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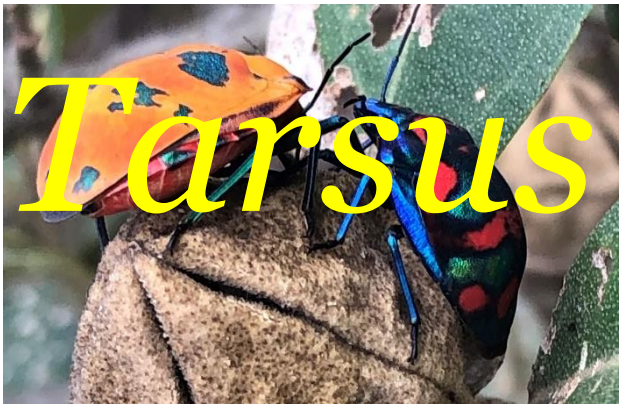

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CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

Dinah Hales has put together an interesting story on the taxonomy of Queensland fruit fly. A story of revolving name changes.

Our Tasmanian members, Jocelyn Bornemissza and Mike Bouffard have put together another eyecatching insect display – this time dung beetles sourced from the late George Bornemissza's extensive collection.

Robin Gunning has highlighted some further entomologists that have made the cut for an honor in the recent Kings birthday list. The late Geoff Monteith (a long-standing member of the society) AO for distinguished service to entomology, to the taxonomy of Australian insect fauna in the wet tropics, to mountain biodiversity, and to the museum sector. And Peter Allsopp AM for significant service to entomology, and to the sugar cane sector.

Ross Rickard has provided an obituary for the late Professor Yonglin Ren of Murdoch University who did a fair bit in the biosecurity space and will be missed.
Vale Professor Yonglin Ren

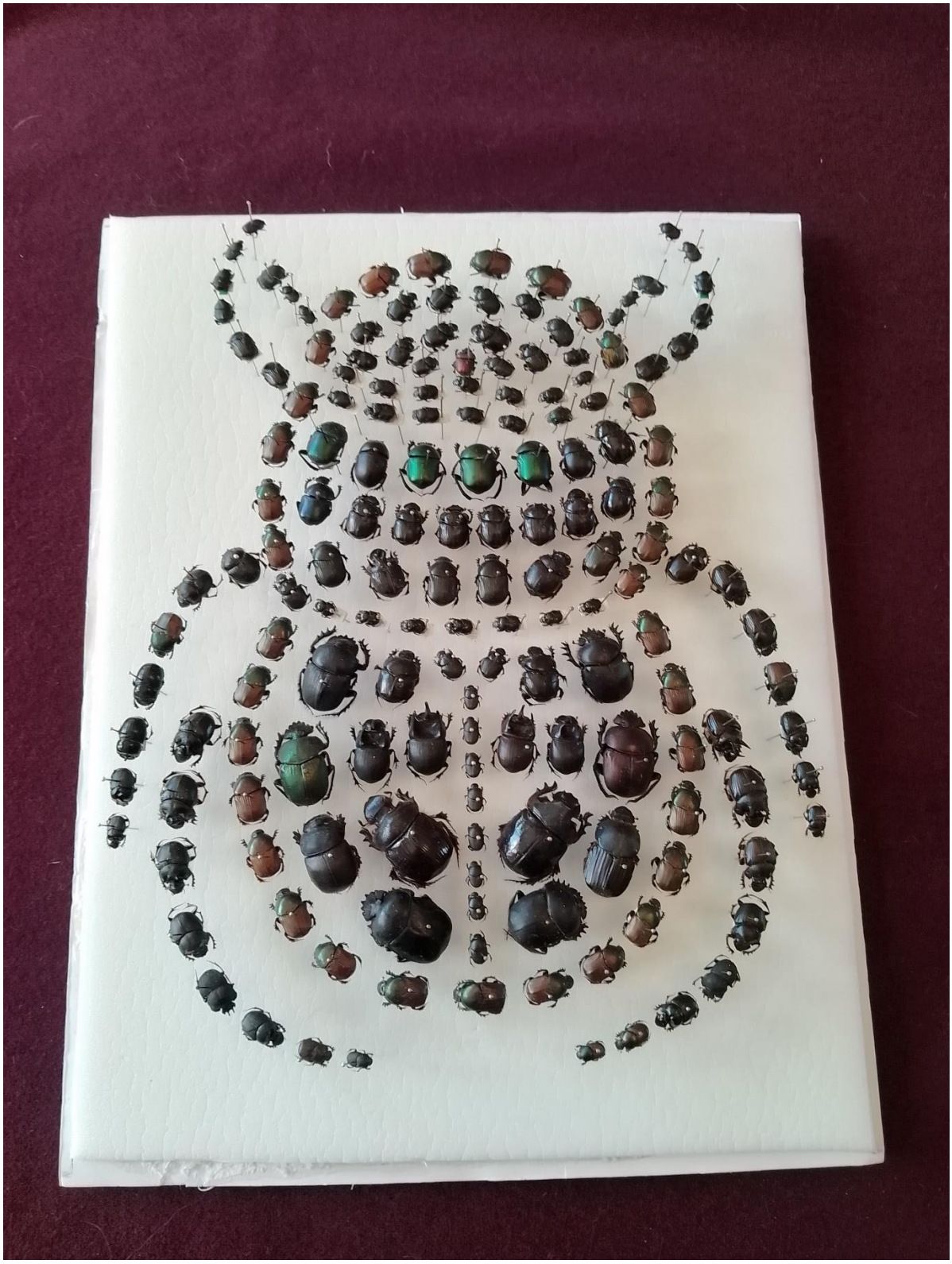
We encourage all members to consider that the society, Tarsus and the journal GAE rely heavily on the contributions of members. We need your input to not only populate the society endeavours but to also encourage others to contribute and become members.

