

THE AUSTRALIAN BUSTARD: WITH SPECIAL REFERENCE TO ITS PAST AND PRESENT STATUS IN SOUTH AUSTRALIA

By E. F. BOEHM.

Having a very wide distribution over the grasslands, shrub-steppes, and fringes of the lightly-timbered regions of Australia, the Bustard (*Eupodotis australis*) soon attracted the attention of explorers and pioneer settlers, both for the purpose of sport and as a source of fresh meat. It is a large, handsome bird, with a majestic bearing as it stalks slowly about, holding its head erect; and, seen at a distance, in the open, its whitish fore-neck is a conspicuous object. Single birds, pairs, and small parties of up to five or six birds were frequently seen in suitable places almost anywhere in South Australia, prior to the severe droughts of 1902 and 1914. Where plagues of grasshoppers or caterpillars occurred larger flocks of twenty to thirty or more Bustards would gather and feed on the insects.

The Bustard is at all times wary, and it is especially alert and watchful in the morning and evening when feeding. On being approached by man, it walks off, and then runs with wings outstretched before flying away. Its flight is slow and deliberate, never soaring, and is generally made at a height of 60-70 ft. The primaries look black from beneath, as the bird flies, and the distal portions of the extended wings have a notched appearance. The head and neck is stretched out in flight. When a wind is blowing, the birds always endeavour to take flight against the wind, as they can rise from the ground more easily in this manner. Among long grass or shrubs, Bustards may evade detection by crouching low with head and neck down. The immature birds without the conspicuous plumage are thus easily lost to view.

Segregation of the sexes seems to take place after the breeding season, from the evidence of several observers. At night flocks usually roost on a patch of bare ground or a stony hillock, and early in the morning the birds fly away to their feeding grounds among the grass or shrub-covered plains and watercourses. The usual call given on infrequent occasions while flying is a fairly loud, hoarse, barking sound. Large gatherings of Bustards in a limited area of favourable country occasionally take place. Early in 1897, H. K. Bennett saw a flock between Hay and Booligal, N.S.W., which he estimated to contain more than one thousand individuals. H. T. Condon states: "In October, 1944, a huge flock of about 500 birds was seen on the side of the road near Powell Creek, N.T." In 1915, L. R. Reese noted Bustards in thousands on the Goyder's Lagoon plain, Lake Eyre Basin, S.A. Early settlers in various localities observed that smoke-clouds from burning scrub or stubble attracted the Bustards, which came flying from all directions and proceeded to search for insects and reptiles disturbed, or killed and roasted, by the fire. Flocks, when feeding, are generally fairly widely spread, and occasional individuals may become so gorged with grasshoppers that they can fly only with difficulty. Dingoes have been known to surround and pull down Bustards, closing in on them and catching them before they can rise in full flight.

A considerable variety of animal and vegetable matter is eaten by the birds. Insects such as grasshoppers, crickets, and caterpillars are favourite food, but they also take beetles and even ants. Other animal food

