Emus in the Northern Wheatbelt - Notes on observations - January 1958 to March, 1959

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During the period from January, 1958, to March, 1959, advantage was taken of an opportunity to observe a population of emus (Dromaius novae-hollandiae) at close quarters and an effort was made to gain some knowledge of the breeding behaviour, feeding habits, the extent of range and the damage caused by the birds. The observations were collected while experimenting with methods to control the emu, during which, their reactions to colour, foreign food media and poisons were being studied.

Work was carried out on the property of Mr. J. R. Forrester & Sons of Yuna. The northern edge and 4½ miles of the eastern extremities of this property are bounded by an "emu-proof" fence, erected by the owner, which served both as a barrier to those birds moving in from outside and, for some periods, as an obstruction to those attempting to leave the property. The fence consists of 3 ft. 6 in. rabbit netting with three barbed wires on top, about 4 in. apart giving a total height of approximately 4 ft. 6 in. Posts (only few less than 6 in. in diameter), were spaced at 48 ft. intervals with three steel pickets between posts, the idea being to have a fence which was strong but had sufficient resilience to prevent it from being broken when hit by emus and kangaroos at speed. Only on one occasion was an emu seen to topple over the fence, and this was while being hotly pursued by a vehicle into a corner.

General Behaviour

Mostly, the birds were gregarious, moving about in bunches of between six and 30, although it has not been uncommon
to see solitary individuals, especially in the breeding season, and small groups of two or three birds. Among the large numbers there did not appear to be any well-marked flock grouping as is found with some domestic birds, especially poultry. The larger groups could merge with others without any friction being apparent, except that occasionally an individual emu—probably an old bird—was observed to peck at others. In no case however, was the action followed up and no attempt was made to cow the other birds.

During the winter months, bathing by the birds was fairly common. They were observed sitting upon their haunches in small claypans of muddy water splashing it about with their beaks and frequently fluffing out their feathers, while sometimes half-standing and shaking themselves vigorously.

Although possessed of a natural curiosity the emus were found to have extremely good eyesight and hearing and on many occasions were content to view strange objects from afar for a considerable period before examining them closely.

This was found especially so when highly-coloured materials were used to attract them to certain areas for the purpose of poisoning. Present indications are that they are blind to colour, relying more on the relative brightness of an object, gradually becoming less afraid as long as the object remained still.

At times, mainly on still mornings, all the emus would leave the observed area when a motor vehicle was started up at the homestead some 1½ miles away. They did not always disappear completely but would sometimes move into a small bunch and await the coming into sight of the vehicle, or, if none came would gradually disperse and commence feeding again.

**BREEDING SEASON AND BEHAVIOUR**

The first indication of the breeding season was gained when a female bird shot on May 14 contained 14 partly-developed eggs ranging in size from that of a pea to almost full size (20½ oz.). The first chicks were seen in August and were then estimated as being from two to three weeks of age, being approximately 7 to 12 in. high. This would place the hatching in late July and the probable laying time—taking the average incubation time of 58 to 61 days—in the latter half of May. This clutch of five young was then used as the “yardstick” for all the others and placed the laying time of these birds as being from approximately the end of April until the beginning of June. The largest clutch seen was 13 and one bird had only a single chick.

From observations on half-grown chicks when work started in January 1958 and with the advent of more during the year it would appear that the chicks take at least two years to reach maturity. Those estimated at 13 to 14 months old were still at the “squeaking” stage and had not developed the “booming” or guttural noises characteristic to this species. Most of the year's clutches had lost the striped juvenile plumage by October and developed feathering similar to that of adults, but much darker by comparison.

**POPULATION MOVEMENTS**

The number of adult birds increased in October and November, indicating that some migration of birds from adjacent areas on to the property had occurred. These birds, which we shall call the “migratory population” were easily frightened from the property by human interference (in December), but the “hard core” of the resident population remained with their chicks to feed on the observation area.

The number of the chicks in the area did not fluctuate materially during late spring and summer. There was a normal build-up in chick numbers such as would be expected from August-November and a gradual decline from December onwards as individual clutches of chicks left the area with their parents. This was borne out by direct observation. There appeared to be very little mortality in the chicks from the time they were first observed in the very young striped stage (some two to three weeks of age) until they were several months old, as individual clutches were easily recognised by their number, size and feeding area.

**FEEDING BEHAVIOUR AND FOODS**

The most notable behaviour in the early stages, (January to August) was the extreme mobility of the birds while feeding.
They moved continuously about old crop stubble and pasture seeking food (up until the time the crop came into ear). When wild radish and other natural pasture commenced coming into head they confined their activities to the portions of the property where these plants were plentiful. Generally, feeding commenced shortly after daybreak and birds did not leave the observation area until dusk, unless disturbed.

From September until almost the end of December, birds would cross pasture paddocks to feed in and on the grain crops, where their movements seemed very restricted in comparison with former mobility. As the crops gradually dried off it was noted that any tendency to congregate was on those patches which retained some green longer than the remainder.

It would appear then that the emus preferred "seedling heads" at this period of the year. This fact was also borne out by the failure of the birds to take experimental grain during this period.

When feeding in the same paddock as sheep they usually feed in among them without disturbance, but if frightened seemed to do their utmost to also panic the sheep. This type of behaviour is apparently common as it was recorded by other authors as early as 1913-14.

Wheat constituted the main diet of these birds for the greater portion of the year. Grain was available to them from the end of August to Mid-November as growing and ripening crop, and from that time until approximately mid-January as mature grain. Most of the spilled and wasted grain was soon eaten, and from the end of February to seeding time (April-May) it was in relatively short supply although some small quantity was still available amongst the stubble. During 1958 only June-July and early August were grainless and it was in this period that large quantities of green grass and caterpillars were consumed.

CROP AND OTHER DAMAGE

An accurate assessment of the damage caused by this population would be very difficult to make. Prior to the commencement of this work the owner of the property estimated that the emus cost him £1,000 annually.

The damage during the year could be divided into four sections:—

(a) To Pasture, Mainly during Winter Months.

During the winter months when food consisted mainly of natural pasture, damage was not visible and could not be separated from that caused by sheep. The number of caterpillars consumed by the birds during this period probably outweighed any destruction to the pasture.
(b) Damage at Seeding Time.
For a short period after seeding and before germination there was quite an appreciable amount of grain either left uncovered or dropped during these operations. After germination the crop showed no visible ill-effects from emus grazing on the uncovered grain.

(c) To the Growing and Ripened Crops.
It was quite obvious as the crop ripened that this would be the time when the emus would be the greatest nuisance. Coinciding with the maturing of the grain crops the migration of birds previously mentioned, swelled the numbers of the existing resident population and it was only in these months that any real damage was noticed. No real estimate of the percentage destruction to the crop was attempted as the factors involved in such an estimate were far too numerous. Other animal and bird damage, such as is caused by kangaroos, rabbits, galahs and sheep would have to be excluded. It was hard to trace individual birds through the crop even when chased but probably more damage would be caused by a very large number of birds.

(d) To Fencing.
No accurate estimate of damage to fencing could be given although wire and netting breakage by the birds was definitely known.

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