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Observations on nesting and associated behaviour of the Shrike Flycatcher *Megabyas flammulatus* in Tai National Park, Ivory Coast

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Summary

A nest, incubation and associated behaviour of a pair of Shrike Flycatchers *Megabyas flammulatus* and one accompanying male are described. Two calls and two display types were noted, one of each being previously undescribed.

Résumé

L'article décrit le nid, la couvaison et le comportement qui s'y rapporte d'une paire de Bias écorcheurs *Megabyas flammulatus*, accompagnée d'un mâle. Deux cris et deux types de parades ont été notés: l'un des cris et l'une des parades n'avaient pas encore été décrits.

Introduction

The Shrike Flycatcher *Megabyas flammulatus* is a moderately common species in primary and secondary forest of West Africa, from Sierra Leone to Gabon and Bioko (Fernando Po), and in Central Africa (Mackworth-Praed & Grant 1973, Allport *et al.* 1989), but little is known of its ecology or nesting behaviour.

As part of an ICBP survey of primary forest birds in Tai National Park, Ivory Coast, a study of canopy bird parties was carried out from tree platforms situated between 30 and 40 m from the ground. This permitted observations, over the period 28 December 1990 to 15 January 1991, of the behaviour of a pair of Shrike Flycatchers which had constructed a nest on a bough about 6 m from one of the platforms.

Results

Nest Structure

The nest was found on 12 December 1990, during its construction by a pair of Shrike Flycatchers. It was situated in the upper canopy of a *Klainodexa* tree, 35-40 m above the ground, and positioned on a horizontal, 5 cm diameter branch, at a fork. The branch was leafless, so the nest was completely exposed. It was a raised cup of approximately 4 cm diameter and 1.5 cm height, composed mainly of flakes of bark and lichen, apparently bound together and attached to the branch with cobwebs. Since it was not possible to see into the nest, neither eggs nor chicks could be seen.

Behavioural observations

Observations of behaviour were started on 28 December, by which time the nest had been completed, eggs laid and incubation begun. The observer was partially obscured while on the platform and was 6 m from the nest. Though there may have been some wariness initially, the birds quickly became habituated, as on several occasions incubating birds remained on the nest as the observer climbed up to the platform.

Observations were made on 28 and 31 December 1990, 4, 8, 12 and 15 January 1991. Early on 28 December, birds attending the nest appeared wary of the observer but later and on subsequent days did not leave the nest at the arrival or departure of an observer. Initial signs of unease on the first day of observations included restless moving about the canopy with much sideways tail-wagging, and characteristic *chuick-chuick* calls; both sexes behaved in this way.

At least three birds attended the nest, two males and one female, although nest change-overs were always between a male and female, so there is no evidence that more than one male took part in incubating the eggs or feeding young. A second male was seen in the vicinity of the nest on several occasions when another male was incubating. When two males were present near the nest, they often interacted. Twice, two males appeared simultaneously or nearly so, one began incubating while the other remained within 50 cm of the nest; there was much interactive calling (*chuick-chuick*) combined with a dipping or nodding display by the non-incubating male, in which the head and upper body were repeatedly tilted downwards briefly towards the other bird. On one such occasion, the second male remained near the nest for 15 min.; on the other, the incubating male left the nest and drove the second male away, to a distance of 3 m. On 31 December, two males (one incubating) and a female were seen together near the nest, all giving dipping displays with both call types. The female replaced the incubating male, which departed and began foraging with the second male.

On arrival to incubate, a male or female either began incubating without display or gave a dipping and tail-wagging display, with *chuick-chuick* calls or an insect-like rasping trill *prrrt*, whether or not another bird was present (Table 1). Once, an arriving female gave a brittle *chip-chip* call.

Table 1. Arrival behaviour before commencing incubation. The female was never seen to arrive in the absence of other birds.

	Other bird nearby	No other bird nearby
Male arrived		
Gave display	2	5
Gave little or no display	2	2
Female arrived		
Gave display	3	
Gave little or no display	3	

Incubating birds sometimes left the nest unattended (eight occasions) and were sometimes replaced within a few seconds (seven occasions). Once, a departing male gave the *prrrt* call, although no other bird was nearby. Once, a male left the nest to join another male, which greeted it with the *prrrt* call; both then departed but the female immediately arrived and settled on the nest, without display. Once, the female sat on the nest, with a male nearby, when a troop of Diana Monkeys *Cercopithecus diana* passed close by.

