PROBABLE FIRST BREEDING OF THE CATTLE EGRET (Bubulcus ibis) IN NEW ZEALAND

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ABSTRACT

Cattle Egrets *(Bubulcus ibis)* first arrived in New Zealand in 1963 and have since been seen in increasing numbers, particularly during 1972-73. On 23 November 1972 two adult birds (probably a pair) in full breeding plumage, accompanied by a young bird in the white immature plumage, were seen in a paddock with cattle at Paretai, near the mouth of the Clutha River, south-eastern Otago. The egrets associated with White-faced Herons and twice flew to nearby macrocarpa trees where there were several abandoned heron nests. A week before, the two adult Cattle Egrets had been seen with two young but one had disappeared. From their appearance, behaviour and local circumstances it is suggested that they were a pair with a young and that they had nested nearby together with two or three pairs of White-faced Herons, deriving the stimulus for breeding from this association.

INTRODUCTION

When Peters in 1931 published the first volume of his classic *Check-list of Birds of the World*, the Cattle Egret *(Bubulcus ibis)* was confined to the Old World. Spectacular range expansion and increase in numbers in Africa (the nominate western subspecies *B. i. ibis*) led to colonization of north-eastern South America about 1930 (Haverschmidt 1953) and further spread into North America (Sprunt 1955).

The eastern form *(B. i. coromandus)* similarly expanded its range and reached northern Australia in the early 1920s (Hewitt 1960; Deignan 1964) and has since increased in numbers and spread to many other parts of Australia, including Ulmarra near Grafton, New South Wales, the breeding colony now nearest to New Zealand (Goddard 1955).

ARRIVAL IN NEW ZEALAND IN 1963

The first Cattle Egret was seen in New Zealand in 1963 (Turbott *et al.* 1963); the egret then seen at Belfast, North Canterbury, in September could possibly have been the same as the bird associating with cattle at Waitati, Otago, just before Easter 1963 (Turbott 1964).

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Since then an increasing number of Cattle Egrets has been seen in many parts of the country; a review of the observations published in *Notornis* 1963-73 shows that over the period 1963-71 there were one to four observations in different localities per year, some years none. In 1972-73 there was a marked increase: in 1972 no less than 11 observations with a total of 23 birds involved (although multiple sightings are possible): in 1973 a total of 14 observations, and 26 birds seen. Up to 5 and 6 Cattle Egrets have been seen together. It is also of interest that in 1973 in 8 out of the 14 observations recorded, possible pairs (2 birds together) were seen. Birds seen in the winter have been in the white non-breeding plumage; review of New Zealand observations shows that Cattle Egrets here assume breeding plumage with the characteristic buff plumes on head, breast and back in September-October, retain this plumage throughout the summer, and change through the post-nuptial moult in February-March into the white winter plumage; birds seen from April to August have been white, adults as well as immatures.

Observations from September-October show moult into breeding plumage in progress, and pure white birds have been seen together with moulting birds or birds already with the buff plumes of the nuptial plumage. This establishes presence in New Zealand of young birds not moulting into the breeding plumage in their first year (?) or moulting late, together with moulting or moulted mature birds. This agrees with the observations of Mackworth-Praed & Grant (1952) that Cattle Egrets do not breed till their second year, and Lowe-McConnell (1967) that in Guyana young Cattle Egrets not in breeding plumage were observed roosting above the nesting birds. Herons and egrets appear to breed from their second year onwards, but Siegfried (1966) in South Africa found a few leg-banded and colour-marked Cattle Egrets breeding within a year. Dr Otto Koenig (1962) in his biological research station Wilhelminenberg, Vienna, kept Cattle Egrets in captivity. They have nested there for a number of years, and he found — as also described by Kolar (1966) from this same station — that they nested when one year old. Koenig expressed the view that the rapid expansion and population increase in the Cattle Egret were undoubtedly associated with their early sexual maturity.

Observations of Cattle Egrets in New Zealand have mainly been over the late summer-autumn-winter-early spring months, February/March to October with only two observations from November-January: single birds in breeding plumage, one November 1963-January 1964 (Turbott 1964), and another in November 1972 (Barlow 1973: 354).

