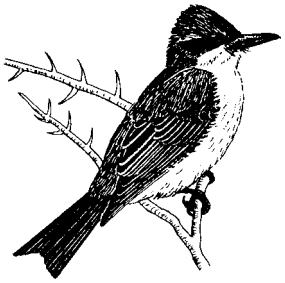

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SEABIRD DENSITIES AT SEA IN SAINT VINCENT AND THE GRENADINES, WITH COMMENTS ON THEIR HISTORIC AND CURRENT POTENTIAL BREEDING STATUS

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Abstract.—I censused 332 seabirds of seven species along 54.1 km^2 of transects (0.5 km wide) between St. Vincent and Union Island during 23 and 28 December 2001. Boobies, which were most common between St. Vincent and Bequia, accounted for 75.6% of the seabirds observed. Red-footed Booby (*Sula sula*) brown-morph adults outnumbered white-morph adults by a ratio of 7.5:1. Red-footed Booby outnumbered the Brown Booby (*S. leucogaster*) by a ratio of 2.5:1. Magnificent Frigatebird (*Fregata magnificens*) was widespread but occurred in low densities. Royal Tern (*Sterna maxima*) was widespread, accounting for 18.6% of seabirds. Small numbers of Brown Pelican (*Pelecanus occidentalis*), Laughing Gull (*Larus atricilla*), and Sandwich Tern (*S. sandvicensis*) occurred only in the central Grenadines. The historic and current potential breeding status of each species is discussed.

Resumen.—DENSIDADES DE AVES MARINAS EN EL MAR EN SAN VINCENTE Y LAS GRENADINAS. Se contó 332 aves marinas de siete especies en 54,1 km^2 de transectos (anchura de 0.5 km) entre el San Vincente y la isla de Union durante 23 y 28 deciembre 2001. Las bobas, que fueron más comúnes entre San Vincente y Bequia, constituyeron 75.6% de las aves marinas observadas. Adultos de Boba Patirroja (*Sula sula*) de fase marón fueron más común que adultos de fase blanco por una ración de 7.5:1. La Boba Patirroja fue más común que la Boba Prieta (*S. leucogaster*) por una ración de 2.5:1. La Tijereta (*Fregata magnificens*) fue amplia distribuida pero se existió en densidades bajas. La Gaviota Real (*Sterna maxima*) fue amplia distribuida, y constituyó 18.6% de las aves marinas. Se encontraron numeros bajos de Pelícan Pardo (*Pelecanus occidentalis*), Gaviota Cabecinegra (*Larus atricilla*), y Gaviota Piquiaguda (*S. sandvicensis*) solamente en el las Grenadinas centrales. Se resume el estado historico y corriente potencial de nidificar para cada especie.

Key words: breeding, *densities*, *distribution*, *Grenadines*, *Saint Vincent*, *seabirds*

ALTHOUGH THE WINDWARD Lesser Antillean islands provide nesting and foraging habitat for a variety of seabird species, little is known about the breeding populations of seabirds and virtually nothing is known about the offshore distribution and seasonal variation of seabird populations within the region (see reviews and references therein by Halewyn and Norton 1984, Schreiber and Lee 2000a). In St. Vincent and the Grenadines, the only available historical data on the distribution and breeding of seabirds are provided by Wells (1902), Clark (1905), Devas (c. 1943), and Bond (1950). Unfortunately most of the information is anecdotal and more than a century old. Apparently no subsequent attempts have been made to survey the breeding seabird colonies within the archipelago.

Given the many threats to the dwindling numbers of seabird colonies within the region (e.g., Halewyn

Table 1. Seabird densities (birds/10 km^2) along three transects in St. Vincent and the Grenadines.

Species	St. Vincent–Bequia	Bequia–Canouan	Canouan–Union	Total	% Comp.
Brown Booby	18.3	2.7	3.1	10.2	16.6
Red-footed Booby	53.0	1.1	–	25.5	41.6
Immature booby sp.	14.0	3.8	15.3	10.7	17.5
Brown Pelican	–	–	6.1	1.1	1.8
Magnificent Frigatebird	2.3	0.5	1.0	1.5	2.4
Laughing Gull	–	–	1.0	0.2	0.3
Royal Tern	12.9	–	29.6	11.5	18.6
Sandwich Tern	–	–	4.1	0.7	1.2

and Norton 1984, Lee and Schreiber 2000b), surveys of seabird populations at their breeding colonies--as well as in their breeding and nonbreeding foraging areas at sea--are urgently needed. In this paper I provide data on seabird densities at sea in Saint Vincent and the Grenadines based on observations from ships during December 2001. I further summarize historic observations of seabirds within the archipelago, summarize recent observations of visiting birders in the region posted at Internet websites (Smith and Smith 1998, Wells and Wells 2000), and discuss the potential breeding status of each species.

STUDY AREA AND METHODS

A comprehensive review of the marine environment of St. Vincent and the Grenadines is provided by Anonymous (1991). The islands are situated upon a shallow coastal shelf less than 100 m deep, with a narrow trough >500 m deep separating St. Vincent from the Grenadines. Some upwelling of deeper ocean waters, which potentially provides nutrients for seabirds and their food supply, is thought to occur along the eastern edge of the insular shelf.

On 23 December 2001, I twice censused seabirds from aboard the *Admiral I* between St. Vincent (Kingstown) and Bequia (Port Elizabeth) during 09:07–10:00 h and 17:05–17:55 h. On 28 December 2001, I censused seabirds from aboard the *Barracouda* from Union Island (Ashton Harbour) to Mayreau (Saline Bay) during 07:14–07:31 h, from Mayreau to Canouan (Charlestown) during 07:40–08:15 h, from Canouan to Bequia during 08:40–10:22 h, and from Bequia to St. Vincent during 10:32–11:18 h. The sea was relatively calm during the censuses, with waves < 2 m high. Visibility was excellent with partly cloudy skies and no rain.

I searched for seabirds from one side of the ship (nearly always with the better light) on a deck about 7 m above the sea. I censused seabirds along a fixed-width transect by counting all birds within 500 m that crossed an imaginary line perpendicular to the ship. Identification was facilitated with 7x42 binoculars. Seabird numbers were recorded at 5 min intervals.

I measured transect lengths on 1:50,000 and 1:200,000 scale maps and calculated the area of each transect and mean ship speed. From north to south, these transects were: St. Vincent-Bequia, 17.1 km (8.55 km^2 surveyed); Bequia-Canouan, 37.3 km (18.65 km^2); Canouan-Mayreau, 11.8 km (5.9 km^2); and Mayreau-Union, 7.8 km (3.9 km^2). Ship speeds were 19.9 km/hr for the *Admiral* I and 22.2 km/hr for the *Barracouda.*

For the purposes of analyses, I combined data for the three counts along the St. Vincent-Bequia transect and combined data for the Canouan-Mayreau-Union transects. For each seabird species I calculated density along each of three transects, and compared the abundance of each species (using Mann-Whitney *U* tests; Zar 1984) between distances < 2 km (herein termed "inshore") and > 2 km from land (herein termed "offshore") based on data taken during 5 min samples (each roughly 1.5-2 km) . Statistical tests were computed with Statistix 3.1 software (Anonymous 1990), with two-tailed probabilities and $\alpha = 0.05$.

RESULTS

I censused 332 seabirds of seven species during this study (Table 1). The total density of seabirds in the archipelago was 6.1/km^2. The density did not differ between inshore and offshore waters for any species (Table 2).

Boobies of two species accounted for 75.6% of

Table 2. Seabird abundance during 5 min samples (each roughly 1.5–2 km) at distances < 2 km (n = 24) and > 2 km (n = 33) from land, with results of Mann-Whitney U tests (z values) for differences (none significant).

Species	<2 km Mean (SD) range	>2 km Mean (SD) range	z
Brown Booby	0.54 (1.50) 0–7	1.18 (3.25) 0–16	0.61
Red-footed Booby	2.38 (7.62) 0–37	2.46 (6.33) 0–26	0.36
Immature booby sp.	1.46 (3.75) 0–14	0.70 (2.27) 0–12	0.02
Brown Pelican	0.25 (1.03) 0–5	0.00 (0.00) 0–0	0.53
Magnificent Frigatebird	0.29 (0.00) 0–2	0.00 (0.00) 0–0	1.59
Laughing Gull	0.04 (0.20) 0–1	0.00 (0.00) 0–0	0.26
Royal Tern	2.50 (6.31) 0–24	0.06 (0.24) 0–1	1.83
Sandwich Tern	0.17 (0.82) 0–4	0.00 (0.00) 0–0	0.26

the seabirds observed (Table 1). The Red-footed Booby (*Sula sula*) was the most common seabird (Table 1), with brown-morph adults outnumbering white-morph adults by a ratio of 7.5:1. The Red-footed Booby outnumbered the Brown Booby (*S. leucogaster*) by a ratio of 2.5:1 (Table 1). Immature boobies accounted for 28.3% of all boobies observed; of these, only 18% were observed closely enough to be identified to species. Booby densities were highest between St. Vincent and Bequia (Table 1); in this area a few scattered individuals flew in a northwestward direction during the morning, in contrast with many flocks (more than 150 were seen beyond the transect) that flew southeastward in the late afternoon.

The Brown Pelican *(Pelecanus occidentalis)* was recorded only in the central Grenadines between Canouan and Union Island (Table 1). Several dozen distant pelicans were observed well beyond the transect at Pelican Cay, to the north of Mayreau. The Magnificent Frigatebird (*Fregata magnificens*) was widespread, but occurred in low densities (Table 1).

The Royal Tern (*Sterna maxima*) was widespread, accounting for nearly a fifth of the seabirds observed (Table 1); its density was nearly significantly higher inshore (P = 0.067; Table 2), especially at Bequia and Union Island, than offshore. The Laughing Gull (*Larus atricilla*) and Sandwich Tern (*S. sandvicensis acuflavidus*) occurred in very small numbers only at Union Island (Table 1), where higher numbers (12 Sandwich Terns and five Laughing Gulls) were noted the day before on 27 December 2001.

DISCUSSION

Although based on only two days of observation, this study provides the first estimates of seabird densities at sea in St. Vincent and the Grenadines. In recent years several experienced birders have cruised through the archipelago (Smith and Smith 1998, Wells and Wells 2000). Given the relative comfort and low cost of public transportation among the islands, visiting birders and ornithologists could easily replicate this study to provide further data on seasonal and annual variation of seabird densities within the archipelago and in other island groups of the region. To aid seabird researchers in obtaining further information, I have provided historical comments on the potential breeding of seabirds within the archipelago in an Appendix.

Given that boobies nest in the Caribbean from October-May (Schreiber 2000), in the Grenadines from February-May (Clark 1905; see Appendix), and in Tobago from June-April (ffrench 1991), the substantial numbers of boobies observed likely represent a resident breeding population. The few previously reported booby colonies from the Grenadines (Wells 1902, Clark 1905, Bond 1950; see Appendix) are currently regarded as extirpated or having only a few pairs (Schreiber 2000), but apparently have not been visited by an ornithologist in several decades. Clark (1905) also reported seeing large numbers of both species in the channel between St. Vincent and Bequia.

The persistent northwestward flight of boobies in the morning and southeastward flight in the evening suggest that most individuals were foraging in an unknown area north or west of St. Vincent and nesting or roosting to the south in the Grenadines. I also observed large flocks of boobies flying southward along the east coast of St. Vincent during the evening of 29 December 2001. However, Wells and

Wells (2000) failed to observe large concentrations to the north of St. Vincent, observing only 20 Brown and 11 Red-footed (eight brown, three white) Boobies while sailing from the Pitons, St. Lucia, to Cumberland Bay, St. Vincent, on 4 December, and eight Brown and ten Red-footed (nine brown, one white) Boobies when returning along the same route on 9 December 2000. A century ago, Clark (1905:231) reported that both Brown and Red-footed Boobies are often seen along the west coast of St. Vincent, where some Brown Boobies spent the night along the cliffs, but "The majority, however, begin to fly down the coast at about three in the afternoon, making for Battowia, which island is the favorite roosting place of all sea birds in this region."

Elsewhere within the archipelago, Wells and Wells (2000) observed the following numbers of boobies: 15 Brown and 36 Red-footed (mostly brown) Boobies between Cumberland Bay, St. Vincent, and Admiralty Bay, Bequia, on 5 December; 22 Brown and 21 Red-footed (17-18 brown, 3-4 white) Boobies between Bequia and Tobago Cays, but mostly near Bequia, on 6 December; 11 Brown and four Red-footed Boobies between Tobago Cays and Bequia on 7 December; and 84 Brown and 16 Red-footed Boobies between Bequia and Cumberland Bay, St. Vincent, on 8 December 2000. Raffaele *et al.* (1998) regarded the Red-footed Booby as rare in St. Vincent and the Grenadines, but my observations and those of Wells and Wells (2000) indicate it is still common.

Although the Brown Pelican was considered to be common throughout the Grenadines a century ago, it has not been reported nesting in the archipelago (Wells 1902, Clark 1905, Collazo *et al.* 2000; see Appendix). A number of Brown Pelicans were also noted in the central Grenadines by Smith and Smith (1998) on 25 May 1998, and by Wells and Wells (2000) on 6-7 December 2000. The long-term local persistence of this species in the central Grenadines suggests that the several dozen seen at Pelican Cay, which presumably has a long association with pelicans as its name implies, might represent a small breeding colony from which individuals disperse to nearby islands. Because Brown Pelicans nest throughout the year in the West Indies (Collazo *et al.* 2000) and from February-April in Trinidad (ffrench 1991), the birds might have been breeding during my visit.

The few scattered individuals of Magnificent Frigatebirds suggest that there are no large colonies of breeding birds, which if present should have been nesting in December (ffrench 1991, Lindsey *et al.* 2000). Small numbers of widely scattered frigatebirds were also reported by Smith and Smith (1998) and Wells and Wells (2000). There are no recent data on former breeding colonies in the Grenadines (Wells 1902, Clark 1905, Lindsey *et al.* 2000; see Appendix).

The small numbers of Laughing Gull, Royal Tern, and Sandwich Tern presumably represent wintering individuals since these species nest during spring and summer (Chardine *et al.* 2000, Norton 2000). All three species have been reported (or at least implied) breeding in the Grenadines, though no recent data are available (Wells 1902, Clark 1905, Bond 1950, Chardine *et al.* 2000, Norton 2000; see Appendix).

There were several species of potentially nesting seabirds (see Appendix) that I did not observe, but were recently reported by others. Wells and Wells (2000) observed one Audubon's Shearwater (*Puffinus lherminieri*) between St. Lucia and St. Vincent on 4 December, five between Bequia and Tobago Cays on 6 December, and one between Bequia and St. Vincent on 8 December 2000, but Smith and Smith (1998) did not see any in May 1998. Wells and Wells (2000) observed two Red-billed Tropicbirds (*Phaethon aethereus*) between St. Lucia and St. Vincent on 4 December, an unidentified tropicbird at Bequia on 7 December, and two unidentified tropicbirds between St. Vincent and St. Lucia on 9 December 2000, but Smith and Smith (1998) also failed to see any in May 1998. Smith and Smith (1998) noted two Masked Boobies (*S. dactylatra*) south of Bequia on 25 May 1998, and Wells and Wells (2000) observed a "possible" individual between St. Lucia and St. Vincent on 4 December, plus another "possible" individual between St. Vincent and Bequia on 5 December 2000. Smith and Smith (1998) reported Roseate Tern (*S. dougallii*), Bridled Tern (*S. anaethetus*), Sooty Tern (*S. fuscata*), and Brown Noddy (*Anous stolidus*) to be common, but mostly between St. Vincent and Bequia, and just south of Bequia, on 22 and 25 May 1998; none were seen by Wells and Wells (2000) in December 2000.

The results of this study, combined with recent observations of other birders, indicate that substantial numbers of potentially breeding seabirds still exist in St. Vincent and the Grenadines. Surveys of the isolated islets within the archipelago, especially those where seabirds previously have been reported to breed (see Appendix), are urgently needed to assess whether these seabirds actually breed and whether any steps need to be taken to preserve them.

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APPENDIX

Historical comments on the potential breeding status of seabirds in St. Vincent and the Grenadines, including the Grenadine islands politically belonging to Grenada. Unless breeding is implied, descriptions of eggs, nests, and nest site selection are excluded.

Audubon's Shearwater.—"...lives in holes and under rocks on most of our islets...Bonaparte Rocks are a favourite abode...On Easter Monday, 2nd April, 1888, I paid a visit to a small islet called Labaye Rock, about a mile off the Port of Granville...a young bird was discovered in a hole under a stone... This caused me to make a thorough research...I found an adult bird with a young in one hole, and a full-grown female and one egg in another" (Wells 1902:241). "...breeding, according to Wells, on most of the small islets about Carriacou, especially on Bonaparte Rocks" (Clark 1905:229).

