

# BIG-EARED HOPPING MOUSE

*Notomys macrotis*

THERE ARE NO PRIZES for guessing which physical trait of the ‘Big-Eared’ Hopping Mouse earned it its name. All of the hopping mice of Australia share simple names based on a physical trait, names which one could be forgiven for thinking border on the unimaginative ... The hopping mice, of which there are 10 recorded species, were initially misnamed Jerboa-rats by the Surveyor General of New South Wales, Thomas Mitchell, in 1836. Jerboas have adapted similar characteristics in response to similar environments but are not related to hopping mice, an example of parallel evolution. Jerboas can be found throughout Asia, Africa and the Arabian Peninsula – but ‘hopping mice’ species are known only to Australia. Of the 10 hopping mouse species we now know, five are extinct.

All that we know of the Big-Eared Hopping Mouse comes from just two damaged specimens consisting of skulls and incomplete skins, the last of which was collected in July 1843 in Western Australia. Both specimens were sent to the Natural History Museum (previously the British Museum) in London. The sex of both individuals remains unknown.

They were described and named in 1921 by British zoologist Oldfield Thomas, who worked at the museum between the 1870s and 1920s. He is said to have described around 2000 species and subspecies from all over the world, for the first time. Thomas gave the habitat of the Big-Eared Hopping Mouse as the ‘interior of Western Australia, on Moore’s River’, which Australian zoologist Charles Brazenor

rightfully responds can hardly be considered the Western Australian ‘interior’ – the Moore River is a small river near the coast, less than 100 km north of Perth. Most of the area around this region has long been cleared for agriculture but it was originally coastal heathland, woodland and open forest. Due to the absence of this species in fossil records from anywhere else in the country, this small region may have formed its entire habitat.

There is uncertainty around what caused the Big-Eared Hopping Mouse’s extinction, which may have happened soon after it was collected in the mid-1800s. However, it was likely associated with the clearing of its habitat for sheep herding, as well as predation from feral cats (*Felis catus*). Cats were introduced to Australia

in the very early 1800s and had become abundant across the whole continent by the mid-1800s. The European Red Fox (*Vulpes vulpes*) was deliberately introduced for recreational hunting in 1855, and so was not around in the 1840s when the Big-Eared Hopping Mouse was last seen. As will become evident throughout these accounts, the introduction of cats and foxes had a catastrophic impact on small mammals all over the country. Prior to their introduction, Australian native mammals had rarely faced such a voracious predator and so were easy targets for the introduced species, whose populations continue to increase rapidly into the modern day. ■

**Sarah Faulkner**

*Big-Eared Hopping Mouse on the move*  
Acrylic on paper  
70 × 50 cm





# DUSKY FLYING FOX

*Pteropus brunneus*

THE STORY, IN FACT the actual existence, of the Dusky Flying Fox is somewhat uncertain, concealed largely behind the impervious curtain of history but for a few ambiguous glimpses.

This entire species is known and described from one individual specimen, collected on Percy Island off the Queensland coast in 1859 by Henry Mangles Denham, Captain of the *HMS Herald* during its voyage throughout Australia and the south-west Pacific. This specimen, mistakenly labelled *P. gouldi* (Black Flying Fox), travelled on the *Herald* back to England, where it was traded at Steven's Sale Rooms of London to the British Museum of Natural History (now the Natural History Museum) in 1874. The specimen, which is still held at the museum, was first described and named by Irish zoologist George Edward Dobson in his 1878 catalogue of the museum's *Chiroptera* (bats) collection.

The question is, is there enough evidence to truly say that this animal was in fact a distinct species, based on a single individual with dubious origins? Furthermore, how can we be sure that the historical authors of this story, such as Captain Denham, were not mistaken, haphazard or dishonest in their records?

There is no actual 'Percy Island': the Percy Islands are a group of three main continental islands, ~75 km east of the central Queensland coast. In 1897, Kendall Broadbent, a collector for the Queensland Museum, is quoted as saying that the Dusky Flying Fox was abundant on the Percy Islands. He stated that he would often witness this species flying between the islands and the Australian mainland. Flying foxes leave their roosts in the early evening and often travel long distances to feed. The individual collected by Denham was said to have been taken from a large camp of Dusky Flying Foxes that had left the island to do just that.

