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NOTES ON THE STYGIAN OWL (*ASIO STYGIUS SIGUAPA*) IN CUBA

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Abstract.—The Stygian Owl (*Asio stygius*) is a vulnerable species which is widespread but localized in Cuba and on the Isle of Pines. This owl is typically found in forested areas, including semideciduous woods and pine forest. It breeds from January to April. The female is more aggressive than the male. Wing clapping, a threat display, was more commonly produced by the female. Of the 34 pellets examined, bats represented 61.3% and birds 38.7% of identified remains.

INTRODUCTION

THE STYGIAN OWL (*Asio stygius*) is distributed exclusively in the New World, where it is one of the least frequently observed owls. Six subspecies have been described, including *A. s. lambi* (northwestern Mexico), *A. s. robustus* (eastern Mexico, Guatemala and Nicaragua), *A. s. barberoi* (Paraguay and northern Argentina), and *A. s. stygius* (central and southern Brazil). Two populations occur in the West Indies: one in Cuba and the Isle of Pines (*A. s. siguapa*), and another in Hispaniola and Gonâve Island (*A. s. noctipetens*) (Howard and Moore 1991). The habitat of this owl is montane evergreen forest, pine-oak forest, pine forest, tropical lowland evergreen forest, and tropical deciduous forest (0-3100 m; tropical to temperate zones) (American Ornithologists' Union 1998).

The objective of this paper is to report our general observations made over the course of several years (1988-1998) in the Ciénaga de Zapata and, for five days in March 1994, at La Güira. Observations in Ciénaga de Zapata were made mainly in Playa Larga, in an open area with scattered trees at sea level. We made more detailed observations at La Güira. The vegetation at La Güira is semideciduous

woodland, with patches of pine (*Pinus caribaeus*) forest at approximately 400 m elevation.

STATUS AND DISTRIBUTION

In Cuba the Stygian Owl is vulnerable and widely distributed, but is rare and localized. The small population sizes are the result of a lack of habitat and the continued destruction to remaining habitat fragments. Gundlach (1876) considered this species rare, even in the last century, and specified that habitat destruction and hunting were the main reasons for the decreasing number of individuals. Also, Garrido and García Montaña (1975) described it as a very rare species. Furthermore, its strictly nocturnal habits, soft voice, and short vocalizations also make this bird particularly difficult to find. The only area where this species is known to be fairly common is the Ciénaga de Zapata, 160 km southeast of La Habana City.

Stygian Owls have been collected or observed in the following sites in Cuba: San Cristobal, La Güira, and Nortey (Sierra del Rosario, Pinar del Río Province); Habana Zoo (probably a straggler from a nearby wooded area); Sierra de Anafe (Habana Prov-

ince); Nueva Gerona, Pasadita, Los Indios, and La Vega (Isle of Pines); Santo Tomás, Playa Larga, El Roble, Molina, Los Canales, Playa Girón, Bermeja, and Guamá (Ciénaga de Zapata, Matanzas Province); Aguada de Pasajeros, Soledad Garden (Cienfuegos Province); Topes de Collantes (Sierra del Escambray, Cienfuegos and Sancti Spíritus Provinces); Vertientes (Camagüey Province); Bayates, Nuevo Mundo (Moa, Holguín Province); and near Pico Turquino (Santiago de Cuba Province) (Garrido and Kirkconnell, in press). In addition, Wotzkow (1994) reported the Stygian Owl in the Cuchillas del Toa, Guantánamo Province,

In Cuba, this owl is found in well-preserved semideciduous woods and adjacent pine in both mountain and lowland regions. While foraging, it can be observed in open areas surrounded by scattered trees and also near the coast.

BEHAVIOR AND DIET

Stygian Owls are highly territorial and are usually found in pairs, with the male and female roosting close to one another at a distance of about 30 m (Kirkconnell, pers. observ). During a typical observation at La Güira, the female started to call at about 18:30 hr, and became more active about 19:00 hr. During this time, the pair autopreened for about 15 minutes, mainly on the back and chest, spreading the wings and tail. The male was silent at first, and began to call several minutes after his mate. He then left his roosting site to join the female. The pair then flew off in a gliding flight. The gliding flight of both birds immediately after leaving the perch was typical. The pair flew off, presumably to forage, just before dark, both leaving in the same direction each evening. They returned to the roosting area early in the morning, arriving within a few minutes of one another. They generally roosted high in the densest foliage of the same pine trees. They sometimes landed with an audible wing clapping.

