

The Emu

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"Birds of a feather."

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[PART I.]

Plumage Changes of the Nankeen Night-Heron (*Nycticorax caledonicus*).

BY C. F. COLE, R.A.O.U., WANGARATTA, VICTORIA.

MY chief object in keeping this species in captivity from nestlings to well over the adult stage was for the purpose of observing and recording the plumage changes that take place during each moult. Apart from the plumage question, I found these birds very interesting. Their habit of standing whilst seeking for prey in the twilight around the edge of a pool or dish of water, apparently motionless, with the body slightly bent forward and the head downwards, gazing with an expression of alertness, combined with cunning in their large nocturnal eyes, led the observer to wonder whether these birds have mesmerical powers.

There is a supposed aboriginal legend attached to the white nuchal plumes which adorn the head of the adult bird. These birds are supposed, whilst seeking in the shallow water for food, to allow the plumes to rest upon the surface, thus attracting their aquatic prey within reach of their bill. This is purely mythical. These birds are not adorned throughout the whole year with such plumes. Like the Egrets, they cast and grow their plumes at a certain season of the year.

The attitude of this bird towards others of the feathered tribe in captivity is a very pugnacious one.

Whilst undergoing the first moult, which begins to take place within 10 months from leaving the nest, there develops upon the nape four to five dark feathers, not so black as those upon the crown. Down the centre of each of these feathers is a golden-brown streak, which makes them very conspicuous. By the end of the second season's moult these feathers disappear, and the white nuchal plumes begin to make their appearance. These striped nape feathers indicate the position of the nuchal plumes.

After the end of the third year's moult the nuchal plumes attain perfection, and the bird has also acquired full adult plumage. The average total length of the nuchal plumes is $6\frac{7}{8}$ inches, and the colour is pure white streaked at the basal ends with pale brown. These plumes fit one within the other, resembling one long tubular-shaped feather.

The first signs of moulting take place at the base of the upper mandible, the brown-striped nestling feathers being replaced by black ones with black quills, as in the adult plumage. The moult gradually works back towards the nape and down the neck. The moulting of the body, wings, &c., is gradual and uniform all over. The moulting period was approximately four months with the specimens under observation.

Towards the latter stages of the first moult the bare patch about the eyes gradually underwent a change of colour, the pale sulphur-yellow tint in the green becoming a bluish tint. This same colour-change also took place in the legs. The bill also gradually changes within this period.

The greater change in plumage colour takes place during the first moult. The second moult brings the adult colours more pronounced, but not so deep and rich as in the fully matured bird.

(A.) IMMATURE PLUMAGE BEFORE THE FIRST MOULT.

At a glance the whole of the plumage appears brown, each feather being tipped or striped with pale buff, white, or cinnamon, giving the bird a mottled appearance. The centre of each feather of the forehead, crown, hinder crown, and nape is striped a dull golden brown, quills same colour, the outer webbing dark brown; ear coverts and cheeks pale buff splashed with dark brown; chin and throat white, lower throat white slightly mottled with brown; hind neck and chest pale buff, quills paler, outer webbing light brown; breast white, edged with brown; abdomen much paler; thighs pale buff, edged with brown; back pale buff, edged with dark brown, many feathers much darker; mantle pale buff, edged with dark brown; humeral feathers pale reddish-chestnut, splashed with dark brown; lesser, medium and greater wing coverts dark brown splashed with pale reddish-chestnut, mottled with pale buff, a few feathers mottled with white; primaries and secondaries—quills reddish-brown, inner webbing rich chestnut-red, outer dark brown, each feather tipped with white splashed with pale brown; tail—quills reddish-brown, webbing pale chestnut-red, feathers tipped pale buff; upper tail coverts much paler; under tail coverts white, faintly splashed with brown; rump whitish, splashed with brown; bare patch in front of eyes pale green tinted with sulphur-yellow; irides straw-yellow; bill—upper mandible, centre dark brown, edges pale buff, lower mandible grey splashed with dark brown towards the tip; legs pale green tinted with sulphur-yellow; feet brown; toe-nails reddish-brown, tipped dark brown.

(B.) IMMATURE PLUMAGE AFTER THE FIRST MOULT.

Forehead, crown, and hinder crown black, quills black; nape black, with a distinct brown tint, five feathers are brownish-black, having a distinct golden-brown streak down the centre, quills golden-brown, appearing at a glance as if the nuchal plumes were