The enigmatic specimen in the museum's collection, upon which the species' existence is based, is an adult male ~21 cm in length. It is mostly brown, with paler tufts on each side of its neck and a slightly lighter belly. It was considered by Dobson to be different from all other flying fox species because of its smaller size, its colour and the shape of its ears and wings.

In more recent times, it has been suggested that the specimen collected on the *Herald* was in fact a mistakenly identified specimen of the widespread Little Red Flying Fox (*P. scapulatus*). The description of its appearance matches that of the Little Red Flying Fox and the Queensland coast opposite the Percy Islands falls within the typical geographic range of this species, which survives today. In 2001, the Australian government delisted the Percy Island Flying Fox as a species due to insufficient evidence. In 2013, the Convention on International Trade in Endangered Species (CITES) proposed doing the same, at its international Conference of the Parties in Bangkok, Thailand.

The story of the Percy Island Flying Fox remains interesting whether it is a valid species or a century-long case of mistaken identity. If the former is true, we were able to record the existence of a unique Australian flying fox species that would have been otherwise lost to history, like so many other undescribed extinct species. On the other hand, if the entire existence of this species is nothing more than the ripple effect of an initial mistake, we see the amusing



difficulties involved in retracing our steps with only glimpses to guide us – especially when the glimpses we inherit are themselves unreliable! ■

**Rick Matear**

*Dusky Flying Fox*

Oil on canvas

37 × 51 cm

**Rick Matear**

*The Daily Commute (Dusky Flying Fox)*

Oil on canvas

37 × 51 cm





# EUNGELLA GASTRIC-BROODING FROG

*Rheobatrachus vitellinus*

THE BIZARRE GASTRIC-BROODING REPRODUCTIVE strategy of Australian frogs of the *Rheobatrachus* genus was thought to be unique to the Southern Gastric-Brooding Frog (*R. silus*) (page 80) until the 1984 discovery of this northern species in Queensland's Eungella National Park. This discovery was sadly short-lived, with the Eungella Gastric-Brooding Frog suddenly and mysteriously vanishing during catastrophic losses of Queensland frog populations in 1985–1986.

The Eungella Gastric-Brooding Frog was larger than its southern relative, which is also extinct, and was far more ostentatious in appearance, being a strikingly vivid yellow–orange colour all over. This colour is the reason for its analogous scientific name, derived from the Latin word *vitellinus*, meaning 'of the yolk of an egg'.

Gastric-brooding frog mothers swallowed either fertilised eggs or tadpoles that would then brood in their stomach, which underwent changes such as halting the release of hydrochloric acid, in order to be converted into an appropriate environment for gestation. Once ready, the mother gave birth through the mouth, essentially regurgitating fully metamorphosed froglets. The Eungella Gastric-Brooding Frog gave birth to around 22 offspring at once. These two Australian gastric-brooding frogs are the only species in the world known to have displayed this

reproductive behaviour, which is now lost as a result of their extinction.

The Eungella Gastric-Brooding Frog was an aquatic species found mainly in shallow sections of fast-flowing rainforest creeks. While habitat loss and destruction pose the greatest threat to amphibians around the world – considered to be declining more rapidly than either birds or mammals – this species' former habitat is considered relatively pristine and undisturbed by human activities. Because of this, the causes for the mass decline of frog populations in this habitat, and the eventual extinction of the Eungella Gastric-Brooding Frog, are not obvious.

Several potential causes have been proposed, including unusual weather, or epidemic or endemic disease spread by insects or even fishes introduced through the international trade

in aquarium species. Most recently, chytridiomycosis, an infectious disease caused by the chytrid fungus *Batrachochytrium dendrobatidis*, has been identified as a potential cause. This disease has been suggested as the driver for major losses in populations of several frog species in Queensland rainforests. Some of the populations have survived or recovered, potentially developing evolutionary adaptations to overcome the disease. The Eungella Gastric-Brooding Frog was probably hit so suddenly and dramatically by the effects of this disease that the population was wiped out beyond recovery. It has not been seen since March 1985 despite several survey attempts to locate it. ■

**Simon Collins**

*Eungella Gastric-Brooding Frog*

Oil on board

42 × 42 cm





# KANGAROO ISLAND EMU

*Dromaius baudinianus*

THE KANGAROO ISLAND EMU was one of two, now extinct, island-dwelling dwarf emu species of Australia. The other (*D. ater*, p. 48) inhabited King Island in western Bass Strait. These emus were historically thought to be the same species but are now recognised as distinct, although recent study suggests both potentially should be considered a subspecies of the mainland emu (*D. novaehollandiae*).