Red-billed Tropicbird.—"It frequents Frigate

Island and Rose Rock, from which I have taken its eggs" (Wells 1902:251). "There is a considerable colony of them near Old Woman's Point, just west of Kingstown, and another at Layou [St. Vincent]... at Bequia they breed in numbers in the inaccessible cliffs of Bequia Head...great numbers breed on Battowia and Balliceaux, and there are other colonies on Frigate Island, Rose Rock, Kick-'em-Jenny, and Les Tantes, between Carriacou and Grenada" (Clark 1905:230). "From this, and the evidence (as well) of fisherman, is established that the *Lea Rocks* (one of them in particular) and *Kick-'em-Jenny* are homes and nesting--, as well as resting--places" (Devas c. 1943:61).

Masked Booby.—"Occurs sparingly on Kick-'em-Jenny, and probably also at Battowia. The eggs [implying breeding] are uniform dull white" (Clark 1905:231). "Colonies thriving in the Grenadines" (Bond 1950:5).

Brown Booby.—"Hundreds of boobies, mainly of this species, nest at Battowia and Kick-'em-Jenny, and there is said to be a large colony on Little Tobago (off Petite Martinique)...The breeding season is from February to May" (Clark 1905:231).

Red-footed Booby.—"This bird is not numerous in Carriacou, though large numbers of them inhabit Kik-'en-jenny [*sic*], a rock about ten miles distant... They lay one egg only [breeding implied]" (Wells 1902:242). "It is said to breed commonly on Battowia...It nests in numbers on Kick-'em-Jenny" (Clark 1905:231). "Nests...in the Grenadines (Battowia, Kick-'em-Jenny and, perhaps, Little Tobago)" (Bond 1950:6).

Brown Pelican.—"I was under the impression that they nested on some of the outlying rocks, but have now determined that they resort to the coast of Florida to breed, during the months of February, March, and April. In May and June they begin to return in numbers, and the young of the year are easily distinguished" (Wells 1902:242). "It occurs mainly in the winter months, and almost wholly disappears in the spring, but returns in early summer... does not breed anywhere in these islands, but is merely an annual visitor, possibly from southern North America and the Greater Antilles...after careful search and exhaustive enquiry I could find not the slightest sign of their ever having done so" (Clark 1905:232).

Magnificent Frigatebird.—"They nest in colonies at Kick-en-jenny [*sic*]" (Wells 1902:243). "In the Grenadines they breed in numbers on Battowia, whence the young are sometimes taken for food" (Clark 1905:233).

Laughing Gull: "They breed on the islets, Isle-de-large being a favorite one, in the months of May and June" (Wells 1902:239). "They nest on the small islets about Carriacou, and rather generally on the more isolated keys all through the Grenadines" (Clark 1905:256).

Royal Tern.—"They breed on the rocks; but I have hitherto been unsuccessful in procuring their eggs" (Wells 1902:239). Clark (1905:257) described the eggs but did not specifically mention breeding.

Sandwich Tern.—"Breeds...among the Grenadines (Tobago Cays)" (Bond 1950:55).

Roseate Tern.—"A few years ago these birds used to frequent Jack-a-dan Island, off the Port of Hillsborough [Carriacou], in large numbers; they also used to breed there, but for some reason they have now deserted it, and seem to have made Frigate Island and Rose Rock their nesting places" (Wells 1902:239-240). "...breeding, among other places, at Frigate Island and Rose Rock near Carriacou. Formerly it bred in numbers at Isle Jaques Adam near the town of Hillsborough, but for some reason has of late years deserted this locality" (Clark 1905:257). "...it breeds with us, e.g., on Green Island" (Devas c. 1950:53).

Bridled Tern.—"Numerous at Isle-de-Large, Rose Rock and White Island. At the eastern end of White Island is a conical hill where the Noddy congregates in large numbers. The hill is honeycombed and is just the place for it to deposit eggs. I have taken several sets of eggs at Rose Rock and Isle-de-large in May; the colony at White Island is inaccessible" (Wells 1902:240). "...nesting abundantly at Lee Rocks, and on Rose Rock. There are smaller colonies on many of the smaller keys, and a number breed on White Island, in the midst of a rookery of several hundred Noddies (*Anous stolidus*)" (Clark 1905:258).

Sooty Tern.—"...it breeds in numbers on the islets between this island [Carriacou] and Grenada; a few may be seen at Bonaparte Rocks and Isle-de-large" (Wells 1902:240). "...breeding on Isle Ronde, Kick-'em-Jenny, Lee Rocks, Bonaparte's Rocks, and Isle de Large, as well as on some of the smaller islets" (Clark 1905:258).

Brown Noddy.—"...nesting at Isle de Large, Rose Rock, and White Island near Carriacou, and on Western Key off Bequia. There are also other less important breeding areas" (Clark 1905:259).

RESULTADOS PRELIMINARES DE LA ENCUESTA SOBRE LA YAGUASA (*DENDROCYGNA ARBOREA*) EN VARIAS REGIONES DE CUBA

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Resumen.—Se analizan los resultados de 181 encuestas realizadas en todas las provincias de Cuba durante el año 1999 en relación con el estado actual, la ecología y la protección legal de la Yaguasa (*Dendrocygna arborea*). Los resultados revelaron una amplia distribución de la especie a lo largo de todo el país, aunque en general las poblaciones se consideran relativamente pequeñas. La mayoría de los encuestados ofrecieron aspectos interesantes sobre la ecología de la especie en relación con su alimentación, reproducción y conducta. Aún cuando existe un amplio conocimiento sobre su veda permanente, los cazadores continúan cazándola, lo que evidencia la necesidad de continuar trabajando en la implementación de programas de educación ambiental que contribuyan a la conservación de la especie.

Palabras clave: *Cuba,* Dendrocygna arborea, *encuestas, Yaguasa*

Abstract.—PRELIMINARY RESULTS OF OPINION POLLS ON THE WEST INDIAN WHISTLING-DUCK (*DENDROCYGNA ARBOREA*) IN VARIOUS REGIONS OF CUBA. We surveyed public knowledge of the status, ecology, and legal protection of the West Indian Whistling-Duck (*Dendrocygna arborea*) in all Cuban provinces during 1999 (181 in total). The species is widely distributed throughout the country, mainly as small flocks. Interesting aspects of the ecology, feeding, breeding, and behavior were gathered from the surveys. Even though a widespread knowledge of the species and its legal protection exists, the whistling-duck is still considered an important game species. The results revealed the necessity of continuing the environmental Education Program to increase public awareness as a mean to preserve the species and its environment.

Key words: *Cuba*, Dendrocygna arborea, *public poll*, *survey*, *West Indian Whistling-Duck*

INTRODUCCIÓN

LA YAGUASA (*DENDROCYGNA ARBOREA*) es una especie endémica de las Antillas Mayores e incluida como vulnerable en el libro rojo de las aves amenazadas (Birdlife 2000), debido al constante decline de sus poblaciones (Todd 1996). Su actual grado de amenaza ha conllevado a que sea objeto de atención priorizada por la Sociedad Ornitológica del Caribe, la cual ha creado un grupo de trabajo (West Indian Whistling Duck Working Group), que concentra sus esfuerzos en campañas de Educación Ambiental con el objetivo de protegerla y educar a la población en la conservación de sus hábitats naturales.

En Cuba la Yaguasa fue común en zonas de ciénaga, terrenos bajos y pantanos, con una larga tradición como ave cinegética entre nuestros cazadores, de ahí que Gundlach (1876) planteara que la apreciaban porque "su carne es excelente y muy buscada por los cazadores, que suelen matarlas al oscurecer cuando vienen a los palmares, atraídas también por el silbido, que el mismo cazador les imita." Aunque su número se ha reducido considerablemente desde los tiempos de Gundlach, existe un fuerte arraigo en cuanto a su explotación en nuestras comunidades rurales. Por esto, nos propusimos estimar a través de encuestas, el grado de conocimiento que existe en la población sobre la Yaguasa en relación con su ecología, distribución, estado actual de sus poblaciones y protección legal.

MATERIALES Y MÉTODOS

Las encuestas se realizaron en el año 1999 en todas las provincias del país (181 encuestas en total) que se distribuyeron de la siguiente forma: Pinar del Río (21), Habana (11), Ciudad Habana (3), Matanzas (3), Cienfuegos (10), Villa Clara (23), Sancti Spíritus (8), Ciego de Ávila (1), Camagüey (19), Las Tunas (16), Holguín (11), Granma (7), Santiago de Cuba (25), y Guantánamo (23) (ver Anexo). Las personas encuestadas oscilaron entre 20 y 60 años e incluyeron un número proporcional de campesinos, obreros, jubilados, administrativos, profesionales y entrenadores de tiro. En total el 86.3% eran cazadores activos.

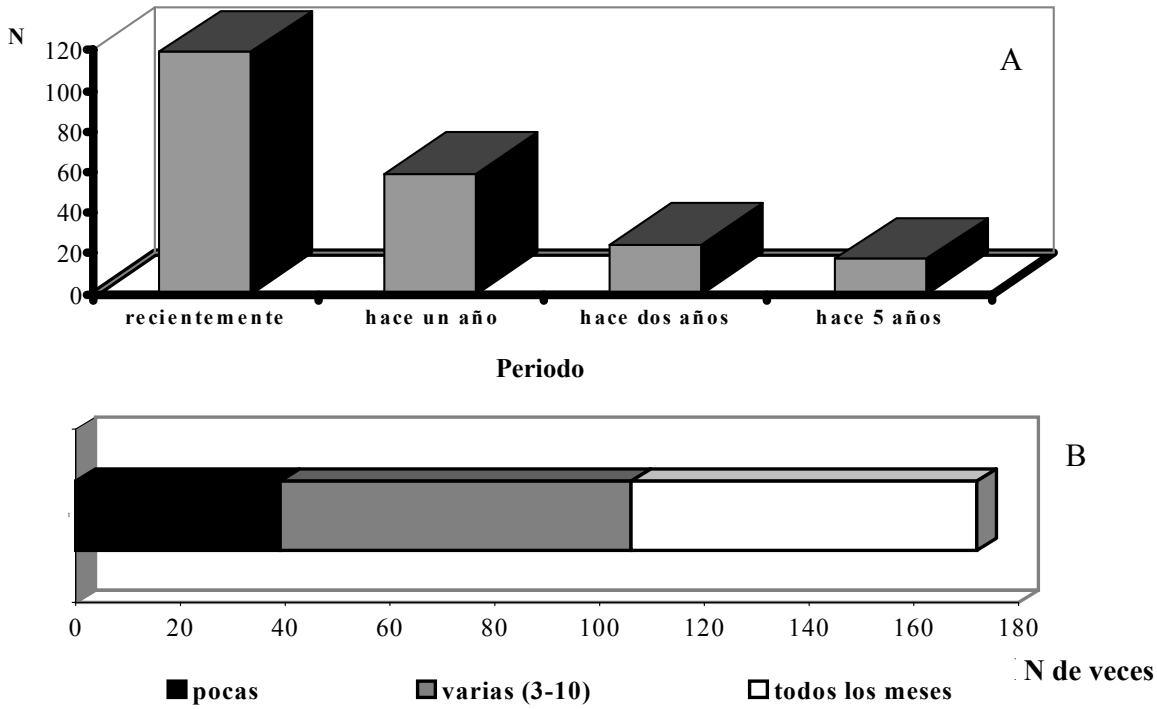

Fig.1. Número de encuestados que han observado la Yaguasa (*Dendrocygna arborea*) (A) en los últimos cinco años y (B) cantidad de veces que la han visto en Cuba en los últimos cinco años.

RESULTADOS

La mayoría de los encuestados ha visto la Yaguasa recientemente y con cierta frecuencia, incluso una buena parte la ha visto todos los meses (Fig. 1). Los resultados evidencian que para una gran parte de los encuestados, las poblaciones de esta ave son en la actualidad más frecuentes o igual que antes, lo cual puede dar la imagen de que la especie no está en decline (Fig. 2).

Los bandos al parecer se observan generalmente en grupos pequeños, que varían 3 a 10 individuos y grupos de hasta 100, con escasas observaciones de bandos muy grandes o de individuos solitarios (Fig. 3).

Estas observaciones deben estar condicionadas por diversos factores ya que generalmente las Yaguasas vuelan en pequeños bandos desde los sitios donde han pasado el día hasta las áreas de alimentación nocturna, donde en muchas ocasiones forman concentraciones de mayores dimensiones. Además a

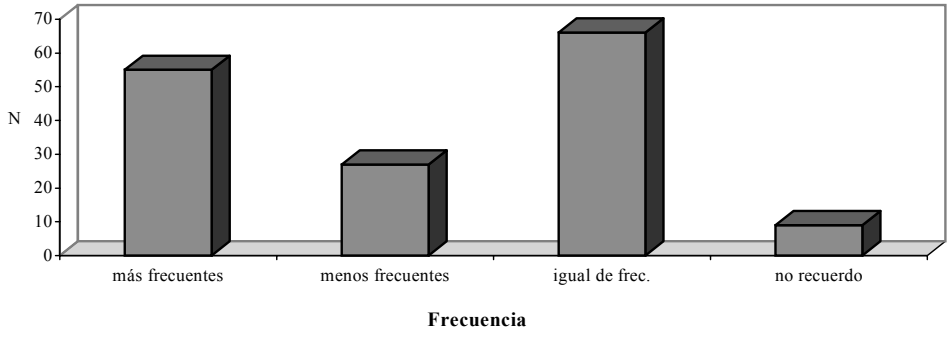

Fig. 2. Número de encuestados que manifiestan algún tipo de tendencia en las poblaciones cubanas de Yaguasa (*Dendrocygna arborea*) en los últimos cinco años.

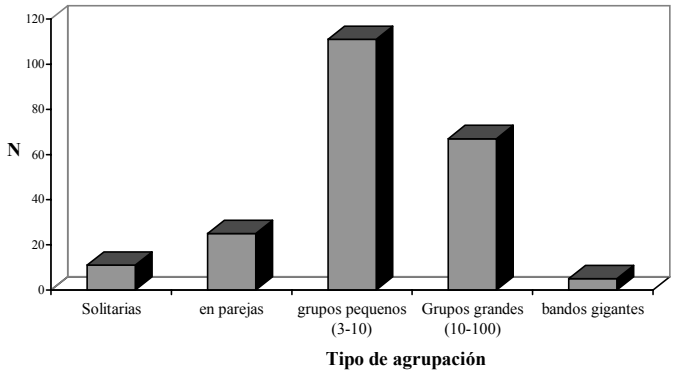

Fig. 3. Número de encuestados que refieren haber observado a las Yaguasas (*Dendrocygna arborea*) en Cuba en diferentes agrupaciones durante los últimos cinco años.

finales de año con frecuencia se congregan en sitios apartados durante el día.

Tradicionalmente los cazadores han utilizado las áreas de cruce de la Yaguasa para desarrollar la actividad cinegética, de ahí la alta frecuencia de personas que han observado pequeños bandos.

Al analizar si la especie era objeto de caza, el 71.4% respondió que si la había cazado, aunque sólo el 34% lo hace frecuentemente. Sin embargo el número de piezas cazadas es menor de 5 en la mayoría de los casos (70%) y sólo el 16% plantea haber cazado alguna vez entre 11 y 20 individuos. Es de notar que entre los años 60 y 90 una minoría incluía a esta especie entre las aves cazadas, sin embargo, el comienzo de la crisis económica que ha afectado extraordinariamente al país en la última década, ha conllevado al parecer a un incremento en su caza para ser utilizada como fuente proteica, a pesar de que el 77% manifiesta conocer que su caza está prohibida por la Ley Nacional de caza.

Este resultado puede estar sesgado también por el largo periodo de tiempo transcurrido que no permite memorizar por igual los periodos más recientes y los anteriores.

Aspectos ecológicos

En relación con el hábitat, las arroceras constituyen el lugar donde más han sido vistas las Yaguasas, este resultado se debe al hecho de ser el hábitat con mayor presencia humana, y además a que todas las arroceras se encuentran asociadas con importantes humedales naturales, constituyendo una amplia fuente de alimentos para esta especie, por otra parte el bajo porcentaje encontrado en manglares debe estar influido por la baja asequibilidad de estos hábitats para el hombre (Fig. 4).

Más del 50% de los encuestados ha visto a las yaguasas alimentándose y reportan entre los posibles alimentos el arroz, granos silvestres, hierbas, boniato, yuca, palmiche, tomate, semillas de cortadera, maíz, macío, frijoles y otros, entre ellos el arroz fue citado como el alimento preferido (Fig. 5).

Los nidos son difíciles de encontrar y más del 60 % nunca ha visto ninguno, sin embargo se señala la presencia de nidos en todos los meses del año, con un pico en Mayo y Junio (Fig. 6). Este resultado coincide con los planteados por Gundlach (1876) y Todd (1996). Los nidos han sido observados en diferentes substratos, de ellos la mayoría se observó en el suelo, aunque es notable la variedad de substratos y hábitats que utilizan para nidificar (Fig. 6).

