

## A GREATER ANI (*CROTOPHAGA MAJOR*) GIVES A NUPTIAL GIFT WHILE COPULATING

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Un Garrapatero Mayor (*Crotophaga major*) da un regalo nupcial durante el acto de ayuntamiento.

**Key words:** Nuptial feeding, Greater Ani, *Crotophaga major*, paternal investment, food for sex, copulation.

### INTRODUCTION

Males of many taxa offer females food items known as nuptial gifts (e.g. Gwynne 1986) before, during, or after copulation. The quality of a nuptial gift can influence the likelihood that the female will mate (Tryjanowski and Hromada 2005), the probability of insemination from mating (Velando 2004), and/or the fitness of offspring conceived from the mating event (Gwynne 1988). In this report I describe an observation of a nuptial gift exchange in a pair of Greater Anis (*Crotophaga major*). Nuptial gifts are not uncommon in birds, but the method of transfer makes this observation noteworthy.

### OBSERVATION

On June 13, 2001, I observed two Greater Anis standing side by side on a log that emerged from a shallow pond in a 22-ha frag-

ment of semi-deciduous tropical forest near the village of Gamboa, Republic of Panama. In this account I refer to the larger and smaller individuals as the male and female, respectively; this assumption is assessed in the Discussion. The male flew a short distance, landed near the edge of the pond, and captured a juvenile green iguana (*Iguana iguana*, snout-vent length ~16 cm). The male returned to the log with the iguana, which was struggling to escape. The male then thrashed its bill, beating the iguana against the perch and flew out of my sight, while the female remained perched on the log. Within a minute, the male returned to the log, alighting near the female. The male grasped the iguana, which was now hanging limp, by the middle of the body. He stood with his chest high and brought the iguana's head toward the female's mouth. She assumed a typical precopulatory posture (bill and tail up, back down, wings slightly spread) and took the lizard's head into her mouth. The male adjusted his grip toward the lizard's tail, flapped his wings and leapt onto the female's dorsum. He lowered his tail, and the two appeared to copulate, although it

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was not possible to directly observe cloacal contact from my vantage point.

While the birds appeared to copulate, the male lowered the prey item into the female's throat. As he fed her, he adjusted his grip toward the posterior of the carcass, such that he was eventually holding the distal portion of the lizard's tail just above the female's mouth. The male then released his grip on the tail and dismounted. Copulation lasted approximately 5 seconds. The male perched next to the female, lowered his head, extended both wings, erected his body feathers and shook vigorously. Shortly thereafter, both birds flew up to perch in a tree near the pond.

## DISCUSSION

The interpretation of the preceding observation depends critically on the assumptions that the mounting bird was male and the mounted bird was female. Reverse mounting has been described in the congeneric Groove-billed Ani (*C. sulcirostris*, Bowen *et al.* 1991), but three lines of evidence suggest that I observed a male mounting a female. First, the mounting bird appeared physically larger than the mounted bird and male Greater Anis are larger than females (Olson 1978). Second, the observation was made during the wet season, during which time male mounting is more common than female mounting in Groove-billed Anis (Bowen *et al.* 1991). Finally, the high nutritional value of the gift is consistent with well-established theories of male investment. Female animals, however, do not typically offer large gifts to males.

The mechanism of gift transfer in the Greater Ani pair was noteworthy because feeding during copulation (as opposed to before or after copulation) is relatively uncommon in birds and because the gradual transfer of food appeared to allow the male to control the duration of copulation. Feeding during copulation has been reported in at

least two bird species (Lack 1940), including another member of the cuckoo family. Lack (1940) observed a Yellow-billed Cuckoo (*Coccyzus americanus*) giving an insect to his mate near the end of a bout of copulation. Male insects are also known to feed females during insemination (reviewed in Thornhill 1976). The giving of a nuptial gift during copulation may prevent females from 'cheating' by accepting gifts and then withholding sexual access.

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