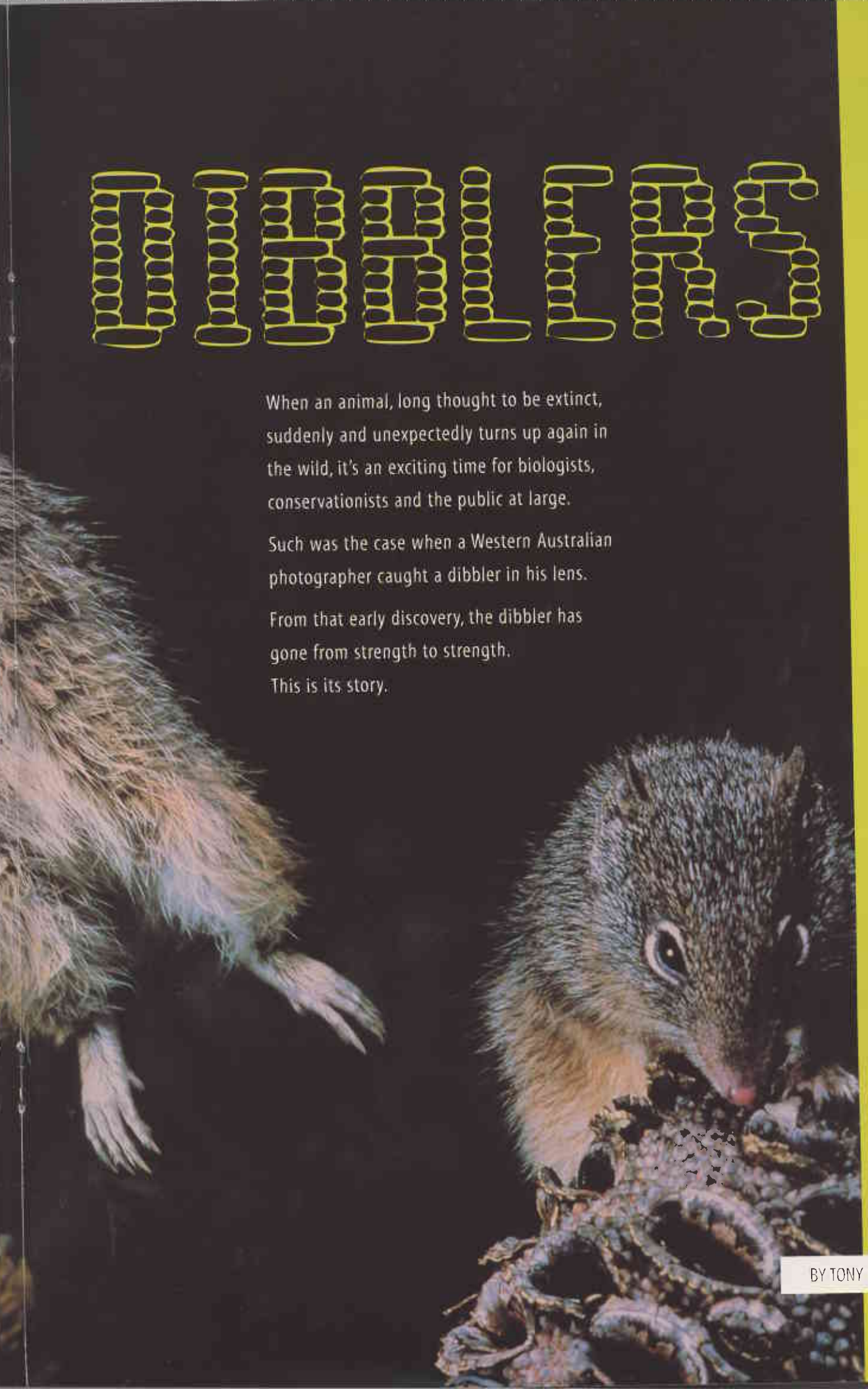
DIBBLERS

When an animal, long thought to be extinct, suddenly and unexpectedly turns up again in the wild, it's an exciting time for biologists, conservationists and the public at large.

Such was the case when a Western Australian photographer caught a dibbler in his lens.

From that early discovery, the dibbler has gone from strength to strength.
This is its story.



BY TONY START

"One's moving about! I can hear it!" We stared into a large aquarium half-filled with dry leaves, but every glimpse of our quarry turned into a cricket or a big bush cockroach—or imagination. Suddenly, silently, a little mammal was staring right back. It had speckled fur, a small pointed face and a white ring around each black eye. And then it was gone.