En general aunque el número de encuestados no es muy elevado, se evidencia que existe un

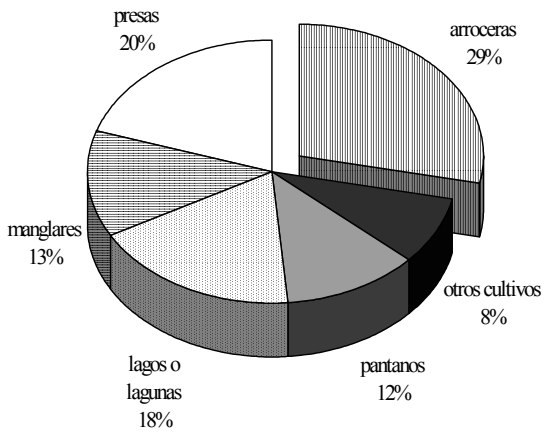

Fig. 4. Tipos de hábitat donde han sido observadas las Yaguasas (*Dendrocygna arborea*) en Cuba durante los últimos cinco años.

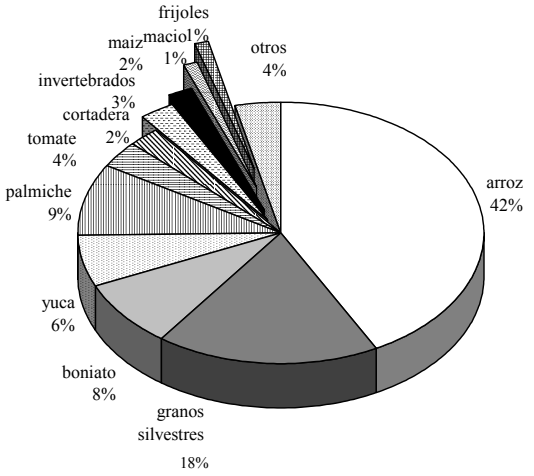

Fig. 5. Tipos de alimentos mas frecuentemente consumidos por la Yaguasa (*Dendrocygna arborea*) en Cuba, durante los últimos cinco años.

conocimiento popular sobre la especie, ya que los resultados de la encuesta coinciden en general con lo planteado en la literatura científica. A partir de estos resultados se confirma la necesidad de implementar programas de educación ambiental que conduzcan a la toma de conciencia en relación con la necesidad de preservar a la Yaguasa, pues está claro que no hay una clara percepción de que las poblaciones de esta ave están en decline, y además no se cumple cabalmente lo establecido en la actual ley de caza relacionado con su veda permanente, a pesar de que esta legislación es bastante conocida.

Finalmente queremos hacer referencia al gran número de localidades a lo largo y ancho del país donde se reporta la Yaguasa en la actualidad (Anexo). La especie se encuentra reportada en todas las provincias de país a excepción de Ciudad de la Habana, con pequeñas poblaciones que hacen un amplio uso de las zonas costeras naturales y de los numerosos embalses artificiales que existen actualmente (Fig. 7).

AGRADECIMIENTOS

Agradecemos el apoyo brindado por el Ministerio de la Agricultura y numerosos colaboradores locales en la entrega y recogida de las encuestas en sus provincias. Agradecemos al West Indian Whistling-Duck Working Group de la Sociedad Ornitológica del Caribe y a WildLife Trust por su constante apoyo al trabajo en relación con la Yaguasa y los humedales.

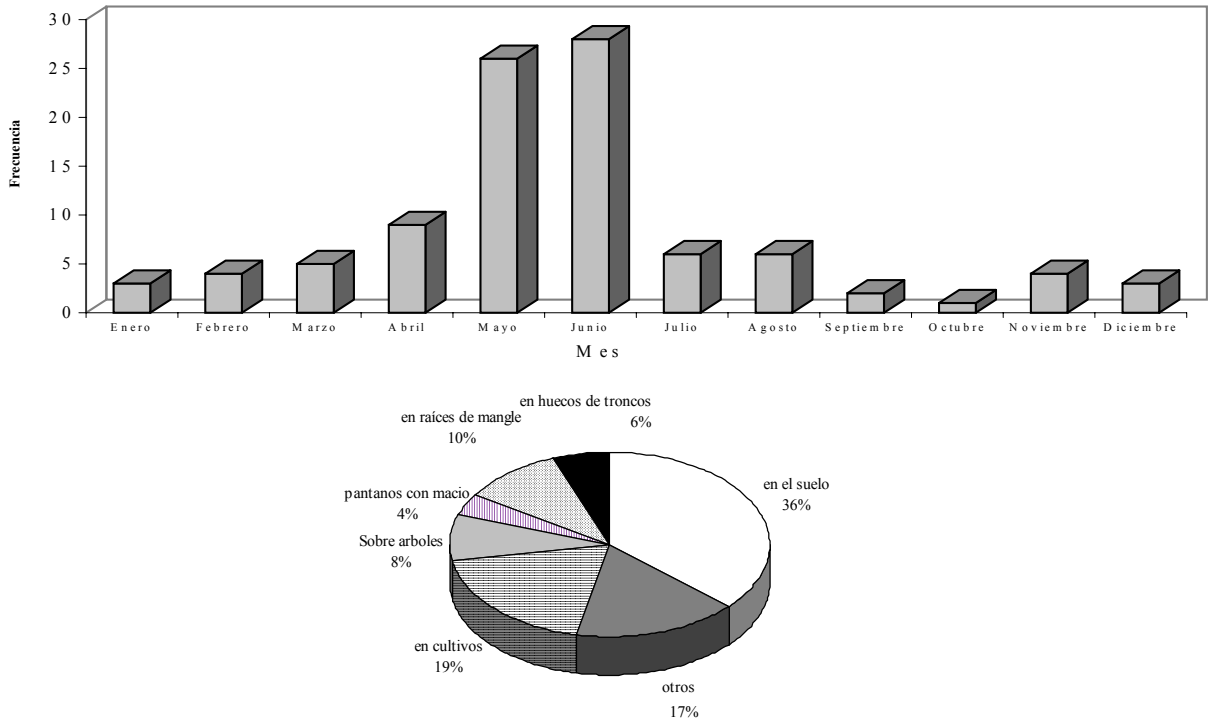

Fig. 6. Meses del año y substrato en que se han observado nidos de Yaguasa (*Dendrocygna arborea*) en Cuba, durante los últimos cinco años.

Fig. 7. Ubicación de las localidades (puntos) donde se ha observado la Yaguasa (*Dendrocygna arborea*) en Cuba en los últimos cinco años, según las encuestas realizadas.

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Anexo. Listado de las localidades donde se ha reportado la Yaguasa por provincias en el territorio cubano.

Guantánamo
- Baracoa (Mabujabo)
- San Ant. del Sur
- Caimanera (Cerro Guayabo)
- Niceto Perez (Guantánamo)
- Cuaba
- El Guiseto
- Boca del Toa
- Vilorio
- Ullao
- Paraguay
- Matabajo
- Cecilia
- Argeo Mtnez
- Boca del Yumuri
- La Yaya
- Maquesito

Granma
- Río Cauto (4)
- Cayo Grande
- Fernando Echenique
- Zona Toma del Cauto

Holguín
- Cayama
- Echenique
- Urbano Noris (Holguín)
- Camilo Cienfuegos
- Granma
- Camagüey
- Sierra Maestra
- Arrocera Sierra Maestra (Camagüey)
- El Jibaro (Camagüey?)
- Arrocera Fdo. Echenique
- Río Cauto
- Yaguabo
- Babiney
- San German (Holguín?)
- La Camilo
- Guantánamo, municipio Niceto Perez
- Presa de Nipe (Holguín)

Cienfuegos
- UBF San Marcos
- Cartagena
- Cumanayagua
- Abreus (3)
- Aguada
- Rodas
- Aguada de pasajeros
- Palmira
- Lajas
- La Josefa (2)
- Alegria
- Sta. Martina
- Vial (2)
- Lagunilla
- San Mateo
- Las Martinas
- Junco
- Refineria
- Charcas
- Algodonoes
- Ciégo Montero
- Yaguaramas
- Camarones
- San Marcos

Camagüey
- Arroceras de Santa Cruz
- Presas del N de Camagüey
- Florida (5)
- Najasa (2)
- Costa sur de Florida
- Vertientes (5)
- Costa sur de la provincia (4)
- Sibanicu
- Santa Cruz del Sur
- Carlos M. de Cespedes

Villa Clara
- Costas del Jibaro (4)
- Jagueyar
- Aridanes
- Mapo (3)
- Yabu
- La Sierpe (2)
- Presa el Colorado
- Lagos de Mayajigua
- Cruces
- Presa Guama
- Aguada
- Caunao
- Florida (Camagüey)
- Sagua (3)
- Palmarito
- San Juan
- La Minerva
- Río Sagua
- El Dorado
- Loma del Rayo
- Sto. Domingo
- Quemado de Guines
- Calabazar de Sagua
- Remedios
- Ranchuelo
- Placetas
- Cifuentes
- Vueltas (2)
- Sitio Grande
- El Pinon
- El Rojo
- Laguna Mojica
- San Ramon
- San Luis
- Estero Caiman
- Playa Carahatas
- Santa Maria
- Galloso
- El Purio
- Presa La Esperanza
- Baez
- Costa Norte
- Presa Sagua
- Presa Alacranes
- Muy abundante desde cifuetes al Río Sagua la Chica
- La Conchita y presas Dos Hermanas y Braulio áreas muy importantes
- Norte de Viana
- Detras del CAI Panchito Gomez Toro

Pinar del Río
- Bahia Honda
- San Cristobal
- Los Palacios
- Costa Sur
- Santa Cruz
- Río Blanco (La Palma)
- Laguna Vieja
- Sierra de Guane
- Alonso de Rojas
- San Luis
- Palisagas
- Sandino
- Llanadas
- Macuriffe (Mantua)
- Río Pan de Azucar (Desembocadura)
- Socarras Baja
- La Vigia, Clavellinas (Mantua)
- Trujillo (San Cristobal)
- San Ubaldo
- Consolacion del Sur

Las Tunas
- Jobabo
- Presa Las Emilia y el Jabao
- Arroceras Sabalo
- Costa Tunas
- Manati (Presa Ciego Estrada)
- Presa Gamal (Manati)
- Cobarrubias
- Presa Machucos
- San Miguel
- Jesus Menendez
- Amancio (Costas)
- La Federal
- San Nicolas
- Presa Mercedes
- Camagueycito
- Biramas
- Leonero
- Arrocera Puente Guillen
- Arrocera Sabalo Jobabo)
- 20 de mayo
- San Estevas

Ciégo de Avila
- Norte Ciégo de Avila
- Chambas
- Sur de Sancti Spíritus
- Las Nuevas
- Jibaro

Matanzas
- Calimete (Arrocera del sur)

La Habana
- Pinar del Río
- Sur de S Nicolas de Bane
- Costa Sur Habana
- Amarillas
- Laguna Hitabo

Santiago de Cuba
- Presa Protesta de Baragua
- Gota Blanca
- Granma
- Baragua Plan 5
- Regina
- Melchor
- Bayamo
- Río Cauto
- Palmarito de Cauto
- Babiney (Granma)
- Felton (Holguin)
- Jucarito
- Presa Maroto (San Luis)

Sancti Spíritus
- Guayaba
- Neiva
- Costa Sur
- Presa Tuinucu
- Sierra de Gabino
- A km y medio de Guayo
- Guayo
- Río Guayos
- CAI Humberto Abat Aleman
- Presa Zaza
- Siguaney
- Lebuye
- La Sierpe
- Taguasco
- Jatibonico
- Cabaiguan
- Las Damas
- CPA 13 de Marzo
- 4 Veredas
- La Mocuca
- Pta. Diamantes
- 3 Palmas
- Santa Lucia

IMPORTANCIA ALIMENTARIA EN LA DIETA DE LA LECHUZA *TYTO ALBA FURCATA* (AVES: STRIGIFORMES) EN LA CIUDAD DE CAMAGÜEY, CUBA

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Resumen.—Se determinó la composición alimentaria de la lechuza (*Tyto alba furcata*) en la ciudad de Camagüey, Cuba, a través del estudio de sus egagrópilas. Se midió la longitud, la anchura, la altura, y el peso de cada egagrópila, y se documentó su composición alimentaria. Se calculó el índice de importancia alimentaria para cada uno de los elementos presentes. El peso presentó el mayor coeficiente de variación y los mamíferos (roedores y murciélagos) presentaron los mayores índices de importancia alimentaria (2.10). Entre los elementos presentes en la dieta se destacó el hallazgo del murciélago *Eumops glaucinus,* un nuevo registro para la provincia de Camagüey.

Palabras clave: *áreas urbanas*, *Cuba*, *Lechuza*, *nicho trófico*, Tyto alba

Abstract.—Prey item abundance was determined for the Barn Owl *Tyto alba furcata* (Aves: Strygiformes) in the city of Camagüey, Cuba. Measurements were taken of the length, width, height, weight and prey composition of each pellet. An index of dietary importance was calculated for all prey items present. Weight was found to have the highest variation coefficient and mammals (rodents and bats) presented the highest indexes of prey item importance (2.10). The bat *Eumops glaucinus* was one of the items in the diet, the first time the species is reported from Camagüey province.

Key words: *Barn Owl*, *Cuba*, *trophic niche*, Tyto alba, *urban areas*

INTRODUCCIÓN

LA LECHUZA (*TYTO ALBA*) se encuentra en todos los continentes, siendo una de las especies mejor estudiadas en el mundo. Una excepción, sin embargo, es la región neotropical, donde existen pocos trabajos publicados (Carvalho *et al*. 1998).

Garrido y García (1975) nos refieren que *Tyto alba furcata* vive y cría en Cuba, isla de la Juventud y en algunos cayos del sur, siendo común en bosques y ciudades. Según Buide (1986), generalmente habita en los campanarios de las iglesias y en otras estructuras arquitectónicas similares, además de los grandes vestíbulos cavernarios.

Es importante destacar que a las lechuzas son atribuidos efectos agoreros y maléficos que naturalmente no poseen (Buide 1986). Por esta causa han sido cazadas indiscriminadamente sin pensar que las mismas consumen gran cantidad de ratones, contribuyendo a su control y limitando la transmisión de enfermedades por éstos.

El estudio de los hábitos alimentarios de las especies de aves contribuye a conocer un poco más de la ecología de dichos organismos. El residuo alimentario de las lechuzas, conocido como egagrópila, es de gran valor en estudios poblacionales de pequeños mamíferos como un método indirecto de obtención de muestras (Machado y Otoch 1998). Las egagrópilas son como unas pelotas de tono oscuro y tamaño variable, compuestas por los restos indigeribles (ej. pelo, huesos) de las presas, que se forman en el interior del estómago y son expulsadas por la boca (Rodríguez, sin año a).

Hernández *et al*. (1992) y Hernández, Reyes y Aquino (1994) realizaron estudios de estas egagrópilas en cavidades cársicas de la provincia de Sancti Spíritus, y Márquez, Pérez y Hernández (1995) en una cavidad cársica de Camagüey. Todos los estudios hasta la fecha han sido en localidades naturales y por lo tanto este trabajo constituye una valiosa fuente de información, al poder compararse los trabajos realizados en esta especie en diferentes hábitats.

Este trabajo se trazó como objetivo conocer la dieta de la lechuza (*Tyto alba*) en la ciudad de Camagüey y conocer la importancia alimentaria de cada uno de los elementos.

Tabla 1. Mediciones (mm) de egagrópilas de *Tyto alba* en la ciudad de Camagüey, Cuba.

Variables	Media	Desviación típica	Error típico	Coeficiente de variación
Longitud (mm)	42.92	7.71	1.11	17.96
Ancho (mm)	28.52	5.64	0.82	19.78
Altura (mm)	21.18	3.33	0.48	15.72
Peso (g)	4.55	1.95	0.28	42.85

MATERIALES Y MÉTODOS

En este trabajo se realizó un muestreo a cinco iglesias de la ciudad de Camagüey, Cuba, en el período comprendido entre 23 de mayo y 7 de agosto de 1998.

Para la toma de las muestras se visitaron las iglesias y se colectaron todas las egagrópilas. Éstas se llevaron a los laboratorios del Centro de Investigaciones del Medio Ambiente de Camagüey y allí se les tomó las medidas con la ayuda de un pie de rey (e = 1 mm) y el peso con una balanza (e = 0,01 mg). A las medidas tomadas a las egagrópilas se les analizó la media, la desviación típica, el error típico y el coeficiente de variación.

Luego se desarmaron las egagrópilas para conocer el contenido de cada una y se guardaron de forma independiente. La identificación de los huesos o cráneos de las ratas y guayabitos se realizó por comparación con otros restos frescos y, en el caso de los murciélagos, se identificó a través de las claves e ilustraciones presentadas por Silva (1983). Con todos los datos tomados se realizó el análisis del Índice de Importancia Alimentaria formulado por Acosta (1982):

$$I'a = V'ij + N'ij + F'ij$$

Donde: I´a => Indice de Importancia Alimentaria.

V´ij => Volumen o en este caso peso de cada elemento específico.

