GENERAL NOTES

Foraging behavior in the Blue Flycatcher.—Many observers have written about the wing and tail fanning of the Blue Flycatcher (*Elminia longicauda*) of eastern Africa and on its flitting and flying pursuit after insects, but none seems to have clearly associated the two types of behavior as elements of a definite foraging routine. In October 1968 we frequently saw individuals and pairs of this flycatcher at Entebbe, Uganda, and from our initial encounters we gained the impression that the posturing serves to disturb or flush stationary insects and thus make them more easily available as prey. This early impression led us to watch these flycatchers closely (at distances of 10 to 30 feet with 7×35 binoculars) over periods totaling 70 minutes. The results of these and more casual observations totaling about 6 hours follow:

We found that typically these flycatchers foraged in shady, wooded areas but not in deep forest, and most often in trees with discrete but open crowns and few branches on their lower trunk, such as jacarandas and cassias. Foraging flycatchers spent most of their time flitting by short hops and flights among the twigs and smaller branches of the lower parts of the crown. Frequently they made longer flights after insects in the airspace below, then returned to the original or a nearby tree and resumed their flitting behavior.

Throughout the flitting routine the birds postured in a definite and stereotyped manner, always just after arriving at a new perch. On arrival a bird generally oriented itself with its head toward the distal or leafy end of a twig and with the foreparts lower than the hindparts (Figure 1A). Almost immediately it forcefully drooped the wings into a half-open position and fanned the tail (Figure 1B). This was followed quickly by a pivoting from side to side (Figure 1C) over an arc of 40 to 60 degrees, with the wings and tail still fanned. From its first arrival at a perch a bird seemed to peer intently at the nearby substrate, apparently seeking prey. Whenever it detected an insect the bird either attempted to glean it from the substrate or, if it flew away, to catch it in flight. Most attempts at capture came during posturing, but some came before it had begun. If the bird gleaned an insect before starting to posture, it usually moved to a new perch before posturing again. Insects pursued and brought back to a perch were eaten without posturing, and generally the bird moved to a new perch before posturing again. Thus, posturing seemed to be closely associated with the bird's arrival at a new perch during the flitting routine and not at other times during foraging.

Proof that the insects being gleaned or pursued in flight were actually being disturbed or flushed by posturing is largely circumstantial. Most of the time the insects were too small and too quick in their movements for us to see, but a few times we were able to discern them. In these instances insects were seen to fly from a branch on which a flycatcher had landed and postured, closely followed by the bird in pursuit. On other occasions the bird's behavior, including its gaze and manner of flight, suggested that this had occurred, even though we could not see the prey. The manner of flight, usually active and darting, particularly suggested that most pursued insects were initially encountered very near the flycatcher, although this does not preclude insects that were hovering or flying near the perch area rather than being flushed from it. Seldom did flycatchers seem to detect and attempt to intercept prey at long range. The few times that we saw this it was not preceded by posturing, and it occurred with a flycatcher sitting near the ground and peering upward toward the canopy after an earthward pursuit of an insect. In essence then, we saw actual flushing of insects in a few instances and behavior suggesting it in others. The impression