This short but dramatic scene summed up so many of our interactions with dibblers; frustration looking for them, excitement when we find them and, all too often, disappointment when they vanish. The scene had been played out many times at different places and at different scales.

Possibly the most memorable was in 1967, when well-known photographer Michael Morcombe set a very cunning trap over the flower of a candlestick banksia (*Banksia attenuata*) at a sleepy fishing camp near Cheyne Beach, on the south coast of Western Australia. He was expecting to catch and photograph honey possums. Instead, he caught a mammal that was thought to be extinct. News of his exciting discovery, accentuated with his superb photographs, excited biologists and conservationists all around Australia. Some of those original photographs are reproduced here.

Michael Morcombe's discovery marked the beginning of a long struggle by biologists and others to recover this enchanting marsupial carnivore from the danger of extinction. However, before exploring that story, we might look briefly at its history.

Aboriginal people knew the dibbler well. We know this because by 1843 John Gilbert had recorded three names used by them in various parts of south-western WA including *dib-bler*, which was the name used by the people living near King George Sound. Gilbert was collecting fauna specimens in Western Australia for the renowned artist and naturalist John Gould (see *LANDSCOPE*, Winter 1997 and Autumn 1998). He obtained several dibblers and wrote notes for his employer on their natural history, much of which he had learned from Aboriginal people. Miraculously, Gilbert's notes, in his own handwriting, survive to this day.

Many other Europeans collected dibblers in the nineteenth century, but none of them recorded anything about the animals or where they came from. Indeed, dibblers were formally named in 1842 on the basis of a purchased specimen that was 'doubtless from Australasia'. The largest collection of dibblers is housed in the National Museum in Victoria, where there are 22 specimens. They were all taken in Western Australia between 1875 and 1884, but that is all the information there is about them.

Another well-known naturalist, John Tunney, was the last of the early collectors to take a dibbler and he did provide some detail. It was caught on 3 July 1904 in a hollow log at his home at Gracefield, near the town of Kojonup.

And so, when Michael Morcombe trapped two dibblers on the banksia blossoms at Cheyne Beach in January 1967, they had popped into view again after 63 years. Two more were caught there later that year, with another three in 1975 and one in 1994. But most attempts to find dibblers at Cheyne Beach have failed; like the dibbler in the aquarium, they vanish.

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This remarkable photograph leaves no doubt that dibblers are astonishingly agile and versatile.
Photo – Michael Morcombe

Below: Quoin Head, Fitzgerald River National Park. Areas of dense, long unburned heath on Western Australia's dramatic south coast provide habitat for dibblers.
Photo – Jiri Lochman

COMING AND GOING

Then, in January 1976, a dibbler popped up near Jerdacuttup, about 225 kilometres east of Cheyne Beach. It had fallen victim to a farm cat and was brought home. Pat Woolley of La Trobe University, an expert on marsupial carnivores who had caught the three dibblers at Cheyne Beach in 1975, did her best to find more. While she searched for their habitat at Jerdacuttup, she was unable to locate any animals. In December 1976, another dibbler turned up on another farm in that area, but once again, attempts to find live, wild ones were fruitless.

For many years, Vic Smith, a retired vet and keen naturalist, has monitored heathland mammals in Torndirrup National Park, near Albany. One of his regular sites is right on the edge of the park, just a few hundred metres from his house. On three occasions in 1987–88, Vic caught dibblers, but despite efforts by him and others, no more have been seen there.

No one realised it at the time, but a breakthrough came in April 1984. National Park Ranger George Duxbury found a freshly dead dibbler on a track in the Fitzgerald River National Park, which lies between Cheyne Beach and Jerdacuttup. Like the Jerdacuttup specimen, it seemed to have been killed by a cat. That find strengthened requests for funds to undertake a biological survey of the park. Between 1985 and 1987, the survey located 17 dibblers at eight different sites. At last, a dibbler stronghold had been found. Since then, dibblers have been caught almost every year and at many other sites in the park. Nevertheless, they seem to come and go; they can be caught at one spot for several months or even years, then they vanish. One year, for a while, they were all about the Ranger's house, where they were even seen among flowerpots on the verandah.

Despite their irritating habit of vanishing, we have learned much about the dibblers in Fitzgerald River National Park. They are most often found in the dense heath and mallee-heath that grows along the northern edge of the park, but they have also been caught in more open vegetation, high on Thumb Peak, near the coast.

Dibblers forage for nectar, and probably insects, in canopies of banksia trees.
Photo – Michael Morcombe

Their habitat is always vegetation that has not been burned for ten or twenty years, although they may venture into more recently burnt areas near by. Their scats usually contain remains of large insects, and they are usually caught on the ground. But, as Michael Morcombe found, they will also climb trees. Perhaps they visit flowers for the insects that gather there, but they may also relish a feed of nectar.

