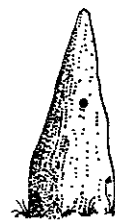
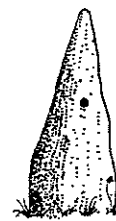
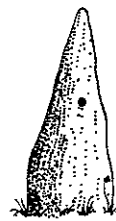


ANTBED



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

Introducing the newsletter

The Golden-shouldered Parrot, or Antbed Parrot as it is known to people on Cape York Peninsula, is a rare animal. To find out why it is so uncommon, and possibly declining, we began a three year study in August 1992 for the Queensland Department of Environment and Heritage with support from the World Wide Fund for Nature (Australia). In the six months we have been working much interest has been shown in the work, and many people have given help and hospitality. This newsletter is to let people know how the project is progressing. In this first issue we shall also give a potted history of what has been written about the bird in the past.

Scope of our study

Our work will concentrate on three main areas of the parrot's biology - distribution, feeding ecology and breeding biology.

Finding parrots

When we first started the project we thought that, once we had developed techniques for finding the birds, we would be able to find them in all their former haunts. We are now a good deal less cocky. Despite many hours at waterholes and innumerable kilometres of travelling through likely habitat, mostly on foot (we've had 12 punctured tyres so far), we have found the birds only in places we have learnt about through local knowledge. We have visited four populations containing between 30 and 100 birds each in the dry season, which is the equivalent of 5 to 16 pairs. There are plausible reports of one other population and more vague rumours of four or five others. At one stage we thought we had several other sites but we now feel that the holes were almost certainly made by irritatingly energetic Red-backed Kingfishers (the holes, although in magnetic termite mounds, are a different size and shape to those of parrots). We shall be doing a lot more looking over the next few years, and have appealed to other bird watchers travelling on the Cape to help us. It now seems unlikely that the wild population exceeds 1000 individuals after the breeding season, or about 150 breeding pairs.

Breeding biology

Much is already known of the breeding biology of the Golden-shouldered Parrot thanks to the work of Mark Weaver and the observations of the Shephard family on Artemis and their many visitors who come to see the parrots. From what we can gather breeding seems unlikely to hold any problems for the birds. They usually lay five or six eggs, sometimes

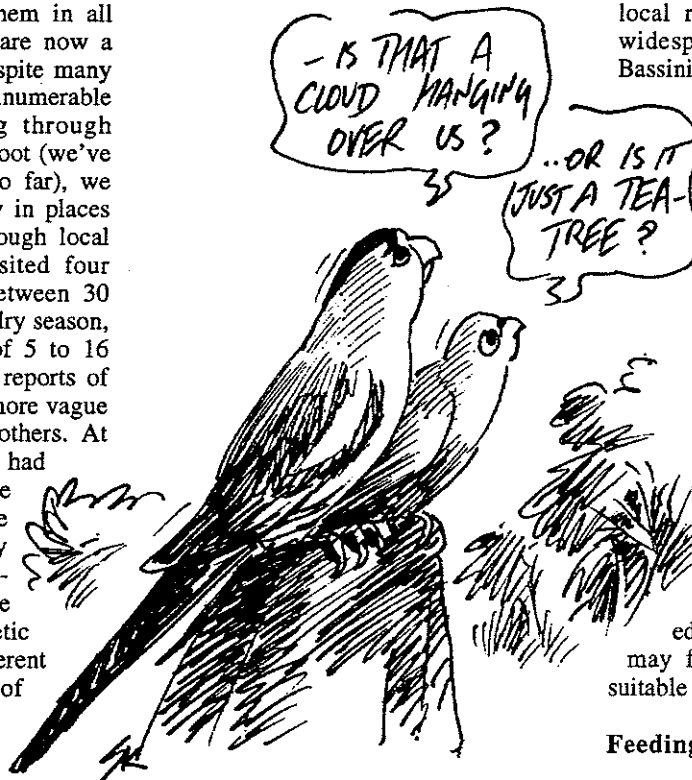
termite mounds and suitable habitat, the birds preferring mounds on the edges of poorly drained grassy flats. Our contention that nesting is usually successful, however, needs to be tested and that is what we shall be doing this coming season, trying to find all the nests in an area and seeing how many young are produced.