Kind Regards

Garry Webb

Circular editor

This is a display box composed entirely of dung beetles composed by and organised by Jocelyn Bornemissza and Mike Bouffard for the Pooseum located in Richmond, Tasmania. The beetles are from Africa, Asia, Australia and Europe. They were all sourced from the late Dr. George Bornemissza collection.



Scientific Names of the Queensland Fruit Fly

Dinah Hales

While I was bewailing the attacks by Queensland fruit fly on my grapefruit, it occurred to me that it had had at least three different names since I first met it in the 1960s. *Dacus tryoni*, *Strumeta tryoni*, *Bactrocera tryoni*. And it had other names before that. Why the changes? Too early for molecular genetics, so what was the basis for the change(s)? Bernie Dominiak suggested I should ask Tony Clarke, who was very generous in his response. The account below was his answer over several emails, with a bit of addition and cut-and-pasting by me.

The Queensland fruit fly was first described in 1897 by W.W. Froggatt of the NSW Department of Agriculture as *Tephritis tryoni*. Could it after all be the NSW fruit fly? Probably not as Tryon (1927) indicates that Froggatt himself in 1909 referred to it as the Queensland fruit fly, although some initial examinations of it had been from apples in Tenterfield NSW. Tryon was quite possessive about his fruit fly. "Up to the present date there has been no systematic account of the species of Queensland fruit flies (Trypetidae), notwithstanding these are evidently far more numerous than would appear from the present account denominated Series 1. Other Australian entomologists, notably W. W. Froggatt, late Government Entomologist of New South Wales, have, however, incidentally treated of some of our species as denizens of other Australian States." (Tryon, 1927). State of Origin alive and well nearly 100 years ago.

In 1909 it became *Dacus tryoni*. Thanks to Tryon himself, it then spent nearly a quarter of a century as *Chaetodacus tryoni* from 1927.

Strumeta was initially a sub-genus of *Dacus*, and from 1951, the QFF was known as *Dacus (Strumeta) tryoni.* In 1963 AWS May raised *Strumeta* to generic level, so we had *Strumeta tryoni.* This change was based on the abdominal tergites, fused in *Dacus* but not in the QFF.

This change didn't last. In 1982 Drew recorded the QFF as *Dacus (Bactrocera) tryoni.* But in 1989 he made a revision in his monograph on the Australasian and Oceanian Dacinae. At that time the genera *Dacus* and *Callantra* covered effectively all the Pacific Dacinae, but Dick Drew considered *Dacus sensu stricto* should be restricted to the dacines where the abdominal tergites are fused, while the existing but previously junior synonymised name *Bactrocera* should be applied to the species with abdominal free terga - *tryoni* sits in this latter group and so it had the name change.

The true *Dacus* are dominant in the African fauna, while *Bactrocera* species dominate the Australasian and Pacific fauna. Up to this point, the delineation of species had depended on morphology. Since Drew's revision, large amounts of molecular work have shown the split between the genera is not so simple as the single morphological trait of abdominal terga. Many species which Drew placed within the subgenus *Bactrocera* (*Zeugodacus*) and related subgenera have been shown to sit monophyletically as sister to *Dacus*, i.e. they made *Bactrocera* polyphyletic.