Wildlife Consultant Natasha Moore tried to track dibblers to which she had attached tiny radio transmitters. Again, they frustrated her attempts to find out how they lived, because they would move away when she was still far off. In the evenings, they quickly travelled beyond the range of the transmitters, and their habitat was so thick that it was impossible to follow them. One day, on her early morning rounds of dibbler traps, Natasha released one female that she had tagged previously, only to find it in another trap 600 metres away just half an hour later. No wonder the radio-collared dibblers were hard to trail.

The other big breakthrough came in 1985 when Phil Fuller, a technical officer with the Department of Conservation and Land Management (CALM), noticed mammal tracks on Boullanger Island in Jurien Bay. He knew there were exotic house mice and small dasyurid marsupials there, but some of the tracks seemed too big for either of those

species, so he set some traps. Imagine his surprise when he caught a dibbler! Together with CALM Scientist Andrew Burbidge, Phil returned to the island with more traps and found dibblers to be abundant there. Boullanger Island is 600 kilometres north of Cheyne Beach (and about 200 kilometres north of Perth) on Western Australia's west coast, and the wind-swept flora of these small islands is very different to the dense mallee-heaths of the south coast.

Boullanger is the largest in a group of islands off Jurien Bay (see 'A View of the Bay' in this issue). A check of the others revealed that dibblers also lived on Whitlock Island. The two islands are close together and it is sometimes possible to walk from one to the other at very low tides. Perhaps it is not surprising that dibblers have managed to colonise both islands. What is surprising is that recent estimates of the number of dibblers suggests that there are about 100 on each island, despite Boullanger (26 ha) being five times bigger than Whitlock. The difference may be due to a much more varied habitat on Whitlock, where there are extensive areas of limestone as well as deep sands; Boullanger is almost entirely composed of sand.

RECOVERY TEAM

A very effective approach to recovering threatened species is to form a recovery team. This brings together expertise and coordinates the activities of all the agencies that can contribute to the mission. The roles of all the participants are best integrated through a recovery plan. The Dibbler Recovery Team has been working for three years and has just prepared an Interim Recovery Plan. The plan takes into account all the information that is now

Top left: Perth Zoo's specialist keeper, Cathy Lambert, holds a dibbler while University of Western Australia PhD student Harriet Mills takes measurements.

Centre left: The captive colony is housed in large aquaria in a special building at Perth Zoo.

Left: Eight young dibblers, each attached to a nipple, fill their mother's pouch. They are much smaller than this when born and will be much larger before they leave the pouch.
Photos – Jiri Lochman

Right: Always alert, dibblers hunt in thick vegetation.
Photo – Jiri Lochman

Below right: White eye-rings, speckled fur and tapering tails are characters that help identify dibblers. This one is scratching its head on a log.
Photo – Michael Morcombe

available and sets a program of research and management for the next three years, when a full Recovery Plan will be written.

The team includes scientists from CALM, Perth Zoo and three Universities as well as CALM managers for Fitzgerald River National Park and the Jurien Islands. The Cooperative Research Centre for Marsupial Breeding and Conservation is supporting the work of a geneticist and a PhD student who is studying dibblers' breeding biology at The University of Western Australia. Environment Australia also contributes to the funding of the program.

In Fitzgerald River National Park, the team's emphasis is on managing habitat. Fire management plans ensure that there are always areas that remain unburnt. (This is also important for other threatened species, such as ground parrots.) The park is included in CALM's feral predator control operation, Western Shield. Dieback disease, caused by the root pathogens *Phytophthora* species, is a serious threat to the park's flora. Any changes could disadvantage dibblers. However, the flora is itself astonishingly diverse and renowned for its many rare species. To protect all these values, strict quarantine rules apply to anyone entering the area. Ironically, this restricts dibbler research, but ensuring the conservation values are not impaired is paramount. In addition to all these provisions, there is regular monitoring to ensure that there are still dibblers in the area.

The islands pose quite different problems. Dibblers are easier to study because they can't move far away. However, this also means that a catastrophe could wipe out the whole population. Like the Fitzgerald River dibblers, those on the islands eat insects. However, they also eat berries (for which they often climb) off the ruby salt bush (*Enchylaena tomentosa*) and probably other succulent fruits. They have also been known to eat seabird chicks and, occasionally, house mice.

WHAT'S IN A NAME?

