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CATTLE EGRETS FEEDING ON FLIES ATTRACTED TO MANGOES

by M. E. Smalley

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The Cattle Egret *Bubulcus ibis* feeds alongside grazing cattle and thereby obtains more food for less effort than do egrets feeding alone (Heatwole 1965). It feeds chiefly upon insects - especially grasshoppers, flies and beetles - and upon frogs and reptiles (Cramp & Simmons 1978), for which it searches by walking forwards with body and neck raised slightly above the horizontal, frequently stopping and "peering over". That involves straightening the neck and pointing the bill and head downwards (Meyerriecks 1960), presumably observing and evaluating a potential prey, and may be followed by either a strike or resumed walking. Birds search either on their own or by following an animal, vehicle on fire, but it is not clear whether they respond to the movement of their feeding associate or directly to the sight of increased concentrations of moving prey (Heatwole 1965).

STUDY AREA

On a 90 acre campus in Fajara, The Gambia, the mango trees fruit at the beginning of the wet season, between late May and mid July. Cattle Egrets forage on the campus all year, usually on regularly mown grassy areas. The ripening mangoes attract numerous animals, and many damaged and partly eaten fruits accumulate on the ground around the trees. Such fruits attract insects, mainly flies, bees and ants, which attract the egrets.

OBSERVATIONS

The average density of fallen mangoes was 4.7 per square metre; the predominant insects attracted to them and taken by Cattle Egrets were flies, especially calliphorids ("blue-bottles"); and the number of egrets in daily attendance was 5-14 (average 7). As many flies rested on the surrounding vegetation and leaf litter as on the fruits; but to assess their availability to the egrets I counted them only on fruits. Counts on 20 mangoes were made regularly. The number of flies per mango, and the number of damaged fruits attracting flies, increased during the course of the morning and remained high until early evening. The proportion of the campus Cattle Egrets feeding around the mangoes showed a similar, although slightly delayed pattern (Fig. 1). 135 observations of egrets striking at flies on and around mangoes were made between 1600 and 1730 hours; 118 strikes (87%) were successful. The successful-strike

rate of 3.8 per minute was twice that of egrets feeding on open grass (Table 1).

Table 1. Feeding rates of Cattle Egrets on mangoes and grassland

	Number of observations	Mean strikes/minute	Mean successful strikes/minute
Mangoes	135	4.4	3.8
Grassland	84	2.8	1.7

Bees were less common, and only once did I see a Cattle Egret catch and swallow one. Indeed the egrets appeared deliberately to avoid them. On four occasions birds "peered over" at a bee (Meyerriecks 1960) only to move aside and turn their attention elsewhere. Twice egrets removed the fly from mangoes with one fly and three bees, ignoring the latter.

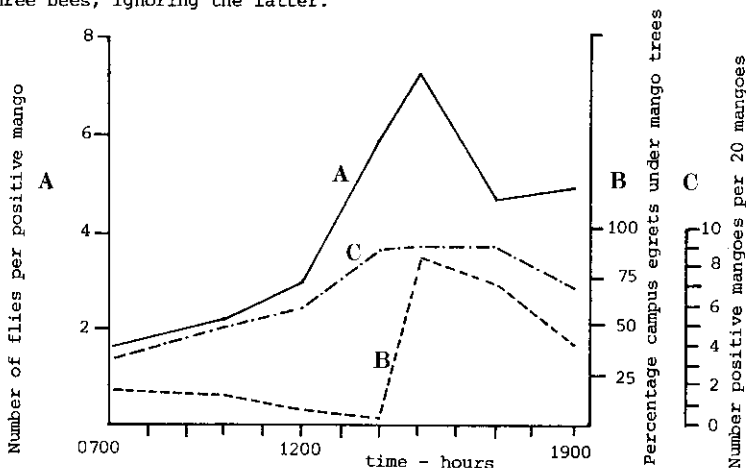


Figure 1. Variation with time of day of fly abundance and of proportion of campus Cattle Egrets at mangoes. 'Positive mango' is one attracting flies.

DISCUSSION

Models of optimal foraging predict that predators maximize their catches by means of deliberate selection (Krebs 1977). Clearly Cattle Egrets can decide where to forage and can thereby increase their food intake. The rate of successful strikes, 3.8 per minute, made by Cattle Egrets feeding around mangoes is considerably greater than the rates measured by Heatwole (1965 - 2.34 per minute) and Dinsmore (1973 - 2.6 per minute) among egrets feeding with grazing cattle. However, in this study the egrets were foraging in a virtually fixed pool of potential prey, and the high strike-success rate of 87% suggests that feeding rate was limited by the time taken to line up and strike at flies. In contrast, the rate of 1.73 per minute achieved by Cattle Egrets feeding on the campus open areas compares well with the values of 1.6 and 1.71 recorded from grassland by Heatwole (1965) and Dinsmore (1973) respectively.

Even the low fly densities on mangoes during the early morning attracted some egrets. The progressive build-up in fly numbers was not, however, followed immediately by an increased number of egrets, presumably because their foraging rate generally appeared to drop during the heat of the day when the birds often rested in the shade.

Flies are a favoured prey of Cattle Egrets foraging under mango trees, but bees were rejected - probably because they stung the egrets. It supports MacArthur's (1972) hypothesis that a predator encountering a favoured prey in abundance will ignore available lower quality prey.

SUMMARY

Cattle Egrets fed on calliphorid flies attracted to fallen mango fruits. 3.8 successful strikes per minute were made at flies and 87% of strikes resulted in a fly being caught. Bees attracted to the mangoes were ignored. Cattle Egrets can respond directly to the sight of large concentrations of potential prey.

RESUME

Des Hérons garde-boeufs se nourrissaient de mouches Calliphorides attirées par des mangues tombées. Les Garde-boeufs donnaient 3.8 coups de bec efficaces par minute et 87% des coups de bec aboutissaient à une capture de mouche. Les abeilles attirées par les mangues étaient ignorées. Les Hérons garde-boeufs peuvent réagir directement à la vue d'une forte concentration de proie potentielle.

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