- Very plentiful in pairs high up in foliage of Sugar and Red Gums, and in higher Mallee (*E. diversifolia*). Very active and fearless. The call of the male is a loud ringing "hweet-hweet" or "glook-glook," rarely answered by the female (?) with a low husky "wittoo-wittoo." In *Eucalyptus diversifolia* scrub one day a pardalote was heard to utter 3 or 4 times a powerful and ventriloquial single bell-like whistle, but I was unable to determine whether it was this species or not.
- Grey-backed Silver-eye (*Zosterops halmaturina*). Very plentiful in flats in Mallee-Broombush, in Cutting-grass Teatree swamps, and in *Hakea* flats in Sugar Gum ranges. Throughout the whole period nests were found in abundance, some in course of construction, others containing 1 to 3 eggs, and others containing young, either helpless or ready to leave. Nests were invariably placed in a Needlebush (*Hakea*).
- Brown-headed Honeyeater (*Meliphaga brevirostris*). Occasionally seen in foliage of dense vegetation along creeks in Sugar Gum ranges. Also a small, outlying colony in Red Gums in swamp on plains. Call or song is a loud musical "choo-choo-choop."
- Tawny-crowned Honeyeater (*Gliciphila melanops*). Fairly plentiful in restricted colonies in Teatree Cutting-grass flats and in Mallee-Broombush, especially in flats where vegetation is denser and dwarfed and heath-like in character. Also in Needlebush-dwarf Teatree association in ranges. Call note is a squeaky chirp. Songs—soft thin whistles, sometimes finishing with a drawn-out whistle—"twee-toota-too." Also "twee-twee" only. Likes to perch on a dead stick above general level of low vegetation, whence its pleasing song is mostly uttered. A nest found in Mallee country in a dwarf Oak (*Casuarina muelleriana*), about 18 inches above ground, was cup-shaped and made of grasses and small pieces of Mallee-bark and lined with down and feathers. It contained 2 eggs, pale pinkish-white, freckled at larger end with pale rust.
- Purple-gaped Honeyeater (*Meliphaga cratitia*). Found in small flocks in restricted localities in Mallee-Broombush (especially where Mallee was flowering) and in Bottlebrush thickets along watercourses in ranges. Very active and noisy. Several calls; one like that of Noisy Miner, another a harsh single chirp; a loud whip-like whistle and a soft, parrot-like warble. When on the wing they occasionally utter a sharp "twit-twit." One feathered young (olive-green, with yellow line on face) was found fluttering along ground. Parents were fearless in their concern for its safety. One bird would flutter along ground with strange antics, uttering a loud babbler-like chatter, pretending injury to divert attention from young bird.
- Yellow-winged Honeyeater (*Meliornis novae-hollandiae*). Most plentiful Honeyeater and probably any bird in this region. Usually found in colonies of 10 to 20 adult birds. Most plentiful in Bottlebrush flats and bushy tangles along watercourses. Also in Mallee-Broombush scrub, including thin strips left along roads at Wildeloo. Extremely active bird, flying incessantly from bough to bough and tree to tree. Very aggressive, especially chasing Tawny-crowned Honeyeaters. Call—single chirps, repeated so quickly when excited to become a harsh chatter. Also thin, but melodious song "dick-dick, doodle-doo, twee-twee" (the last 2 syllables being higher pitched). This song, which was occasionally heard in the scrub without the singer being seen definitely, may possibly more rightly belong to the Tawny-crowned Honeyeater.
- Red Wattle-bird (*Anthochaera carunculata*). Very plentiful in open Red Gum and Sugar Gum forest, more open and higher Mallee, and in big Paperbarks (*Melaleuca halmaturorum*). Also plentiful in timber planted around homesteads and Mallee scrub left on roads at Wildeloo. In addition to its usual cackling call "kucka-kuck," has a softer, lower, throaty and grinding call.
- Groundlark (*Anthus australis*). Fairly plentiful in crops and pastures.
- Diamond Sparrow (*Zonaeigithus guttatus*). Once only in shrubby clearing on edge of Mallee-Broombush scrub at Warunda Sid-ing. Fairly long musical whistle "peeeep" (ascending).
- Crows (*Corvus* sp.). Pairs and small flocks in all classes of country, especially in or near timber adjacent to cultivated lands. One small flock in Red Gum flats were

(Continued on foot of next page)

which the birds consume comprises lizards, mice, small ground-birds and their nestlings, and land molluscs. Vegetable food comprises mainly grass, succulent herbage such as Saltbush (*Atriplex*) shoots, Parakeelya (*Calandrinia*), and the fruits of several plants, including Nitre Bush (*Nitraria Schoberi*) and Turkey Bush (*Myoporum deserti*). Many years ago, Bustards often visited stubble paddocks in the central and southern agricultural districts of the State early in summer to feed on grasshoppers, and also any grain which had been dropped by the stripping implements.

Male Bustards above the age of four years indulge in a remarkable courtship display⁽³⁾ early in the breeding season, and do not, so far as is known, assist in incubation of the eggs or the care of the young. When displaying, the male stands erect, frilling out the feathers of the throat and neck, and depending from its lower throat and breast an elongated apron of feather-covered skin, until this apparatus reaches the ground. At the same time, the feathers of the back are ruffled, and the bird utters a loud, deeply intoned booming note, which, when heard from a distance, may be likened to the distant roar of a lion, or the call of a camel. The Bustard alters his position from time to time, strutting majestically along, fanning and elevating his tail-feathers, drooping the wings, and pointing the beak upwards. Generally, the love-call is heard only at night till about 1 a.m. and again at dawn.

Females are smaller than the male birds, have the light-grey plumes of the hind-neck shorter, and do not look so stately. One or two eggs, rarely three, are laid to a clutch on the bare ground as a rule, there being little indication of a nest. Sometimes a few twigs or grass-stems represent the nest. The site is usually on high ground, from where, sheltered by a shrub, tussock, or stone, the brooding bird can obtain a wide view of the surrounding countryside. J. Neil McGilp states that the brooding female, when sighting a man on horseback, will often crouch down on the nest, but directly he stops near the nest, the bird will leave it, shuffling along in a crouching manner for a few yards, and then run some 10-15 yards before flying away. Four nests seen by him on Moolawatana Station, Lake Frome Basin, S.A., in 1918, were on "slightly elevated ground on

open flats with only a few small bushes in the locality. Two of the eggs, each from a separate nest, were taken as specimens, and the other nests were again visited three days later and each still contained the single egg." "In search for one of these nests," he continues, "we passed within twenty yards of it, and although the sitting bird must have seen and heard us, she apparently did not move until, after retracing our steps, we rode almost upon her. Then she did exactly the same as she did three days previously, sneaking off in a crouching manner, and running a few yards before taking the air." None of the four birds disturbed from nests by Mr. McGilp were noted to attempt any movement that could be construed as injury-feigning or luring away from the nest. From his experience of seeing only one egg in a nest, and on several occasions observing that only one chick has been following the parents, Mr. McGilp had concluded that almost invariably a single egg was laid in a clutch. However, in 1926, which ended a run of excellent seasons on Moolawatana, several Bustards' nests were found and all but one held two eggs.