Kangaroo Island – named by Matthew Flinders in celebration of the island's bountiful supply of kangaroos that fed him and his hungry companions – lies off the coast of South Australia and was the sole home of this emu species. Matthew Flinders came upon this flightless species in his time on the island, and provided the first written record of the Kangaroo Island Emu. On his arrival at the island:

*Not less than thirty emus or cassowaries were seen at different times; but it so happened that they were fired at only once, and that ineffectually. They were most commonly found near the longest of the small beaches to the eastward of Kangaroo Head, where some little drainings of water oozed from the rocks.*

There are few detailed descriptions of the Kangaroo Island Emu as it has only been formally described

from skeletal remains. It was found in flocks, was smaller than the mainland emu and may have been black with a white breast.

In 1803, French explorer Nicolas Baudin ventured to Kangaroo Island after visiting King Island, where he had collected three living King Island Emu specimens to take back to France. Francois Péron, a trainee zoologist on the voyage, wrote in his records:

*of all the birds that this island received as its share from Nature, the most useful to man are the cassowaries ... but because they are very agile runners and because we did not take much care in hunting them, we were only able to obtain three live ones.*

There is inconsistency in accounts from those on board, but it appears that only two Kangaroo Island specimens were obtained and housed with their King

Island counterparts in the ship's menagerie, which would eventually contain 73 living animals. After a 15-month journey, only two emus were still alive upon the ship's arrival in Lorient, France. Because Baudin thought that the emus from King and Kangaroo Islands were the same, which species actually made it to French shores remains a mystery. Nevertheless, the two emus stepped off the ship a long way from their island homes after a remarkable journey.

Their journey continued as both birds were sent on a tour to the French colony of Mauritius for four months then to the Cape of Good Hope for three weeks, before returning to France to arrive at their final destination – Paris. The emus were given remarkable accommodation, being housed in the chateau of Joséphine de Beauharnais, Napoleon Bonaparte's first wife and the first Empress of France. After outliving Josephine, the two emus were sent to the Parisian zoo *Jardin des Plantes*. Here they outlived all the wild emus on both Kangaroo and King Islands, the populations of which are thought to have been wiped out due to hunting by sealers.



Which species became officially extinct when the pair died in 1822 is not known, but their death in the Parisian zoo marked the extinction of both species. The nuances of this interconnected story are continued in the following entry on the King Island Emu. ■

**Terry Matassoni**  
Kangaroo Island Emu  
Oil on canvas  
40 × 45 cm



# LAKE PEDDER EARTHWORM

*Hypolimnus pedderensis*

THE TASMANIAN STATE PARLIAMENT began discussing the potential for a major hydro-electric project on the Gordon River in the 1960s following a report by the Tasmanian Hydro-Electric Commission which cited an unprecedented demand for energy supply in the state.

The report gave details of the construction needed in the Gordon River, but made no specific mention of Lake Pedder. However, when the project was announced it quickly became clear that Lake Pedder would be flooded. This was instantly met with an upwelling of public opposition. Lake Pedder had been a national park since 1955, which meant it was officially a protected area, but this legislative protection was to be revoked as part of the proposed project. Extensive resistance to the project came from within Tasmania and the Australian mainland, with the federal government even recommending that the project be reconsidered.

In 1971, the Lake Pedder Earthworm was discovered by limnologist Dr Peter Tyler in the midst of the ongoing political commotion. Known from a single specimen, the Lake Pedder Earthworm was around 5 cm long, brown and pink in colour with exactly 129 body segments. It ate microbes, algae or organic matter

on sand particles and its entire population existed on the white quartzite beach at the Maria Creek entrance to Lake Pedder. Like most earthworms, the Lake Pedder species was hermaphroditic, meaning each individual had both male and female reproductive organs. In earthworm reproduction, both organs are used by both worms during mating; if successful, the eggs of both worms will be fertilised. The Lake Pedder Earthworm secreted its fertilised eggs in the sandy soil along the banks of Lake Pedder.