If there is a threat to the habitat it would seem to be from invasion of the grassy flats by tea-trees. Talking to local residents this seems to be a widespread phenomenon. Sunlight Bassini, whom we talked to in Coen,

remembers the Old Silver Plains area as being almost treeless and Cape York botanist Peter Stanton and the head ranger at Lakefield National Park, Ron Teece, have, over the last 20 years, seen Nifold Plain almost disappear beneath invading tea-tree. The same thing seems to be happening on the smaller grassy flats inland and we are doing some experiments to see what happens to tea-trees under different burning and grazing regimes. If trees invade the flats the mounds will no longer be at the edges of flats and so the parrots may find it hard to find mounds suitable for nesting.

Feeding ecology

We feel that discovering what the parrots feed on at different times of year is the key to understanding their rarity. So far our observations suggest that food is not a problem during the dry season. (continued on page 2)



even seven. Many of the nests seem to be successful judging from the proportion of young birds to adult males in the groups we saw in the dry season. There would also appear to be plenty of suitable

A brief history of Golden-shouldered Parrot research

The story of research on the Golden-shouldered Parrot has involved some of Australia's most famous ornithologists. The history falls into five different phases, each about 50 years apart.

Bauer's painting

Ferdinand Bauer, illustrator on Matthew Flinders' 1801 voyage round Australia in the *Investigator*, may have been the first European to see a Golden-shouldered Parrot. He painted a bird 'collected in northern Australia' which tantalised the famous ornithologist John Gould until he saw the first Golden-shouldered Parrot specimens. We hope to see the painting to discover whether it is indeed our parrot, and whether we can work out a more precise collecting locality.

Gilbert's Paradise Parrots

In June 1845, just a few days before his death, John Gilbert recorded what he thought were Paradise Parrots 'in great numbers' on the lower Mitchell River. He was travelling with Ludwig Leichardt and earlier in the expedition had collected Paradise Parrots for his patron John Gould. However the Paradise Parrot, a close relative of the Golden-shouldered Parrot, has otherwise been recorded only in south-east Queensland and north-east New South Wales (and is now officially extinct). Gilbert, whose binoculars were woeful, is far more likely to have seen Golden-shouldered Parrots.

The first specimens

Ten years after Gilbert, the Gregory brothers travelled through the Gulf country accompanied by a young doctor, John Elsey. After several days of dry travelling, the party finally encountered a waterhole about halfway between Normanton and Croydon. Here Elsey collected three specimens of what was to become known as the Golden-shouldered Parrot, which he sent to Gould. We looked for the place in late November (a search made difficult because there is some discrepancy between the Gregorys' account of the day and Elsey's). What we found looked nothing like parrot habitat elsewhere on the Cape - very few termite mounds or open flats. Nor did local landholders know the bird. Yet, almost certainly, the birds were breeding in the area 120 years ago. We are currently hoping to get some feathers from Elsey's stuffed specimens to see if his population differed genetically from those occurring further north.

William McLennan and Donald Thomson

Much of what is written about Golden-shouldered Parrots is based on the observations of two remarkably observant men who studied them over 60 years ago. William McLennan was a brilliant field worker who was sent to the Cape by various wealthy egg-collectors

from down south. On 14th April 1915 he collected the first Golden-shouldered Parrot recorded since 1855, a male that flew off the coastal plain into mangroves on the Watson River near Aurukun. Given the date, the species was probably nesting in the area. Only in 1922, however, did McLennan actually find the nest, at a site north of Coen. We shall be reading McLennan's diaries again but, as far as we can make out, his nest was at the site currently occupied by Coen Airstrip. Later in the same year he found numerous nests on Silver Plains. At neither site has the bird been recorded since the 1920s. Irene Taylor from the guesthouse in Coen remembers seeing them on Silver Plains when, as a young girl, she went through the area to catch the boat to boarding school. When we visited her she produced a photograph of McLennan on his return to Coen in the 1930s. According to Irene the Taipan, first collected by McLennan, was for many years known locally as the McLennan Brown Snake.

