZ and Australia – they need your help to track where they gather

Monarch butterflies (*Danaus plexippus*) appear to be declining not just in North America but also in Australiasia. Could this be a consequence of global change, including climate change, the intensification of agriculture, and urbanisation? We need more citizen scientists to monitor what is really going on. Insect populations, even species that seemed impervious, are in decline globally. Monarch butterflies exemplify the problem. Once a very common species, numbers have declined dramatically in North America, engendering keen public interest in restoring populations. The monarch butterfly is an iconic species. It is usually the species people recall when drawing a butterfly and observations are shared frequently on the online social network iNaturalist. This is partly because monarch images are used in advertising, but the butterflies are also a species of choice for school biology classes and television documentaries on animal migration.

Flesh-eating ulcer 'endemic' in coastal town with 'significant risk' of spread to Sydney

A flesh-eating ulcer has taken root in a NSW holiday hotspot and poses a significant risk of spreading to Sydney. Batemans Bay on the state's south coast has become an endemic centre for Buruli ulcer, infectious disease experts have warned, after two confirmed cases were genetically linked to an earlier infection in another NSW town. Buruli ulcer is the same flesh-eating infection responsible for outbreaks in Melbourne after it spread from coastal getaway hotspots in 2021. Victoria has confirmed 347 cases of Buruli ulcer so far this year. Researchers suspect mosquitos have carried the flesh-eating bacteria from possums to humans, as occurred in Victoria. The ulcers develop when *Mycobacterium ulceran*s bacterium releases a toxin that eats away at the skin and subcutaneous soft tissue.

Unusual Insects Wearing Two Hats Solve Long-Standing Botanical Mystery

Ants and camel crickets serve dual roles in both pollinating and dispersing seeds of *Balanophora subcupularis*, as discovered by Kobe University, providing crucial insights into plant-insect interactions and conservation. The dark and damp understories of the subtropical forests on Shimoshima Island in Japan are home to parasitic plants called *Balanophora*, which feed on the roots of other plants. For over a century, the mechanism of their seed dispersal has remained a mystery. Although it has been suggested that the tiny seeds are carried by the wind, the understories of these (sub)tropical forests experience little to no wind. Some plant species among the *Balanophora* are bright red, resembling strawberries, and attract birds and rabbits to eat and thus disperse the seeds. However, others, like *Balanophora subcupularis*, have dull colors and a yeasty smell, making it unlikely that vertebrates are involved. Similarly, the mechanism of the plant's pollination has remained unclear.

A Look Back at Bed Bug Research in 2024

Bed bugs aren't new. Since the 1990s when they made their resurgence in the United States, they continue to be a problem. According to the 2024 PCT State of the Bed Bug Control Market report, 85 percent of respondents predicted bed bug jobs would increase or hold steady. The good news is that bed bug research continues. A search of the literature published in 2024 brings up 547 articles. Out of those, I read through about 80. I brought the number down to 10 that directly related to the pest control market. Here are the highlights of those scientific journal articles and the implications for pest management.

Beware! These Are The 18 Most Lethal And Dangerous Spiders From Around The World

Small, quick, and venomous spiders are one of the more dangerous and deadly species on the planet. From Black Widows killing and devouring male spiders to fuzzy wolf spiders who only attack when threatened, read on for some of the world's nastiest, most venomous, and lethal arachnids. Are you ready to learn more about these creepy critters?

Acid-spraying ants and cat-sized scorpions – meet the deadliest prehistoric bugs

These huge, deadly prehistoric insects, from acid-spaying ants to cat-sized scorpions, are among the most terrifying bugs that have ever lived. Entomophobes look away now! Here are some of the largest, deadliest, and most terrifying bugs to ever live… More than a hundred million years before fish crawled out of water and evolved into walking, four-legged vertebrates, invertebrates ruled over Earth's terrestrial environments unchallenged. These pioneering invertebrates made their first appearance on land some 470 million years ago. Around the same time, plants also emerged and began to seed life across the previously barren continents. This 'land of bugs' was home to some of the most bizarre creatures that ever lived. They include millipedes larger than a king-size duvet to giant dragonflies with wingspans as wide as a common kestrel's.