The Lake Pedder Action Group was formed in opposition to the project. It had a presence in every Australian state and formed a political party to run in the 1972 state election. The Australian federal government and international body UNESCO both joined the fight, lobbying the state government against the flooding. However, despite the strong resistance, the Middle Gordon Hydro-electric Power Scheme received parliamentary

approval and construction began in 1972. After two years the project was completed and Lake Pedder, originally 9 km<sup>2</sup>, had been flooded to create an area covering over 240 km<sup>2</sup>, drowning the Lake Pedder Earthworm's habitat in its entirety.

The Lake Pedder Earthworm was lost as soon as it was found, its extinction implicit in its discovery. It represents a strange phenomenon whereby the knowledge of its impending disappearance was the auspice under which it was described. The Lake Pedder Earthworm was not the only animal extinction caused by the project: an endemic flatworm, the Lake Pedder Planarian (*Romankenkius pedderensis*) and freshwater fish, the Lake Pedder Galaxias (*Galaxias pedderensis*), were also lost. ■

**Tom O'Hern**

*Lake Pedder Earthworm*  
Oil pastel on paper  
30 × 21 cm





# TASMAN STARLING

*Aplonis fusca*

A ONCE ABUNDANT ISLAND species, the Tasman Starling was endemic to both Lord Howe Island (*A. f. hulliana*) and Norfolk Island (*A. f. fusca*). Around 20 cm in height, male starlings had dark grey feathers, with green spreading to the throat and breast, and the underparts becoming white. The male’s bright red–orange eye was emphasised against its dully coloured feathers. Females were generally lighter in colour, with a less obvious green tinge, with the throat and breast shading to brown on the sides and ochre on the lower breast. Its name reflects its humble appearance – *Aplonis* means ‘simple bird’ and *fusca* is derived from the Latin *fuscus*, meaning dark or dusky – a dusky, simple bird.

The Tasman Starling built its nest from small twigs and dry grass in the hollow of a dead limb or fern, sometimes quite close to the ground. Every breeding season – late spring and early autumn – it returned to the same nesting place. If the nest had been damaged or removed in its absence then it was rebuilt in the same spot. The eggs, often four to five to a nest, were green with freckled sand-coloured blotches becoming pale red towards the larger end. The shape and size of eggs in a single clutch were said to differ considerably.

In both island populations, the birds fed on native fruits but enjoyed cultivated fruit once agriculture took root. Arthur Hull, the first and last person to record the existence of this species,

described the bird in 1909, and its focus on the settlement’s fruit offerings:

*It is a bold and noisy marauder, creating havoc amongst the banana plantations and orchards. Its soft, slaty-grey plumage, darker in the male than in the female, is somewhat at variance with its bright orange-red eyes; and its assertive manner, attitudes and loud challenging notes are not in keeping with its sober coat. I have often watched a pair attacking a bunch of bananas hanging to ripen under the verandah of the house where I was staying on Norfolk Island. The male would utter a few calls from an adjacent pine-tree, and then dart on to the iron roof, making a great clatter as he alighted. Then, whistling a sharp*

*staccato note at short intervals, he would drop on the bananas, rip open the ripest, and swallow large pieces of fruit, uttering satisfied notes between mouthfuls. The female would follow, with less noise and assurance, and in a few minutes the empty banana skin would only remain. A sudden movement on my part would send the birds back to the pine-tree where they scolded for a while, and then returned to scoop out another banana.*

The Norfolk Island subspecies (*A. f. fusca*) inhabited most of the island’s forested area, largely dominated by Norfolk Island Pine (*Araucaria heterophylla*), and also frequented the plantations and orchards established by settlers. It was last seen on Norfolk Island in 1923.

The Lord Howe Island subspecies (*A. f. hulliana*) was named onomatopoeically for its call, by locals of the island. It was considered the most abundant bird on Lord Howe Island and was described to occur in thousands in the early 20th century; however, it has not been reported since 1915.