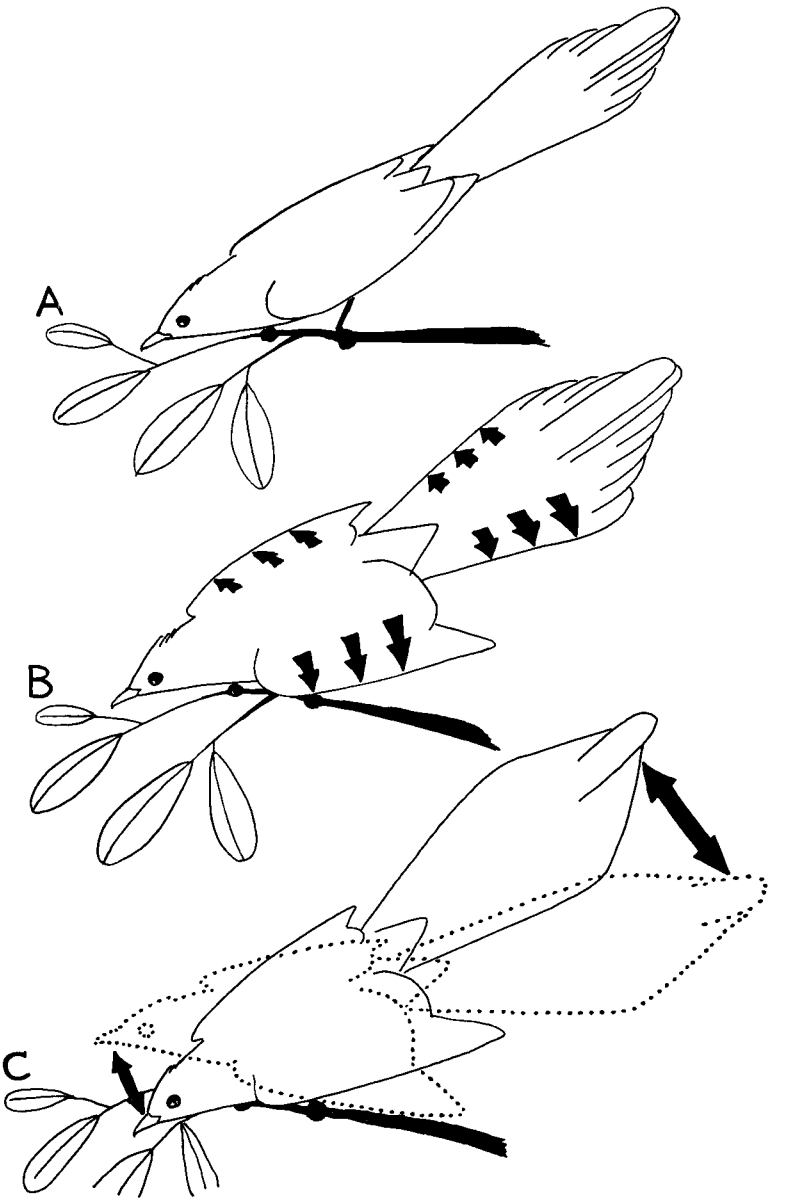

Figure 1. A, Blue Flycatcher arrives at a new foraging perch, head facing leafy area and lower than tail. B, almost simultaneously the wings are forcefully drooped and the tail is fanned. C, the flycatcher then pivots from side to side over an arc of 40 to 60 degrees with the wings and tail still fanned.

that most prey was initially detected in the immediate vicinity of the perch is consistent with the hypothesis of flushing. The fact that posturing preceded most attempted captures suggests that this was the mechanism of flushing. Our interpretation of this evidence is that the Blue Flycatcher overtly flushes some and perhaps a great deal of its prey by posturing as it forages.

Although the posturing described above has not been specifically associated before with foraging, Willoughby Lowe may have implied it when he noted that Blue Flycatchers hunted along boughs, driving insects until they took flight and were captured and eaten (*in* Bannerman, The birds of tropical West Africa, vol. 4, London, Oliver and Boyd, 1936: 288). Wing and tail fanning also occurs in other African and in Asian flycatchers, and D'Abreu (J. Bombay Nat. Hist. Soc., 35: 217) reports that *Rhipidura aureola* and *R. pectoralis* employ tail fanning to flush insects from mango trunks in India. Among New World birds that forage like the Blue Flycatcher, wing and tail fanning occurs commonly in parulid redstarts (e.g. *Setophaga ruticilla, Myioborus pictus,* and *M. miniatus*), and one wonders whether or not flushing of prey might be an object of their posturing. Such parallelism would not be unexpected.

We are very grateful to the many people who made possible and productive our ornithological research in Africa, particularly those of the East African Virus Research Institute (Entebbe), the U. S. Naval Research Unit in Cairo, and the Smithsonian Institution.—JOHN P. HUBBARD and CLAUDIA L. HUBBARD, *Rockbridge Alum Springs Biological Laboratory, Goshen, Virginia 24439.*

Spring departure of Sandhill Cranes from northern Florida.—While banding and color-marking Sandhill Cranes (*Grus canadensis*) in 1968 on Paynes Prairie near Gainesville, Florida I was able to observe the striking behavior of cranes departing their wintering grounds. The spring departure of Whooping Cranes (*Grus americana*) has been described (Shields and Benham, Auk, 85: 318, 1968), but evidently it has not been described for the Sandhill Crane in detail before.

On 1 March 1968 a 15 mph breeze from the southwest produced an early spring-like day in northern Florida. I was watching a bait site on Paynes Prairie used to capture cranes for banding and color-marking when at 09:50 hours a group of about 150 cranes sprang suddenly into the air calling excitedly and settled back to the prairie after circling widely at low altitude.

At 09:55 hours about 100 of the same group rose again with a clamor even greater than before and began a slow upward spiral, beating their wings strongly and gaining altitude each time the spiral turned into the wind. As the disarranged flock continued upward, smaller groups and single individuals joined them from other parts of the prairie until the flock numbered nearly 200.

At 10:05 hours the flock was still not organized into formation, but some of the birds were attempting to form small "V" groupings within the larger flock. At this time the birds were approximately 1,000 feet above the ground and a few smaller flocks were still gaining altitude to join them. By 10:09 hours all the smaller groups were near the main body of the flock. Suddenly, they all turned to a northward heading and slipped into three long "V" formations. Occasionally the three formations attempted to merge, but the arrangement was unstable and did not comprise a single formation for more than a few seconds. After about 6 minutes of steady northward flight, the three formations turned and spiraled upward several more times before resuming a northerly heading. They seemed to be moving faster after turning north again, possibly as a result of having gained stronger winds at that altitude, which I