The increasing number of Cattle Egrets, especially from 1972, are indication of more coming across the Tasman, or possibly a result of breeding in New Zealand, or both. So far no record of breeding or possible breeding has been published.

PROBABLE NESTING AT PARETAI, OTAGO, 1972

At noon on 23 November 1972 I received a telephone call from Mr T. A. Walker, Balclutha, Field Officer of the Otago Acclimatisation Society; he told me that he had been informed by Mr D. R. Clark, Port Molineaux, that herons, possibly Cattle Egrets, had been seen at Paretai, near the mouth of the Clutha River. A differently coloured and slightly smaller bird, perhaps a young one, was with them. I immediately drove to Balclutha, having picked up my wife at Brighton on the way, and with Mr Walker we visited the area where the herons/egrets had been seen.

To my pleasure, the birds were still there. In a low-lying wet paddock with much standing water were a few cattle beasts, and scattered over the area several hundred birds, feeding or resting: big numbers of Pied Stilts *(Himantopus h. leucocephalus)*, Black-backed Gulls *(Larus dominicanus)*, and Red-billed Gulls *(Larus novaehollandiae scopolinus)*; 7 Spur-winged Plover *(Lobibyx novaehollandiae)*, 2 South Island Pied Oystercatchers *(Haematopus ostralegus finschi)*, 10 White-faced Herons *(Ardea novaehollandiae)*, and 3 Cattle Egrets.

There was no doubt about the identification of the Cattle Egrets; I was quite familiar with this species which I had seen several times before, including a flock of some 25 following a herd of wild buffalo, 25 February 1971, in the Mt Bundy area, south-east of Darwin, in the company of D. N. Crawford; and a flock of 8 in a field near domesticated water buffaloes at Mai Po near Deep Bay, New Territories, Hong Kong, 5 March 1971; and I had the opportunity to study Cattle Egrets at close quarters — shortly after my encounter with them at Paretai — when visiting the Jurong Bird Park in Singapore, 29 December 1972.

Contrary to what some books state, I did not find these 3 Cattle Egrets particularly approachable (Palmer 1962: 440 calls it the "least shy of our herons"), but maybe my difficulty in approaching them (from behind hedges) was affected by the alert behaviour of some of the other birds associating with them, in particular the White-faced Herons and the Spur-winged Plovers.

Difficulties of approach were increased by the large size of the open area, the egrets being approximately in the centre, patches of open water, some unfriendly-looking steers, and the fairly even distribution of birds over the area. I did not succeed in getting close enough to take satisfactory photos (I had only a 135 mm lens on my Pentax when a longer range telephoto lens was needed), but did take a number of photos; an appreciable enlargement of a section of one of these is shown in Fig. 1. In the original, it is noticeable that the two larger adult birds are bigger, heavier and darker at the head than the smaller, white, young bird in the centre.

The two adult egrets were in full breeding plumage, white with dark orange buff breast and similarly coloured elongated plumes on crown and mantle; the short stocky bill was yellow, the legs

blackish. The young bird was clearly smaller than the two adults, its plumage pure white with no trace of buff, the bill pale yellowish, and the legs dark greenish-grey.

When I was slowly approaching the egrets, other birds in the area flew away, and the egrets grew restless and eventually flew off together with five or six White-faced Herons. They swung over the paddock, gaining height and flew towards a group of tall macrocarpa some 600 metres away; I followed them in my binoculars and saw them landing in the tops of the macrocarpas. When I approached the egrets they remained in the trees till I was about 75 metres away; scattered in other tree tops were six White-faced Herons. I took several photographs of the egrets sitting in the tree tops before they and the herons flew away towards, and landing in, the paddock from where they had recently come.

I wandered back, trying to get close to them, utilising the shelter of gorse bushes and a gorse hedge. But the same performance was repeated, and the wary egrets again flew back to the group of macrocarpas.

Returning to the trees, I examined carefully the ground in the hope of possibly finding egg-shells or feathers of young egret chicks, but in vain. There were several old heron nests high up, but the trees were very dense and long-branched and closer inspection was difficult. From the birds' behaviour (their return to the trees) and later hearing from local people that the white birds had been seen here, my impression was that the egrets probably had nested with a few pairs of White-faced Herons in this group of mature macrocarpa trees. The site was ideally suited, on a small rise, and surrounded by much wet grassland with plenty of cattle and with the large delta of the Clutha River to the north and east.