On Lord Howe Island, the generally recognised cause of extinction was the introduction of Black Rats (*Rattus rattus*), which were introduced in 1918, as was the case for fellow island inhabitant the Lord Howe Gerygone (*G. insularis*) (p. 62). Invasive species introductions have been catastrophic for these island ecosystems, and predation from Black Rats continues to threaten several endemic bird species. However, the rats are not thought to have been introduced to Norfolk Island until 1942, almost two decades after the Norfolk Island Starling’s last known appearance.

The Norfolk Island population may have gone extinct as a result of hunting, as it has been suggested that farmers were not exceedingly pleased with the birds’ indulgence in their fruit crops. Also, in the 10 years before its extinction, the Common Blackbird (*Turdus merula*), Song Thrush (*T. philomelos*) and Common Starling (*Sturnus vulgaris*) were all introduced to the island and may have competed for resources with the native starling. These pressures, combined with habitat clearing for agriculture, are

thought to have been behind the eventual extinction of the Norfolk Island Starling, and therefore the Tasman Starling, in the early 20th century. ■

**Lottie Consalvo**

*My eyes held onto nothingness (Lord Howe Gerygone)*

Acrylic on board  
120 × 180 cm

**Lottie Consalvo**

*And then it was gone (Lord Howe Gerygone)*

Acrylic on board  
120 × 180 cm







# THYLACINE

*Thylacinus cynocephalus*

THE STORY OF THE Thylacine has been told by a diverse multitude of storytellers in as many ways. It is without doubt the most high-profile extinct Australian animal and prevailing icon of extinction in the country. The Thylacine has now entered the realm of mythology and its story has become implicitly intertwined with an 'Australian' culture within which it continues to play a role. It is the proverbial Ned Kelly of the animal kingdom. To condense the abundant information available on this species is an impossible task; interested readers are encouraged to explore the array of texts, films and artworks that surround this famous animal.

Thylacines were exclusively carnivorous marsupials and well suited to hunting smaller mammals like bandicoots, wallabies and potoroos. The Thylacine was a slow runner compared to many marsupials and probably relied more on the scent of its prey than on seeing it. As such, its hunting technique involved drawn-out pursuits, stalking its prey. It hunted during the evening, night and early morning and tended to retreat to the hills and forest for shelter during the day. Like other marsupials, the young would crawl into the mother's tail-facing pouch, where it would stay until the age of around three months.

Although commonly referred to in modern times as the 'Tasmanian' Tiger, the Thylacine was once considered abundant throughout the whole Australian continent, including the arid northern

habitats. The extinction of the Thylacine on mainland Australia is often suggested to be the result of direct competition with the Dingo (*Canis lupus dingo*). Dingoes were introduced to the continent by Asian seafarers, who may have carried dingoes with them for several reasons, around 4000 years ago (though maybe longer). The persistence of the Thylacine on Tasmania in the absence of dingoes, which were never introduced to the island, is often used as evidence to support this theory for mainland extinction. However, there is potential that mainland extinction of the Thylacine was more related to human impacts, with abundant evidence that they were hunted in both the north and south by Indigenous people, who shared a long history with the animal. The Thylacine is depicted in Indigenous rock art across the

continent, with some examples thought to date back around 13 000 years. The development of new Indigenous hunting technology, such as the spear-thrower, was suggested to have dramatic impact on Thylacine numbers, especially as the adoption of this technology from north to south mirrors the chronological decline of Thylacine populations. The last Thylacine died on the mainland around 3500 years ago.

While the contribution of humans to the mainland extinction of Thylacines is not certain, there can be little doubt that the more recent extermination of the Tasmanian population was a direct consequence of people. Perhaps British settlers arriving in Tasmania saw the Thylacine as a foreboding menace, which embodied their anxieties about their rugged and unforgiving new island home. The Thylacine was met with fear, scorn and blame, which eventually manifested in a hunting campaign that caused its disappearance. Although we know now that introduced wild dogs were far greater predators of domestic sheep, the Thylacine was relentlessly blamed for the death of Tasmanian farmers' sheep.



