

A High Incidence of Bent Beaks in Nestling Pied Cormorants

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The Pied Cormorant *Phalacrocorax varius* colony situated in Lake Borrie within the Werribee Sewage Farm, 50 km south-west of Melbourne, is the only notable breeding colony of this species reported in Victoria and consists of about 500 nests per season. The nests are placed in dead *Melaleuca pubescens* in the lake and are built with sticks and vegetation gathered nearby. The parent birds do not feed on Werribee Farm but fly out to Port Phillip Bay: Table 1 lists food disgorged by nestlings.

During two banding expeditions (13 April 1990 and 13 May 1990) to Lake Borrie, five nestlings out of a total of 91 from 34 nests were observed to have bent beaks. The upper mandible was bent, usually at right angles to the lower mandible. The tip of the upper mandible was sometimes curled over the lower one which might also suffer a lesser degree of deformity. Darker or lighter colours appeared on both mandibles.

Nestlings with these bent bills showed no other signs of ill health compared with their siblings. They appeared able to take food from their parents without difficulty, but given the feeding methods of cormorants and the types of prey they pursue (Table 1) it is reasonable to assume that such a bent beak would prove to be a lethal deformity with the fledgling eventually starving to death.

Such malformed beaks are rare in birds. Norman (1966) reported an observation of a Silver Gull *Larus novaehollandiae*, with a deformed beak. M.H. Waterman (pers. comm.) reports seeing one example during a 15-year study of 89 000 cormorants (van Tets *et al.* 1976). Current studies of Australian Pelicans *Pelecanus conspicillatus* and Black-faced Shags *Leucocarbo fuscus* in South Australia by G.R. Johnston (pers. comm.) have revealed no deformities in over 1000 shag nests.

Beak deformities of varying kinds have been report-

Table 1 Fish disgorged by nestling Pied Cormorants at Lake Borrie.

Species	Age	Number of Fish
<i>Heteroclinus</i> sp.	Adult	1
<i>Sardinops neopilchardus</i>	Adult	2
<i>Sillaginodes punctata</i>	Juvenile	1
<i>Acanthogobius flavimanus</i>	Adult	24
Unidentifiable bodies		12

ed in domestic fowl (Hutt 1964) as a result of inbreeding. Anderson (1987) cites selenium, boron, mercury and arsenic as causing deformities in water birds in the United States, blaming agricultural run-off from irrigated farm land. At present it is not known what causes the bent beaks of Pied Cormorant nestlings at Lake Borrie.

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