

FOOD-HOLDING BEHAVIOUR IN SOME AUSTRALIAN PARROTS

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A number of authors have discussed the tendency of some birds, especially parrots, to hold food in their left foot (Noske 1985, Rogers 1980, Friedmann and Davis 1938). Some authors have referred to the extreme development of this habit, sometimes called handedness, in the Glossy Black-Cockatoo *Calyptorhynchus lathami* (Hyem 1933, Forshaw 1981, Joseph 1982a); other workers have found that some individuals of a species tend to hold food more often in the left foot, while other individuals favour the right foot (see Baptista 1976 for grassquit finches *Tiaris* spp. and McNeil *et al.* 1971 for the Brown-throated Parakeet *Aratinga pertinax*). In this article, I present further observations that indicate the consistency with which Glossy Black-Cockatoos hold food in the left foot, present and review some observations of food-holding behaviour in other Australian parrots, and suggest some areas warranting further study.

OBSERVATIONS

Glossy Black-Cockatoo *Calyptorhynchus lathami*

On Kangaroo Island in 1979, 1980, 1982 and 1987 I observed varying numbers of these cockatoos feeding on the cones of Drooping Sheoak *Allocasuarina verticillata*, and on every occasion the birds held food in the left foot. My observations of birds feeding totalled approximately 45 hours. I observed individuals of the mainland populations holding food in the left foot once in the Pilliga Scrub (at least one bird, November 1980), once west of Dubbo (three birds, July 1982) and once, north-west of Dorrigo (two birds, January 1988). I have never observed individuals of this species holding food in the right foot.

Other Australian Parrots

On all but two of the approximately 50 occasions in 1980, 1988 and 1989 that I observed feeding by varying numbers of the south-eastern Australian population of the Red-tailed Black-Cockatoo *C. magnificus* (Joseph 1982b and unpubl.), only the left foot was used for holding food. These birds feed in trees and use a specialized technique (described in Joseph 1982b). In a flock of Red-tailed Black-Cockatoos that I observed feeding on the ground on the western outskirts of Alice Springs, Northern Territory, in June 1984, some held food in the left foot and some used the right. I have also observed Yellow-tailed Black Cockatoos *C. funereus* (three times) and Palm Cockatoos *Probosciger aterrimus* (once) feeding in trees and holding food in the left foot. Rogers (1980) reported that Yellow-tailed Black Cockatoos held food in the left foot in all of seven observations. Prendergast (1985) and Rogers (1980) reported Gang-Gang Cockatoos *Callocephalon fimbriatum* holding food in the left foot in all of 114 and 38 feeding observations, respectively. Rogers (1980) presented further observations for seven other Australian parrots: all but one held food significantly more often in the left foot, and two, the Pink Cockatoo *Cacatua leadbeateri* and the Yellow Rosella *Platycercus elegans flaveolus* used only the left foot. The exception was the Crimson Rosella *P. e. elegans*, which held food significantly more often in the right foot.

DISCUSSION

The observations presented strongly suggest that the Glossy Black-Cockatoo, the Gang-Gang Cockatoo and, less consistently, the south-eastern Australian population of the Red-tailed Black

Cockatoo hold food only in the left foot. It may be worth noting that all three feed in trees and rarely, if ever, descend to the ground other than to drink. However, data are at present insufficient to determine whether this reflects a broader and perhaps ecologically significant correlation. A hypothesis is, however, suggested: that exclusive use of the left or right foot for holding food will be found most commonly in species or populations that feed either while perched, or by employing specialized feeding techniques, or both. I suggest that the various populations of the Red-tailed Black-Cockatoo will provide an opportunity for initial testing of this hypothesis within a species. This species has populations that are either terrestrially feeding diet specialists, arboreally feeding diet specialists, or arboreally and terrestrially feeding diet generalists (Saunders *et al.* 1985, Joseph 1982b, Forshaw 1981).

There is much potential for further study of this curious subject. Concerning individual variation, McNeil *et al.* (1971) reported that individuals of the Brown-throated Parakeet that held food significantly more often in the left foot had longer left than right legs (summed lengths of femur, tibiotarsus and tarsometatarsus); individuals that held food significantly more often in the right foot exhibited the opposite tendency. It would be of interest to measure left and right leg lengths in species such as the Glossy Black-Cockatoo and Gang-Gang Cockatoo, which hold food consistently in the left foot, and in other species that use both feet in which to hold food. Finally, there is much scope for further study of how much of this

aspect of feeding behaviour is learned and how much of it has an innate basis.

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