N´ij => Número de elementos presentes en cada egágropila.

F´ij => Frecuencia de aparición de los elementos.

En el caso de los pesos, se tomaron las presentes en las diferentes bibliografías (Rodríguez sin año b, Silva 1983) y por muestreos propios en el lugar del trabajo.

El material que sirvió de base a este trabajo se encuentra depositado en las colecciones del Centro de Investigaciones de Medio Ambiente de Camagüey (CIMAC) del Ministerio de Ciencia, Tecnología y Medio Ambiente de Cuba.

RESULTADOS Y DISCUSIÓN

En las egagrópilas muestreadas se encontraron ocho taxa ubicadas en cinco familias, cuatro órdenes y tres clases.

En el análisis de las mediciones realizadas (Tabla 1) se obtuvo que es el peso la variable de mayor coeficiente de variación y las mediciones de altura y longitud las de menor coeficiente de variación. Esto debido, supuestamente, a que los huesos de aves y plumas son más livianos que los huesos de los mamíferos.

Al analizar el índice de importancia alimentaria (Tabla 2) a nivel específico, se estableció que *Rattus* sp. (ratas), *Mus musculus* (guayabita) y *Passer domesticus* (gorrión) constituyen los recursos primarios de la lechuza. Para una mejor observación de los resultados se analizaron los datos a nivel de orden, corroborando que los roedores son los elementos fundamentales y los murciélagos obtienen su valor al igualarse a los passeriformes. A nivel de clases se detectó que son los mamíferos los que llevan el peso en el subnicho trófico de *Tyto alba furcata* y las aves e insectos son elementos accesorios, corroborando los resultados obtenidos por Machado y Otoch (1998), Márquez, Pérez y Hernández (1995) y Rodríguez (sin año a), aunque a diferencia de éstos no se observó la presencia de anfibios ni reptiles.

Un hecho curioso de este trabajo fue que sólo en una iglesia hallamos residuos de aves (*P. domesticus*) en las egagrópilas. Esto se debió a que la lechuza que utilizaba esta área de caza salía más temprano a cazar, hecho que pudimos comprobar en etapas posteriores del estudio cuando la vimos volar antes de que anocheciera.

Schwartz (1955) y Silva (1983) reportan 4 especies de murciélagos para la ciudad de Camagüey,

Tabla 2. Resultados de los elementos presentes en la dieta de *Tyto alba* en la ciudad de Camagüey, Cuba.

Taxa	Valor I′a
Insecta	0.27
Orthoptera	0.27
Tettigonidae	0.27
Neoconocephalus sp.	0.27
Aves	0.63
Passeriformes	0.63
Passeridae	0.63
Passer domesticus	0.63
Mammalia	2.10
Chiroptera	0.52
Phyllostomatidae	0.19
Artibeus jamaicensis parvipes	0.19
Molossidae	0.33
Tadarida brasiliensis muscula	0.06
Eumops glaucinus glaucinus	0.20
Molossus molossus tropidorhyncus	0.07
Rodentia	1.58
Muridae	1.58
Rattus sp.	0.79
Mus musculus	0.79

corroborándose la presencia de tres de ellos en las muestras. Se informa *Eumops glaucinus* como un nuevo reporte para la provincia de Camagüey, ya que la localidad de Morón, donde en el pasado Cerny y Dusbábek (1967) y Silva (1983) habían reportado la especie, no pertenece a la nueva división politico-administrativa de la provincia.

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NEW PUBLICATION AVAILABLE

Sociedad Ornitológica de la Hispaniola

The Ornithological Society of Hispaniola has just published "AVES COMUNES DE LA REPÚBLICA DOMINICANA/COMMON BIRDS OF THE DOMINICAN REPUBLIC." It includes photographs of 60 common birds with a brief text in Spanish and English. The author is Dr. Steven Latta and the chief photographer is Eladio Fernandez. The book may be purchased for US$10.00 plus $2.00 postage from Dr. Latta at:

Point Reyes Bird Observatory
4990 Shoreline Highway
Stinson Beach, CA 94970, USA
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ANTILLEAN PALM SWIFT *TACHORNIS PHOENICOBIA* NESTING IN SEA CAVES IN THE DOMINICAN REPUBLIC

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Abstract.—We report the first instance of Antillean Palm Swift (*Tachornis phoenicobia*) breeding in a sea cave, based on observations in the Dominican Republic in April 1996. Breeding data for this species and its congenerics are comparatively sparse but, with the exception of the location, our data appear to conform to previously published observations of *T. phoenicobia*. The only report of this species from Puerto Rico concerned a single individual observed in somewhat similar circumstances to the small breeding colony detailed here, raising the interesting possibility that *T. phoenicobia* may breed or have bred on the latter island.

Key words: *Antillean Palm Swift*, *Dominican Republic*, *nesting*, Tachornis phoenicobia

Resumen.—Se reporta la primera instancia de Vencejillo Antillano (*Tachornis phoenicobia*) nidificando en una cueva marina, con base en observaciones de la República Dominicana en abril de 1996. Los datos de nidificación de esta especie y sus congéneres son comparativamente escasos pero, con la excepción de la localidad, nuestros datos parecen concordar con observaciones previamente publicadas de *T. phoenicobia*. El único registro de esta especie en Puerto Rico concierne un individuo solitario observado en circunstancias algo similares a la pequeña colonia de nidificación detallada aquí, planteando la interesante posibilidad que *T. phoenicobia* pueda nidificar o haber nidificado en esta isla.

Palabras clave: nidificación, *República Dominicana*, Tachornis phoenicobia, *Vencejillo Antillano*

THE AVAILABLE LITERATURE suggests that the genus *Tachornis* is wholly reliant on palms for nesting (Chantler 1999, Chantler & Driessens 2000). Data for the range-restricted Pygmy Swift (*Tachornis furcata*) are very few, though Collins *et al*. (in press) report that it is closely tied to *Mauritia* (and possibly *Copernicia*) palms in the Maracaibo Basin, while those for Antillean Palm Swift (*T. phoenicobia*) suggest it is wholly reliant on *Roystonea* (Chantler and Driessens 2000) and, at least in Cuba, *Washingtonia* (Garrido and Kirkconnell 2000), although Raffaele *et al*. (1998) mention the species nesting in 'thatched roofs of tobacco sheds', and Fork-tailed Palm Swift (*T. squamata*) is very closely tied to *Mauritia* and *Bactris* palms (Chantler and Driessens 2000).

On the morning of 21 April 1996, RSRW drew CGB and GMK's attention to a number of Antillean Palm Swifts repeatedly entering a rather open and small sea cave at Cabo Rojo, just southeast of Pedernales, in the extreme southwest Dominican Republic. The cave was approximately 10 m in diameter and its roof was about 3 m above ground. We eventually counted c.10 pairs of swifts nesting in this cave, along with several pairs of Caribbean Martin (*Progne dominicensis*) and Cave Swallow (*Hirundo fulva*). In most respects the nests accorded with the literature (Chantler and Driessens 2000), being a globular construction of soft materials with a shallow interior cup, and situated within small crevices in the rock. In many respects the nests were similar in their position and aspect to those described and illustrated for *T. squamata* by Sick (1993), with the crucial exception, of course, that they were attached to a rock surface rather than a palm frond. Judging by calls emanating from within at least some of the nests, young were present, but we were unable to ascertain their approximate age due to the difficulties of accessing the site. As mentioned above, published data concerning the species' breeding biology are strikingly few, but clutch size is apparently 2–5 eggs, which are laid in March–July (Garrido and Kirkconnell 2000, Raffaele *et al*. 1998). Low elevations within the extreme southwest of the Dominican Republic are generally rather arid and palm trees notably few, with comparatively few Antillean Palm Swift, perhaps necessitating the use of such apparently unusual habitats for nesting.

Interestingly, Kepler (1971) in describing the first observation of Antillean Palm Swift in Puerto Rico, at Cabo Rojo, in the extreme southwest of the country, mentions that Caribbean Martins and Cave Swallows also accompanied this individual. We are unaware of whether subsequent observers have visited Cabo Rojo, and the nature of the habitat at the site, but speculate that, in light of the above, it may be worth observers re-visiting this part of Puerto Rico to discover whether the species nests in similar habitat there to the observations described above.

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BULLOCK'S ORIOLE (*ICTERUS BULLOCKII*) ON GRAND BAHAMA: A SECOND RECORD FOR THE WEST INDIES, WITH NOTES ON OTHER VAGRANTS FROM WESTERN AND CENTRAL NORTH AMERICA

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Abstract.— A trip to the Bahamas during late January and early February 2001 yielded six species that are typically associated with central or western North America, the rarest of which was Bullock's Oriole (*Icterus bullockii*). A review of North American Birds and Christmas Bird Count data reveal that five of those species were present in above average numbers in Florida that same winter.

Key words: *Bahama Islands*, *Bullock's Oriole*, *Christmas Bird Count*, *Clay-colored Sparrow*, *Grand Bahama Island*, Icterus bullockii, *Nashville Warbler*, *North Andros Island*, *Orange-crowned Warbler*, Spizella pallida, Tyrannus verticalis, Vermivora celata, Vermivora ruficapilla, *Western Kingbird*, *Wilson's Warbler*

Resumen.—EL BOLSERO DE BULLOCK (*ICTERUS BULLOCKII*) EN GRAND BAHAMA: SEGUNDO REGISTRO PARA LAS INDIAS OCCIDENTALES. Un viaje a las Bahamas a finales de enero y principios de febrero de 2001 produjo seis especies que típicamente son asociadas con el centro u oeste de América del Norte, de las cuales la más rara fue el Bolsero de Bullock (*Icterus bullockii*). Una revisión de datos en North American Birds y Christmas Bird Count revela que cinco de esas especies estuvieron presentes en números por encima de lo común en la Florida ese mismo invierno.

Palabras clave: *Bolsero de Bullock*, *Christmas Bird Count*, *Gorrión Pálido*, Icterus bullockii, *isla Grand Bahama*, *isla North Andros*, *islas Bahamas*, *Reinita Corona Naranja*, *Reinita de Nashville*, *Reinita de Wilson*, Spizella pallida, *Tirano Occidental*, Tyrannus verticalis, Vermivora celata, Vermivora ruficapilla

FROM 20 JANUARY to 3 February 2001, I explored the avifauna of North Andros and Grand Bahama Islands. I was rewarded by encounters with a number of unusual species, including several that are normally associated with central or western North America: Western Kingbird (*Tyrannus verticalis*), Orange-crowned Warbler (*Vermivora celata*), Nashville Warbler (*Vermivora ruficapilla*), Wilson's Warbler (*Wilsonia pusilla*), Clay-colored Sparrow (*Spizella pallida*), and Bullock's Oriole (*Icterus bullockii*). The Bullock's Oriole was briefly videotaped and represented a first record for the Bahamas and second record for the West Indies. Below, I provide salient points regarding the oriole's identification and discuss each species' status-and-distribution in the Bahamas and nearby Florida. Several of the aforementioned species occurred in above average numbers in Florida during the winter of 2000–2001. Information on recent annual occurrence of these species was gleaned from *North American Birds/Field Notes* and from Christmas Bird Count (CBC) data. In the Bahamas, only the New Providence Island CBC was run annually. During 1996–1997 and 1997–1998, there were also two CBCs for Andros Island and the Grand Bahama Island CBC had its inaugural run during 2000–2001.

BULLOCK'S ORIOLE ON GRAND BAHAMA ISLAND

On the afternoon of 2 February 2001, I was fortunate enough to encounter a Bullock's Oriole at Grand Bahama Island's "West End." The bird approached as I was "pishing" at a large flock of passerines that included Blue-headed Vireo (*Vireo solitarius*), Wilson's Warbler, and Summer Tanager (*Piranga rubra*) among more common species. I heard the oriole chattering before I was able to see it, and when visual contact was first made, I was surprised to see a bird that looked quite like a Bullock's Oriole. The bird was approximately 10–15 m away in good light. It eventually approached somewhat closer but was directly above me at that time. I was able to obtain brief and mediocre videotape that, nonetheless, helped corroborate the identification.

My initial suspicions were based on two obvious marks: a strong eyeline/supercilium and dull underparts. The eyeline was dark gray and extended through the eye, being broadest and darkest just before and after the eye itself. The supercilium was yellowish and quite distinct. The face was yellow as was the throat and chest, with the intensity of the face coloration being about equal to that of the throat and chest. The belly and undertail coverts were a dull whitish/grayish without any yellow or orange. One other useful mark was observed – the

median coverts possessed a wingbar with a distinctly serrated upper edge. Relating to separation from Baltimore Oriole (*Icterus galbula*), the face pattern, and colorless crissum are diagnostic for Bullock's Oriole (A. Jaramillo, pers. comm.), and the median wing-covert pattern is suggestive but not absolutely diagnostic (Lee 1998, Jaramillo 2001). Unfortunately, this bird's upperparts were not seen.

BULLOCK'S ORIOLE IN NORTH AMERICA

The Bullock's Oriole breeds across much of western North America, from southern British Columbia and Saskatchewan south to Baja California, Durango, and Coahuila. This species winters mostly from northern Mexico south to Guatemala (American Ornithologists' Union 1998), but small numbers are regular east to Louisiana. The precise status-and-distribution of Bullock's Orioles in eastern North America is poorly known, partly due to identification issues and partly due to its former conspecific status with Baltimore Oriole. The single prior West Indies record of Bullock's Oriole comes from Vieques, Puerto Rico, on 22 December 1993 (Jaramillo and Burke 1999).

In Florida, the Bullock's Oriole was first reported in 1950 and was later considered widespread, making up "a considerable portion of the wintering population [of Northern Orioles] in northwestern Florida" (Sprunt 1954, Robertson and Woolfenden 1992). Stevenson and Anderson (1994) listed six specimens and three identifiable photos from Florida, spanning 1 October to 4 February. Sight records extended from 31 August to 19 April (Stevenson and Anderson 1994). During 2000, however, the Florida Ornithological Society Records Committee (FOSRC) decided not to include Bullock's Oriole on the state list after finding that two of the aforementioned specimens were misidentified Baltimore Orioles, though their criteria for making these re-identifications were not published (Bowman 2000). The FOSRC later reviewed the remainder of the specimen and photographic record, finding that at least two specimens and two photographs were correctly identified and subsequently added Bullock's Oriole onto the state list (R. Bowman, pers. comm.). Additionally, since then, three more Bullock's Orioles were reported during the 2000–2001 winter, two of which were photographed (Anderson 2001, Cooley 2001).

Black-headed Grosbeak (*Pheucticus melancephalus*) and Black-throated Gray Warbler (*Dendroica nigrescens*) have a similar or more restricted breeding ranges when compared with that of Bullock's Oriole, and both of these species are regular vagrants to Florida. Thus, annual occurrence of Bullock's Oriole in Florida would not be surprising, but such is uncertain at this time. Georgia, just to the north, has only four accepted records (G. Beaton, pers. comm.). For a summary of this species' occurrence elsewhere in eastern North America, see Jaramillo and Burke (1999).

During the winter of 2000–2001, five Bullock's Orioles were reported east of that species' usual range (Anderson 2001, Cooley 2001, Dalzell 2001, Hunt 2001). Only seven total were reported for the preceding four winters combined (West 1997, Hunt 1999, Burgiel *et al*. 2000, Dalzell 2000, Hunt 2000).

OTHER VAGRANTS FROM WESTERN AND CENTRAL NORTH AMERICA

Western Kingbird.—On 23 January 2001, I located a Western Kingbird at the San Andros Airport, North Andros Island. This species is rare-but-regular in the Bahamas, though it occurs primarily during October and November (Brudenell-Bruce 1975, Raffaele *et al*. 1998), and none had been reported during the previous four winters, including CBCs. However, during the 2000–2001 winter, five were found on the New Providence CBC. Also during that winter, Western Kingbirds were considered "plentiful" in peninsular Florida, where this species is locally fairly common (Robertson and Woolfenden 1992, Anderson 2001).

Orange-crowned Warbler.—I found single Orange-crowned Warblers at two locations on Grand Bahama Island: Queen's Cove on 25 January and West End on 2 February. Another was found on the New Providence CBC on 17 December 2000 (*American Birds* 55:614). Orange-crowned Warblers are rare, but not annual, winter visitors to the Bahamas (Brudenell-Bruce 1975, Raffaele *et al*. 1998). Only two Orange-crowneds had been reported from the Bahamas during the preceding four winters, with none on CBCs (Norton 1997, Norton 1999). This species is an uncommon to fairly common winter resident in Florida (Stevenson and Anderson 1994). I selected five southeastern Florida CBCs from the National Audubon Society CBC Database (http://birdsource.cornell.edu/cbc/): Dade County, Fort Lauderdale, Key Largo-Plantation Key, Royal Palm-Homestead, and West Palm Beach. The total number of Orange-crowneds tallied on these counts, by year, is as follows: 2000–2001 (22); 1999–2000 (15); 1998–1999 (4); 1997–

1998 (7); 1996–1997 (14).