Around 9,000 species have already gone extinct in Australia and we'll likely lose another this week – new study

More than 95% of Australian animals are invertebrates (animals without backbones – spiders, snails, insects, crabs, worms and others). There are at least 300,000 species of invertebrate in Australia. Of these, two-thirds are unknown to western science. This means there are huge gaps in our knowledge of Australia's invertebrates. Our new study, published today in the journal Cambridge Prisms: Extinction, indicates there has been a catastrophic

under-recording of Australia's species extinctions. Our best estimate is that 9,111 invertebrate species have become extinct in Australia since 1788. This dwarfs the current official estimate of the total number of extinctions across all plant and animal species in Australia: 100. The extinction of so many invertebrate species is not an arcane concern for those few people who care about bugs. Invertebrates are the building blocks of almost all ecological systems. Loss of invertebrates will destabilise those systems. It will negatively impact the resources we depend upon, like pollination, cycling of nutrients into the soil, clean air and waterways.

Formidable fire ants

Mark Newton was at Archerfield Wetlands in Brisbane's south-west when curiosity got the better of him and he placed his hand beside a red imported fire ant (RIFA) nest. "I wanted to poke the bear," the retired ecologist says, explaining the stunt he wouldn't encourage others to try. "I only got about half a dozen ants on me, but that was enough … It was like little sharp pinpoints of pain," he says. "They just came spilling out of the nest. I could flick those few off but, bloody hell, there were hundreds of them and they were very angry. If they ran all over me, that would be a horrible experience. If [they swarmed] pets or small children, it would be horrible." This was Mark's first – and hopefully last – encounter with the invasive ant species he'd been hearing about since moving to Brisbane in 2022. RIFA first slipped through Australia's borders sometime before 2001, when infestations were discovered at Brisbane's port and the south-western Brisbane suburb of Richlands. The Port of Brisbane incursion has been eradicated, along with several other separate infestations in Queensland, New South Wales and Western Australia. Unfortunately, Greater Brisbane's main RIFA population has proved far more challenging to exterminate and has spread from the south-western suburbs to north of Brisbane, with outbreaks detected across the NSW border in Murwillumbah and Wardell.

Australia boasts some of the world's most stunning beetles. Look out for these 5 beauties this summer

Beetles are the most diverse group of animals on Earth, accounting for nearly a quarter of all known animal species. Australia is thought to be home to a whooping 30,000 beetle species, and they are crucial to keeping our ecosystems healthy. Beetles can be distinguished from other insects by their hard, shell-like wing covers called "elytra". Unlike other insects, beetles hide their soft, thin wings beneath these protective covers when they are not in use. Summer is a great time to go beetle-watching in Australia. While beetles can be found all year round, many species are more visible and numerous when the weather heats up. Beetles come in a brilliant range of colours, patterns and textures – even metallic – which makes them especially fun to spot. Here are five beautiful beetles to look out for this summer.

How do ants forage for food?

Ants obtain many of their essential nutrients from food, including essential amino acids that they cannot produce and must acquire from their diet. However, how ants forage for food in order to meet their nutritional needs is still an obscure topic. In the recent article *"Contrasting effects of amino acid types on foraging behaviour, colony growth, and worker mortality in red ants and carpenter ants*" in Myrmecological News, Reynard and colleagues employ choice experiments to investigate the foraging behaviour of the red ant *Myrmica rubra* and the Western carpenter ant *Camponotus modoc*, along with its

impact on colony growth, brood production, and worker longevity. Here, Enikő Csata provides commentary on this recent study and its importance in the fields of insect nutrition and behaviour.

Hidden Alchemy: How Beetles Conquered Earth by Evolving Their Own Biochemical Laboratory

Beetles are an evolutionary success, with rove beetles' diversification largely due to their unique tergal gland that synthesizes defensive chemicals. *This adaptation, evolving over millions of years, has allowed them to occupy diverse ecological niches, underlining the impact of cellular changes on species evolution.* As life on Earth evolved, some groups of organisms became incredibly diverse, while others remained relatively limited—or even disappeared entirely. Understanding why evolution favored certain groups over others has been a key question for scientists studying the history of life. Beetles are a prime example of evolutionary success. With about 400,000 known species—roughly a quarter of all described life forms—and countless more likely undiscovered, their diversity is unmatched. Their beauty and variety captivated a young Charles Darwin and intrigued Alfred Russell Wallace, both co-discoverers of natural selection.