Campbell⁽²⁾ relates that in about 1886, on Maooup Station, near Penola, S.A., Thomas Pinkerton saw three young, apparently just hatched, in a nest. A clutch of three eggs has been reported from Victoria, and similar large sets are known to have been found in Queensland. Carter⁽³⁾ reported having been informed of a four-eggs clutch at Point Cloates, W.A., which, however, may have been the product of two females. Eggs have been found in South Australia from mid-July to mid-November, but the chief laying and incubating months are August, September, and October.

Brooding Bustards have been seen pursuing curious cattle and sheep with outstretched wings and uttering a croaking noise to frighten the animals away from the nest. Le Souef⁽⁶⁾ gave an account of a Wedge-tailed Eagle (*Uroaetus audax*) which swooped down on a young Bustard, colliding with the mother bird which flew up to intercept its enemy. The Eagle broke its neck with the force of the impact, and the Bustard being killed by the Eagle's claws fixed in its neck. He does not vouch for the authenticity of the tale, however, and one may question the truth of it.

French⁽⁴⁾ described the chick about two days old as being a light drab colour with blackish-brown irregular markings, and observed that when in a sitting posture its head is held well back, so that the back of the head almost touches the body between the wings. According to North,⁽⁹⁾ "The young leave the nesting-place soon after they are hatched, if threatened by danger, relying upon the protective colour of their mottled brown and black covering of down to escape detection." Mathews and Iredale⁽⁷⁾ describe in detail two chicks which were just losing their down. Russell⁽¹⁰⁾ states that the young Bustard, on being surprised, utters two quick barks, which sounded like the bark of a young dog. Another of its calls heard by him was a long-drawn-out whistle, which can be heard for a considerable distance. Several observers claim to have seen female Bustards fly out of danger, carrying a young one on their backs or held in their feet. It is desirable, on ornithological grounds, that such carrying habit, if it really exists, should be confirmed by more reliable evidence than has hitherto been furnished.

The male Bustard grows to a large size, and when standing erect is well over three feet in height. Large, fat males weighing up to 32 lbs. have been recorded in Victoria. An Adelaide newspaper, some years ago, reported a bird from an undisclosed South Australian locality which weighed 28 lbs. when disembowelled. Such a bird would have weighed about 32 lbs. when gorged with food. Sir Lancelot Stirling shot one at Terowie, S.A., many years ago, which weighed 28 lbs. A large male with a fly-blown wound in one wing, caught at Sutherlands, S.A., some forty years ago, by my father, J. Boehm, weighed 24 lbs. gross.

Mr. McGilp recounting his experiences at Carriewerloo Station, 36 miles west of Port Augusta, S.A., writes: "The year 1887 was a splendid grass and herbage year, heavy rains having fallen in May and all the flats and watercourses had been flooded. The wonderful growth of herbage had in turn brought myriads of grubs and grasshoppers. Towards August and September, Bustards appeared as if by magic, and it was not an uncommon sight to see 20 to 30 birds in a flock, although somewhat scattered over open country. Several shooting parties came out from Port Augusta and large bags were taken into

the town. There was much rivalry as to who could get the heaviest bird, and consequently small birds were not molested. My late father, in later years, often related with pride that he shot the champion weight bird, a male of 22 lbs. He told me that the male birds ranged in weight from 14 to 18 lbs., with only an occasional one of greater weight. The female birds, he said, were considerably lighter, being 10 to 14 lbs. in weight. When the Bustards first arrived none of them were heavy, but by November and December heavy birds were obtained."

In 1918, Mr. McGilp saw quite large flocks in the sandhill country east of Lake Frome, S.A. He says: "Given good herbage years with an abundance of grasshoppers, I do not think that the presence of sheep or cattle disturbs the birds, but in drought years they do not appear."

Mr. H. T. Condon informs me that there is no localised South Australian skin of the species in the S.A. Museum. Kinghorn and Fletcher⁽⁵⁾ record the colours of the soft parts of a male and a female from Ooldea, S.A., taken in October, 1921, as follows: "Eyes white; bill dark brown; legs pale bluish-white." A specimen was examined at Birdum, N.T., in October, 1942, by Mr. Condon and he noted the following data: "Iris yellowish-brown; bill dull white with culmen dark horn; legs and feet yellowish or cream colour."