Nashville Warbler.—I encountered two Nashville Warblers at Taino Beach, Grand Bahama Island, from 28–31 January. Another had been found on the Grand Bahama Island CBC on 15 December 2000 (*American Birds* 55:613). Nashville Warblers are a rare-but-annual winter visitor to the Bahamas (Brudenell-Bruce 1975, Raffaele *et al*. 1998). Only two Nashville Warblers had been reported from the Bahamas during the preceding four winters, with none on CBCs (Norton 1997, Norton 1999). This species is considered very rare and irregular during winter in Florida (Robertson and Woolfenden 1992). Six Nashville Warblers were seen in peninsular Florida during the 2000–2001 winter (Anderson 2001), compared to eight total during the previous four winters (West 1998, West and Anderson 1999, Anderson and West 2000).

Wilson's Warbler.—I found five Wilson's Warbler during my visit. Single birds were at Small Hope Bay, North Andros Island, 25 January; Queens Cove, 26 January; and Taino Beach, 31 January. Two more birds were at West End, 2–3 February. During the 2000–2001 winter, at least two others were found on Grand Bahama Island, and four were at New Providence (Norton and White 2001; *American Birds* 55:613–614). None had been seen during the previous four winter's CBCs. Wilson's Warblers are considered casual during winter and very rare during migration on the Bahamas (Brudenell-Bruce 1975, Raffaele *et al*. 1998). Indeed, none were reported from these islands during the four preceding winters. In Florida, Wilson's Warblers are considered casual during winter (Stevenson and Anderson 1994), yet an astounding 61 were found in peninsular Florida during the winter of 2000–2001 (Anderson 2001). Contrast this with 16 during the winter of 1999–2000 (Anderson and West 2000), three during the winter of 1998–1999 (West and Anderson 1999), and none during the winter of 1997–1998 (West 1998).

Clay-colored Sparrow.—On 24 January, I found a Clay-colored Sparrow near Owen's Town, North Andros Island. This species is a rare-but-regular winter visitor to the Bahamas (Brudenell-Bruce 1975, Raffaele et al. 1998), but only three were reported from the Bahamas during the preceding four winters, one of which was found on a CBC (Norton 1997; *American Birds* 52:567). None were found in the Bahamas during the 2000–2001 CBC season. In Florida, this species is rare to uncommon. At least 14 were reported in peninsular Florida during the 2000–2001 winter (Anderson 2001), and a similar number was found during the 1999–2000 winter (Anderson and West 2000), but 48 were located during the 1998–1999 winter (West and Anderson 1999).

SUMMARY AND CONCLUSION

During February 2001, a Bullock's Oriole was found at West End, Grand Bahama Island, representing a first record for the Bahamas. Perhaps equally interesting was the presence of five other species typically associated with central and western North America. Four of these are generally considered less-than-annual on the Bahamas during winter (Western Kingbird, Orange-crowned Warbler, Nashville Warbler, and Wilson's Warbler). All four were present in above average numbers in Florida, and all four were found for the first time in at least five years on Bahamian CBCs. The remaining species, Clay-colored Sparrow, appeared to be present in typical numbers that winter in Florida and was missed on the two Bahamian CBCs. An increase in vagrants can occur due to many factors including increased breeding success (Veit 2000) and anomalous weather (Patten and Marantz 1996, Mlodinow *et al*. 1999). Given the diversity of habitats used for breeding by these species, a simultaneous increase in breeding success seems unlikely. Rather, a change in weather conditions during the migratory period may be somewhat more plausible, though a careful examination of the entire fall's wind patterns would be necessary to assess this possibility.

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ESTABLECIMIENTO DEL DIMORFISMO SEXUAL EN LA COTORRA CUBANA (*AMAZONA LEUCOCEPHALA*)

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Resumen.—Durante 11 años (1990–2001) seis individuos de la cotorra cubana (*Amazona leucocephala*) fueron observados en cautiverio con el fin de establecer el dimorfismo sexual de la especie. Se utilizó la observación directa por aproximadamente 180 minutos al día en períodos de 20 min consecutivos cada hora. Luego se pasó a la observación de poblaciones en estado silvestre en distintos lugares de Cuba, como la isla de la Juventud, la provincia de Camagüey, las montañas del Escambray y la ciénaga de Zapata, donde fueron observados 20 nidos. Finalmente, se comprobó el resultado del estudio mediante la laparoendoscopía y empleando la técnica de PCR. El dimorfismo sexual en *Amazona leucocephala* es evidente. Los métodos usados no han sido usados en otras especies de *Amazona*.

Palabras clave: Amazona leucocephala, *Cotorra cubana*, *dimorfismo sexual*

Abstract.—Observations of sexual dimorphism of six captive Cuban Parrots (*Amazona leucocephala*) were made over 11 years (1990–2001). Direct observations of plumage coloration were made for about 180 min per day in bouts of 20 consecutive minutes each hour. Observations of wild populations were made in the Isla de la Juventud, Camagüey province, Escambray mountains, and Ciénaga de Zapata, where 20 nests were observed. Finally, the results of the work was tested using laparoendoscopy and the technique of PCR. The sexual dimorphism of the parrot is described. The methods used have not been studied in other species of *Amazona*.

Key words: Amazona leucocephala, *Cuban Parrot*, *sexual dimorphism*

INTRODUCCIÓN

UNA DE LAS ESPECIES más depredadas en la naturaleza en Cuba, Bahamas e islas Caimán es la cotorra *Amazona leucocephala* debido a la vistosidad de su plumaje y la facilidad de aprender a repetir el sonido humano. Estas características, y su fácil adaptación a las condiciones de cautiverio en un espacio reducido, las han convertido en uno de los objetivos principales de personas que no toman en consideración el daño que hacen a la especie y las capturan en los períodos iniciales de su vida para comercializarlas por precios muy altos. Esta actividad continúa a pesar de las leyes que mantienen la veda permanente.

La dificultad en determinar el sexo de *Amazona leucocephala* (Fig. 1) ha sido uno de los grandes obstáculos para lograr su cría en cautiverio. Este conocimiento contribuiría a la procreación y, por consiguiente, aliviaría la presión sobre las poblaciones silvestres de la especie. En el presente trabajo se pretende demostrar la posibilidad de determinar el dimorfismo sexual de las cotorras mediante la observación directa de la coloración de su plumaje.

MATERIALES Y MÉTODOS

La investigación se efectuó durante 11 años consecutivos. El método empleado fue la observación directa de la coloración del plumaje durante 20 min diarios cada hora desde las 07:00 hasta las 18:00 h, para un total de 180 min al día. Se hicieron 4015 observaciones en total. La jaula empleada en esta investigación media 80.5 cm de alto por 70 cm de ancho.

En 2000, los seis individuos fueron sexados mediante laparoendoscopía en la clínica ornitológica por los doctores en medicina veterinaria Carlos Soto Piñeiro y Eliecer Cruz López, en presencia de la doctora en medicina Ana del C. Argüelles Zayas y los biólogos Hiram González Alonso y Gema Díaz Mariño. En 2001 fueron sexados 21 individuos mediante la técnica de la reacción en cadena de la polimerasa (PCR), empleando los cebadores específicos para la determinación del sexo en la División de Biotecnología del Centro de Producción de Animales de Laboratorio (CENPALAB) por los doctores en medicina veterinaria Calixto García Rodríguez e Itamy García Villar.

Fig. 1. Ana María Zayas Pérez with captive Cuban Parrots.

RESULTADOS

En 1990 recibí seis pichones de *Amazona leucocephala* tomados directamente de la naturaleza en la provincia de Holguín. Tenían solamente algunas plumas en la cabeza y alas y se procedió inmediatamente a su alimentación para lograr su supervivencia.

Al cabo de dos años (1992) se notó que había dos individuos con la región de la garganta y el pecho de un rojo oscuro y cuatro con la misma zona del cuerpo de un color rojo más claro. Pensando que se trataba de un problema alimenticio, se les suministró un complejo vitamínico. Como consecuencia, en ambos casos el rojo se volvió más intenso, pero manteniendo la diferencia. La disimilitud se pudo deber al sexo de unas y otras y el próximo paso fue definir cuáles eran machos y cuáles hembras.

Después de estudiar los tonos de coloración, se pasó a la observación en la naturaleza en las provincias de Camagüey, Holguín, Villa Clara e Isla de la Juventud con el fin de conocer cómo correspondían los tonos con el sexo en individuos de la especie en la vida silvestre. Así se pudo determinar que los huevos eran puestos e incubados por los individuos de color rojo claro en la garganta y el pecho.

A los tres años de vida (1993) los tonos de los machos se tornaron más intensos y los de las hembras adquirieron un matiz más mate, lo cual podría estar influido por el avance de la madurez sexual, la calidad de la alimentación, o ambos.

En 1994 las seis cotorras aparecieron un día divididas en parejas. Dos de las parejas estaban formadas por un individuo con la región garganta-pecho de color rojo intenso y otro de color rojo más claro. La otra pareja estaba formada por los otros dos individuos con el pecho y la garganta de color rojo claro. Esta pareja resultó estar formada por hembras.

Se estableció una pareja en la parte superior de la jaula, otra en la zona central y la tercera en la parte inferior. Sin embargo, no mantenían la misma posición, sino que se intercambiaban el lugar. Lo que no variaba eran los individuos que formaban cada pareja.

En 2000, los seis individuos fueron sexados mediante laparoendescopía. En 52 casos se llevó a cabo el mismo procedimiento de determinar el sexo de forma fenotípica inicialmente y luego se efectuaba la prueba. Las mismas se le realizaron a 17 individuos del Zoológico Nacional, nueve nacidos en cautiverio (en mi casa), cuatro de Sabanazo-Buenaventura (provincia de Holguín), siete de Pinar del Río, cinco de amistades y 10 de Camagüey. En todos los casos, el sexo determinado fenotípicamente coincidió con el determinado por la vía laparoendoscópica.

En 2001 fueron sexados 21 individuos mediante la técnica de PCR. Los resultados fueron coincidentes en su totalidad entre la evaluación fenotípica y la genotípica.

CONCLUSIONES

En todo el tiempo de observación, con la comprobación en áreas silvestres y la verificación laparoendoscópica y la de PCR, se pudo concluir que el dimorfismo sexual de *Amazona leucocephala* existe y está determinado por la coloración de la región garganta-pecho de la especie. A los machos corresponde un color rojo intenso y a las hembras un rojo más claro.

FIRST COLONIZATION OF THE LESSER ANTILLES BY THE HOUSE SPARROW (*PASSER DOMESTICUS*)

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Abstract.—We observed the House Sparrow (*Passer domesticus*) in late 1999 at Cul-de-Sac, Saint Martin, and at Grande Terre, Guadeloupe, the first records for the French West Indies. We have confirmed the colonization of this species on the two islands during February-March 2002.

Key words: *French West Indies*, *Guadeloupe*, *House Sparrow*, Passer domesticus

Resumen.—PRIMERA COLONIZACIÓN DEL GORRIÓN DOMÉSTICO (*PASSER DOMESTICUS*) EN LAS ANTILLAS MENORES. Observamos el Gorrión Doméstico (*Passer domesticus*) a finales de 1999 en Cul-de-Sac, San Martín, y en Grande Terre, Guadalupe, los primeros registros para las Antillas Francesas. Durante febrero-marzo de 2002 confirmamos la colonización de esta especie en las dos islas.

Palabras clave: *Antillas Francesas*, *Gorrión Doméstico*, *Guadalupe*, Passer domesticus

THE HOUSE SPARROW *Passer domesticus* is a Palearctic passerine which was first introduced into the USA in 1850. It rapidly invaded a large part of North America including southern Canada and most of Mexico (Sibley 2000). It is also now present in South America from western Colombia to Chile and from eastern Brazil to Paraguay and Argentina (American Ornithologists' Union 1998). Recently it has also been expanding its range rapidly in Central America (Fleischer 1982).

In the West Indies, the House Sparrow first appeared in Cuba in 1865 and next in Jamaica in 1903 and on Grand Bahama and New Providence Islands in the Bahamas shortly thereafter. More recently it appeared for the first time on Hispaniola (1976), Puerto Rico (1978) and on St. Thomas in the Virgin Islands in the early 1950's (Raffaele *et al*. 1998; see also the bibliographical summary in Wiley 2000). In the Lesser Antilles, the House Sparrow was seen several times: one observation on Barbuda in 1989 (John Mussington, pers. comm.), another on Barbados in 1997 (Martin Frost, pers. comm.), one seen at St. Lucia in 1999 (Allan Keith, pers. comm.) and one on Saba in 2001 (Martha Walsh-Mc Gehee, pers. comm.).

In 1999, travels through the French West Indies by several ornithologists permitted observations and censuses of many bird species, during which the House Sparrow was detected on two islands. It was first observed at Cul-de-Sac in northeastern Saint Martin by Gilles Leblond (pers. comm.), who found one male in May, and then by Anthony Levesque (1999), who located a family of four birds in September 1999. Second, it was observed twice in eastern Guadeloupe: one female at Pointe des Châteaux in September 1999 and about 10 individuals at Campêche in the Anse-Bertrand region in August 2000 (Levesque 2001). These observations of a species new to the French Antilles immediately interested several ornithologists and also the Direction of French Environment, who wanted to know the extent of colonization of this alien bird in Guadeloupe.

Thus, in 2001, we confirmed the reproduction of the House Sparrow on Saint Martin and Guadeloupe, and in February–March 2002, we conducted a study to census colonies of the sparrows and to estimate the total population on each island.

We divided each island into squares, 5 km on each side: 55 squares for Guadeloupe and 6 squares for Saint Martin, including the Dutch part. In each square, we selected three points of favorable habitat (e. g., village, town suburb, chicken farm) and at each point we performed 10-minute point counts for House Sparrows. In nine squares in northern Guadeloupe we increased the number of observation points to one point per kilometer. A total of 249 point counts were made. When we found sparrows in a square, we looked for the species in neighbor-

ing villages within the square, searching for birds and nests for at least four hours. In April, we also used daily newspapers to send a message to the entire human population of Guadeloupe, asking for locations of the sparrows.

In Guadeloupe, we found the House Sparrow only in one square in the Anse-Bertrand region. More complete research in the square revealed only one colony in Campêche village. There we found 14 nests and estimated the total population from 40 to 60 individuals. Response to our newspaper notice helped us find another colony of about 30 birds at Sainte Anne.

In Saint Martin, we found the House Sparrow in three squares, all in the French part of the island: at Cul-de-Sac, Grand-Case, and Marigot. At Grand-Case and Marigot, we did not find any nests, but we estimate the population at about 10 individuals in each village. In Cul-de-Sac, we discovered a large colony of about 50 nests with numerous young being fed. We estimated this population to be from 200 to 250 individuals. One response from our newspaper notice also revealed some House Sparrows on the Dutch side at Mullet Bay.

As of today, we do not believe breeding populations of House Sparrows are present on other islands of the Lesser Antilles. Recent contacts with other ornithologists from the Lesser Antilles corroborate this belief.

The source of the birds that have colonized Saint Martin and Guadeloupe is unknown but we suppose they arived as stowaways on large cruise ships or traveled in cereal ships. In the case of Saint Martin, we also suggest that the birds may have arrived from neighboring islands on strong winds.

It is clear that the House Sparrow is now well established in Saint Martin with several colonies and numerous individuals. In Guadeloupe, this species seems to be just at the start of its colonization and the population is still small. These two islands where breeding of the House Sparrow is confirmed are likely to become sources for the spread to other nearby islands of the Caribbean archipelago. Our observations show that this alien bird will probably continue to colonize the West Indies, island by island.

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FIRST RECORDS OF BOHEMIAN WAXWING (*BOMBYCILLA GARRULUS*) FOR BERMUDA

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Abstract.—We report the first records of Bohemian Waxwings (*Bombycilla garrulus*) for Bermuda. Three adults were seen on 29 December 2001 in a house garden on Dock Hill, Devonshire. By the 31 December 2001, the flock size had increased to five birds (photographed). The birds were last seen on 6 January 2002. There was a report of them being heard calling on 7 January 2002. All observations were in Devonshire in the private garden or nearby Railway Trail.

Key words: Accipiter gentilis, *Bermuda*, *Bohemian Waxwing,* Bombycilla cedrorum, Bombycilla garrulus*, Cedar Waxwing*, Loxigilla leucoptera, *Northern Goshawk*, *White-winged Crossbill*

Resumen.—PRIMEROS REGISTROS DEL AMPELIS BOHEMIO (*BOMBYCILLA GARRULUS*) EN BERMUDA. Reportamos los primeros registros del Ampelis Bohemio (*Bombycilla garrulous*) en Bermuda. Tres adultos fueron vistos el 29 de diciembre de 2001 en un jardín residencial en Dock Hill, Devonshire. Para el 31 de diciembre la bandada había aumentado a cinco individuos (fotografiados). La última observación de las aves fue el 6 de enero de 2002. Hubo un reporte de estas aves vocalizando el 7 de enero de 2002. Todas las observaciones fueron en Devonshire, en el jardín privado o en el cercano sendero Railway.

