

abdomen, being chestnut with buff shaft-streaks; under-tail coverts blackish with chestnut streaks.*

This species is apparently a giant development in north-western Australia (where the annual rainfall is at least 30 inches) of *A. purnelli*, belonging to the "textilis" group.

Effects of Droughts on Bird-Life in Central Queensland.

By H. G. BARNARD, R.A.O.U., Brisbane.

It is a well-known fact that many of our native birds are becoming very scarce, and some of them will soon be extinct. From observations extending over a number of years, I suggest that the chief causes are the disastrous droughts which have devastated the country from time to time, and the bush fires indirectly caused by droughts. But that drought and fires are not the only causes in the disappearance I will endeavour to show.

In the 'eighties the seasons were far more uniform than they have been of later years. At that time Central Queensland was naturally well watered by numerous creeks and large swamps; the water-holes in the creeks and many of the swamps were permanent and were the homes of hundreds of water-fowl and waders. The birds bred freely every season and this kept their numbers from decreasing. This applied to the land birds as well as water-fowl. Gradually the country became heavily stocked with cattle and sheep, and this soon began to show its effect on the natural waters. Continual trampling of the surface and keeping the grasses short caused soil to be washed into the creeks and swamps, which in time levelled up; and at the present day one could travel across hundreds of creeks and swamps where no water would be found after three months' dry weather. As a consequence, where once birds of all kinds were abundant, only few are now to be seen, because their food—fish and water-weeds for the water-fowl, and insects and grass seeds for the land birds—is gone. Many of our best seeding grasses have died out and only the coarser kinds remain.

Towards the end of the nineteenth century the seasons became worse and worse, culminating in the disastrous drought of 1901 and 1902. These years almost wiped the birds out of Central Queensland. Emus, Scrub-Turkeys, Pelicans, Bitterns, Kingfishers, Magpies, Coucals, Honeyeaters *et cetera*, either

* Mathews's plate shows a second figure, apparently specimen 4768. From the lack of boldness in the white striations and smaller size (192 mm.) it is a different sex or an immature bird.

disappeared altogether or were represented by only a few survivors, and it was not till many years after that some of these birds began to appear again. Even now (1927) they are not in anything like the numbers they were before 1901 and 1902. This is to be accounted for a good deal from the fact that since 1902 we have had further severe droughts.

A strange thing was that the Squatter Pigeon (*Geophaps scripta*), a seed-eating bird, lived through the drought, and bred very freely during 1903 and 1904. They then completely disappeared and have not reappeared. At the present time a few of them are known to exist on some of the coastal stations north of Rockhampton.

During the winters of 1904 and 1905 hundreds of domestic cats, gone wild, and the spotted native cats made their appearance, and to this cause I attribute the disappearance of the Pigeons. I continually came across Pigeons' feathers in the long grass and in hollow logs. With the disappearance of the Pigeons went the cats—whither?

It is not only the water-fowl and insect-eating birds that have become depleted in numbers, but among our beautiful Parrots (both honey- and seed-eating) the decrease is very marked. Years ago the Honey-Parrots were frequently seen in very large flocks, and the flowering trees were a babel of shrieks and whistles. Of late years the trees do not bloom during the whole season, thus depriving the birds of both honey and seed.

To a bushman, especially a nature-lover, it is a very sad thing to wake in the early morning beside his camp-fire and listen for the early morning chorus of his feathered friends and to be rewarded only by a few feeble notes. The bush will indeed become a lonely and mournful place if our birds continue to decrease.

Subjoined is a list of birds, specimens of which I have seen dead from starvation during drought time:

Dromaius novæ-hollandiæ, Emu.—In the great drought of 1902, many of these fine birds died. A few were seen dead on Rio station, Dawson River, in 1922 and 1926.

Alectura lathamii, Brush-Turkey.—Seen dead on Coomooboolaroo station in 1902. During the drought of 1922 the birds were so poor and weak that they could not fly and could be run down on foot.

