BREEDING OF THE WHITE PELICAN IN THE MWERU MARSH, NORTHERN RHODESIA, AND ELSEWHERE IN EASTERN TROPICAL AFRICA

Vesey-FitzGerald, "Ostrich," 1954, p. 139 has decribed a breeding site of the White Pelican, *Pelicanus onocrotalus* in the Rukwa Valley, Tanganyika Territory. Although known to breed in southern Africa, this seems to be the first definite record from tropical Africa, Chapin & Amadon, "Ostrich," 1950, pp. 17-18 remarking that "thus far no nesting colony has been located in tropical Africa."

On the other hand, Mackworth-Praed & Grant, "Birds of Eastern and North Eastern Africa," vol. 1, 1953, p. 33, give breeding records from Central Island, Lake Rudolf and from Lake Chilwa, Nyasaland. The Lake Rudolf record is evidently based on information by MacInnes, in Jackson & Sclater's "Birds of Kenya Colony and the Uganda Protectorate," vol.1, 1938, p. 28. MacInnes was not sure of the identification, and mentions a nest in a tree, which is surely referable to the Pink-breasted Pelican, *P. rufescens*. Mr. J. G. Williams, Ornithologist at the Coryndon Museum, Nairobi, who agrees that MacInnes' record is based on a misidentification, was at Lake Rudolf in April-May and again in September-October 1953. His only record of *P. onocrotalus* was of a single bird which stayed in Ferguson's Gulf for a few days in September and then disappeared. On Central Island in April-May a number of *P. rufescens* were present, and both adults and immatures were abundant on the lake. In September he collected on the lake two *P. rufescens* in full breeding condition. He was unable to visit the island on his second expedition, but has little doubt that *P. rufescens* was breeding there. Every evening there was a flight of this species to the island. In regard to the Chilwa record cited by Mackworth-Praed & Grant, it is very probable that *P. onocrotalus* does breed there, where it is common. But I know of no further evidence than this, and a careful search of the literature when compiling my "Check List of the Birds of Nyasaland," 1953 failed to reveal any such record.

It seems worth recording without delay the evidence for breeding in the Mweru Marsh, even although there is still much detail to be learnt. This area is not to be confused with Lake Mweru proper. The Mweru Marsh lies between that lake and the south end of Lake Tanganyika, and lacks any drainage outlet. When Major I. R. Grimwood, of my department, and I were in the Mweru Marsh on 11th October 1954, we received a reliable report of a breeding colony of pelicans on the west side of Lake Mweru wa Ntipa (the "mud-lake,"), a shallow, brackish lake within this area. The following day we searched for the site, but were unsuccessful. On the 13th, Grimwood made a further attempt to reach the colony, by crossing Lake Mweru wa Ntipa from the eastern shore by canoe. Due to the excessive shallowness at this late stage in an exceptionally dry year, it was impossible to complete the crossing (distance about six miles).

At about two miles from the east shore, on a bare stretch of mud which would normally have been inundated, he saw at least 300 young birds, in two stages :—

(a) Approximately 75% were of adult size, but differed in being more distinctly pinkish, with less extensive black on the primaries.

(b) Approximately 25% were distinctly smaller than adults, greyish white in colour, without any pinkish tinge, with primaries grey. They were still weak on the wing.

Subsequently, I obtained some information about the colony itself from Mr. D. F. De Wet, of the International Red Locust Control Service, who had visited it on 4th October 1954. He found at least 1,500 young, on an island of rotting papyrus, in an area of bare mud normally inundated. About 25% were just able to fly. But the majority were still in a brown coloured down. There were no adults nearby, but thousands of *P. onocrotalus* on the nearest stretch of open water, about three miles east.