The three egrets were close together and were feeding when watched at a distance; the young bird was on both occasions, as in the photograph (between flights to trees) between the two adults, most probably its parents. It fed on its own and was not seen being fed by the adult (parent) birds. When feeding or resting in the paddock, the egrets were only seen on the drier parts, not in the flooded areas where the White-faced Herons and Pied Stilts were feeding. I returned to the area on 10 December, equipped with a better telephoto lens, but never saw the egrets again; as they are more dependent upon pasture-land and paddocks with cattle for their dry-feet feeding (mainly on insects) than on streams and swamps as frequented mainly by the White-faced Herons, the surrounding country offered wide scope for dispersal through suitable feeding areas.

On 10 December I contacted a number of people in the area, the local school teacher, school-boys and farmers. From these discussions emanated the following picture: there had at first been four egrets, two larger (adult) and two smaller white (young) birds, and they were first observed by the boys (my two main helpers were

Stephen Gould and Kim Perry) a week before I saw them, dating their first appearance about 16 November. After a couple of days there were only three birds, as I saw them, undoubtedly two parents and a surviving young. That one young bird died is more likely than to accept it left the parents as these egrets are particularly sociable in their behaviour. During the week 16-23 November, the egrets were seen near the Clutha bridge and in the paddocks both north and south of the river (I saw them only in the area south of the river and bridge).

The facts of the observation and associated information are that two adult Cattle Egrets (probably a pair) were associating closely with a definitely young Cattle Egret (probably their young, and earlier two young had been seen with the pair). The egrets fed with a group of White-faced Herons among cattle, and when approached flew off and landed in the tops of nearby macrocarpa trees where several White-faced Herons were sitting and where there were several old heron nests. It is suggested that the social egrets, as has been their habit elsewhere when a pair or two first breed in a new range, nested with the herons, deriving the stimulus for breeding from this association.

Other alternatives are: breeding elsewhere in the general Clutha delta area or the remote possibility that the pair with two young together crossed the Tasman from the nearest colony at Ulmarra in New South Wales. As the young bird observed by me was noticeably smaller than the adults with which it was associating and had already been in the area for a week (and undoubtedly had recently left the nest), it appears very unlikely that the pair with young successfully and together without being split up should have covered the long distance across the Tasman and across the South Island where it is widest.

The most acceptable explanation all considered is that the pair of Cattle Egrets bred in the Paretai area with a small number of White-faced Herons.

THE FUTURE

As to the subsequent fate of these egrets little is known: I did not see them again on 10 December and I left New Zealand on 26 December for a two months' study tour overseas. Mr Walker has advised me that he did not see the Cattle Egrets again in the Paretai area although he passed through a number of times. The following April (1973), however, accompanied by Mr A. J. Russell, Field Officer of the Southland Acclimatization Society, he saw three Cattle Egrets (possibly the same?) at Lake Vincent, between Tokanui and Fortrose. The egrets were in a paddock with sheep. Later that year, October-November 1973, two Cattle Egrets were regularly seen at Haldane Estuary, west of Lake Vincent.

It should be noted that the occurrence of Cattle Egrets and their probable breeding here is extra limital. Distribution maps (Voous 1960; Davis 1960) and many recent faunistic records clearly show that the species is mainly and originally a bird of the tropics and sub-

tropics, overflowing into the temperate zones. Its expansion in the last 50 years, following build-up in numbers, has seen its invasion of less favourable areas of the temperate zones, in particular in eastern North America (Davis 1960) where they have bred as far north as Luther Marsh, west of Orangeville, Ontario (Buerkle & Mansell 1963) at 44°N. In Europe they have only bred in south-western Spain and Portugal but recently Cattle Egrets have spread to and started nesting further north, in the Camargue, France, just under the 44°N latitude (Hafner 1970).