Dibblers (*Parantechinus apicalis*) belong to a family of small to medium-sized carnivorous marsupials, the dasyurids. Dibblers weigh between 40 and 100 grams, varying with sex, age and location. The smallest Australian dasyurids often weigh less than five grams. These tiny hunters are common in the spinifex grasslands of Western Australia's Pilbara region. The largest living dasyurid is the Tasmania Devil.

Aboriginal people of south-western WA had various names for dibblers. In the early 1840s, John Gilbert recorded three of them:

- *Marn-dern* – Aborigines of Moore's river in the interior
- *Wy-a-lung* – Aborigines of Perth
- *Dib-bler* – Aborigines of King George's Sound

J.E. Gray, a Fellow of the Royal Society, formally described and named dibblers in 1842. He had only one specimen, "procured from Mr Brandt of Hamburgh who purchased it during his late visit to London". Gray thought that the dibbler was a type of phascogale and called it *Phascogale apicalis* (*apicalis* referred to its tail "being short, conical, tapering" and "having a terminal pencil of black-tipt hairs"). For a comparison, see 'Fascinating Phascogales', *LANDSCOPE* Summer 1993–94.

Subsequently, scientists realised that dibblers were more closely related to, but distinct from, another genus of small marsupial carnivores, the antechinuses, and so the species is now called *Parantechinus apicalis*. Although name changes can be confusing, it seems appropriate that our modern popular and scientific names incorporate contributions from Aboriginal people, pioneering naturalists and modern scientists.

Photo – Greg Harold

Large colonies of seabirds that nest in burrows may be a key to dibbler survival on both these small, exposed islands. Dibblers often enter the burrows and, we suspect, may nest in them. Even if the chicks are not important in their diet, dibblers probably find many insects sheltering there. Thus, any threat to the seabird colonies might threaten the dibblers. House mice, on the other hand, may be a threat. They have been introduced to both islands and were there when Phil Fuller visited in 1985. Their impact on the habitat and the extent to which they may compete with dibblers for resources are not known. Although they have coexisted for at least 13 years, the real test may come after a rare event such as a severe drought or a fire.

Because the island populations appear so vulnerable, four pairs of dibblers were brought to Perth Zoo in May 1997. They are housed in a special air-conditioned building, which they share with another threatened species, the djoongari (*Pseudomys fieldi*). The dibblers live in large aquaria where their nest-boxes are buried in a deep layer of dead leaves. They avidly hunt specially bred crickets and cockroaches, but they are given many other things to make up a varied diet. These conditions suit the colony well if breeding success is anything to go by. Nineteen young were reared the first year and about 40 have been born this year. Most of them were released in October this year onto a third island in Jurien Bay. This island has the habitat diversity, but twice the area, of Whitlock Island. Furthermore, it has a thriving seabird colony and is free of house mice.

This success is so encouraging that, as we peer into the aquarium hoping for another glimpse of the dibbler, frustration gives way to excitement. At last, we really are taking a big step forward in the struggle to lessen the threat of extinction for this enchanting little marsupial.

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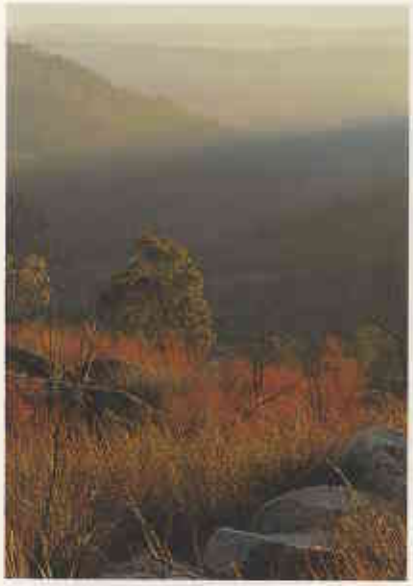

This land, where the Avon River cuts through the Darling Range, was home to WA's most notorious bushranger. His story is on page 10.

'What about the Animals', on page 21, discusses early findings from the Kingston Study.

LANDSCOPE

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Just when everyone thought it was extinct, this small mammal suddenly reappeared. See 'Dibblers' on page 28.

100,000 hectares of bluegums by the year 2000. Was it a realistic target? See 'From Blue sky to Blue Chip' on page 35.

'Karla Wongi: Fire Talk', on page 48, is a Nyungar perspective on the use of fire in the south-west of WA.

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Colour Separation by Colourbox Digital
Printed in Western Australia by Lamb Print

Visit *LANDSCOPE* online on our award-winning Internet site *NatureBase* at http://www.calm.wa.gov.au/

Published by Dr S Shea, Executive Director
Department of Conservation and Land Management,
50 Hayman Road, Como, Western Australia