Mr. De Wet is sure that the young were of *P. onocrotalus*, not of *P. rufescens*, with which he is familiar elsewhere (the adults of the two species are of course easily distinguishable even at a distance, the former being larger, and white rather than greyish in general appearance.) He has been working in the Mweru Marsh for several years, and while frequently seeing *P. onocrotalus* in large numbers, he has never seen *P. rufescens*. Grimwood and I, on 13th October, also saw thousands of adults of *P. onocrotalus*, but not a single *P. rufescens*. I had a similar experience on

10th September. Mr. P. I. R. Maclaren, Fisheries Officer, on 25th August, arrived at a conservative estimate of 4,500 (all *P. onocrotalus*), but possibly as many as 6,000. Two which he shot each contained two *Tilapia*, weighing 6,6,6, and 8 oz. respectively.

On 12th November I counted less than 100 birds, circling in a flock overhead (and on 12th December saw only one), and report had it that some of the young had died, probably due to the abnormally dry conditions, causing the death of many *Tilapia*. On 13th October there was a line of dead *Tilapia* along the edge of the lake, estimated by Maclaren from sample counts at 44,000 per mile. The only other two species of fish known in the lake—a *Clarias* and a *Heterobranchus*—do not appear to have been affected by the adverse conditions. In four miles only two dead *Clarias* were found among the *Tilapia*. Vesey-FitzGerald, too, refers to mortality in the Rukwa colony of *P. onocrotalus*. According to the local African fishermen, this pelican breeds annually in the Mweru Marsh, eggs being laid in August. In 1949, when conditions were drier even than in 1954, and Lake Mwere wa Ntipa dried up almost completely, mortality must have been very severe.

Finally, it is necessary to record some comments by Captain C. R. S. Pitman, C.B.E., D.S.O. M.C., ex-Game Warden of Uganda, which he has kindly sent me and which I have his permission to use. It is likely that another breeding ground of *P. onocrotalus*, possibly on a vast scale, will eventually be located in the northern Lake Rudolf region or in the vast swamp region of the southern Sudan—perhaps in both. With reference to Chapin & Amadon's paper, it is practically certain that there is no breeding colony in the Lake Edward region, where a thorough search has been made. It is equally certain that there is no suitable locality elsewhere in Uganda or the adjacent Congo. The African pelicans require for successful breeding, (1) plenty of suitable fish, and (2) inaccessibility. In the case of *P. rufescens*, the breeding colonies are usually sited in lofty trees with tall limbless boles, and so can only be reached with considerable difficulty. In the case of *P. onocrotalus*, however, a ground breeder, the colony must be inaccessible to four-footed predators (including the large *Varanus* lizards) as well as to man. It seems that in the Rukwa and the Mweru Marsh, and possibly also at Lake Chilwa, a combination of shallows and mud affords the necessary degree of inaccessibility. Possibly small nesting colonies may also occur in the Malagarasi region of western Tanganyika Territory, or in the swamp and minor lakes region of north-western Tanganyika Territory and the adjacent Lake Mohasi region of Ruanda-Urundi. But all investigations (by correspondence) have revealed only arboreal colonies of *P. rufescens*. Pitman agrees that Mac-Innes' record of *P. onocrotalus* from Central Island, Lake Rudolf must have been incorrect.

It is worth giving measurements of bill and wing of Northern Rhodesian specimens in the Bulawayo Museum, taken in the same manner as by Chapin & Amadon (heads only available in some cases) :—

Sex	*Locality*	*Date*	*Wing*	*Bill*
Male	Mweru Marsh	25.8.54	696	422
Male	Mweru Marsh	25.8.54	—	429
Male	Kalomo	26.7.52	—	435
Female	Kalomo	26.7.52	685	445
Female	Balovale	6.9.45	575	298
Female	Luangwa River at 12° 57'S.	21.8.52	625	333

Note the relatively small figures (carefully checked) for the last two specimens. They are not *P. rufescens*.

GAME & TSETSE DEPT.,
KASAMA,
NORTHERN RHODESIA,

C. W. BENSON

12th February 1955.