Paretai is situated at 46°S, thus further from the equator than any previous records in both the northern and southern hemispheres. In New Zealand the 44°S parallel bisects the South Island from Ashburton to Jackson's Bay. It would be realistic to expect future breeding (attempts) in the northern part of the South Island or in the North Island. The breeding colonies in Portugal and Spain are in latitudes 36-38°N, corresponding to the stretch Dargaville-Whakatane (36-38°S) in New Zealand. Between the eastern Mediterranean and and the south-western shores of the Caspian Sea, Cattle Egrets breed north to 41°N latitude, corresponding to practically all of the North Island.

As a further help in possible future location and verification of breeding it is of interest, but of little help, to note that Cattle Egrets can be found nesting in reed-beds (as in Africa, Mackworth-Praed & Grant 1957), low, some 2-3 m above the ground in trees (in Florida, Jenni 1969), 3-6 m from the ground in shrubs, trees or bamboos (in Japan, Austin & Kuroda 1953), or from 15-24 m in eucalyptus trees (in South Africa, Skead 1956). Nests can be placed in swamps, over water, but also in trees on dry land and some distance from water.

Cattle Egrets in New Zealand are most likely to nest with a few pairs of White-faced Herons, or maybe with White Herons *(Egretta alba)* and Royal Spoonbill *(Platalea leucorodia)* at Okarito, Westland (?). Initial nesting in colonies or a few pairs of other herons appears an indispensable association to provide sufficient stimulus. Large numbers of Cattle Egrets can nest in separate colonies. The nest is a loosely-built twig platform, the clutch averages 3-4 (1-6) eggs measuring 47-50 x 33-35 mm and are white to light blue, smooth and sometimes with patches of lime (Goddard 1955).

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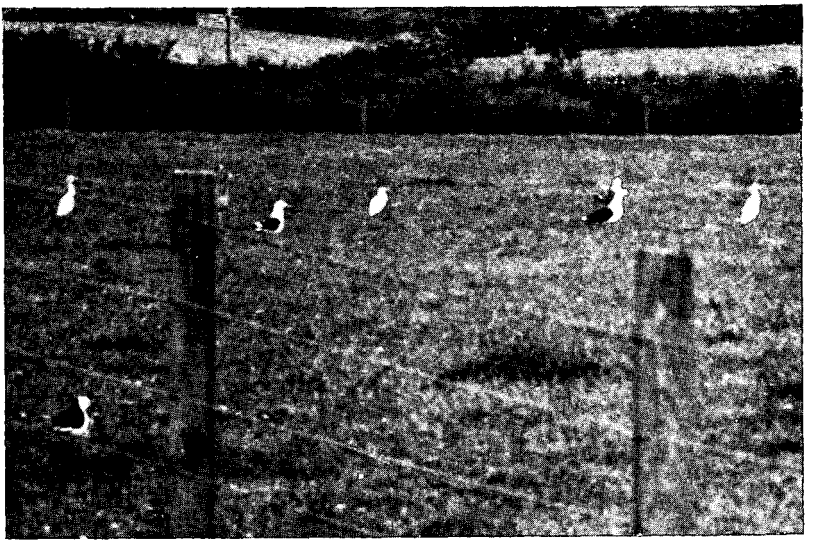

FIGURE 1 — Two adult Cattle Egrets (probably a pair) in breeding plumage and a smaller and pure white young (in centre) associating with White-faced Herons, Black-backed Gulls and Pied Stilts at Paretai, south-east Otago. 23 November 1972.

Photo: K. E. Westerskov

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SHORT NOTE

SPUR-WINGED PLOVER ON N.I. EAST COAST

In May 1973 a duck shooter reported to me the sighting of a strange bird on the Mata River, a tributary of the Waiapu, which flows into the sea 15 km south of East Cape. He saw a similar bird on two successive mornings, some 3 km apart, and from his description it was obviously a Spur-winged Plover, *Lobibyx novaehollandiae.* On 20 November 1973 J. C. Henley recorded one at the Waiapu River estuary; and then on 27 July 1974, I heard a bird call briefly from a coastal valley 8 km north of Gisborne, and moments later another flew overhead, calling vigorously, to join the first bird. From these records it would appear that the Spur-winged Plover is widely prospecting new territory up the East Coast, and perhaps now breeding, if the last two were a pair.

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