Tick Invasions Take Flight: The Climate Link to Global Pathogen Spread

Ticks have always traveled on migrating birds — but the rising temperatures of the climate crisis mean they may now survive at their destination, and so could the pathogens they carry. Research reveals that migrating birds carry ticks across continents, introducing them to new regions where rising global temperatures may allow them to thrive. This could lead to the spread of new tick-borne diseases, highlighting the need for more comprehensive studies on tick dispersal and disease transmission. Ticks travel light, but they carry pathogens with them. When they parasitize migrating birds, these journeys can take them thousands of miles away from their usual geographic range. Historically, they haven't been able to establish themselves, due to unsuitable climate conditions at the other end of their long journeys. But now, thanks to the climate crisis, it's getting easier for ticks to survive and spread, potentially bringing novel tick-borne pathogens with them. "If conditions become more hospitable for tropical tick species to establish themselves in areas where they would previously have been unsuccessful, then there is a chance they could bring new diseases with them," said Dr. Shahid Karim of the University of Southern Mississippi, lead author of the article in Frontiers in Cellular and Infection Microbiology.

Aussie mum's 'magical' discovery covering backyard trees: 'Thousands of them'

An Aussie mum has made a "magical" — and nowadays quite rare — discovery in her backyard. Kimmy Stokes was walking around her 600 acre property in NSW's Hunter Valley earlier this week when she "stumbled upon" thousands of Christmas beetles covering "almost every tree" in a paddock. "I have not seen anything like it before," she told Yahoo News Australia. "I see them almost every year but never this many — [we're] maybe lucky to see 50 a year around Christmas." Incredible video footage shows mounds of the native insects hanging from branches, stacked on top of each other, "eating the leaves and eating everywhere". Chatting again on Friday, Ms Stokes told Yahoo the Christmas beetles appeared to have settled in. "They're still here. I've been watching them daily and photographing them too, trying to gather as much information as I can. There a few different species there," she revealed.

Beetle 'swarms' in parts of south-east Queensland may be due to warm weather, expert says

Heatwaves bring sticky afternoons and sleepless nights — but west of Brisbane, they may have also brought "swarms" of beetles. Residents in Springfield and Camira, near Ipswich, took to social media after "hundreds" of scarab beetles — often confused with Christmas beetles — surrounded homes on Monday evening. "I have lived in Brisbane my entire life. The amount of beetles was the most I have ever seen," she said. "You could hear them tapping as they collided with glass windows. Initially I thought it was heavy rain drops.

How Do Termite Baits Work?

The first commercial termite baits based on chitin synthesis inhibitors (CSIs) were launched in 1995. However, their acceptance by the industry as a mainstream termite control method took time and even now, termite baits are not utilised by a number of pest control companies. Part of the reason for this is a lack of understanding as to how termite baits actually work, which has led to misconceptions about their performance and uncertainty as to how to best utilise this unique management tool. Leading termite researcher Assoc. Prof. Thomas Chouvenc from the University of Florida has written a comprehensive overview summarising the latest research on termite baits. His review 'How Do Termite Baits Work?', published in the *Journal of Economic Entomology* in October 2024, highlights how CSI baits utilise termites' inherent colony demography, behaviour, and physiology, which gives rise to colony collapse through a characteristic succession of events, leading to colony elimination. Here we have a look at the key learnings from this work. Termite baits are particularly effective on the pest species in the Heterotermitidae, which includes the *Coptotermes*, *Reticulitermes,* and *Heterotermes* genera, for reasons which will be explained later. The paper therefore uses *Coptotermes* as the primary model for explaining the mode of action of termite baits.

