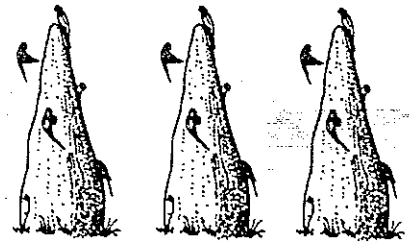


ANTBED

Issue 5

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An occasional newsletter about the Golden-shouldered Parrot produced by Stephen Garnett and Gabriel Crowley.

This newsletter is for the many people who have shown an interest in the research on the Golden-shouldered Parrot since it began in August 1992. The work is being conducted with funding from the Queensland Department of Environment and Heritage, the World Wide Fund for Nature (Australia) and the Australian Nature Conservation Agency.

Where do all the young birds go?

Since the end of last breeding season our work has concentrated on finding banded nestlings. We have been trying to discover how far they move and where to, and how many survive. This is by no means easy. To start with, during the dry season the parrots can only be found in the early morning or late afternoon when they are feeding or drinking. Between about 8 am and 5 pm the birds are sitting up in trees so sound asleep that you can walk beneath them without them making a sound. We once took 40 New Zealand bird watchers within 20 metres of roosting birds. The birds never flinched.

Finding the birds is easy, however, compared with seeing their colour-banded legs. We mark the birds on one leg with a numbered metal band from the Australian Bird and Bat Banding Scheme (stainless steel so they cannot crush them with their bills) and a plastic colour band on the other. Most birds have legs long enough for at least two big colour bands but the parrot's legs are so short there is room for only one, bi-coloured band. These the parrots prefer to sit on. If they show a leg at all, it is invariably the one with the metal band, just to show they are banded, but without revealing who they are. Our record for watching a banded parrot before it revealed its identity is 92 minutes. Worst of all are the parrots which have managed to remove their colour band. On a

few occasions we have read the number on the metal band, using the telescope on maximum power at its closest range, but it takes great patience on both our part and that of the parrot.

Which could all serve as an excuse for not finding out as much as we had hoped. Nevertheless we have some excellent records of young birds moving up to 20 km. The first major movement is the dispersal of young males in the dry season. They are more likely to join distant flocks; the females largely stay at home. Interestingly many of the young females paired up with males that were at least a year older than them. Given that there are many more males than females in the flocks, females appear to be at a premium. This

fits in with our observation that several females died or disappeared from nests. We now consider the loss of breeding females one of the major threats to the species.

At the end of the dry season there was a second movement, one we hope to unravel this breeding season. One week we were able to locate half a dozen flocks, each of 20-30 birds; the next week all the flocks had gone. Some birds we found in a large area that had been burnt after the wet season had begun, as happened last year early in the wet. The vast majority, however, have been missing now for two months. We hope we shall find some of them breeding but think it more likely that most of them, unable to find suitable habitat and inexperienced at finding and eating the foods that are available in the wet, have perished.



Update

This is our penultimate issue of *Antbed*, and a short one because we are busy analysing our results. A summary of all our results will be presented in *Antbed 6*. Much hinges on the results from the current breeding season in which we are concentrating on identifying nest predators.

The search for the golden genes

Genetic studies of birds are useful at three levels. First you can look at differences between individuals — so called genetic fingerprinting which allows you to see who's related to whom and whether the parrot in a cage this week is the same bird as last week. At another level you can look at genetic variation between populations. This can show whether populations are mixing or isolated, which makes a big difference in managing them. Finally you can look at the genetics of similar species, to see how closely they are related, and whether apparently pure-bred stock are in fact hybridised. For this project Les Christidis of the National Museum of Victoria is looking at all three aspects of Golden-shouldered Parrot genetics, where possible using tissue he has extracted from feathers so the birds aren't stressed by having their blood taken.

His first results have been in the last area, differences between species. They have answered a question we are often asked — how closely related are Golden-shouldered Parrots to the more common Hooded Parrot of the Northern Territory. The answer is not very. Les compared the cytochrome B section of DNA in wild caught specimens of both species as well as a captive Golden-shouldered Parrot held by a Victorian breeder. The captive and wild Golden-shoulders were identical, but there was a 6% difference from the wild Hooded Parrot. To put that in context, Ground Parrots and Night Parrots show only a 4% difference.

There are two implications from these results. First it means that by saving the Golden-shouldered Parrot we are saving something quite different, not some regional variant. Secondly it is now possible to tell how many real Golden-shoulders are in captivity, and whether the fear that many are hybridised is warranted. At present the cost of the test in time and equipment is about \$200 per bird but Les hopes to develop a procedure that will halve that.

Paradise relost

Soon after we began the project we were sent a photograph of a Golden-shouldered Parrot with a difference — all the gold had been replaced by the rich crimson of a male Paradise Parrot. 'This caused a stir at the local bird show' was inscribed on the back. You bet it did! And so it did among the many visitors to whom we showed the photo. What a stunning form! Could this be what Gilbert saw along the Mitchell, when he said he saw Paradise Parrots. Could this be what the Coen policeman described to Alec Chisholm in the 1920s? We replied immediately. Was the bird still alive? Could we conduct genetic tests?...



Cockatoo Grass

The wet season food plant most widely distributed through the Golden-shouldered Parrot's habitat is Cockatoo Grass *Alloteropsis semialata*. It is among the first grasses to set seed, taking about six weeks from the first heavy fall of rain. Given its importance we have been studying how grazing and fire affects seed production, continuing work begun last year.

The results show two things. First that heavy grazing effectively prevents seed production in cockatoo grass. It also reduces the vigour of individual plants and can even kill a small percentage each year. If spelled from grazing, however, the plants can recover and moderate grazing pressure has little impact.

Secondly, Cockatoo Grass burnt in the early wet season produced as much as ten times the seed of unburnt plants. We had some indication of this last year but more rigorous testing this year has emphasised the degree of the effect. There are several factors which contribute to this difference. First, fires produce a flush of nutrients which can be rapidly taken up by this early seeding grass. By contrast, native sorghum appears to take two years to recover sufficiently after fire to set seed, by which time it is beginning to crowd out the cockatoo grass. Secondly, as flowering is initiated by the first major rains, flowering plants may suffer from repeated dehydration before the wet-proper set in. The delay caused by fire means that the plants are more

likely to be well-watered during flowering and seed set. Finally, as the time it takes for plants to receive enough rain to produce a flowering stem varies from clump to clump, a fire synchronizes flowering, and thus improves pollination and seed set. Thus storm-burnt plants have both more flowering stems per clump and more seeds per flowering stem. But, perhaps more important, by staggering seed availability through having sites with a range of fire histories, the parrots can feed on cockatoo grass for a longer period and begin breeding before later seeding grasses, such as native sorghum, become available.

Erratum

In *Antbed* 4 there was a typographical error in the paragraph explaining what must happen before an egg can be fertile. It was wrong to state that the male 'hopped abroad'. Realizing we were referring to the problems of smuggling and not smuggling, one reader questioned whether the verb should have been 'humped'.