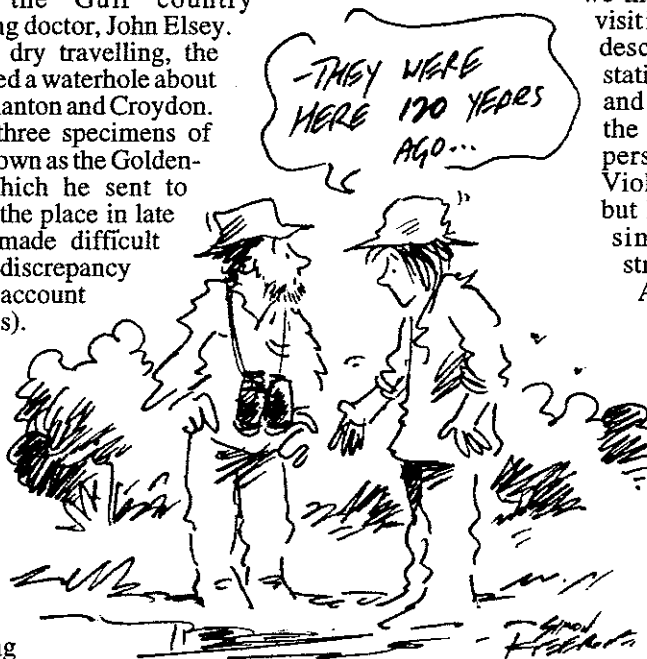
Donald Thomson was also on the Cape in the 1920s, travelling across it several times with packhorses. His widow Dorita kindly sent us copies of his diaries from the expeditions. These included an account of a visit to Violetvale specifically to see Golden-shouldered Parrots. He must have been a memorable

character because Ann Colman, whom we met in Coen, clearly recalls his visit in 1929. In his diaries, Thomson describes walking out from the station on the afternoon he arrived and finding numerous nests among the termite mounds. The birds persisted in good numbers on Violetvale until the early 1970s but have not been recorded there since, even though their stronghold is just next door on Artemis Station. We spent a week trudging up and down Violetvale flats. There was plenty of likely habitat but no sign of the birds at all.

Mark Weaver's searches in the 1970s

National Parks ranger Mark Weaver studied the birds most recently, conducting a survey of many of their known haunts in the late 1970s. He found them only in the

Musgrave area, though there were rumours from elsewhere. He also studied their nesting behaviour. Round Musgrave the parrots nest in two types of termite mound, conical mounds made by a termite called *Amitermes scopulus* and magnetic mounds made by *Amitermes laurensis*. Mark was able to show that the parrots preferred the conical mounds. He also showed that the nest chambers in conical mounds stay warmer at night and cooler during the day than those in magnetic mounds.



The birds only have to feed for a few hours each day and, at least between August and November, they appear to be eating the seeds of one of the commonest grasses around, fire grass or red grass, a sort of *Schizachyrium*. In the breeding season, too, we think there must be ample food because the birds commonly raise four or five chicks. If nests do fail, it doesn't seem to be because of starvation.

The wet season, however, is likely to be a hungry time for them. Their dry season supply of fallen seed germinates, and it is some time before new seed is produced. They are hard enough to find in the dry season when we know what they are feeding on, we would only be guessing what they'd be up to in the wet. So this wet we went to the Northern Territory to see what their closest living relative, the Hooded Parrot, does at this time of

year. The Territory's wet season had started earlier than the wet on the Cape so when we arrived most fallen seed had already been transformed into two inch high plants and the perennial grasses were almost seeding. Even so, before the new seed came on, the parrots were spending long hours laboriously extracting seeds from the fruit of a weedy, and possibly poisonous, shrub called *Phyllanthus minutiflorus*. Toxins may make this shrub undesirable because, as soon as the first perennial grass seed became available, the *Phyllanthus* was abandoned. There also appeared to be a real knack to feeding on *Phyllanthus* - it looked like trying to bite an apple on a string. Young parrots that failed to learn the technique would go hungry.