Corpse flowers and flesh flies: why so many plants and fungi stink like death warmed up

Right now, people are lining up at the Geelong Botanic Gardens to see and smell the giant corpse flower, a rare plant that stinks like a dead body. This is the titan arum. It's a plant that makes news whenever it flowers in a botanic garden around the world. It's sometimes called a lily, but it's an arum, a genus not closely related to true lilies. Why do people travel to see it? The huge arum might only bloom once a decade. It spends huge amounts of energy preparing to flower. And when it does, it's spectacular. Its huge flowering structure (the spadix) can be up to three metres in height and one to two metres across, which is why it has the wonderfully apt Latin name of *Amorphophallus titanium*, which translates as "giant misshapen phallic-like". But the spadix is actually not a flower – it's an inflorescence. Its true flowers are small and hidden from view at the base. The main reason people seek it out is because of its stench. The spadix stinks like a rotting animal carcass – and the strong smell spreads far and wide. The spadix lasts only one or two days. But why would a plant spend so much time and energy doing this? The answer is reproduction – the titan arum needs pollinators such as flies, and flies like dead things. Many other plants use the same tactic to get insects to pay attention.

Interview with a Myrmecologist in New Zealand

Monica Gruber is the co-founder and leader of the Pacific Biosecurity programme in New Zealand. She finished her PhD in ecology at Victoria University of Wellington under the supervision of Phil Lester, where she worked on the yellow crazy ants. Then she was a

postdoctoral researcher at the School of Biological Sciences working in different biological fields with ants and other insects. Currently, in association with several institutions and researchers, her efforts are focused on the control of invasive species in the Pacific islands.

What dangles from its rear end needs some explaining. Why the Australian horror moth deserves its name

When I first set eyes on a male Australian horror moth, I had to do a double-take. What on Earth was I looking at? Was this a practical joke, or some sort of poorly constructed chimera? It looked as if it was made from bits of different insects stuck together with glue. Parts of its anatomy registered as familiar – it had eyes and antennae, six legs, wings and other mothy things, but all of that was upstaged by, well… I don't know what. The male Australian horror moth (*Creatonotus gangis*) is also known as the Baphomet moth, after the multi-horned occult deity (whether it deserves such fear-inducing names, I'm not sure). For most of its life, it looks like a regular moth, albeit larger than average, with a 4cm or so wingspan.

How Farming Ants Harness Beneficial Bacteria for Survival

A study explores the evolution of beneficial bacteria residing within and on the surface of farming ants. Attine ants engage in a mutualistic relationship by cultivating fungi, one of the most extensively studied symbioses in nature. In the 1990s, researchers discovered an additional partner in this relationship: an actinobacterium known as *Pseudonocardia*. This bacterium inhabits the ants' cuticle—their protective exoskeleton—where it is nourished by secretions from subcuticular glands. *Pseudonocardia* is known to kill the fungal pathogen *Escovopsis*, that might destroy the ants' mutualistic fungus. Jacobus J. Boomsma and colleagues sequenced samples from 194 ants from 11 attine species collected in Panama to assess the extent of coevolution between ants and their cuticular residents. Three of the 11 attine species had abundant *Pseudonocardia*, including two *Acromyrmex* leaf-cutting ants. Five other species had cuticular actinobacteria other than *Pseudonocardia*, with no clear phylogenetic patterns.

Council warns Aussies to check gardens amid threat of 'highly invasive' pest

A concerned council is urging residents to inspect their gardens for a new "highly-invasive" pest that is causing chaos in one of Australia's biggest cities. Native to Southeast Asia, the polyphagous shot-hole borer was first found in Fremantle, WA, in 2021 — confusing experts on how it got into the country and sparking fears the destructive beetles could wipe out forests and agricultural crops. The issue has since escalated rapidly, leading to the creation of a quarantine area which was expanded in September to encompass Perth's entire metropolitan area. This week, the City of Canning — an area deemed to have high numbers of infested trees — asked locals to do their own part to help tackle the pest that works symbiotically with fungus to block a tree's water and nutrients, killing it within two years. "Be alert for the polyphagus shot-hole borer (PSHB) in trees near you," the council posted on Facebook, listing a handful of the hundreds of tree species it has been known to attack.

PHOTO CORNER

Flatid (*Scolypopa* sp.), Mt Lidgbird, Lord Howe Island, December 2012 (Dinah Hales).
[The passionvine hopper, *Scolypopa* nr. *australis* (Walker), has been recorded from Lord Howe island previously].

Unknown spider on blueberry ash flowers Huskisson NSW Nov 2014. (Dinah Hales).

Australian Common March Fly - *Tabanus australicus* Family Tabanidae (Dinah Hales).

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