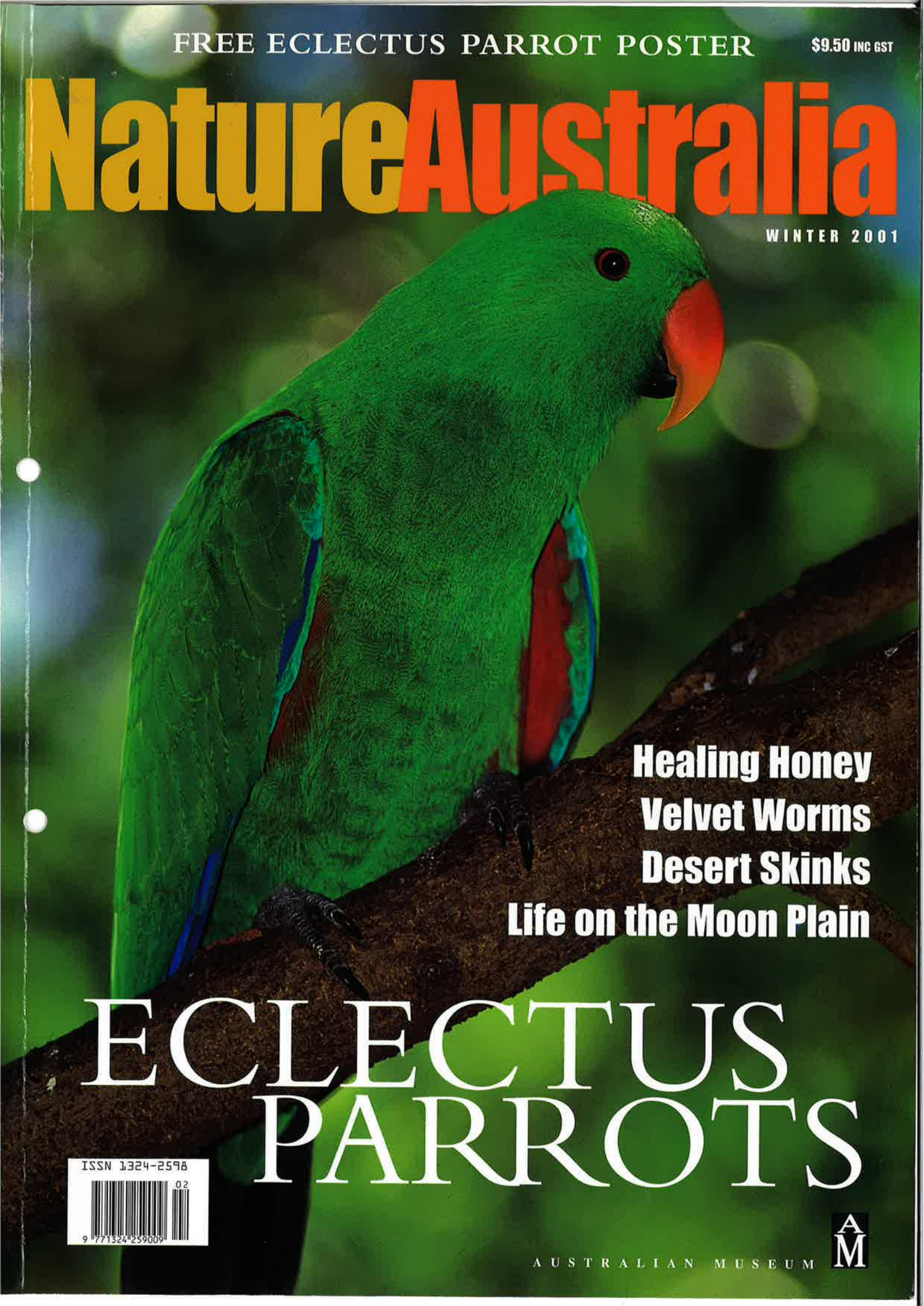
FREE ECLECTUS PARROT POSTER

$9.50 INC GST

NatureAustralia

WINTER 2001



Healing Honey
Velvet Worms
Desert Skinks
Life on the Moon Plain

ECLECTUS PARROTS

ISSN 1324-2598
02
9 771324 259009

AUSTRALIAN MUSEUM

DAVE WATTS/NATURE FO

How does a parent Barn Owl decide which of its chicks to feed?

indicators of an animal's genetic health. The trade-off is that the animal is more likely to mate, and carry his genes forward to the next generation. But new research has shown that not everyone is playing the mating game fairly.

Patricia Backwell (Smithsonian Tropical Research Institute) and colleagues studied fiddler crabs in Mozambique (*Uca annulipes*) and found the first known example of a dishonest sexual signal.

When male fiddler crabs lose the big claw that they use to attract mates and defend territories, they grow a new one, but it is lighter and therefore cheaper to wave around than its predecessor. It is also a less effective weapon than an equivalent-length original claw.