beginning to grow ; eyebrow pale buff, slightly flecked with dark brown, becoming paler towards the lores ; chin and throat pale buff ; lower throat pale buff ; ear coverts and cheeks pale buff splashed with brown ; hind neck deep chestnut-red ; fore neck pale buff heavily splashed with pale chestnut-red and dark brown, giving a mottled appearance, base of feathers white ; breast white splashed with brown ; abdomen white ; thighs (inner) white ; thighs (outer) light reddish-brown, becoming white in the adult ; flanks white splashed with brown ; back dark rich chocolate (becoming a rich chestnut-red in the adult), the feathers, when raised, showing a pale bluish-slate colour ; rump pale reddish-brown splashed with pale bluish-slate, and slightly mottled ; upper tail coverts deep chestnut-red, but not so distinctive in colour as in the adult ; tail rich chestnut-red, as in the adult ; under tail coverts white ; the whole of the humeral feathers, lesser, medium, and greater wing coverts dark chocolate, showing a tint of rich chestnut, a few feathers here and there being mottled ; mantle similar ; primaries—outer webbing rich chestnut-red, as in the adult, splashed dark chocolate at the tips, inner webbing much paler ; secondaries vary in colour, some a rich chestnut-red, others mottled, general colour under the wing, primaries, and secondaries pale chestnut-red, tinted with bluish-slate, the smaller feathers white splashed with pale chestnut-red (this bluish-slate tint, so pronounced, passes off in the second moult) ; bare patch in front of eyes pale green, with bluish tint ; rim of eyes pale greenish-yellow ; irides deep straw-yellow ; upper mandible black, with grey streak extending two-thirds along outer edge from the base ; lower bluish-grey blotched with black ; legs and feet pale green, with bluish tint ; toe-nails grey.

(C.) IMMATURE PLUMAGE AFTER THE SECOND MOULT.

Forehead, crown and hinder crown black, quills black ; nape black, a few feathers tinted a chestnut-red, the white nuchal plumes are short and unattractive ; eyebrow white ; chin and throat white ; ear coverts pale chestnut-red ; hind neck rich chestnut-red splashed with black, a few feathers almost black ; fore neck white, tinted with pale chestnut-red, the side feathers pale chestnut-red ; chest pale chestnut-red, the side feathers much darker ; breast white, a few feathers faintly tinted with chestnut-red ; abdomen white ; thighs (inner) white ; thighs (outer) white, tinted with chestnut-red ; under tail coverts white ; flanks white ; rump chestnut-red, faintly splashed with bluish-brown ; upper tail coverts chestnut-red ; tail rich chestnut-red, quills paler ; back rich chestnut-red ; lesser, medium, and greater wing coverts rich chestnut-red, quills paler ; primaries and secondaries rich chestnut-red, quills paler ; bare patch in front of eyes pale green ; irides deep orange-yellow ; upper mandible black, the sides streaked reddish-brown ; lower mandible greyish-buff, tipped black ; legs and feet pale chrome-yellow ; toe-nails reddish-brown, tipped black.

(D.) FULL PLUMAGE, THIRD MOULT.

(Age from leaving the nest, 3 years 6 months.)

Forehead, crown, hinder crown, and nape black; nuchal plumes white, base streaked brown; eyebrow white; chin, throat, and lower throat white; ear coverts white, tinted pale chestnut-red; hind neck black, a few tinted chestnut-red; fore neck white, tinted pale chestnut-red; chest white, tinted pale chestnut-red, the side feathers a rich chestnut-red; breast, abdomen, thighs, under tail coverts white; flanks white; rump chestnut-red; back, the whole of the wing, and tail rich chestnut-red, quills paler; bare patch in front of eyes pale green; irides deep orange; upper mandible black, sides blotched reddish-brown, lower mandible greyish-buff, tipped black; legs and feet chrome-yellow; toenails reddish-brown, tipped brown.

With Camera and Field Glasses in North-West Victoria.

BY L. G. CHANDLER, R.A.O.U., "MALURUS," DIXON-STREET,
MALVERN.

LEAVING Melbourne by the 6.40 a.m. train on 11th August, 1919, I reached Hattah at 4.10 a.m. on the following day. It was a slow, tiresome journey; but a few hours later, when on a memorable drive to Kulkyne Station, I forgot previous discomforts in the examination of the varied, interesting scenery and the presence of many birds and flowers new to me. Mr. Balmain, a local fisherman, who kindly drove me a distance of 18 miles, was an interesting companion, and we talked of bush-lore as the horses toiled through the heavy sand.

For miles the track wound through typical Mallee vegetation, and the oil mallee (*Eucalyptus oleosa*), giant mallee (*E. incrassata*), and hooked mallee (*E. uncinata*) were noticed, together with acacias and smaller shrubs and plants. The last two eucalypts were heavily in blossom, and the morning air was scented with their perfume. With the exception of a few Yellow-plumed Honey-eaters (*Ptilotis ornata*) and White-eared Honey-eaters (possibly *Ptilotis novæ-noriæ*), honey-eating birds were scarce. Near Hattah the familiar notes of a Scrub-Robin (*Drymodes brunneopygius*) were heard—the only occasion on which I had evidence of its presence. Soon a beautiful pair of Ground-Birds (*Cinclosoma castanotum*) crossed the track, and this species also became a memory. Like Scrub-Robins, they apparently have not extended their range to the Murray River, or perhaps foxes and domestic cats gone wild have exterminated them in places. Unless drastic action is taken to reduce the pest, the cats will cause the complete disappearance of many birds. The value of a cat as a destroyer of rabbits is negligible when compared with the immense harm done to bird-life. Cats, by instinct, are bird-



Immature, before First Moul.

PLUMAGE CHANGES OF NANKEEN NIGHT-HERON.

Full Plumage.

The Inset shows the Crown and Nape after the First Moul.

Immature, after Second Moul.



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