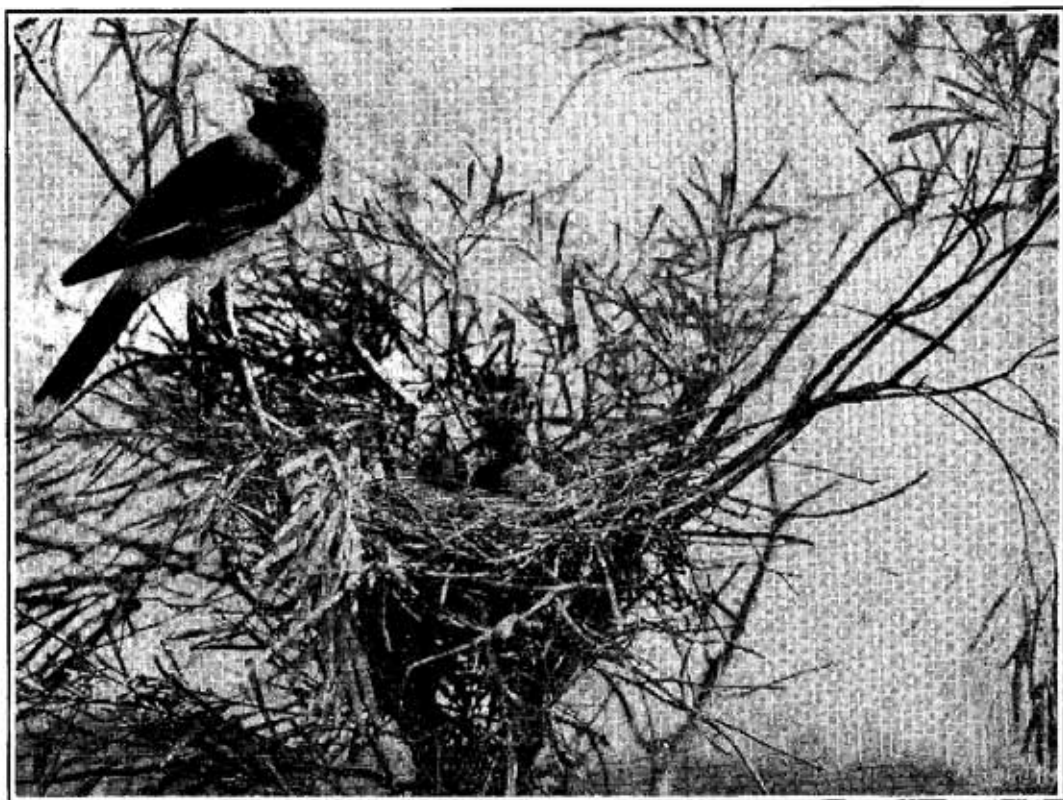
Pelecanus conspicillatus, Australian Pelican.—In dry, cold winters these birds often died about lagoons. In the cold dry winter of 1922 many Pelicans died on a lagoon at Rio station. Evidently fish were very scarce and the birds remained about the lagoon till they became too weak to seek other waters. They were only bone and feathers. So hard pushed were they for food that they would walk from the lagoon to get scraps of meat thrown to the fowls.

Gymnorhina tibicen, Black-backed Magpie.—Seen dead in numbers on Coomooboolaroo in 1902; also on Rio in the winter of 1922.

Dacelo gigas, Laughing Kookaburra.—During the drought of 1902 these birds died in numbers on Coomooboolaroo. Many appeared to



AUSTRALIAN RAVEN AND YOUNG. (GLARING SUNLIGHT MADE PHOTOGRAPHY DIFFICULT IN THIS CASE).



BLACK-THROATED BUTCHER-BIRD AND YOUNG.

Photos. by D. W. Gaukrodger.

die during the night, as they were often found dead under their roosting perches. On Rio station (Dawson River) in the drought winters of 1919 and 1922, many were seen dead, and others were so weak that they could not fly into the trees, but perched on logs. On being approached they would make a short flight and light on the ground, where they were easily caught.

Dacelo leachi, Blue-winged Kookaburra.—These birds were not so numerous as the common "Jackass," and in 1902 were almost exterminated. They increased later, but in the severe winters of 1919 and 1922 they died in numbers on Rio station.

Cracticus torquatus, Grey Butcher-Bird.—Seen dead on Coomoooolaroo during the drought of 1902, and on Rio station in the winters of 1919 and 1922.

Cracticus nigrogularis, Pied Butcher-Bird.—One would think such species as Butcher-Birds would be the last to die from starvation, but in 1902, when the whole of Central Queensland was without a vestige of grass, when the timber on miles of country completely died out, and insects and small birds and reptiles completely disappeared, they died as freely as any other kinds of birds. While I camped on Coomoooolaroo station in the winter of 1926 (when the worst drought since 1902 was raging), snaring wallabies, these birds were so hungry that they took bits of meat from my hand; and when their hunger was satisfied they still continued to take it, but flew off with it, and after placing it in a crack or fork of a tree, returned for more, which was treated in the same way. I did not remain in the locality after the end of June, but as the drought continued till December, probably many of them died.

A list will suffice of smaller birds seen dead in the winters of 1902, 1915, 1919 and 1922. Probably many died in 1926, as it was one of the worst droughts known in Queensland, but I was not in the "bush" after June, and the drought did not break till the middle of December. However, I received information from reliable sources that Emus died in numbers. Most of the birds were dead in the winter months, scarcity of food combined with the cold being the cause. Here is the list:

White-winged Chough (*Corcorax melanorhamphus*), Grey-crowned Babbler (*Pomatostomus temporalis*), Black-faced Cuckoo-Shrike (*Coracina novaehollandiae*), Magpie-Lark (*Grallina cyanoleuca*), Grey Shrike-Thrush (*Colluricincla harmonica*), Rufous Whistler (*Pachycephala rufiventris*), Golden Whistler (*Pachycephala pectoralis*), Hooded Robin (*Melanodryas cucullata*), Jacky Winter (*Micræca fascians*), Willie Wagtail (*Rhipidura leucophrys*), Brown Weebill, (*Smicrornis brevirostris*), Little Thornbill (*Acanthiza nana*), Purple-backed Wren (*Malurus assimilis*), Red-backed Wren (*Malurus melanocephalus*), Dusky Wood-Swallow (*Artamus cyanopterus*), Black-headed Pardalote (*Pardalotus melanocephalus*), Noisy Miner (*Myzantha melanocephala*), Noisy Friar-Bird (*Philemon corniculatus*), Double-bar Finch (*Steganopleura bichenovii*).

Blue-winged Parrots Near Broken Hill.—A bird-trapper brought me three Grass-Parrots (*Neophema chrysostoma*), the first that I have seen from about here. He trapped them from a flock of nine. A dry season such as this is the trapper's opportunity, as the watering-places for birds are few and far between—mostly troughs at wells and bores, as all open water-holes are dry.—W. MACGILLIVRAY, Broken Hill (May 20, 1927).