this species that despite habitat changes it is not totally excluded from such areas. That birds were found dead around habitation, possibly because of collisions with buildings or automobiles (based on post-mortem examination), suggests, however, that such an association is not entirely beneficial.

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Tool Use by the Palm Cockatoo *Probosciger aterrimus* During Display

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The Palm Cockatoo *Probosciger aterrimus* is distributed through the rainforests of northern Cape York Peninsula, Queensland, Aru Islands and New Guinea (Foreshaw, 1969).

The following observations were made at Iron Range, north-eastern Cape York Peninsula during a six month period between March and August 1983. At three localities in the Iron Range area, Palm Cockatoos were found displaying atop dead eucalypt trunks; in all cases these trunks were hollow, near vertical, had been broken off and stood 10 to 15 m tall. Two were at the edge of rainforest and one within one kilometre of it. Two of the localities were observed regularly and each appeared to be within the territory of a pair of cockatoos. Maximum activity at these display sites took place early in the morning and late in the afternoon, chiefly in June and July but also at other times of the year.

My curiosity was first aroused by loud tapping sounds coming from the forest. Subsequent investigation revealed the source; I was camped not more than 60 m from one of these display sites. As I had been occupying this campsite continuously for 14 weeks (since the beginning of March), activity at this display site did not commence until early June. Activity increased through June, then tailed off through July.

Observations

Early one morning I awoke to the sound of loud knocking coming from the display site near my camp. On investigation I found a Palm

Cockatoo pirouetting around the top of the display tree trunk, wings outstretched, beating the trunk with an object in its left foot, as it turned. This display continued for a minute or more and was followed by head rolling and erection of the crest. During this performance the other member of the pair had been perched at a vantage point nearby. This bird then flew down to the trunk top and was stroked on the neck by the performer, using its head. On several subsequent occasions this display was again observed but no object was used to beat the trunk, only a closed foot and no neck stroking occurred. The volume of noise produced by the closed foot in no way compared with that produced with an object.

Early one morning while moving along the edge of the rainforest at another locality, a loud tapping was again heard. I approached to within five metres of the display trunk before being noticed by the sentry who raised the alarm and both birds departed. Before being noticed I observed the drumming of the trunk. In this instance, the bird used part of a branch about 12 cm long. That it had been part of a living branch was evidenced by the fresh colour of the wood exposed at either end and where strips of bark had been peeled away. Upon departing, the stick was dropped and bounced loudly down the interior of the trunk, unfortunately beyond retrieval.

On a later occasion I was observing a display involving closed foot drumming when the performer departed to a nearby tree. Here a branch about two centimetres thick was bitten off and the foliage end removed, leaving a length of about 10 cm. This was taken back to the display trunk and some time was spent in modification. During this period the ends of the timber were further chewed, with pieces of bark being removed. Drumming of the trunk was terminated when the performer was disturbed and departed.

The third locality at which drumming was heard was in open woodland within one kilometre of the rainforest. At this site the drumming was clearly discernable at over 100 m.

Forshaw (1969) has previously noted a female bird using its bill to pound on hollow trees but the use of a tool has not previously been reported.

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Co-operative Hunting by Pied Currawongs *Strepera graculina*

M. G. O'NEILL and R. J. TAYLOR

Many hypotheses have been proposed to account for the adaptive value of flocking in non-breeding birds. There are numerous ways in which an individual may benefit from flocking (e.g. see Morse 1970). One advantage of flocking may be that a group of individuals can exploit certain prey items more efficiently or can capture prey not available to an individual hunting alone (Bartholomew 1942).

Chance observations of Pied Currawongs *Strepera graculina* (made by M. O'Neill) indicate that co-operative hunting could be one of the benefits derived from flocking for this species.