Palabras clave: Accipiter gentilis, Ampelis Americano, *Ampelis Bohemio*, *Bermuda*, Bombycilla cedrorum, Bombycilla garrulus, Loxigilla leucoptera

THE BOHEMIAN WAXWING (*Bombycilla garrulus*) is widely distributed in the Northern Hemisphere in North America and northern Eurasia. In North America it breed in Alaska and western Canada. In the winter it can stray east as far as New England and the east coast states of New Jersey to Delaware. There are sight records as far south as Virginia and southern Texas (American Ornithologists' Union 1998). Their roaming lifestyle has earned them their "Bohemian" name (Kaufman 1996).

At 11:30 h on 29 December 2001, Michelle and Rebecca Conklin spotted three lovely little birds just above their heads as they played on their new Christmas trampoline at their home in Dock Hill, Devonshire. The birds were "fluffed up" like little butterballs on the branches of the trimmed Casuarinas (*Casuarina equisetifolia*) on the north side of the property. They pointed them out to their mother, J. Gray, who phoned Dobson that evening discussing what they might be – "perhaps Bohemian Waxwings". The following morning, the three birds, now sleek and more active, spent much of the time high in the branches of a bare Pride of India (*Melia azedarach*), taking swift trips down to the birdbath below to drink. Their soft trills or "bleating" calls could be heard clear across the property as they chatted from their high sunny perch. Dobson arrived to see the birds and confirmed them to be Bohemian Waxwings, the first ever to have been recorded in Bermuda. They were also seen feeding on the berries of Asparagus Fern (*Asparagus densiflorus*). Other keen birders were called but the birds had already flown off before anyone else arrived. On the morning of 31 December there were only ever two birds present, but they were enjoyed by a number of visitors. In the late afternoon Gray was surprised to find five Bohemian Waxwings in the Pride of India tree. Amazingly, Dobson and his family had found the same five waxwings feeding on berries of Mexican Pepper (*Schinus terebinthifolius*) about a mile away on the Railway Trail and watched them fly back towards Dock Hill. The birds were last seen on 6 January and heard calling on 7 January.

DESCRIPTION

A larger, plump body and gray belly immediately distinguished it from smaller Cedar Waxwing (*Bombycilla cedrorum*). A short, thick bill. Black face-mask and throat with some white bordering. Crest resting on rear of gray-brown head. White and yellow markings on wing feathers. The red appendages on the tips of the secondaries on all five birds would suggest they were all adult birds. Short gray tail with brown undertail coverts. Prominent yellow tips to square end of tail. Direct flight. Two other species of bird were perched in the trees with the waxwings. The waxwings were similar in size to European Starling (*Sturnus vulgaris*) but smaller than Great Kiskadee (*Pitangus sulphuratus*). The birds frequently called, giving a lower pitched "sirr" compared with *B. cedorum*.

DISCUSSION

The similar Cedar Waxwing is a regular migrant and winter visitor to Bermuda (Dobson 2002) and a rare non-breeding winter resident in the West Indies (Raffaele *et al.* 1998). Bohemian Waxwings are readily distinguished from *B. cedorum*. by their gray underparts (not yellowish), rufous undertail and yellow tips on outer web of primaries. The red appendages on the tips of the secondaries on all five birds would suggest them all to be adult birds. This species was not unexpected in Bermuda bearing in mind the irruptive nature of its migration in some years. Other rarely recorded species during the winter of 2001–2002 included a Northern Goshawk (*Accipiter gentilis*) and two White-winged Crossbills (*Loxia leucoptera*).

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Thanks are due to the Gray family for welcoming many people to their garden. Others who shared their observations with us include E. Amos, W. Frith, B. Lorhan, J. Madeiros, L. Madieros, S. Rodwell, P. Soares, D. Wallace and P. Watson.

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SECOND SIGHT RECORD OF INDIGO BUNTING (*PASSERINA CYANEA*) ON DOMINICA

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Abstract.—One male Indigo Bunting (*Passerina cyanea*) was observed on Dominica on 13 March 2002. This sighting constitutes a second record for Dominica.

Key words: *Dominica*, *Indigo Bunting*, *Lesser Antilles*, Passerina cyanea, *status*

Resumen.—SEGUNDO REGISTRO VISUAL DEL COLORÍN AZUL (*PASSERINA CYANEA*) EN DOMINICA. Un Colorín Azul (*Passerina cyanea*) macho fue observado el 13 de marzo de 2002 en Dominica. Este avistamiento es el segundo registro para Dominica.

Palabras clave: *Antillas Menores*, *Colorín Azul*, *Dominica*, *estado*, Passerina cyanea

ON 13 MARCH 2002, I observed one male Indigo Bunting (*Passerina cyanea*) feeding with a flock of Black-faced Grassquits (*Tiaris bicolor*) on the mowed grounds of Fort Shipley at Cabrits National Park, Dominica, Lesser Antilles. This individual was primarily in Basic Plumage but undergoing Prealternate Molt. Amount of blue in plumage was variable but most prominent on head, back, and breast. Abdomen and undertail coverts were white with some blue feathers. Wings primarily brown with some blue on wing coverts; one wing had a distinct row of black dots on uppermost wing coverts. Bill appeared pale yellow with angulated commisure distinct. Irides were dark and legs appeared gray. This individual hoped on ground rather than walked and it was observed for at least 20 minutes. Unfortunately, no photographs were obtained.

According to Bond (1971) and Raffaele *et al*. (1998), Indigo Bunting is not listed as a vagrant on Dominica. The closest islands where this species has been recorded in the Lesser Antilles include Saba and Anguilla (Raffaele *et al*.1998). Evans and James (1997) however, mentioned one sighting of Indigo Bunting for Dominica recorded in March 1992. To my knowledge, this sighting constitutes a second record for the island of Dominica, Lesser Antilles.

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ÉVOLUTION DE LA DENSITÉ DE POPULATION DE L'IGUANE DES PETITES ANTILLES (*IGUANA DELICATISSIMA*) DANS LA RÉSERVE NATURELLE DES ÎLETS DE LA PETITE TERRE (GUADELOUPE) ENTRE 1995 ET 2002

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Mots-Clés: *Antilles françaises*, *biologie de la conservation*, *densité*, *Guadeloupe*, Iguana delicatissima, *insularité*, *milieu tropical*, *Petite Terre*, *réserve naturelle*

Key words: *biological conservation*, *density*, *French West Indies*, *Guadeloupe*, *insularity*, Iguana delicatissima, *Petite Terre*, *protected area*, *tropical dry ecosystem*

Palabras clave: *Antillas Francesas*, *área protegida*, *conservación biológica*, *densidad*, *ecosistema tropical árido*, *Guadalupe*, Iguana delicatissima, *insularidad*, *Petite Terre*

Les Îles de la Petite Terre (Commune de la Désirade, Guadeloupe), situées entre la Pointe des Châteaux de la Grande Terre et l'Île de la Désirade, comprennent deux îles, Terre de Bas (117,1 ha) et Terre de Haut (31,5 ha). Propriété du Conservatoire de l'Espace Littoral et des Rivages Lacustres, elles bénéficient du statut de Réserve Naturelle terrestre et marine depuis 1998 en raison, entre autres, de leur rôle de site de ponte pour deux espèces de tortues marines, de la présence d'une riche avifaune migratrice, de la nidification d'espèces d'oiseaux ailleurs rares et chassés et de la présence d'espèces endémiques, localisées ou en voie de disparition à la Guadeloupe : quatre reptiles, un crabe terrestre et un arbre, le Gaïac (*Guaiacum officinale*).

Ces îles constituent surtout un écosystème original dont la biomasse de vertébrés est dominée par l'Iguane des Petites Antilles (*Iguana delicatissima*), un reptile végétarien de grande taille, endémique du nord des Petites Antilles où il ne vit plus que dans certaines îles, souvent en très petites populations. L'espèce est actuellement Vulnérable (statut UICN) dans l'ensemble de son aire de répartition du fait de la destruction de son habitat, la prédation par des espèces allochtones, la compétition avec les herbivores domestiques, la chasse, les persécutions humaines et le risque de compétition ou d'hybridation avec l'Iguane commun (*Iguana iguana*). Afin de compléter les informations scientifiques disponibles et de fonder rationnellement un plan de gestion, le gestionnaire de la réserve a confié à l'association naturaliste AEVA le développement d'études destinées à apprécier l'effectif de cette population et ses fluctuations inter annuelles.

Une méthode de dénombrement sur transect, modélisant la détectabilité des individus en fonction de la distance, a été adaptée à l'espèce et aux conditions locales. Reproduite annuellement entre 1995 et 2002, à l'exception de l'année 1997, elle a permis d'établir la corrélation entre d'importants déclins de la population et deux évènements climatiques majeurs, le passage de deux ouragans en 1995 et une période prolongée de sécheresse en 2001. L'effectif de cette population, en dehors des périodes consécutives à ces évènements, est estimé à environs 10 000 individus adultes. Cette estimation lui confère le statut d'une des trois plus importantes populations mondiales de l'espèce avec celles des îles de la Dominique et de la Désirade.

L'effectif de cette population et sa répartition en deux sous-ensembles (Terre de Bas et Terre de Haut), la situation géographique et le statut de protection du site ainsi que l'absence locale actuelle des menaces précitées, confèrent à la Réserve Naturelle des Îlets de la Petite Terre un rôle de premier plan dans le domaine de la conservation et de l'étude de la biologie et de l'écologie d'*Iguana delicatissima*. La discussion porte également sur diverses hypothèses relatives à l'origine de la population actuelle et sur la nature de facteurs locaux susceptibles d'en limiter la pérennité.

EVOLUTION OF THE POPULATION DENSITY OF THE LESSER ANTILLEAN IGUANA (*IGUANA DELICATISSIMA*) OF THE ÎLETS DE LA PETITE TERRE NATURAL RESERVE (GUADELOUPE, FRENCH WEST INDIES): 1995–2002

The ecosystem of the Îles de la Petite Terre, two offshore islands of Guadeloupe (French West Indies) of less than 150 ha size together, is original because a large vegetarian reptile, the Lesser Antillean iguana (*Iguana delicatissima*), dominates it. At least two marine turtles nest on the beaches. Four endemic, low area or endangered reptiles are living on the islands. Some uncommon breeding birds for Guadeloupe and many Neotropical migratory landbirds, seabirds, and shorebirds have been recorded, too. An uncommon tree (*Guaiacum officinale*) and an uncommon terrestrial crab are present.

A survey of the Lesser Antillean iguana population was conducted by the AEVA natural society. The main goals of this study were to gather data on the inter-annual evolution of the population density and to identify eventual threats, necessary for the authority in charge of the management of this protected area (Natural Reserve).

A line transect census technique, taking into account the perpendicular distances from the transect to the animals, was carried out each year from 1995 to 2002 (except 1997). The correlation between the two large declines of the population and the hurricanes (1995) and a long drought (2001) were established.

The Lesser Antillean iguana population of the Îles de la Petite Terre is one of three largest in the world with an estimated size of 10,000 animals outside the low population periods. These protected islands are quite important sites for the species (Vulnerable, IUCN Threatened Status Category), which is threatened elsewhere in its whole Caribbean area by the destruction of its habitats, carnivore depredation, competition with domestic animals, hunting, and human persecutions. Locally, the risks of competition and/or hybridization with the common iguana (*Iguana iguana*) are not likely to occur because of the absence of this species in the Îles de la Petite Terre. The absence of these threats, the size of the population, and its location on two islands should help studies improving knowledge on the biology and the ecology of the species.

EVOLUCIÓN DE LA DENSIDAD POBLACIONAL DE LA IGUANA DE LAS ANTILLAS MENORES (*IGUANA DELICATISSIMA*) EN LA RESERVA NATURAL DE LAS ISLAS DE PETITE TERRE (GUADALUPE) ENTRE 1995 Y 2002

Las islas de Petite Terre ("commune" de Désirade, Guadalupe), situadas entre Pointe des Châteaux en Grande Terre y la isla La Désirade, están compuestas por dos islas, Terre de Bas (117,1 ha) y Terre de Haut (31,5 ha). Propiedad de Conservatoire de l'Espace Littoral e des Rivages Lacustres, gozan desde 1998 de status como reservas naturales terrestres/marinas por, entre otros motivos, ser lugar de puesta de dos especies de tortugas marinas, la presencia de una rica avifauna migratoria, la nidificación de especies de aves raras y de caza, y la presencia de especies endémicas, de ocurrencia limitada o en vías de desaparecer en Guadalupe: cuatro reptiles, un cangrejo terrestre y un árbol, el Gaïac (*Guaiacum officinale*).

Las islas forman todo un ecosistema singular donde la biomasa de vertebrados está dominada por la Iguana de las Antillas Menores (*Iguana delicatissima*), un reptil vegetariano de gran talla, endémico de las Antillas Menores septentrionales, que sólo habita algunas islas, a menudo en poblaciones muy pequeñas. La especie actualmente es considerada como vulnerable por la UICN debido a la destrucción de su hábitat, la depredación por especies introducidas, la competencia con herbívoros domésticos, la caza, la persecución humana y el riesgo de competencia y la hibridización con la Iguana Común (*Iguana iguana*). Con el fin de añadir a la información científica disponible y de establecer un plan de gestión racional, la administración de la reserva encargó a la asociación ambiental AEVA el desarrollo de estudios destinados a establecer el tamaño de esta población y sus fluctuaciones de año a año.

Un método de censar con transectas, modelando la detectabilidad de individuos en función de la distancia, fue adaptado a la especie y las condiciones locales. Efectuado todos los años entre 1995 y 2002, a excepción de 1997, permitió establecer la correlación entre importantes declives de la población y dos eventos climáticos significantes, el paso de dos huracanes en 1995 y un período prolongado de sequía en 2001. El tamaño de esta población, fuera de los períodos después de estos eventos, fue estimado en alrededor de 10 000 individuos adultos. Este estimado le confiere un status como una de las tres más importantes poblaciones a nivel mundial para la especie, junto con las poblaciones de las islas de Dominica y La Désirade.

El tamaño de esta población y su distribución en dos subpoblaciones (Terre de Bas y Terre de Haut), la situación geográfica, el status de protección del lugar y la actual ausencia de las amenazas mencionadas, confieren a la Reserva Natural de las Islas de Petite Terre un rol de importancia en el ámbito de la conservación y el estudio de la biología y la ecología de *Iguana delicatissima*. Se discuten también varias hipótesis relativas al origen de la población actual y la naturaleza de los factores locales que puedan limitar la continuidad de la población.

CONSEQUENCES DE LA RECENTE INVASION DE LA RESERVE NATURELLE DES ILETS DE SAINTE ANNE (MARTINIQUE) PAR LE RAT NOIR (*RATTUS RATTUS*) SUR L'AVIFAUNE INSULAIRE

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Les Îlets de Sainte Anne bénéficient depuis 1995 du statut de Réserve Naturelle en raison de l'important rôle qu'ils assument à l'échelle des petites Antilles vis-à-vis de la nidification d'oiseaux marins. Suite à leur invasion récente par le Rat noir, une tentative d'éradication du Rongeur fondée sur l'usage successif du piégeage et de la lutte chimique a été entreprise en novembre 1999. Dès 1997, le succès de reproduction du Puffin d'Audubon (*Puffinus lherminierii*), du Noddi brun (*Anous stolidus*), de la Sterne bridée (*Sterna anaethetus*) et du Phaéton à bec rouge (*Phaethon aethereus*) a été évalué sur le seul Îlet Hardy. Les contrôles de l'opération d'éradication conduits en janvier 2001 et 2002 ont permis de conclure à la seule éradication de la population de rongeurs de l'Îlet Percé, celle de l'Îlet Hardy ayant été réduite à 3 et 28 % de son effectif initial en 2001 et 2002 respectivement. Cette réduction d'effectif a généré un accroissement du succès reproducteur du Puffin d'Audubon et du Noddi brun de 0 et 5 % en 1999, à 61–90 et 63–85 % en 2000 et 2001. L'indice d'abondance du Crabe Zombi (*Gecarcinus ruricola*) s'est accru de 0,85 à 1,36 captures pour 100 nuits-pièges entre 1999 et 2002. Une seconde tentative d'éradication a été mise en place en janvier 2002. C'est à une veille systématique des gardes et scientifiques travaillant sur la Réserve Naturelle que l'on doit le diagnostic précoce de son envahissement par Rat noir et la prise de décision rapide de son éradication selon une stratégie permettant d'en évaluer a posteriori l'efficacité et l'intérêt au plan de la Biologie de la Conservation. Atteindre ce dernier objectif nécessite de disposer d'inventaires systématiques détaillés, quantifiés ou semi-quantifiés, activité qui devrait s'inscrire dans la mission d'Observatoire du Vivant, conférée par le Ministère de l'Environnement aux espaces protégés.

