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OPPORTUNISTIC PREDATORY BEHAVIOR OF THE MONTEZUMA OROPENDOLA (*PSAROCOLIUS MONTEZUMA*) IN TIKAL NATIONAL PARK, PETEN, GUATEMALA

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Comportamiento depredador oportunista de la Oropéndola de Montezuma (*Psaro-colius montezuma*) en el Parque Nacional Tikal, Petén, Guatemala.

Key words: Montezuma Oropendola, *Psarocolius montezuma*, Icteridae, *Nyctomys sumichrasti*, Muridae, Rodentia, Guatemala, Tikal.

INTRODUCTION

Tikal National Park is situated in Petén, Guatemala's northernmost Department. The Park protects one of the largest ancient cities of the Maya civilization. It stands out in the eco-region Humid forest of Petén-Veracruz (CONAP 2008) as it is located in the southern part of the Yucatan Peninsula (17°13'N, 89°37'W), approx. 307 m a.s.l. Montezuma Oropendola (*Psarocolius montezuma* Lesson, 1830), formerly placed in the genera *Cacicus* and *Gymnostinops* (Griscom 1932), belongs to the New World family Icteridae, together with American blackbirds, New World orioles, meadowlarks, grackles, caciques, and cowbirds (Jaramillo & Burke 1999, Jaramillo 2009). Geographically, this resident species ranges from east-central Mexico to central Panama (Griscom 1932, Land 1970, Howell & Webb 1995, Jaramillo & Burke 1999) and from sea level to ca. 1500 m a.s.l. in Costa Rica (Stiles & Skutch 1989) and even to 1600 m a.s.l. in Nicaragua (Martínez-Sánchez 2007).

Besides fruits and invertebrates, Passeriformes consume an ample variety of food in the Neotropics including lizards and frogs (Poulin *et al.* 2001), bird eggs, nestlings, fishes, amphibians, reptiles, birds, and mammals (Lopes *et al.* 2005). Among icterids, diet consists mainly on fruits, nectar, seeds, grains, small crustaceans, arthropods, fishes, amphibians, small vertebrates in general (McIlhenny

1937, Skutch 1954, Skutch 1996, Jaramillo & Burke 1999, Kricker 2006), small mammals (Hamilton 1951), and some species have been reported to prey on songbirds at times of food scarcity (Jaramillo 2009). Generally, oropendolas mostly take fruits but also feed on a wide diversity of seeds, nectar, nestlings, bird eggs, small vertebrates, and invertebrates (Stiles & Skutch 1989, Skutch 1996, Jaramillo & Burke 1999, Lopes *et al.* 2005, Reidy 2009). *P. montezuma* is a fruit and nectar consumer (Skutch 1954), an occasional vertebrate consumer (e.g., lizards and frogs) and a probable nestling predator (Orians 1969, Wolf 1971). More recently, Sánchez-Monge & Calderón (2012) reported *P. montezuma* predating on a juvenal bird. No specific information has been found describing the Montezuma Oropendola as an opportunistic mammal predator.

RESULTS

In Tikal National Park, at mid-morning of 4 May 2006, a single individual of indeterminate sex of *Psarocolius montezuma* was first heard moving alone in the forest canopy at approx. 280 m a.s.l. (17°13'39"N, 89°37'21"W). At about 5 m above the forest floor, the bird perched on a branch with a small mammal in its bill. Repeatedly, its bill was jabbed into the prey which was secured with the feet (Figs 1a–b). Afterwards, it was grabbed with one foot only and its face punctured with the bill, then the rear side of the body. Insistently, while the prey was still alive, a wound was opened in the hind section as ingestion began. The prey finally died after constant crushing of the bill on the face. Half of the prey was devoured before three individuals of the Brown Jay (*Cyanocorax morio*, Corvidae) approached in order to steal the carcass by distracting the oropendola. When the bird dropped the remains to the forest floor (Fig. 1c), the jays achieved their aim (Fig. 1d). The entire activity lasted for around 20-min and nearly all was filmed in High Definition using a Sony HDW-730 video-camera (part of it watchable at http://vimeo.com/54339162).

After repeated viewing of the HD video, the mammal was determined as Sumichrast's vesper rat (*Nyctomys sumichrasti*; Rodentia: Muridae), an arboreal and strictly nocturnal rodent species (Reid 2009). This was supported through comparisons of proper key identification marks of specimens found in the reference section of the Mammals Collection at Museo de Historia Natural of Universidad de San Carlos de Guatemala (USAC). *N. sumichrasti* is a rodent species endemic to Central America, although also reported diurnal in captivity it is of primarily nocturnal habits, with a body mass of 40–67 g, hind food length 22–27 mm, and an average total length of 236 mm. It is agile in trees, but not so on the ground, nests up in branches or tree cavities, and inhabits middle to upper levels of forest in heights from 3–22 m (Hunt *et al.* 2004).

DISCUSSION

While *N. sumichrasti* is a strictly nocturnal species (Reid 2009), it probably was roosting in a tree cavity during daytime at the moment it was opportunistically captured. It is worth to mentioning that no nocturnal activity has been reported in *P. montezuma* or *C. morio*. Another possibility is that the rat was roosting in a fruiting tree and/or disturbed by a bird flock, providing opportunity for the oropendola to take the mammal. Many frugivorous bird species congregate at fruiting trees (Land 1963) and may turn into potential prey for facultative predators (Wolf 1971). Small mammals may be at similar risk if opportunistic predators, such as oropendolas, are around.

Obligate predators, such as Accipitriformes, Falconiformes, Strigiformes, or even

FIG. 1. Images showing details at different stages of predatory behavior: (a) and (b) Montezuma Oropendola (*Psarocolius montezuma*) individual hunting, killing, and partly foraging upon Sumichrast's vesper rat (*Nyctomys sumichrasti)* in a tree; (c) prey lying on the forest floor between tree buttresses; and (d) approaching of Brown Jay (*Cyanocorax morio*) to steal the prey after harassing the oropendola; all in Tikal National Park, Petén, Guatemala. Arrows indicate location of rat within the prints. Photos captured from HD video by T. Barksdale.

Laniidae exhibit sharp talons or a hooked beak, or both of them as specialized anatomical structures to seize and tear. If this agility and ease of killing and prey consuming process of the above taxa is compared to the one of the oropendola, then the latter definitely had more trouble while evidently spending longer time for doing so. However, this represented no major obstacle on its purpose to feed. Icterids possess a special adaptation named "gaping" (Jaramillo 2009). This feature allows them to strongly open their mandibles with suchlike powerful musculature to enlarge holes from where to extract food. It is suspected that this predatory behavior occurs amongst this large icterid species whenever the opportunity presents itself (e.g., food scarcity, breeding seasons, abundance of small mammals, feeding trees, etc.).

As mentioned before, icterids feed on an ample variety of food; some, such as grackles include small mammals within their diet (Hamilton 1951). Although literature was consulted, there is no previous evidence that *P. montezuma* opportunistically preys upon mammals. Hence, the record presented here is the first one of such kind for this species.

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