In 1830, a bounty was put on the Thylacine by the Van Diemen's Land Co., which had significant pastoral holdings in north-west Tasmania. In 1887, the Tasmanian government became the Thylacine's greatest predator after the bounty was officially adopted for the whole island – it was set at 1 pound for an adult animal and 10 shillings for a juvenile. Thylacine numbers crashed between 1904 and 1910, possibly exacerbated by disease. The last one known to be killed in the wild was shot by Tasmanian farmer Wilfred Batty in 1930.

After Thylacines disappeared in the wild, some still survived

in the collection of wealthy entrepreneur Mary Grant Roberts of Beaumaris Zoo, who was the primary exporter of Thylacines to overseas collections. In 1936, the last surviving member of this collection, Benjamin, died in Hobart Zoo, marking the extinction of the species just 59 days after it finally became illegal to kill a Thylacine. The famous footage, shot by David Fleay, of an anxious, agitated and yet formidable Benjamin, hauntingly depicts this incredible animal's final days of existence.

Anecdotes of Thylacine sightings around the more rugged and untouched parts of Tasmania into

the late 1900s are plentiful. Some are wonderful stories of discovery, awe and admiration, and may well be true; some should be taken with a grain of salt. Despite the stories, there can be little doubt that the once despised, now revered Thylacine is well and truly extinct. ■

## Marina Strocchi

Thylacine (after Broinowski)  
Acrylic on linen  
31 × 41 cm



# A STORY OF HOPE: THE MOUNTAIN PYGMY-POSSUM AND THE BOGONG MOTH

*Burramys parvus* and *Agrotis infusa*

THIS STORY OF THE Mountain Pygmy-Possum and the Bogong Moth is one of hope for the future. It is an analogy, a microcosm, illustrative of the complex interactions and interdependencies that all species on this continent share – including us. These two animals still survive, but not without complications. Their shared story demonstrates that even the rarest animals can continue to inhabit the beautiful, wild land of Australia. If this book aims to demonstrate anything, it is that extinction is not an inevitability. To understand and appreciate the importance of each of these animals, their beauty, complexity and history is to understand the significance of losing them, and thus the true consequences of our actions.

The Mountain Pygmy-Possum is a tiny alpine marsupial, though the largest of all the Pygmy-Possums. It is the only Australian marsupial that hibernates for long periods during winter, emerging in early spring for the mating season. It hibernates because it spends its winters in some of Australia's coldest environments, atop snow-capped mountain peaks in the high plains of Victoria and New South Wales.

The first written record of the Mountain Pygmy-Possum comes from Scottish scientist Robert Broom in 1896 from a portion of skull and jaw found in the

Wombeyan Caves of central New South Wales. It was described and given the name *Burramys parvus*, or 'small rock mouse'. As no living specimens were discovered at the time, it was assumed to be extinct. It remained extinct in the minds of scientists for the next 70 years and was likely written off as a species discovered posthumously.

That was until 1966, when a living Mountain Pygmy-Possum was discovered in a ski lodge in the alpine holiday resort on Mt Hotham in Victoria's high country. Thought to be the only individual in existence, the Mountain Pygmy-Possum was named the

rarest animal on Earth in the 1967 Guinness Book of Records.

Since that rediscovery, three isolated populations of the Mountain Pygmy-Possum have been found in alpine and subalpine rocks and boulders of three distinct locations – the Bogong High Plains and Mt Buller in Victoria and Mt Kosciuszko in New South Wales. The rediscovery of this species is not a resurrection. The Mountain Pygmy-Possum was simply undetected by humans – or at least by the type of humans who keep written records of such things – for all those decades.

The Mountain Pygmy-Possum remains one the rarest animals in Australia and is critically endangered, with only 2000 surviving individuals spread across the three populations. Its alpine habitat is reducing due to climate change and increasing tourism and it faces increased predation from introduced feral cats and foxes – all of these pose severe threats.



Another important, emerging threat to the Mountain Pygmy-Possum is related to a key staple of its diet, the Bogong Moth (*Agrotis infusa*).

Each spring, as the Mountain Pygmy-Possums awake from their hibernation, around 2 million Bogong Moths are emerging from their pupae stage to begin the long journey to the Australian alps, so that they too might get some rest. Coming from southern Queensland, New South Wales and western Victoria, the iconic moths manage to navigate up to 1000 km to reach the alps, where they hibernate (or 'aestivate') through the summer in caves and crevices. Bogong Moths are thought to have undertaken this journey for

over 7000 years. This predictable migration offered an important food source for Indigenous communities of south-eastern Australia, who annually travelled to the mountain ranges of the region in large groups.