These groupings have subsequently been elevated to the genus level, e.g. the genus *Zeugodacus.* Most fruit fly workers in the world now accept these three genera, although some still treat *Zeugodacus* as part of *Bactrocera*. The cucumber fly, formerly *Dacus tryoni var. cucumis*, then *Dacus cucumis*, then *Austrodacus cucumis*, then *Dacus* (*Austrodacus*) *cucumis*, then *Bactrocera* (*Austrodacus*) *cucumis* and now *Zeugodacus cucumis*, is an example of an Australian pest species which has been moved into *Zeugodacus*. It's also an excellent example of how variable the Dacinae names have been over the last 120 years. The elevation of *Zeugodacus* to genus level was done by Belgian workers who are heavily engaged in research with African dacines.

I'm sure that's all now perfectly clear.

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New Entomological Research

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

Three-Eyed "Sea-Moth" Predator From 506 Million Years Ago Stuns Scientists

Paleontologists from the Manitoba Museum and the Royal Ontario Museum (ROM) have uncovered an extraordinary new predator that lived over 500 million years ago. This fascinating creature, named *Mosura fentoni*, was found in Canada's famous Burgess Shale fossil beds, and the discovery is detailed in the journal *Royal Society Open Science*.
About the size of a human index finger, *Mosura* had three eyes, sharp spiny claws, a circular mouth ringed with teeth, and rows of flaps along its sides that likely helped it swim. These features place it in the radiodont group, an extinct line of ancient sea predators that includes the more famous *Anomalocaris canadensis*, a giant of the Cambrian seas.

Secret life of Australia's ants, the hardest workers in any backyard

They are builders, miners, carpenters and farmers. And despite a mostly undeserved reputation for being a stinging pest, Australian ants do an extraordinary amount of environmental heavy lifting. While several high-profile invasive ant species — such as the red imported fire ant (*Solenopsis invicta*) from South America and the yellow crazy ant (*Anoplolepis gracilipes*) from Asia — have caused alarm due to the threat they pose to domestic agriculture and the environment, their native counterparts have quietly continued their vital, often unheralded, work. Museums Victoria Research Institute curator of entomology Ken Walker describes a large ant colony as a "super organism" that plays an essential role in both suburban gardens and the wild. "Ants belong to a group of insects described as 'eusocial', in that they have a large community and it's all being directed by one individual or queen," Dr Walker explained.

Aussie communities overrun by stinky bugs — but there's a reason why they love it

Residents in some rural Aussie communities have been forced to close their windows and turn off their lights after a swarm of stinky bugs emerged in the middle of the night. On Sunday, properties in Julia Creek and Richmond, in Queensland's north-west, were suddenly inundated with thousands of gidgee bugs — a member of the stink bug family known for its distinct sewage-like odour. While their presence is somewhat of a nuisance, with photos showing the creatures almost entirely covering some outdoor features, the flying insect's arrival is also a sight for sore eyes as gidgee bugs often go hand-in-hand with heavy rainfall. "They crawl out from the ground — they love moisture and warm weather," McKinlay Shire Mayor Janene Fegan told Yahoo News, noting it is a tad late in the year for the bugs to appear.

New Chemical Kills 95% of Termites and Can't Harm Humans

A new termite treatment blocks molting, spreads through colonies, and kills up to 95% when combined with a chemical lure. Drywood termites, which live hidden inside wooden structures, molt about seven times during their lives. Researchers at UC Riverside have discovered that a chemical preventing the formation of new exoskeletons can effectively eliminate termite infestations in homes. This chemical, called bistrifluron, has been shown

to kill approximately 95 percent of a termite colony without causing harm to mammals. Its effectiveness is detailed in a study published in the *Journal of Economic Entomology.*

"This chemical is more environmentally friendly than ones traditionally used for drywood termite infestations," said Nicholas Poulos, corresponding author of the paper and a doctoral student in UCR's Department of Entomology. "It's specific to insects and can't harm humans."

Toowoomba resident helps stop potential fire ant spread in Darling Downs

A Toowoomba resident has helped prevent the potential spread of fire ants to Cotswold Hills by reporting fire ants found on second-hand machinery purchased from within a fire ant biosecurity zone. On 29 May 2025, the resident spotted suspect fire ants in organic material inside the loader bucket and on the machine's frame. The resident engaged a licensed pest manager to investigate, who recommended reporting the find to the National Fire Ant Eradication Program (the program). The pest manager treated the ants. Program eradication officers treated the machinery with a contact insecticide and as a precautionary measure treated the entire property with an insect growth regulator on 2 June 2025. One live worker fire ant was collected for sampling, and no visible nests were found. Program compliance officers are investigating how live fire ants came to be on the machinery. This discovery is considered an interception, not a detection, because the ants were confined to the machinery and had not established themselves in the ground.