Sometimes there may also be an absolute shortage of food. The first two perennial species the Hooded

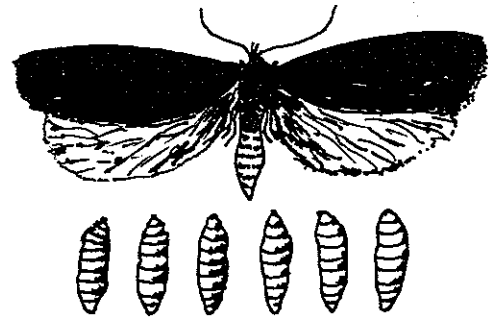
Parrots feed on are Cockatoo Grass *Alloteropsis semialata* and Golden Beard Grass *Chrysopogon fallax*. Both these grasses are important pasture species right across northern Australia and, in the Kimberley at least, the Cockatoo Grass disappears when there is over-grazing. The loss of either of these species would mean a longer lean time for Hooded Parrots. We don't yet know if the Golden-shouldered Parrot is equally dependant on them, but it seems likely. Any reduction in food availability early in the wet season could make a big difference to survival. At other times of year there would need to be a massive drop in seed availability to have the same effect. We shall be looking at the parrots' diet all this year but will be making an extra effort at the start of next wet season, putting radiotransmitters on some birds (if we can catch them) so we can find them more easily.

Golden-shouldered Parrots in Captivity

There are thought to be several thousand Golden-shouldered Parrots in captivity but the exact number is unknown. This is because many of the captive birds are in fact hybrids with Hooded Parrots from the Northern Territory. These birds look similar but, as we have discovered on a recent trip to the Territory, live in a completely different habitat. They are crossed with Golden-shouldered because both Hoodeds and the hybrids are easier to breed in captivity than pure Golden-shouldered.

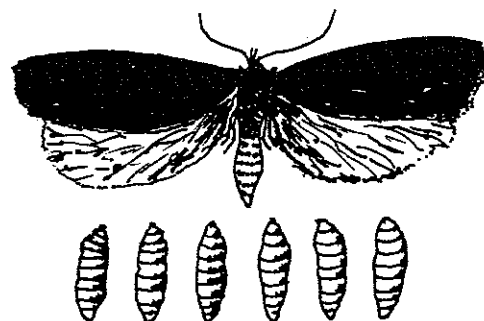
Even in the 1920s, when McLennan and Thomson were on the Cape, many young Golden-shouldered were being kept by station owners. The first breeding, however, is credited to Sir Edward Hallstrom at Taronga Park Zoo in Sydney in the 1950s. During the 1960s and early 1970s there was a high demand for the species as a cagebird and one particularly voracious collector took dozens, and possibly hundreds, of birds from Violetvale and surrounding stations. Demand seems to have dropped since then as captive bred stock has become available. Certainly the price has come down but some illegal trapping may continue.

We are currently seeking the assistance of people keeping Golden-shouldered Parrots in captivity to help with studies on feeding. We want to know how much seed a parrot can consume, how well it is digested and whether the husk of a seed is handled in a distinctive manner. We also want to know what density of grass the parrots like to feed in - we suspect that, if the grass is too dense, the parrots cannot find fallen seed.



