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# PREDATION EVENTS AT AN APOSTLEBIRD NEST

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Nest predation is a major cause of mortality in birds (Ricklefs 1969; Montgomerie and Weatherhead 1988; Poiani and Pagel 1997), but a rarely observed event. Consequently, in many species little is known about the identity of nest predators or the context in which predation occurs. Here we report successive partial predation events on a brood of Apostlebird *Struthidea cinerea* Corcoracidae nestlings by a Brown Goshawk *Accipiter fasciatus* and a Grey Butcherbird *Cracticus torquatus*.

The Apostlebird is a medium sized (33 cm, 130 g), territorial, co-operatively breeding passerine endemic to the semi-arid open woodlands of eastern Australia. Breeding groups normally comprise between 4 and 18 birds (Chapman 1998; pers. obs.). Group members assist with nest building, incubation and provisioning of young (Baldwin 1975; Chapman 1998; pers. obs.).

We studied a breeding population of Apostlebirds in south-central New South Wales (34°34'N, 145°45'E) near the town of Darlington Point. As part of our research, we routinely video-taped the nests of groups that were incubating eggs or provisioning chicks. On 19 October 1999, we monitored a nest belonging to a group of six adults that were provisioning four nestlings ranging in age from three to six days. The nest was about nine metres high in a Black Box *Eucalyptus largiflorens* located 50 metres from the edge of a large woodland floodplain. Just prior to the predation event, the nestlings were being brooded by one member of the group. At 1640 hours, the brooding bird abruptly left the nest as a juvenile Brown Goshawk approached. The goshawk alighted on the rim of the nest and immediately reached into it with its left talon, extracting three of the four chicks. It then flew off in the direction from which it had arrived. By the time it was about 20 metres from the nest, one Apostlebird was seen in pursuit. Other group members may also have joined in the chase, but this could not be confirmed because of the limited field of view of our video camera (~60° at 0.3 m). Interestingly, the chick that escaped this attack was the only one adopting a conspicuous, upright begging posture when the Goshawk arrived.

About 20 minutes after the Goshawk left, an adult Grey Butcherbird alighted on the nest rim. It looked around briefly before picking up the remaining nestling with its bill. It then scanned its surroundings again for several seconds before flying off with the nestling. During this event there was no evidence that any Apostlebirds defended the nest.

Twenty-three minutes after the Butcherbird departed, a single Apostlebird returned to the empty nest and immediately settled as if to brood. It stayed in attendance for 59 minutes, leaving a second before the Goshawk returned to the nest. On finding it empty, the Goshawk remained on or next to the nest for about four minutes before it left.

Both the Brown Goshawk and the Grey Butcherbird are known brood predators (Erickson 1951; Jasper 1963; Lepschi 1993; Marchant and Higgins 1993), and both were common in the open woodland of our study area.

The apparent failure of Apostlebirds to return to the nest between the raid by the Goshawk and the arrival of the Butcherbird may have been due to extended pursuit and harassment of the Goshawk by the entire group. On several occasions we observed groups of Apostlebirds mobbing potential predators, including Laughing Kookaburras *Dacelo novaeguineae*, Tawny Frogmouths *Podargus strigoides*, and a Fox *Vulpes vulpes*. Furthermore, as part of our experimental work, we presented breeding groups of Apostlebirds with a mounted Brown Goshawk within five metres of the nest tree. These trials frequently resulted in sustained swooping attacks by most or all members of the group, often involving repeated physical contact with the model. In each case, mobbing continued unabated for ten minutes, at which time the trial was terminated. It seems likely, therefore, that a group of Apostlebirds might sustain an attack against a live Goshawk carrying three of their young for upwards of 20 minutes.

Alternatively, adults may have been reluctant to return to the nest because of the risk of predation. Apostlebirds fall well within the size range of prey items taken by Brown Goshawks (Aumann 1988). Indeed, the adult brooding the nest at the time of the attack narrowly escaped being taken. However, this explanation would appear less likely given the subsequent return of an adult to settle in the empty nest.

Predation by the Grey Butcherbird was most likely opportunistic, with this individual taking advantage of the absence of the Apostlebird group. Grey and Pied Butcherbirds *C. nigrogularis* were often observed near attended Apostlebird nests but were never seen to be mobbed, suggesting that they were not usually perceived as a threat to the nest.

To our knowledge there have been no previous reports of predation on Apostlebird nests. We are further unaware of any reports of partial nest predation by Brown Goshawks in which the remainder of the quarry was taken by another species.

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