Since the droughts of 1927 and 1929, Bustards have only rarely been seen in the southern areas of the State receiving an annual rainfall of more than 8 inches. The reasons for the decrease seem to be that environmental conditions generally are unsuitable for them, and the constant destruction spread among them by shooters. Country in which grass and other herbage, and shrubs such as Saltbush, have been greatly eaten down or even exterminated, fails to provide suitable cover in the open for birds such as Bustards, nor does it provide the assured food supply necessary for permanent residence and breeding. In times of low rainfall, domestic livestock ultimately converted grazing lands into bare tracts. Then, in good seasons, when the birds did appear, they were ruthlessly persecuted by shooters, in spite of protective legislation. Mr. McGilp's experience serves to illustrate the ruthless nature of the illegal slaughter

which has been carried on through the years. He writes: "About forty years ago we had a visit from fully 80 birds on Bungaree Station, near Clare, S.A., but although Mr. S.-Hawker, a part-owner of the property, did his best to save them, even seeking and obtaining police patrol of most of the paddocks they were in, I am afraid that 50 per cent. of the birds were slain." From reports received at the Museum, Mr. Condon states that it appears to have been a common practice in the not too distant past on the "West Coast" of the State for parties to go out hunting the Bustard, and large numbers were often shot. P. T. Sandland⁽¹¹⁾ reports that in the pastoral country about Burra, S.A., the species was decimated by eating phosphorised pollard baits laid for rabbits. Foxes, and to a lesser extent Wedge-tailed Eagles and Falcons, have undoubtedly also contributed to the decimation wherever a sufficient cover of grass and shrubs were lacking in the agricultural and southern pastoral areas of South Australia. But the effect of these predators appears quite definitely to have been secondary to the environmental alterations and the constant shooting of the birds. In other words, given suitable cover and food supply, Bustards would hold their own against foxes and birds of prey.

After reviewing all the evidence available to me, I am forced to the doleful conclusion that this splendid species is doomed to extinction over practically the whole of the southern districts of the State. In 1942 and 1943, Mr. McGilp saw a pair of birds in a favoured spot not far from the coast, but it is best not to report the exact locality for fear that, as a consequence, they may be shot by someone. Souter⁽¹³⁾ has seen a few birds on Yorke Peninsula in recent years, and has noted the species breeding in a swampy flat on Wardang Island, Spencer Gulf,⁽¹²⁾ which is a sanctuary. Mr. K. M. Niall, of Mornington, Vict., has shown that the birds can be bred in a semi-captive state in large paddocks.⁽¹⁾ The only hope of conserving a limited number of Bustards in the South seems to lie in breeding them in suitable sanctuaries under the constant protection of resident rangers. It is a matter for lasting regret to Nature lovers that these fine birds have been exterminated over nearly all of the southern districts of South Australia, and

that the few survivors are confronted by an uncertain future. There is little consolation in the thought that the species may still be seen hundreds of miles to the north where so few people can see the birds and fewer still feel inclined to devote time to the study of their life history.

Acknowledgments.—In connection with the preparation of the foregoing paper, the writer received valuable help from Messrs. J. Neil McGilp, H. T. Condon, H. E. A. Jarman, S. E. Terrill, and J. Boehm. To all these gentlemen the writer is indebted and records his appreciation for their assistance.

REFERENCES

- (1) Anonymous. 1943. "Wild Life," 5: 341.
- (2) Campbell, A. J. 1901. "Nests and Eggs of Australian Birds," II: 765.
- (3) Carter, Thos. 1921. "Emu," XX: 191.
- (4) French, sen., C., 1891. "Vict. Naturalist," VIII: 12.
- (5) Kinghorn, J. R., and Fletcher, H. O., 1927, "Emu," XXVII: 83.
- (6) Le Souef, W. H. D., 1907. "Wild Life in Australia," 411. Christchurch, N.Z.
- (7) Mathews, G. M., and Iredale, T., 1921, "Manual of Birds of Australia," I: 186.
- (8) Mattingley, A. H. E., 1929, "Emu," XXVIII: 198; Pl. 41. Vide also Morgan, A. M., 1930, "S.A. Orn.," X: 215.
- (9) North, A. J., 1913. "Nests and Eggs of Birds Found Breeding in Australia and Tasmania," IV: 245.
- (10) Russell, J. K., 1921. "Emu," XX: 242.
- (11) Sandland, P. T., quoted by Mathews, G. M., 1913. "Birds of Australia," III: 364.
- (12) Souter, T. G., 1926. "S.A. Orn.," VIII: 345.
- (13) ————— 1942, Ibid. XVI: 16.