On 15 January, both male and female made brief visits (≤ 2 min.) to the nest, during which they appeared to feed chicks. That day, they rarely left the nest unattended for more than 2 min..

The relative proportion of time spent by the male and female in incubation changed dramatically during the study. On 28 December, the male occupied the nest for about 12 times more time than the female; by 8 January, this ratio had reduced to about 2.5 and subsequently the female had a similar or a greater role than its mate.

Discussion

Mackworth-Praed & Grant (1973) described *M. flammulatus* as occurring in secondary forest, and Grimes (1987) found them to be "not uncommon" in undergrowth and the middle layer of mature and secondary forest. At Tai Forest we encountered them in small foraging parties in mid-storey as well as canopy of primary forest. This concurs with earlier observations in Ivory Coast (Thiollay 1971) and in Gola Forest, Sierra Leone (Allport *et al.* 1989).

In NE Gabon, Erard (1987) recorded *M. flammulatus* occurring at 18-36 m in canopy and emergent trees of gallery forest and 12-15 m in secondary growth. The nest described here was situated at 35-40 m in the upper canopy of primary forest and the breeding birds apparently foraged nearby. Restriction of nesting to forest canopy may account for the paucity of previous reports on nesting in this species.

The nest closely resembled that described by Mackworth-Praed & Grant (1960), though they later suggested that this and their earlier description of habits probably related to the Black and White Flycatcher *Bias musicus*. Our observations also correspond closely with the recent description by Halleux (1994) of a *M. flammulatus* nest in Guinea. However, nest-building behaviour, eggs, clutch size and hatching success remain unknown. Likewise, uncertainty in the laying date prevents determination of the incubation period. However, eggs were laid in mid to late December. Birds were found in breeding condition during October on nearby Mt Nimba (Colston & Curry-Lindahl 1986).

Brosset & Erard (1986) described the social unit in this species as not a pair but rather two adult males often accompanied by a juvenile or, more often, an adult female. In the present case, two males and a female were frequently present near the nest. Both males were in full adult plumage. However, the fact that an incubating male was never replaced by another male suggests that only one male and the female incubated the eggs.

The second male moved within 25 cm of the nest on 28 December but was driven off on 31 December, perhaps indicating increasing intolerance on the part of the incubating male. On 4 January the second male never approached closer than 10 m from the nest and from 8 January, the second male was never seen in the vicinity.

There is, therefore, circumstantial evidence that the second male did not incubate the eggs or feed chicks. Halleux (1994) stated that both male and female incubated, but he would likewise have been unable to determine the involvement of additional adults.

Erard (1990) found evidence that the third adult commonly accompanying breeding pairs of Sooty Flycatcher *Muscicapa infuscata* may not have participated in nest building or incubation but only in defence of the territory. In the Forest Flycatcher *Fraseria ocreata*, however, Erard (1990) found that such supernumerary adults participated in all nesting activities except incubation. Similar social arrangements also appear commonplace in some *Malimbus* spp. (Brosset & Erard 1986).

The apparent change in incubation proportions by male and female may have been caused at least in part by a differential response to disturbance: C. Erard (pers. comm.) has observed that, in Gabon, males of various forest species are less shy than females. Alternatively, the female could have been foraging more to replenish food reserves, just after egg laying.

Mackworth-Praed & Grant (1973) described the calls of the West African race *M. f. flammulatus* as a musical *chuick* and Bannerman (1951) a *tuwick* call. These are presumably the bisyllabic *chuick-chuick* noted here as made by both sexes. Mackworth-Praed & Grant (1973) also note the female as making a churring note. This may be analogous to the *prrrt* recorded in our study, although this was uttered by both sexes. A brittle *chip-chip* call emitted once by the female in our study has no counterpart in other descriptions.

Calls were almost always accompanied by one of two displays – side to side tail-wagging and dipping – occasionally in combination but often independently. Bannerman (1951) described similar slow wagging of the tail. However, dipping does not appear to have been recorded previously and may be specific to the nesting context.

Both sexes indulged in the two main call types and the two forms of display. There was, however, some indication that the male dipped more frequently and more vehemently but with less tail-wagging than the female. No clear pattern can be discerned with respect to the circumstances in which each type of call or display was used.

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Egyptian Vulture – Vautour percnoptère – *Neophron percnopterus*
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