RECENT INVASION OF THE SHIP RAT (*RATTUS RATTUS*) IN THE SAINTE ANNE ISLETS (MARTINIQUE—FRENCH WEST INDIES) NATURAL RESERVE: IMPACTS ON THE INDIGENOUS AVIFAUNA ESTABLISHED AFTER AN ERADICATION ATTEMPT

Since 1995, the Sainte Anne Islets has been under the protected status of Natural Reserve they are major nesting site of two marine bird species, both at the scale of the Lesser Antilles and three more at the scale of Martinique. The ship rat (*Rattus rattus*) invaded these islands perhaps as recently as 1996 or 1997. In November of 1999, an attempt to eradicate this alien species by the successive use of trapping and poisoning was planned by the Martinique Regional Park, which has the charge of management of the Reserve. To evaluate the impact of the management of ship rat populations, data on reproductive success of *Puffinus lherminierii*, *Anous stolidus*, *Sterna anaethetus*, and *Phaethon aethereus* were collected from 1997 to 2001 on the Hardy Islet of the Reserve only. Monitoring of the eradication operation was conducted in January of 2001 and 2002, revealing eradication of only the islet Percé rat population. In 2001 and 2002, the Hardy rat population sizes were 3% and 28% of the initial sizes, respectively. The decline of the Hardy rat population coincided with an increase of the reproductive success of *P. lherminierii* and *A. stolidus* from 0 and 5% in 1999, before the eradication attempt, to 61–90% and 63–85% in 2000 and 2001, respectively, after the eradication attempt. from 1999 to 2002 the number of terrestrial crabs (*Gecarcinus ruricola*) increased from 0.85 to 1.36 for 100 trap-nights. A second eradication campaign took place in January of 2002. The results of that erradication will be available in January 2003. The recent diagnosis of the ship rat invasion and the quick decision to attempt its eradication were the result of a systematic survey of these islands by scientists and wildlife rangers. Up to date quantified inventories of fauna and flora have to be done before eradication with the plan to assess impact. The acquisition of such inventories is clearly one of the main missions devoted to the protected areas by the French Ministry of Environment.

CONSECUENCIAS EN LA AVIFAUNA INSULAR DE LA RECIENTE INVASIÓN DE LA RATA NEGRA (*RATTUS RATTUS*) EN LA RESERVA NATURAL DE LOS CAYOS DE SAINTE ANNE (MARTINICA)

Desde 1995 los cayos de Sainte Anne gozan de protección como reserva natural debido al importante rol que tienen en las Antillas Menores como lugar de nidificación de las aves marinas. Después de la invasión reciente de la rata negra, un esfuerzo de erradicación del roedor basada en el uso sucesivo de trampas y agentes químicos fue emprendido en noviembre de 1999. A partir de 1997 el éxito reproductivo fue evaludado para la Pardela de Audubon (*Puffinus lherminierii*), la Cervera Parda (*Anous stolidus*), el Charrán Embridado (*Sterna anaethetus*) y el Rabijunco Piquirrojo (*Phaeton aethereus*) en el cayo Hardy. El monitoreo de la operación de erradicación efectuada en enero de 2001 y 2002 revela que la población de roedores en el cayo Percé fue totalmente erradicada, la población del cayo Hardy se redujo al 3% de su tamaño inicial en 2001 y al 28% en 2002. Esta reducción en la población de roedores generó un incremento en el éxito reproductivo de la Pardela de Audubon y la Cervera Parda, pasando del 0 al 5% en 1999, al 61-90% en 2000 y el 63-85% en 2001. El índice de abundancia del cangrejo *Gecarcinus ruricola* aumentó de 0,85 a 1,36 capturas por 100 noches-trampa entre 1999 y 2002. Un segundo intento de erradicación se efectuó en enero de 2002. La vigilancia sistemática de los guardias y científicos trabajando en la reserva natural resultó en un diagnóstico rápido de la invasión de la Rata Negra y la decisión sin demora de erradicarla. Inventarios numéricos de la flora y la fauna tienen que ser efectuados antes de la erradicación para poder evaluar su impacto. La recopilación de estos inventarios es uno de las principales objetivos del Ministerio del Ambiente francés.

IMPACT DE LA MANGOUSTE DE JAVA (*HERPESTES JAVANICUS*) ET DU RAT NOIR (*RATTUS RATTUS*) SUR LA NIDIFICATION DE LA TORTUE IMBRIQUEE (*ERETMOCHELYS IMBRICATA*), LA POPULATION DE RALE GRIS (*RALLUS LONGIROSTRIS*), ET CELLE DU CRABE BLANC (*CARDISOMA GUANHUMI*). ÎLET FAJOU - RESERVE NATURELLE DU GRAND CUL-DE-SAC MARIN - PARC NATIONAL DE LA GUADELOUPE -ANTILLES FRANÇAISES

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L'éradication simultanée de la Mangouste de Java, du Rat noir et de la Souris domestique par l'utilisation successive du piégeage et de la lutte chimique a été tentée en mars 2001 sur l'Îlet Fajou (104 ha de mangrove, 11 ha de forêt sèche). Un contrôle réalisé en décembre 2001 a démontré l'échec de l'éradication du Rat noir. Une seconde opération d'éradication conduite en mars 2002 a permis de tester diverses hypothèses expliquant cet échec et de pallier certaines imperfections techniques. Son résultat sera établi à la fin de l'année 2002. Elle a permis de conclure au succès, dès mars 2001, de l'éradication de la Mangouste de Java par le seul piégeage et, peut-être, à celui de la Souris domestique par l'action cumulée du piégeage et de la lutte chimique. L'analyse de la répartition spatiale des captures des espèces cibles a permis de démontrer qu'elles fréquentent préférentiellement la partie sèche de l'île. L'élimination de la Mangouste et la forte réduction de l'effectif du Rat noir ont généré la totale cessation des destructions de nids de la Tortue imbriquée et une apparente colonisation de la partie sèche de l'île par le Râle gris cantonné auparavant à la seule mangrove. L'indice d'abondance du Râle gris et du Crabe blanc a fortement augmenté à l'issue de cette opération. La mobilisation sur le long terme d'un personnel qualifié et de moyens techniques importants, caractéristique d'une pareilles opérations de recherche et gestion, a été obtenue ici grâce au statut d'aire protégée dont bénéficie l'Îlet Fajou.

THE JAVANESE MONGOOSE (*HERPESTES JAVANICUS*) AND THE SHIP RAT (*RATTUS RATTUS*) IMPACTS ON THE REPRODUCTION OF THE HAWKSBILL TURTLE (*ERETMOCHELYS IMBRICATA*), THE CLAPPER RAIL (*RALLUS LONGIROSTRIS*), AND THE TERRESTRIAL CRAB, *CARDISOMA GUANHUMI*. FAJOU ISLAND, NATURAL RESERVE OF GRAND CUL-DE-SAC MARIN - GUADELOUPE NATIONAL PARK – FRENCH WEST INDIES

During March 2001, an attempt was made to eradicate, by simultaneously trapping and using chemical baits, the Javanese mongoose, the ship rat and the house mouse from Fajou Islet (104 ha of mangrove on peat, 11 ha of dry vegetation on sandy soil) Natural Reserve managed by the Guadeloupe National Park (French West Indies). The control operation took place in December 2001 and January 2002, and demonstrated a check of the ship rat eradication. A second eradication operation was undertaken in March 2002, to test hypotheses related to this check and to determine technical factors. Its result will be available in March 2003. Moreover, it allowed a proof of the success of the Javanese mongoose eradication by trapping alone and, perhaps, the success of the house mouse eradication by trapping and poisoning.

The spatial distribution of trapped individuals of the target species statistically showed that they were concentrated in the dry part of the island.

The mongoose eradication and the decline of the ship rat population reduced hawksbill turtle nest destruction and the colonization of the dry part of the island by the clapper rail, which had been located strictly in the mangrove in the past. The abundance indexes of the clapper rail and the terrestrial crab, *Cardisoma guanhumi*, increased dramatically. The relationships between those increases and the drop of the alien mammal populations have to be rigorously established by the collecting of future data. Such operations combining research and management have to be planned for a long time to be founded on the availability of good logistical, technical and human qualified supports. All these conditions were gathered here because of the protected area status of the Fajou Islet.

IMPACTO DE LA MANGOSTA DE JAVA (*HERPESTES JAVANICUS*) Y LA RATA NEGRA (RATTUS RATTUS) EN LA NIDIFICACIÓN DE LA TORTUGA CAREY (*ERETMOCHELYS IMBRICATA*), LA POBLACIÓN DEL RASCÓN DE MANGLE (*RALLUS LONGIROSTRIS*) Y EL CANGREJO BLANCO (*CARDISOMA GUNHUMI*). CAYO FAJOU, RESERVA NATURAL DE GRAND CUL-DE-SAC MARIN – PARQUE NACIONAL DE GUADALUPE – ANTILLAS FRANCESAS

La erradicación simultánea de la Mangosta de Java, la Rata Negra y el Ratón Doméstico con el uso sucesivo de trampas y químicos fue intentada en marzo de 2001 en el cayo Fajou (104 ha de manglar, 11 ha de bosque seco). Un monitoreo realizado en diciembre de 2001 demostró el fracaso del intento de erradicar la rata negra. Un segundo intento de erradicación efectuado en marzo de 2002 permitió probar diversas hipótesis para explicar el fracaso y paliar ciertas imperfecciones técnicas. Los resultados estarán disponibles a finales de 2002. Se pudo confirmar el éxito, desde marzo 2001, de la erradicación de la Mangosta de Java por la simple captura y, quizás, del Ratón Doméstico por los impactos acumulativos de la captura en trampas y el uso de agentes químicos. El análisis de distribución espacial de las capturas de las especies deseadas permite demostrar que ellas frecuentaban la parte seca del cayo preferiblemente. La eliminación de la mangosta y la fuerte reducción en los efectivos de la Rata Negra acabó totalmente con la destrucción de los nidos de la Tortuga Carey y aparentemente permitió una colonización de la parte seca del cayo por el Rascón de Mangle, antes restringido al manglar. Los índices de abundancia del Rascón de Mangle y del Cangrejo Blanco aumentaron considerablemente al final de este operativo. El uso a largo plazo de personal capacitado y técnicas apropiadas, características de otras operaciones de investigación y manejo, se obtienen aquí gracias al status del cayo Fajou como área protegida.

STRUCTURES SPECIFIQUES DES PEUPLEMENTS DE RONGEURS D'AGROECOSYSTEMES ET D'ECOSYSTEMES «NATURELS» DE LA GUADELOUPE ET DE LA MARTINIQUE (ANTILLES FRANÇAISES)

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Le peuplement de Rongeurs de la Martinique et de la Guadeloupe est constitué de 3 espèces allochtones, *Rattus rattus*, *R. norvegicus* & *Mus musculus*. Un effort d'échantillonnage standardisé de 26 740 nuit-piéges a permis de mettre en évidence une grande hétérogénéité de la distribution de ces espèces au sein d'un ensemble de 4 agro-écosystèmes (canne, banane, manioc & pastèques) et de 3 écosystèmes «naturels» (forêt tropicale humide & îlots à végétation xérophile). Une analyse conduite à une échelle spatiale plus fine, depuis les milieux encaissant les parcelles cultivées jusque dans celles-ci, aboutit à la même conclusion. Les souris domestiques constituent la majorité des captures réalisées sur l'ensemble des agro-écosystèmes étudiés (56% pour l'ensemble et 84% pour les agro-écosystèmes canniers). L'espèce est fortement représentée au sein des parcelles cultivées et faiblement dans les milieux encaissants. Le Rat noir est fortement représenté dans les "savanes" et formations d'épineux d'une part, et la forêt tropicale humide, d'autre part, milieux constituant l'environnement immédiat des champs de canne et des bananeraies respectivement. Le Surmulot, moins abondant que les espèces précédentes, est cependant bien représenté dans les agro-écosystèmes consacrés aux cultures vivrières et se concentre dans l'écotone que constitue la marge des parcelles cultivées. Ces résultats induisent une réflexion sur l'optimisation des stratégies de lutte anti-rongeurs en vigueur et des stratégies d'échantillonnage destinées à évaluer des risques épidémiologiques ou environnementaux en rapport avec la présence de ces rongeurs. Ils sont discutés en relation avec la mise en évidence récente du portage rénal de *Leptospira interrogans* par 57% des souris d'un échantillon collecté en Guadeloupe.

RODENT COMMUNITY STRUCTURE IN "NATURAL" AND AGRICULTURAL ECOSYSTEMS IN GUADELOUPE AND MARTINIQUE (FRENCH WEST INDIES)

The rodent community of Martinique and Guadeloupe includes three alien species: ship rat (*Rattus rattus*), Norwegian rat (*Rattus norvegicus*), and house mouse (*Mus musculus*). A 26,740-trap-nights effort conducted under standardized sampling methods showed a strong heterogeneity of the species' frequency distribution among three "natural" ecosystems (tropical rainforest and islets covered totally or partially by a dry vegetation) and four agricultural ones (sugarcane, banana, manioc, watermelon).

A second step of the analysis, conducted at the smallest space scale, from the surrounded ecosystems of the cultivated areas to the inside of these, gave the same result. The house mouse constituted the majority of the captures in the agricultural ecosystems (56% for the total and 84% for sugarcane specifically). This species is well represented inside the cultivated area and poorly outside. The ship rat is well represented in the "savannah" and "bush" and tropical rain forest, surrounding the sugarcane and banana fields, respectively. The Norwegian rat, statistically less numerous than the mouse, was well represented in the cultivated areas devoted to watermelon and the manioc, and concentrated in the field margins. The build-up and the optimization of the strategy in controlling the alien rodents in tropical islands were discussed in relation with these results. These results allowed a description on how to optimize sampling strategies to evaluate the epidemiological and environmental risks related to these alien rodents. The results were discussed in relation to recent findings showing that 57% of a Guadeloupe Island house mouse sample hosted *Leptospira interrogans* in its kidneys.

ESTRUCTURA DE LA COMUNIDAD DE ROEDORES EN LOS AGROECOSISTEMAS Y LOS ECOSISTEMAS "NATURALES" DE GUADALUPE Y MARTINICA (ANTILLAS FRANCESAS)

La comunidad de roedores en Martinica y Guadalupe está compuesta por tres especies no nativas, *Rattus rattus*, *R. norvegicus* y *Mus musculus*. Un muestreo estandarizado de 26 740 noches-trampa pone en evidencia una gran heterogeneidad en la distribución de estas especies en cuatro agroecosistemas (cañaveral, bananal, plantaciones de yuca y cultivos de sandía) y tres ecosistemas "naturales" (bosque tropical húmedo, cayos y vegetación xerófila). Un análisis a escala espacial muy fina, desde la periferia de las parcelas hasta el interior de las mismas, llega a la misma conclusión. Los ratones domésticos constituyen la mayoría de las capturas realizadas en los agroecosistemas estudiados (56% de las capturas en todos los grupos y el 84% de las capturas en los cañaverales). La especie está muy bien representada en las parcelas de cultivo pero pobremente fuera de ellas. La Rata Negra está muy bien representada en las "sabanas" y formaciones espinosas próximas a los cañaverales y el bosque tropical húmedo próximo a las plantaciones de banano. La Rata Gris, menos abundante que las especies anteriores, está bien representada en los agroecosistemas compuestos por la yuca y la sandía y se concentra en los ecotonos de las márgenes de las parcelas cultivadas. Estos resultados nos llevan a una discusión sobre cómo optimizar la estrategia vigente para controlar los roedores y las estrategias de monitoreo destinadas a evaluar los riesgos epidemiológicos o ambientales relacionados a la presencia de los roedores. Los resultados se discuten en relación al reciente hallazgo que el 75% de los ratones en un muestreo recolectado en Guadalupe presentaban *Leptospira interrogans* en los riñones.

REQUIEM FOR A BIRD LOVER

PETER ESPEUT
From *The Daily Gleaner*
Wednesday, 31 July 2002

MURDER IS SO COMMON and so frequent in Jamaica that, for many of us, it fails to shock or appall.

The stabbing to death last week of internationally famous Jamaican environmentalist Robert Sutton of Marshall's Pen, Manchester, was murder most foul, and the abduction and stabbing of his wife, Dr. Ann Haynes Sutton, ostensibly for ransom, is further indication of the depths to which we have sunk as a people. But those tragic events passed without being much noticed, itself quite tragic.

Robert Sutton was more Jamaican than most of us, being able to trace more than one of his ancestors back to the English invaders in 1655. Indeed, he is a direct descendant of Richard James, the first baby born in Jamaica under English rule. But that does not mean much to some people, for Robert Sutton was a white Jamaican, born into an old Jamaican family.

Robert was born in Mandeville, and went to DeCarteret College. His father was a cattle farmer and he learnt the family business at an early age. After managing cattle properties in St. Elizabeth and Westmoreland, he took over his father's farm in Manchester in 1979, and he remained a cattle farmer until his murder last week. He was a respected cattle breeder; one of the bullkins bred on his property, Marshall's Pen, was purchased and raised by a local farmer and later won the prize at a recent Denbigh Show.

