ORNITOLOGIA NEOTROPICAL 26: 109–112, 2015

COOPERATIVE HUNTING BY A PAIR OF PLUMBEOUS KITES (*ICTINIA PLUMBEA*)

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Caza cooperativa por una pareja de Milanos Plomizos (*Ictinia plumbea*).

Key words: Argentina, cooperative hunting, *Ictinia plumbea*, *Molothrus bonariensis*, Plumbeous Kite, *Tropidurus torquatus*.

Handling editor: Jean Marc Thiollay; **Receipt:** 24 February 2015; **First decision:** 9 March 2015; **Final acceptance:** 23 March 2015.

INTRODUCTION

Cooperative hunting, which requires the coordinated efforts of individuals belonging to the same (or even different) species to capture, or increase the probability of capturing, relatively large or elusive prey, has been reported for several species of diurnal raptors, including falcons (Hector 1986, Yosef 1991, Leonardi 1999, Eakle *et al.* 2004), Harris' Hawks (Mader 1979, Bednarz 1988), and eagles (Collopy 1983, Folk 1992). This behavior is not frequently observed, most likely due to the low population densities of these birds and their furtive habits, among other reasons; thus, its occurrence may be underestimated. No records of this behavior exist for some birds of prey; in other cases, only scarce information is available. The Plumbeous Kite (*Ictinia plumbea*) is a species of medium size, the males being slightly larger than females (38 cm vs. 34 cm in length), although somewhat lighter (239 g vs. 255 g body mass, respectively) (Haverschmidt 1962, Rodríguez Mata *et al.* 2006). It is widely distributed in the Neotropics (Ferguson-Lees & Christie 2005), and its diet consists mainly of insects (cicadas, beetles, dragonflies, orthopterans, lepidopterans, and hymenopterans) mostly captured in flight, and to a lesser extent amphibians, lizards, snakes, birds, and bats (Skutch 1947, Haverschmidt 1962; Seavy *et al.* 1997, 2012). Only one instance of cooperative hunting by Plumbeous Kites has been documented (Seavy *et al.* 1997).

In this work, I describe two observations of cooperative hunting by a pair of Plumbeous Kites in northeastern Argentina.

STUDY AREA AND METHODS

The observations were recorded at the Estación Biológica Corrientes (Corrientes Biological Station) near San Cayetano, in the province of Corrientes, Argentina (27°33'11"S, 58°40'46"W).

The climate is subtropical: eight months with mean temperature above 20°C, and the remaining months with 10– 20°C mean temperatures. The annual precipitations reach 1300 mm, with high concentrations in the months of Austral summer (December to March) (Servicio Meteorológico Nacional 2015). This site is part of the Oriental District of the Chaco Phytogeographical Province (Cabrera 1976), also known as "Humid Chaco." The predominant vegetation comprises mesophyll and riparian forests, as well as savannas, often interspersed with palm-tree forests.

During Austral summer, observations were made opportunistically, every 2–3 days by means of 8x40 binoculars from distances of less than 30 m, since kites were extremely tame to human presence.

The pair of Plumbeous Kites under study was nesting c. 6 m high in a Lapacho tree (*Handroanthus heptaphyllus*, Bignoniaceae) close to the Biological Station buildings, and was raising a juvenile at the time of the observations.

RESULTS AND DISCUSSION

On 12 January 2011 at 14:00 h, the kite pair took off from the nesting tree and flew in tandem at high speed, no more than 1 m above ground level and at a distance from each other of approximately 2 m towards a collared lizard (*Tropidurus torquatus*) that was moving on the ground. These lizards (average head-tail length: 101.8 mm; average body mass: 39.6 g; Teixeira & Giovanelli 1999) are common in forest edges, thickets, and rocky places. They are nimble and fleet, and climb the trunks of trees, where they capture insects. When the kites appeared, the lizard ran swiftly toward the nearest tree (at a distance of about 6 m) pursued by the kites, one on each side. When it tried to change direction and flee to another tree, one of the kites swerved, blocking its path. Turning again and trying to run the other way, the lizard was intercepted and captured by the other kite with one of its claws; the kite then flew up with the lizard and perched on a dead tree, after which it took the lizard to the nest and fed its nestling.

On 26 January 2011 at 14:00 h, the same kite pair attacked a fledgling Shiny Cowbird (*Molothrus bonariensis*) that was perched among the foliage of a grapefruit tree (*Citrus paradisi*), approximately 2 m above the ground. One of the kites flew directly toward the cowbird, causing it to fly away from the foliage. At that moment, the other kite of the pair, which was flying several meters above the tree, dove down and captured the cowbird in flight. However, the cowbird got free, fell to the ground, and sought shelter under a bush.

It should be noted that in both observed incidents preys were larger and had a greater body mass than the ones previously cited in the literature for these species. Seavy *et al.* (1997, 2012) cite lizards of the genera *Norops* and *Sceloporus*, both averaging less than 15 g in body mass, as well as frogs and small snakes weighing less than 10 g, and Ridgway's Rough-winged Swallows (*Stelgidopteryx ridgwayi*), whose average weight is 15.9 g (Turner 1989). Instead, *T. torquatus* and *M. bonariensis* weigh on average 39.6 g and 53 g, respectively (Teixeira & Giovanelli 1999, Storer 1989).

Bednarz (1988) pointed out that one of the advantages of cooperative hunting is the use of distraction tactics. The observation of the kites capturing the lizard would fit into

this behavior category. These lizards are very common at the study site, where they move around on tree trunks feeding on insects. At times, they climb down to the ground and sprint to a different tree. Thus, although they may become more vulnerable to a potential predator while they are on the ground, they are difficult prey to capture due to their speed and maneuverability. But with one kite distracting the lizard, the second one could attempt to capture it. Likewise, the attack on the Shiny Cowbird illustrated a variant of this type of strategy, with one of the kites provoking the prey to flee so that the other one could eventually capture it.

Given that this hunting event involved two birds, with division of labor and shared consumption of the prey (at least with the juvenile) captured by one member of the pair, it can be categorized as "cooperative pair hunting", according to the social foraging categories proposed by Ellis *et al.* (1993).

ACKNOWLEDGMENTS

I thank Viridiana González for her help during the observations; David H. Ellis for sending bibliography, and Juan M. Coronel for suggestions. I also thank the Directorate of the Estación Biológica Corrientes (MACN-CONICET).

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