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February / février 2010

ON THE FIELD IDENTIFICATION OF THE YELLOW-BILLED EGRET

Sir,

When discussing the problem of distinguishing the Yellow-billed Egret Egretta intermedia from the Great White Egret (Heron) E. alba in the field, Macdonald (1976, Bull. Nigerian Orn. Soc. 12: 73) did not mention the following point of distinction. In the Yellow-billed Egret the black line of the gape ends immediately below the eye whereas in the Great White Egret it extends over 1 cm past the eye (Cramp & Simmons, 1977, The birds of the Western Palearctic, Vol. I, O.U.P., Oxford, p. 296; Stronach, 1968, Ibis 110: 345; see also Broekhuysen 1969, Field guide to the birds of the South African sea-shore, Timmins, Cape Town, pp. 46-47). At close range the absence of a black line beyond the eye is a good field character of the Yellow-billed Egret.

Adult Yellow-billed Egrets in breeding plumage can also be told from Great White Egrets by the shorter scapular plumes ('aigrettes'). In the Yellow-billed Egret the scapular plumes reach a little, in the Great White Egret far, beyond the tip of the tail (Cramp & Simmons 1977: 296, 301). Under certain conditions (for instance, when observing a flying bird), this can be a useful additional point of distinction.

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MIGRATION OF SAVANNA BIRDS REVEALED BY LOCAL RECORDS

Sir,

By a synthesis of information from localities throughout Nigeria, Elgood, Fry & Dowsett (1973, Ibis 115 : 1-45 and 375-411) revealed a tendency for many bird species to migrate northward for the wet season and southward for the dry season. The latitudinal uniformity of climate and vegetation zones over much of West Africa suggests that their conclusions apply more widely. Several authors (e.g. Pettet 1976, Bull. Nig. Orn. Soc. 41 : 18-24; Greig-Smith 1977, Bull. Nig. Orn. Soc. 43 : 3-14; Hall 1977, Bull. Nig. Orn. Soc. 43 : 15-36; Gee & Heigham 1977, Bull. Nig. Orn. Soc. 44 : 103-132; Taylor & Macdonald 1978, Bull. Nig. Orn. Soc. 45 : 4-8) have recently commented further on the migration of particular species, based on

records suggesting seasonal absence or rarity at single localities. Here I discuss whether such records are adequate to demonstrate migratory behaviour, or to identify its nature. The question has been prompted by recent studies in the Guinea savanna zone, but the arguments apply in principle to the birds of other zones.

Impressions of a species' seasonal migration from a site must rely on changes in its observed abundance, detected by censusing (e.g. Greig-Smith 1977), mist-netting (e.g. Fry 1970, Ostrich suppl. 8 : 239-263) or casual observation. Such evidence is greatly strengthened if changes are replicated in several years. However, observed changes could be due to any one of the following factors: (i) mortality; (ii) recruitment of young; (iii) changes in occupancy of different habitats; (iv) changes in conspicuousness within a habitat, reflecting the birds' habits (e.g. cessation of territorial displays outside the breeding season), adoption of eclipse plumage, or the growth and destruction of vegetation cover; (v) immigration and emigration from the area. All of these influences are likely to be seasonally biased, probably differ between species, and their importance may be difficult to estimate without detailed study of the species concerned. In addition, errors may arise through variation in the efficiency or ability of different observers (see Greig-Smith 1977), although in principle this variable can be readily controlled.

These considerations mean that observers may be misled into interpreting a seasonal change in numbers of birds recorded as due to migration rather than other causes, or vice versa. Without direct investigation of the factors listed above, decisions on this question rely largely on the personal opinions of the authors, and are unsatisfactory scientific evidence. Thus many of the discrepancies between my own conclusions (Greig-Smith 1977) and those of Taylor & Macdonald (1978) at the same site are impossible to resolve objectively from the information available.

A further complication is introduced when migration is inferred by taking records from different years as representative of different seasons. There are large year-to-year fluctuations in climate in the savanna zones (e.g. Morel & Morel in press, Mem. O.R.S.T.O.M.; Greig-Smith in press, Report of 4th Aberdeen Univ. Ghana Exp.), partly responsible for changes in local status. For example, there were obvious differences in the abundance of many species at Mole National Park, Ghana, between the early wet seasons of 1974, 1975 and 1976 (unpubl. data of P. W. Greig-Smith, N. C. Davidson, and A. H. Cuthbert), while even greater yearly changes occur in the sahel zone (Morel & Morel in press). Therefore, conclusions regarding migratory status based solely on visits as much as seven years apart (Taylor & Macdonald 1978) are of doubtful validity.

Thus it is difficult to recognise seasonal immigration or emigration from changes in numbers alone, particularly if the species is never entirely absent. However, let us assume that for some species this can be reliably accomplished. It is then possible to envisage a continuum of 'migratory' behaviour, which can be summarised by the following stages: (a) birds retain the same territory or home range throughout the year (i.e. they are

fully resident); (b) birds become more restricted in their ranging at some seasons than at others, though always retaining some part of their range; (c) birds make a seasonal change in habitat preference, becoming confined to a different habitat at the same locality; (d) birds' ranges in different seasons are entirely discontinuous.

Only the last category is usually thought of as 'migration', (b) and (c) generally being classed as 'local movements'. However, the 'migration' category covers a wide range of behaviour. In some species, all birds might make similar movements in a consistent direction, often following a traditional route (as in many of the patterns revealed by Elgood et al. 1973), whereas in others movements might be uncoordinated, in a variety of directions (such as probably occurs in many waterbirds as aquatic habitats shrink in the dry season). All members of a population might migrate, or only some individuals (e.g. certain age-classes, or birds in sub-optimal habitats). The behaviour of individuals might vary yearly between residence and migration (e.g. in response to fluctuations in rainfall). Synchrony of movements within populations might vary; while the timing, distances, and relationship of moult and breeding to migration differ between species (see Elgood et al. 1973). Clearly, a simple distinction between 'residents' and 'migrants' is a poor reflection of this diversity, while the assumption implicit in some accounts, that species have migration patterns characteristic of all their populations in all years, is probably unjustified.

Do these objections mean that local records are valueless? The answer is clearly no, since the important analysis by Elgood, Fry and Dowsett (1973) was based on such information. Records from a single site, though often inevitably short-term and non-quantitative, can readily add information by noting times of arrival and departure, and whether absences are partial or total. Where regular censusing is feasible, further information can be obtained with little additional effort. For example, noting the positions of sightings along a regular transect route allows assessment of the pattern of dispersion of a population, and its seasonal changes. Levels of conspicuousness are measurable by methods such as Emlen's (1971, Auk 88 : 323-342), involving the calculation of objective 'coefficients of detectability', applied to savanna woodland birds by Greig-Smith (1978, Ibis 120 : 284-297, and in press). Changes in ranging and habitat preferences at a locality can be identified by marking individual birds (Greig-Smith in press), or less satisfactorily by correlating the results of censuses in different habitats, - thus a decrease of a species in savanna woodland at the same time as an increase in nearby riverine forest would provide strong circumstantial evidence for the movement of individuals.

While local records can provide much information, they cannot reveal the directions, distances or consistency of longer migrations. In view of the alternative possibilities outlined above, it is perhaps unjustified to assume that these follow the overall trends revealed by Elgood et al.'s (1973) analysis. For example, it seems incautious on the evidence available for Taylor & Macdonald (1978) to state for Phoeniculus purpureus that "there must be a considerable movement south in the late dry season", or for

Prionops plumata that "the entire population moves south". Unless coupled with detailed study of a species, or comparison of different localities, such firm statements may be premature, and are best avoided.

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