Indigenous moth hunters either scraped Bogong Moths (*Buugang* in Wiradjuri) off the cave walls, or carried smoking branches into the caves, stifling the moths and causing them to drop off the walls. They were caught in sheets of bark, kangaroo skins or finely woven nets made from Kurrajong (*Brachychiton populneus*) fibre. To cook them, a fire was lit in the sand until thoroughly heated then all hot coals were carefully picked out so as not to scorch the insect

**Brook Garru Andrew**

*Gidyay (Possum)*

Wax aquarelle and Sennelier oil stick on paper

29.5 × 21 cm





**Brook Garru Andrew**

*Buugang (Bogong Moth)*

Wax aquarelle and Sennelier oil stick  
on paper

37.5 × 21 cm

bodies. The moths were poured onto the ashes to cook before being placed on a sheet of bark to cool. They were then sifted in nets to remove the heads, legs and wings, leaving just the cooked, nutritious body which is said to be tasty and nutty, like almonds or walnuts. Sometimes they were ground to a paste and made into cakes.

This event was attended by people of many Indigenous groups, Minjambuta, Jaimathang, Djilamatang, Dudoroo, Ngarigo, Walgalu and Ngunawal, to name a few. It is possible that some even made the journey from the coast, most likely the Taua, Djiringanj and Walbanga people from around Eden, Bega and Batemans Bay. The Kurnai people of Gippsland were less likely to attend, as they were traditionally considered adversaries of the highland groups. That being said, the gatherings were not always

peaceful events, with skirmishes breaking out and sometimes pre-arranged battles occurring at the foot of the mountain ranges. Most often, though, the moth hunt and subsequent feast were accompanied by corroborees in designated meeting places, called *Mungabareena* in Wiradjuri language. These congregations could involve up to 1000 people, providing an opportunity for meetings between friendly nations, information and language sharing, trade, initiations, and cultural and spiritual performances. The cultural and historical significance of the Bogong Moth migration to this part of the continent cannot be understated.

The Bogong Moth is also a key food source for the Mountain Pygmy-Possum, providing essential nourishment as it wakes up from hibernation and begins its mating season. Typically, the moth

migration is abundant. Thousands of moths line the interior of the alpine caves each summer. But in 2017 the moths never came ... the summer of 2018 came and went, yet still the moths were nowhere to be seen in the Mountain Pygmy-Possum's alpine habitat.

There are several possible reasons why Bogong Moths didn't reach the alpine areas, including climate change, drought and pesticide use. Furthermore, bright lights from towns and cities are thought to lure and trap the moths along their journey. In response, in recent years households along the Bogong Moths' migratory route have been urged to turn their lights off in the evenings so that the moths do not get lost on their journey. A 'Moth-Tracker' citizen science program was also successfully established, allowing people to log Bogong Moth sightings online, and thus track their migration.

In October 2019, Bogong Moths began arriving at the Australian alps after a two-year hiatus, and the small populations of Mountain Pygmy-Possums were able to feast on this vital food source once more.

Although there are fewer than 2000 critically endangered Mountain Pygmy-Possums left in the wild, the numbers have stopped declining, and a captive breeding program has helped to secure this species' existence into the future. The continuing presence of Bogong Moths each summer will be fundamental to the survival of the Mountain Pygmy-Possum.

The story of these species' survival is an ongoing one that demonstrates the complex connections which together dictate the livelihood of all species. From light switches in Queensland homes to Mountain Pygmy-

Possums in the snow-capped peaks of Victoria. All animals on this continent have incredibly complex relationships with their fellow species and the land on which they live, relationships that have been unprecedentedly affected by human society, particularly in the last hundred years. We have enough understanding of these links to comprehend the consequences of our actions, yet perhaps we do not know the scale of those consequences, or the significance of extinction.

Australian animals are among the most unique in the world. They are also among the most endangered, with hundreds on the brink of extinction right now. These species can still be pulled back from the brink, but once gone they are gone forever.

Extinction is irreversible, but **avoidable**.