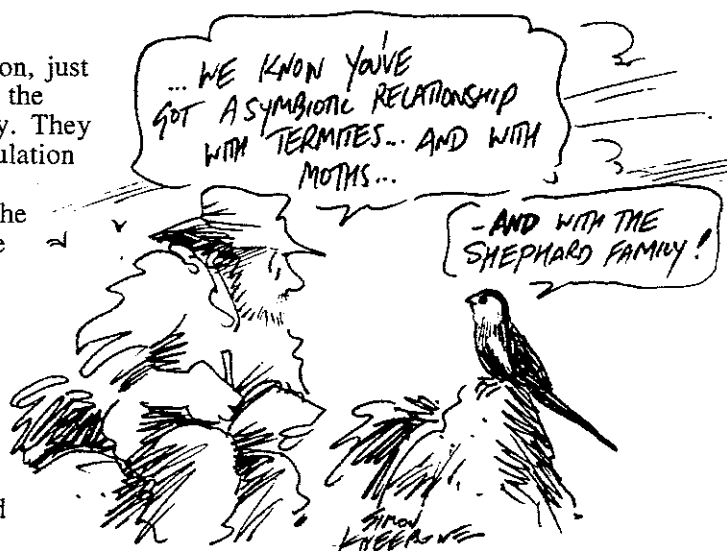
The Parrot and the Moth

One of the most remarkable features of the parrot's biology is its relationship with a moth, called *Trisyntopa scatophaga*. With remarkable skill this moth finds the parrots' eggs just after they have been laid and lays its own eggs. When the parrots' eggs hatch so do those of the moth. Then the young moth larvae feed on the dung and moulted feathers of the nestling parrots, keeping the nest beautifully clean. Finally, when the parrots fledge, the moths pupate at the nest entrance. So far we have seen only the pupae, but once we know the moth we may be able to use its presence in moth traps to tell whether the parrots are in an area.



Artemis Station

The base for our study is Artemis Station, just south of Musgrave, which is owned by the exceedingly hospitable Shephard family. They not only have the largest nesting population that we know of but have been kind enough to let us establish a donga at the back of their place from which we have ready access to the birds (and all mod cons). We have no idea why the birds have survived on Artemis but have disappeared from neighbouring Violetvale but are working on the assumption that the Shephards must have done something right. Interestingly the parrots disappeared from Violetvale only after the Shephard family stopped managing the area.



Threats

Many reasons have been given for the decline in the Golden-shouldered Parrot. Despite the conclusive tone adopted by some books, none of them have been tested. These are the reasons cited most commonly, and what we are doing to test them:

Poaching for the bird trade: we shall be following the fate of all the nests we can find at several sites. We may also mark chicks using tiny digitised transponders. These can be detected with special instruments by fauna authorities and are very difficult to remove.

Cattle grazing: one population occurs in an area with few cattle, others are on cattle properties. When we discover the main foods the birds eat we shall see how they are affected by cattle grazing. We shall also be following up the local wisdom that cattle grazing promotes tea tree invasions.

Change in burning patterns: a particularly vigorous late dry season fire that burnt most of Artemis last year set up a natural experiment for us. We shall be looking at food availability, nesting success and other patterns in burnt and unburnt areas. No doubt there will be more fires to study this year.

Cats and other predators: Most people are concerned about what cats might do to the birds. But cats feed at night when the parrots are roosting in trees. Nevertheless we have begun collecting dead cats to see what they have eaten. Three we have looked at so far have contained a snake, geckoes, frogs and some small wading birds. We shall be attempting to discover all the major predators of nests.

Cattle knocking over termite mounds: we are following the fate of several hundred termite mounds.

Ultimate Objectives

The primary objective is to discover why the Golden-shouldered Parrot is so rare and to ensure it persists in the wild. The final outcome will depend on what we find to be the major threats. The most likely result will be recommendations on land management which will be worked out with land managers as we go along. In later issues we shall probably float ideas to which people can respond.

Support

The project employs one person (we divide the work between us) but its success so far is thanks to a far larger cast. We shall not attempt to list them all in this issue but it would be remiss of us not to express our appreciation at the very start to Sue, Tom and the Shephard family at Artemis and to Daryn Storch and Buzz Symonds of the Queensland National Parks and Wildlife Service.

Contact Anyone with information about the Golden-shouldered Parrot, who would like to help with the work or who would be interested in learning more about the species should contact Stephen Garnett and Gabriel Crowley, Queensland National Parks and Wildlife Service, P.O.Box 2066, Cairns, Queensland 4870.