Upon playing a recording of a male's call (*ooh, ooh, ooh*; Garrido and Kirkconnell, in press) one evening, the male answered five to six times, and after several minutes, left his perch. Meanwhile, the female stayed on her perch, emitting calls (screaming sound *quick, quick*; Garrido and Kirkconnell, in press) at intervals. After we played the female's call, she repeated her call over 56 minutes (an average of one call per 3.7 minutes), and flew from one perch to another, each time producing two or three wing claps just above our heads or before landing on a branch. The wing clapping display has been observed in other members of the genus *Asio* (e.g., Clark et al. 1978) as part of the courtship, but in the context we

observed, we considered it to be a threat display. In this pair, the female displayed more persistently and was more aggressive than the male.

During many years of observations at Playa Larga, Ciénaga de Zapata, Kirkconnell observed a male foraging in the same area and perching in the same trees. Only twice was a female spotted flying nearby (both sexes identified by call). At Girón (32 kms southeast of Playa Larga), a pair has been observed sharing the same foraging area.

At Playa Larga during full moon, the owl tended to be quiet and difficult to find. It called only late at night, between 03:30 and 04:30 hr. On dark nights the owls were active, starting to call on the feeding ground at about 21:00 hr. A common behavior was to scan the sky, then fly straight up and high, probably to hunt for bats or large nocturnal insects (George Wallace, pers. comm.). Once a Stygian Owl was observed chasing an animal, presumably a rodent, on the ground (Kirkconnell, pers. obser.). Gundlach (1876) found mice and birds remains in a collected bird. F. C. Lehmann claimed to have seen *A. s robustus* hunt doves (*Zenaida* sp.) in their roosting trees in Cali, Colombia (*in litt.*, Borrero 1967). Borrero (1967), who also worked in Colombia, reported Stygian Owl prey remains included a Purple Gallinule (*Porphyryla martinica*), Eastern Meadowlark (*Sturnella magna*), and Vermillion Flycatcher (*Pyrocephalus rubinus*). Other items he found in pellets included: bats (*Artibeus lituratus*), birds, and large beetles (Scarabeidae). Motta and Taddei (1992), in an analysis of 422 pellets from southern Brazil, found that birds represented 90.2% of prey remains, bats 6.1%, insects 3.6%, and anurans 0.1%. Mark (1991) mentioned that pellets in Belize were composed mainly of bats remains.

Pellets (N=34) we collected beneath roost trees in La Güira contained remains only of bats (61.3%) and birds (38.7%). We detected 13 individuals of 9 bird species: 1 Cuban Trogon (*Priotelus temnurus*), 3 Cuban Pewees (*Contopus caribaeus*), 3 Black-cowled Orioles (*Icterus dominicensis*), 1 Cuban Blackbird (*Dives atrovioleacea*), 1 warbler (*Dendroica* sp.), 1 White-crowned Pigeon (*Columba leucocephala*), 2 Mourning Doves (*Zenaida macroura*), and 1 Ruddy Quail-Dove (*Geotrygon montana*). We found skulls and bones of 21 individual bats in the pellets: 13 *Phylloscoloplos poeyi*, 6 *Phylloscoloplos falcatus*, and 2 *Artibeus jamaicensis*. All three species are vegetarian bats, perch while eating, and fly slowly through trees and shrubs (Silva 1979).

In Cuba, two other bird species have been observed hunting bats: American Kestrel (*Falco sparverius*) and Peregrine Falcon (*Falco peregrinus*). The Barn Owl (*Tyto alba*) also has been reported to hunt bats in Cuba (Silva 1979), Poland (Ruprecht 1979), and Jamaica

(MacFarlane and Garret 1989). MacFarlane and Garret (1989) noted that the predictable occurrence of bats at fruiting trees left them more vulnerable to aerial depredation. They also concluded that selection of bats as prey was not related to the size of the bats.

NESTING

The breeding season of the Stygian Owl in Cuba is from January to April (Garrido and Kirkconnell, in press). Stockton de Dod (1983) reported that the breeding season in the Dominican Republic is from November to April. Local guides in the Zapata Swamp claimed that this species nests in tree holes, usually high above the ground, but this has not been confirmed. The well-known guide, Rogelio García ("Pelao") reported three observations of this owl using bulky platform nests made of small twigs. There are other observations of nesting in platforms (C. Wotzkow and G. Alayón, pers. comm.). Bond (1985) reported that Stygian Owls nest on the ground, but we have not found this to be the case in Cuba. The only two owls documented breeding on the ground in Cuba are the Short-eared Owl (*Asio flammeus*) and the Burrowing Owl (*Athene cunicularia*).

The Stygian Owl lays two white eggs (Bond 1985). Juveniles have barred bellies, a black facial disk and lack conspicuous ear tufts. In contrast, adults are streaked below, and have rather long ear tufts. The eyes of fledglings are yellow, whereas those of adults are yellow to yellowish-orange. Variation in eye color may be related to age.

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