Yellow crazy ants spread on Fraser Coast as experts issue dire warning for K'gari

Traditional owners on Australia's largest sand island say biosecurity checks are needed to stop the spread of one of the world's worst invasive ant species near the World Heritage-listed area. Five colonies of yellow crazy ants have been found in the Queensland town of Maryborough, which is one of the gateways to K'gari (Fraser island). The detection follows the spread of yellow crazy ant colonies in the Hervey Bay suburb of Booral, which is near the airport and the departure point of a barge used by thousands of tourists to access K'gari every year. The 500,000 annual visitors to the island are not subject to routine checks and vehicles belonging to residents, tourists and four-wheel drive enthusiasts could transport yellow crazy ants or other invasive species to the island.

Machiavellian Mothering

In England's Hertfordshire county, a fork-jawed nomad bee (*Nomada ruficornis*) dangles from a single blade of grass, covered in morning dew. It rests in preparation for another day of calculated trickery. Nomad bees are known less for their pollination roles and more for their cunning brood-rearing habits. All nomad bees are brood parasites—also known as cuckoo bees—meaning their evolutionary edge relies on practiced deception: sneaking their eggs into the nests of other bees and leaving the hosts to unknowingly raise and provide for their young. This convenient adaptation relieves nomad bees of the time-intensive parental responsibilities of building nests and collecting food. Instead of spending their days preparing pollen and nectar stores for their young, they can be found lurking around the nests of other bees, waiting for their chance to slink in. At night, with no home to return to, they might roost on leaves or blades of grass, sometimes anchoring themselves with their mandibles, as in the photo above, so they won't fall off as they sleep.

Ancient termite poo reveals 120 million-year-old secrets of Australia's polar forests

Imagine a lush forest with tree-ferns, their trunks capped by ribbon-like fronds. Conifers tower overhead, bearing triangular leaves almost sharp enough to pierce skin. Flowering plants are both small and rare. You're standing in what is now Victoria, Australia, about 127 million years ago during the Early Cretaceous Period. Slightly to your south, a massive river – more than a kilometre wide – separates you from Tasmania. This river flows along the valley forming between Australia and Antarctica as the two continents begin to split apart. During the Early Cretaceous, southeastern Australia was some of the closest land to the South Pole. Here, the night lasted for three months in winter, contrasting with three months of daytime in summer. Despite this extreme day-night cycle, various kinds of dinosaurs still thrived here, as did flies, wasps and dragonflies. And, as our recently published research in Palaeogeography, Palaeoclimatology, Palaeoecology reveals, termites also chewed through the decaying wood of fallen trees. This is the first record of termites living in a polar region – and their presence provides key insights into what these ancient forests were like.

The 'uniquely Australian' solution to harmful bacteria and fungi

Bees are the unsung heroes of the food chain, but it is not just golden nectar this humble insect provides. It has been revealed that Australian sugarbag honey can help kill off bacteria and fungi that are harmful to human health — all thanks to native, stingless bees. The new study from University of Sydney researchers found the stingless bees were unlocking their honey's antimicrobial properties and stopping particular pathogens from becoming drug-resistant. It is welcome news, considering experts in infectious diseases have forecast that drug-resistant superbugs could kill up to 39 million people by 2050.

Migrating bogong moths use the stars and Earth's magnetic field to find ancestral summer caves each year

It's a warm January summer afternoon, and as I traverse the flower-strewn western slopes of Australia's highest mountain, Mount Kosciuszko, I am on the lookout for a tell-tale river of boulders that winds its way down into the alpine valleys below. Here, hidden in cave-like hollows and crevices formed deep within the river of boulders, is one of the most spectacular natural phenomena in the insect world – the summer mass gathering of an iconic Australian insect, the bogong moth (*Agrotis infusa*). Tightly huddled together in their dim cool cavernous world, with each moth's head pushed slightly under the wings of the moth just ahead, millions of bogong moths sleep out the summer, slumbering in a state of dormancy known as "aestivation". Their little bodies coat the stone surfaces in an endless soft brown carpet, with 17,000 of them tiling each square metre of cave wall. It's a sight that never fails to take my breath away.

47 Million Years Old: Oldest True Cicada Unearthed in Europe

Eoplatypleura messelensis is the oldest known true cicada ever identified in Europe.
For the first time, a fossilized true cicada has been identified from the Messel Pit deposits. *Eoplatypleura messelensis* is among the oldest known representatives of modern true cicadas in Eurasia and marks the earliest record of the subfamily Cicadinae worldwide. This discovery, made at the UNESCO World Heritage Site near Darmstadt, enhances our understanding of the region's ancient fauna, fills a significant gap in the cicada fossil record,

and sheds light on the evolution and spread of this insect group in Europe during the Cenozoic era. The findings were published today in the journal *Scientific Reports*.

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