What is surprising, say the researchers, is that these supposedly less-fit crabs do not seem to suffer in any way from their disability. Even though males with original claws are more likely to win encounters with 'second-hand' males, they do not go out of their way to fight these males; nor are females deterred from choosing 'second-hand' individuals for mates. Assessment of crab fitness, it seems, is based on claw-length alone.

With up to 44 per cent of the population displaying regenerated claws, Backwell and colleagues suggest that cheating may be a lot more common than we thought. Its apparent rarity may simply be an artefact of the difficulty in detecting cheats, designed by nature to go unnoticed.

—R.S.

Owl Chick-Chat

When birds return to the nest to feed their chicks, there is usually a cacophony of noise as the baby birds compete for the tasty morsel being delivered. But Barn Owl chicks (*Tyto alba*) play a different tune—they call to each other even when parents are not present. What's the point of squawking when the parents are out of earshot? Alexandre Roulin and colleagues from the University of Bern in Switzerland wondered whether chicks might be negotiating among themselves who should get the next meal.

Owl parents only deliver about one mouse per hour to their chicks but, with up to nine chicks per nest, inevitably the babies are left in different states of hunger. The researchers temporarily removed all chicks except two. They gave one chick extra food during the day, leaving the other one hungry. They secretly filmed and recorded the chicks, noting the duration and volume of their chirps before and after the parents arrived with food, and noting which chick got fed. The results showed that the hungrier chick not only made the most noise before the parents arrived, but almost always got the mouse. After the parents left, it immediately quietened down and the other chick piped up with the louder call.

Experiments with larger broods showed that, contrary to some other bird species, the more chicks in the nest, the lower the noise level. The researchers suggest this is because each owl chick uses the intensity and frequency of its siblings' calls to assess their willingness to compete for the next meal. If the other chicks' needs are greater than its own, rather than calling for hours on end, the chick

shuts up and waits for the next round of negotiations. In this way it saves energy and possible injury from ravenous siblings. With fewer chicks in the nest, the probability of getting the next meal increases, as does their willingness to compete for it and the overall noise level of the brood.

Previous research has shown that owl parents continue feeding their chicks at a steady rate, whether or not the chicks are already satiated. Therefore, it may be that these wise young owls can afford the luxury of kicking back, in the knowledge that they will eventually get dinner from their hard-working parents.

—A.T.

Lovers or Fighters?

The Argentine Ant (*Linepithema humile*) behaves almost as if it's a different species when away from home.

In its native range, it lives in single-nest colonies that it aggressively defends against other members of its own species. This seems to self-limit population size and, as a result, the Argentine Ant manages to coexist with a wide range of other native ant species.

However, in California and other places where it has been introduced, it lives in large 'supercolonies' in which individuals from different nests mix freely with each other. As this lifestyle helps it outcompete and dominate local ant species, the Argentine Ant has become a serious pest.

According to recent research by Neil Tsutsui (University of California at San Diego) and colleagues, different levels of genetic variability could determine whether Argentine Ants are lovers or fighters. In the ant's native home, where aggression between nests is high, the researchers found comparatively high levels of genetic variability. In the introduced populations, where different ant nests cooperated rather than fought, the ants were more genetically similar. The ants use genetic similarity to assess whether other ants are friends or foe. Thus in their introduced range, genetically similar Argentine Ants act as one big happy family. This is one of the few known examples in which reduced genetic variability can lead to ecological success.

With aggression towards members of their own kind seemingly operating as a check on population size, the findings suggest that increasing the genetic variability in introduced populations could offer an effective form of biological control for Argentine Ants.

—K.McG.

The Shroud of *Nephila*

In New Zealand's Canterbury Museum there is an artefact from the New Hebrides (Vanuatu) that resembles a flaccid, wool-coloured dunce's hat, just under a metre long. The label, written in the early 1900s, describes it as a "spider-web cap" that was used for smothering adulterous women. The cap was made by passing a cone-shaped piece of wood backwards and forwards through numerous spider webs until it was covered with a thick felted mass of silk. The wooden cone was then withdrawn so the conical cap could accommodate a human head. However, it seems that the anthropologist who wrote the label literally had the spider-web cap pulled over his eyes. Rather than being used to procure death, these caps were used to mourn death in funerary rituals (as they still are today). Kirk Huffman (Honorary Curator of the Vanuatu Cultural Centre) believes the mistake was made by the white collector incorrectly interpreting the gestures and pidgin English of the local people. However, the unwitting providers of the raw material for these caps do have some smothering tricks of their own.

The webs are spun by golden orb-weaving spiders (*Nephila* spp.), probably the Giant Wood Spider (*N. pilipes*) or the smaller *N. plumipes*. *Nephila* are enormous spiders and common throughout the tropics. Females of some species can have a body seven centimetres long and a leg span up to 20 centimetres. Compared to

The 'spider-web cap' held in the Canterbury Museum, New Zealand, was used in funerary rituals such as this one photographed on Malakula Island, Vanuatu, in 1997.

SIMON POLLARD