

Notes on some Fish-eating Birds other than Cormorants

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During the course of the investigation into the feeding habits of Cormorants, already reported in *The Emu*, a few specimens of various other birds commonly regarded as subsisting on fishes, were sent to me. There were not a sufficient number of them to offer generalizations as to their feeding, as was possible with most of the Cormorant species, but it may be of interest to record the data obtained as a contribution to our knowledge of their dietary in this part of Australia.

AUSTRALIAN DARTER (*Anhinga novæ-hollandiæ*)

Nine birds, all of which were females, were examined. One was from the Canning River at Maddington, three from the Mandurah estuaries, and five from Leschenault Inlet, Bunbury. The average weight of these females was 4 lb. 1 oz., and they ranged from 3 lb. 11 oz. to 4 lb. 8½ oz. As the food contents were similar from all of them, and as they were all from the same kind of environment, the results may be set down in one table, on the lines of the Cormorant report:

<i>Food Species</i>	<i>Number of Birds in which it was Found</i>	<i>Highest Number in any One Bird</i>	<i>Total from All Birds</i>
Fishes—			
Yellow-eyed mullet (<i>Agonostomus forsteri</i> (C. and V.)) ..	6	5	13
Silver-fish (<i>Gerres ovatus</i> Gunth.)	2	5	6
Rock-whiting (<i>Neodax semifasciatus</i> (C. and V.)) . . .	1	3	3
Mullet (<i>Mugil</i> sp.)	1	1	1
King George whiting (<i>Sillaginoides punctatus</i> (C. and V.))	1	1	1
Estuary cobbler (<i>Cnidogobius macrocephalus</i> (C. and V.))	1	1	1
Total . . .			25

Comparison of this table with those for the Cormorants indicates that this bird is a much more expert fisher than the Cormorants and is able to obtain fishes too agile for them. Fishes found in the Darters' stomachs usually showed the puncture marks where they had been speared in capture. In some cases there were two holes close together, showing that the beak was slightly open when the

bird was making its dart at the fish. Most of the fishes caught are more or less actively moving ones, in contrast to the forms preyed on by the Cormorants.

Possibly this habit is correlated with the relative abundance of the bird in various parts of the South-west. It is not generally a common widespread bird as are the Cormorants, and Tom Carter in his wide experience declared the bird to be absent from the true South-west. It is, however, reasonably plentiful in the estuaries of the west coast, particularly in the Mandurah and Bunbury districts, and the absence of large indigenous fishes in the fresh-water streams no doubt explains its rarity inland. On the whole the species does not seem abundant enough to be regarded as a menace to the fisheries.

CRESTED TERN (*Sterna bergii*)

A male bird from the Swan River estuary, December 12, 1936, and weighing 13½ oz., contained four blue sprats (*Stolephorus robustus* Ogilby), between 2 and 2½ inches in length. A female obtained at the same time (weight 12½ oz.) was empty.

GREY HERON (*Notophoxyx novæ-hollandiæ*)

Three birds from the Collie River, at Collie, were received.

(a) January 24, 1937.—The stomach contained fragments of 2 fresh-water crayfish up to 3½ inches in length, perhaps a marron (*Chaeraps tenuimanus* Smith); 7 small fresh-water cobblers (*Tandanus tandanus* Mitch.), up to 1 inch in length; 7 small Percoid fishes too disintegrated to identify—they may have been pygmy perch (*Nannoperca vittata* (Castel.)) or the introduced English perch (*Perca fluviatilis* L.)—up to 1 inch in length; 3 grasshopper femora (at least two individuals, and perhaps picked up dead); 1 beetle wing (probably of a terrestrial family); 1 dragon-fly nymph; 1 small spider.

(b) April 4, 1937.—The stomach contained 1 jilgie (*Chaeraps quinquecarinatus*), 3½ inches in length; 1 fresh-water cobbler, 2 inches in length; 1 frog (*Hyla aurea*), 1½ inches in length; 1 grasshopper (*Acridida turrita*); legs and remains of another (*Chortoicetes* ?); head of an aquatic Homopteran (Corixid ?).

(c) April 10.—The stomach contained 4 jilgies, from 2 to 3 inches; 1 small Percoid fish, ¾ inch long; 1 dragon-fly adult (*Anax papuensis* ?); 1 dragon-fly larva; 2 grasshoppers (*Gastrimargus musicus*).

The insect remains were determined by Mr. C. F. H. Jenkins.

BLACK BITTERN (*Dupetor flavicollis*)

One specimen was received from Collie, having been shot on the Collie River on April 28, 1937, immediately

after it had pierced a small English perch (*Perca fluviatilis* L.), 4½ inches in length. The bird was sent to me in this condition, the fish having been run through by the upper beak. The stomach contained the remains of one small marron (*Chaeraps tenuimanus* Smith).

Ornithological Notes

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AVIAN PARASITES AND COMMENSALS

Mr. A. J. Elliott is to be congratulated on his notes in the July number of the current volume of *The Emu*, and especially so for the beautiful series of photographs. I was particularly interested in his brief note on *Passeromyia longicornis*. As records accumulate it is becoming apparent that the distribution of the bird-nest fly is fairly extensive. On September 19, 1937, I added another host to those already known. Whilst strolling over a ridge between Waterfall and National Park, I found a nest of the Heath-Wren (*Hylacola pyrrhopygia*) containing three young about eight days old. On examining a nestling I observed five fairly-developed larvæ on the abdominal surface. Returning a fortnight later, I secured the nest, eleven flies emerging from the lining in due course.

Recently, whilst turning up some earlier records on the parasite, I came across a note received from the late Dr. Eustace Ferguson, a prominent zoologist, specializing on Diptera. He was interested in the bird-nest fly, and, having supplied him with a series of specimens, he submitted them to Professor Bezzi, of Paris. He wrote, under date September 2, 1921: "I have recently received information from Europe as to the identity of the Bird-nest Fly. Professor Bezzi identified your specimen as *Passeromyia* (*Ornithomusca*) *longicornis* Macq. and hints there is some synonymy. *Ornithomusca* was formed by Townsend for *O. victoriæ* Towns. from the nest of *Pardalotus* sp. but he also includes *O. (Cyrtoneura) longicornis* Macq., and *O. (Cyrtoneura) analis* Macq., in the same genus. It may be that those names will not all hold."

Mr. K. A. Hindwood has treated the bird-nest fly rather exhaustively in *The Emu*, vol. xxx, part 2, page 131.

In his note on the Mulga Parrot, Mr. Elliott also remarks about "grubs." In the absence of specimens it would be mere conjecture, but I suggest that the "grubs" may have been those of a Dermestid beetle, and if "caterpillars" could quite easily have been those of a moth, but the inconclusive mention does not indicate the bird-nest fly. In vol. xxiii, page 325, of *The Emu*, the late A. J. Campbell gives some interesting notes on "an extraordinary moth living in the nests of the Golden-shouldered Parrot (*Psephotus chrysopterygius*)," discovered by Wm. McLennan.