But Robert's local and international fame and his enduring contribution to Jamaica is in connection with his passion for and expertise in Jamaican birds, specially recording bird songs. You might have seen his recent book published jointly with his cousin, Audrey Downer, by Cambridge University Press: *Birds of Jamaica: a Photographic Field Guide*; or you might have seen his recent set of tapes/CDs of Jamaican bird calls published in 2000 jointly with G. Reynard by Cornell University Press: *Bird Songs in Jamaica*. He was just beginning to set down for the rest of us the wealth of knowledge he had gained over his lifetime and was planning a new book and a new series of sound recordings. He shared his knowledge freely, and encouraged and trained many local people. He was always willing to volunteer to take groups from the Natural History Society of Jamaica and the Gosse Bird Club (now BirdLife Jamaica) into the field, and had infinite patience when trying to introduce people to birdwatching. His untimely death is a great loss to the environmental community, and to the environment itself.

His expertise in Jamaican birds was called upon in many ways. He was the natural person for visiting film crews to turn to as a consultant on Jamaican bird life: he was a consultant to the BBC Natural History Film Unit when it filmed David Attenborough's *Life of Birds* in 1997 *Spirits of the Jaguar* in 1995 on location in Jamaica. Similarly, visiting scientists usually contacted him for advice about how to implement their bird studies, taking advantage of his comprehensive knowledge of Jamaican birds and their habitats. He carried out assessments of environmental impact all across Jamaica for almost thirty years. To name a few, he assessed the JAVAMEX Project for CIDA (1977), the Royal Palm Reserve Project for the Petroleum Corporation of Jamaica (1987), and the hazards posed by birds to aircraft at the Sangster International Airport for the Airports Authority of Jamaica (1992).

Most Jamaicans know that many North American birds migrate to Jamaica to spend the winter months.

These birds spend about eight months of the year in Jamaica, so they are really Jamaican birds which migrate north for the summer months when the insects on which they feed are abundant]. But where do our birds reside during the four months they live up north? Robert Sutton dedicated a good part of his life trying to find out.

He qualified himself as a bird-bander through the US Fish and Wildlife Service, and over the last 30 years he has placed uniquely numbered metal bands on the feet of thousands of migrant birds. Birders in the US who observe the bands communicate with the US Fish and Wildlife Service, which means that we in Jamaica can know which parts of the USA we are organically linked with through our birds.

By banding Jamaican resident birds, he has studied the survival, ages and the plumages of these creatures throughout their life cycle, and their longevity, which has advanced the science of Jamaican bird ecology and identification. His serious and scientific approach to data collection was reflected in his long-term commitment to the Meteorological Service. He maintained the weather station at Marshall's Pen and received several awards for his service, most recently as Champion Observer for Manchester in 2001. In his own quiet (and unsung) way, this Jamaican man has made a serious and lasting contribution to our understanding of Jamaica's natural history.

A TOUGH OUTDOOR MAN

Robert Sutton was a pioneer in Jamaican Nature Tourism. He took great pleasure in taking groups of local and foreign people into the bush to see birds and was one of the first Jamaicans to work with bird-watching tours for overseas birders tourists, and has arrangements with US and UK tour companies – including Victor Emmanuel and Ornitholidays – which has brought thousands of tourists to Jamaica. He took tour groups all over Jamaica - from Barbecue Bottom in the Cockpit Country to the John Crow Mountains in St. Thomas - exposing them to the beauty of God's creation in Jamaica. He was a tough outdoor man, fit of mind and body. He was murdered – stabbed in the heart as he fought with the intruders to protect his wife.

He was not a narrow environmentalist. He supported the local community around Marshall's Pen. His family donated land for the Mike Town Community Centre and the Mike Town Missionary Church, and he regularly attended local Community Council meetings and was quite vocal on local and national issues. He was the sponsor of the Mike Town Basic School. He was a past president of the Manchester Horticultural Society, and treasurer of the Jamaica Junior Naturalists, an environmental education NGO for the youth of Manchester.

In my own work, Robert Sutton (and his wife) did extensive research for us on the resident, migrant and transient birds of the Portland Bight Protected Area. Of course, he could identify the species of birds just by hearing them chirp. And he banded hundreds of our birds. He was a world-class expert in his field; a big Jamaican! He will be sorely missed.

Rest in Peace, Gallant Robert!

Peter Espeut is a sociologist and is executive director of an environment and development NGO.

ROBERT SUTTON MEMORIAL FUND

Dear Colleagues,

Robert Sutton – internationally-known Jamaican Ornithologist and author of Birds of Jamaica, husband of Ann Sutton (Ornithologist & Secretary of SCSCB) – passed away, tragically, on July 22nd, 2002. Robert was stabbed during a robbery of the Sutton's home – Marshall's Pen. Ann was treated at the hospital and released. We are thankful that she is alive and hope she will have the strength to carry on after this devastating loss.

Robert touched many lives and had a profound and positive influence on Jamaica's birds and environment. In addition to co-authoring *Birds of Jamaica: a Photographic Field Guide* (Cambridge University Press), Robert also published in 2000 a set of tapes/CDs of Jamaican bird vocalizations (with G. Reynard by Cornell University Press: *Bird Songs in Jamaica*). His expertise in Jamaican birds, especially their songs, was called upon by many, including visiting film crews, NGOs, and scientists, as well as local residents and environmental groups. He and Ann were pioneers in promoting Jamaican Nature Tourism. Robert took great pleasure in taking local and visiting birders into the bush to see birds. Not only did Robert provide expertise to overseas birdwatching tours, but he and Ann extended warm hospitality and friendship to all who enjoyed seeing birds in Jamaica. His legacy will live on in the many individuals that he taught and inspired.

This senseless tragedy is beyond comprehension. Our hearts go out to Ann and Robert's family for their loss. The bird conservation communities in Jamaica, the Caribbean, and throughout the world also mourn the loss of a dedicated environmentalist who worked tirelessly, along with his wife, to study and conserve Jamaica's birds. Many of you have asked how you can help. The SCSCB is pleased to announce that, with the kind assistance of the National Fish and Wildlife Foundation, a Memorial Fund has been established to honor Robert's memory. The funds will go towards supporting an aspect of Jamaican bird conservation especially important to Robert (to be announced).

If you would like to contribute to the fund, please send a check, made out to National Fish and Wildlife Foundation, to the following address:

National Fish and Wildlife Foundation
1120 Connecticut Ave NW, Suite 900
Washington, DC, 20036
Telephone: 202–857–0166, fax: 202–857–0162

NOTE: It is VERY IMPORTANT that you write "Robert Sutton Memorial Fund" directly on the check. This will ensure that all contributions are documented and accredited to this fund, and that NFWF mails you a thank you letter that includes the tax deductible donation credit.

As soon as a decision is made as to how the fund will be used, we will notify you.

Thank you in advance for your support.

Yours sincerely,

Lisa Sorenson & Patricia Bradley, Co-chairs, WIWD Working Group of the SCSCB

Eric Carey, President, and other Executive Officers for the Society for the Conservation and Study of Caribbean Birds

Birders' Exchange

Conserving birds by getting tools to people who need them

Birder's Exchange is a program of the American Birding Association

Dear Colleague,

The American Birding Association collects new and used bird-related equipment and books for use by bird conservation, research, and education groups in Latin America and the Caribbean. You may already be familiar with our program, called Birders' Exchange. The Program has two primary goals: 1) to provide material assistance to those working for birds and their habitats, and 2) to increase the flow of information about bird conservation and bird education efforts between organizations throughout the Americas.

This is why our slogan is: "Sharing tools, saving birds."

We distribute these tools free of charge. We do this because we know that we share a common hemispheric birdlife and a common responsibility.

Birders' Exchange would be delighted to send equipment to more projects in Latin America and the Caribbean. You may be aware of important projects in need of the kind of equipment that we can provide. Please consider bringing Birder's Exchange to the attention of your colleagues in the field.

As a result of donations from individuals and organizations in North America, the following materials are currently available:

- binoculars (used, but in good condition)
- spotting scopes and tripods
- field guides and ornithological reference books
- backpacks

Requests for other equipment, such as laptop computers, cameras, and slide projectors, can sometimes be filled.

An application is attached.

Please visit the following site for more information: <http://www.americanbirding.org/bex>

Sincerely,

Betty Petersen
Birders' Exchange Program Director

Paul J. Baicich
Director, ABA Department of Conservation and Public Policy

Birders' Exchange • American Birding Association
720 West Monument Street, PO Box 6599, Colorado Springs, CO 80934, USA
Phone: 719–578–9703; Fax: 719–578–1480; e-mail: edcon@aba.org
www.americanbirding.org

BIRDERS' EXCHANGE
APPLICATION

Organization Name:_____

Project Names:_____

Contact Person:_____

Address:_____

City:_____

State:_____

ZipCode:_____Country_____

Telephone:_____ Fax:_____

Email:_____

Website:_____

1. Provide a brief history of your organization or project. When and why was it formed? How many paid and/or volunteer employees are on your staff?

2. Describe your organization's current activities, in terms of research, education, or conservation. How does your organization work to preserve birds and/or their habitats? Why it is important to bird conservation?

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www.americanbirding.org

3. How many species of birds does your research involve, or, how many students does your education program impact?

4. What are the specific needs of your organization or project in terms of research equipment, field guides, reference books, or journals? Explain specifically why the materials are needed, how they will be used, and how many people will be using them. If more than one item is requested, rank the items in terms of importance to your project.

5. IMPORTANT: We rely on volunteer couriers to carry equipment from the Unites States to programs in Latin America and the Carribean. Do you know of a person who may be traveling to your area who can carry a Birders' Exchange donation to you? Please send us their name and contact information.

6. Organizations that receive equipment through BIRDERS' EXCHANGE are required to provide a follow-up report on their activities 6 months after receiving the materials. This report should detail how the equipment has been used, whether it performed satisfactorily, and how many people used it.

7. Photographs depicting your organization's activities or staff, or printed materials describing your organization's work, will greatly help ABA to publicize the work of your organization and to solicit future donations from North American bird watchers. If you are able to provide us with these materials, please include them with your proposal. We cannot guarantee the return of photographs.

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www.americanbirding.org

Birders' Exchange

Conserving birds by getting tools to people who need them

Birder's Exchange is a program of the American Birding Association

Estimado colega,

La "American Birding Association" recolecta libros y equipo relacionados al estudio de las aves para ser usados por grupos dedicados a la conservación e investigación de aves, y a la educación en este campo en Latino América y el Caribe. Quizás usted ya esté familiarizado con nuestro programa, llamado "Birders' Exchange," el cual tiene dos objectivos primordiales: 1) proveer materials a aquéllos que trabajan por las aves y su hábitat, y 2) aumentar el flujo de información acerca de iniciativas para la conservación de aves y educación al respecto en las Américas.

Por esta razón, nuestro lema es: "Compartiendo herramientas, salvando aves."

Nosotros distribuimos esas herramientas sin costo alguno para el usuario. Hacemos esto porque sabemos que compartimos la fauna de aves en el hemisferio, así como una responsabilidad común.

Nos encantaría proporcionar equipo para más proyectos en Latino América y el Caribe, como parte del programa "Birders' Exchange." Si usted esta al tanto de proyectos importantes que requieran equipo que nosotros podamos proporcionar, por favor considere darle la información acerca de Birders' Exchange a sus colegas envueltos en esos proyectos.

Debido a donaciones por parte de individuos y organizaciones en Norte América, el siguiente equipo esta actualmente disponible:

- binoculars (usados, pero en buenas condiciones)
- miras telescópicas y trípodes
- guías de campo y libros de referencia en ornitología
- mochilas

En algunos casos nosotros también podemos proveer otros equipos, como computadoras portátiles, cámaras y projectores de diapositivas.

Adjuntas van planillas de aplicación en Inglés y en Español.

Por favor visite la siguiente página web para mas información: <http://www.americanbirding.org/bex>

Para su información, la directora del programa, Betty Petersen, estará en la Tercera Conferencia Norte Americana de Ornitología (Third North American Ornithological Conference) en New Orleans, del 24 al 28 de septiembre del 2002. (Betty estará en la conferencia desde 25 hasta 27 de septiembre.) Si usted o algún colega van a asistir a esa conferencia, le podríamos entregar el equipo allí (a usted, o a algún amigo que se lo pueda llevar). Si no, encontraremos alguna otra forma de entregarle el equipo.

Sinceramente,

Betty Petersen
Directora del Programa Birders' Exchange

Paul J. Baicich
Director del Departamento de Conservación y Políticas Públicas

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Birders' Exchange • American Birding Association
720 West Monument Street, PO Box 6599, Colorado Springs, CO 80934, USA
Phone: 719–578–9703; Fax: 719–578–1480; e-mail: edcon@aba.org

BIRDERS' EXCHANGE

PROPUESTA

Nombre de la Organización: _____

Nombre del Proyecto: _____

Persona a contactar: _____

Dirección a la cual se debe enviar la correspondencia: _____

_____

_____

Teléfono: _____ Fax: _____

Email: _____

Website: _____

1) Una breve descripción de su organización o proyecto. Cuando y como fue formado? Está compuesto de personal voluntario o profesionales pagados?

2) Describa las más recientes actividades en términos de investigación, educación, y conservación. Cómo trabaja su organización para preservar las aves y sus habitas? Por qué su proyecto es importante para la conservación de aves?

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www.americanbirding.org

3) Cuántas especies de aves cubre su proyecto? O, cuántos estudiantes envuelve su programa educativo?

4) Cuáles son las necesidades específicas de su organización o proyecto en términos de equipo para investigación, guías de campo, libros de referencias, o revistas de ornitología? Explique específicamente por qué estos materiales son necesitados y el uso que les será dado y cuánta gente hará uso de ellos. Si usted está pidiendo más de un tipo de material, precise sus necesidades en términos de mayor importancia.

5) IMPORTANTE: Nosotros contamos con voluntarios para llevar equipo de los Estados Unidos a los programas en Latinoamérica y el Caribe. Usted conoce a alguien que vaya a viajar a su región, que pueda llevarle el equipo donado por Birder's Exchange? Por favor mándenos el teléfono de esa persona, y cualquier otra información de cómo contactarla.

6) Las organizaciones que requieran equipo a través del BIRDERS' EXCHANGE, están obligados a brindar un informe de actividades después de 6 meses de haber recibido el material. El reporte debe detallar la manera como el equipo ha sido usado, si funciona satisfactoriamente y cuanta gente lo usó.

7) Fotografías, diapositivas, etc., describiendo las actividades de su organización y material que ayude al programa Birders' Exchange dar a conocer su trabajo y solicitar así futuras donaciones a observadores de aves de los Estados Unidos. Si usted puede proveernos este material, por favor inclúyalo en su propuesta. No podemos garantizar el retorno de las fotografías.

Las propuestas o requerimientos deben ser enviados a:

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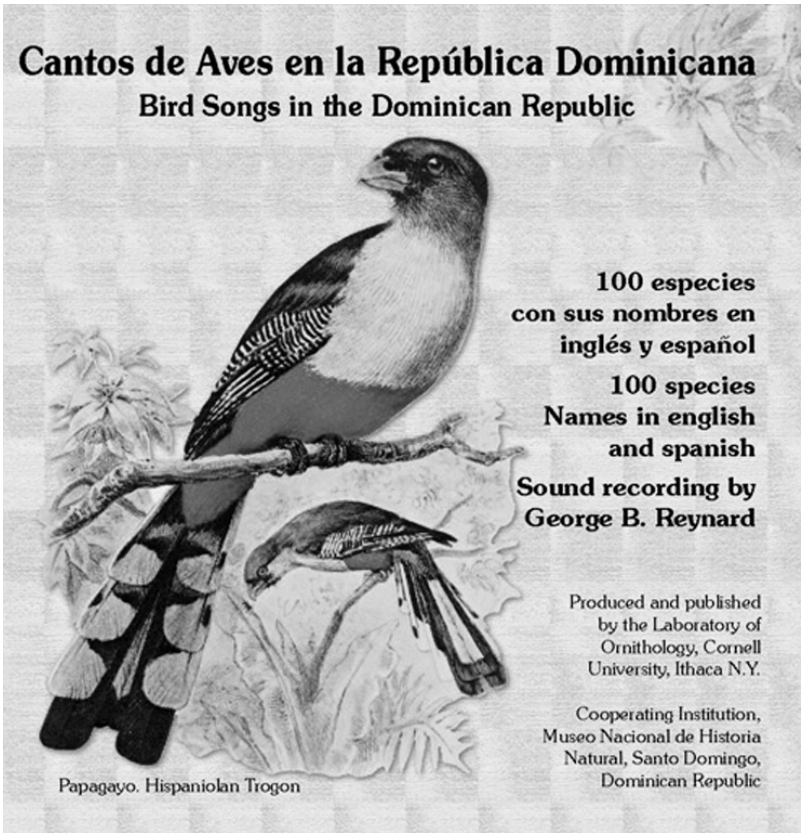
Ph: 719-578-9703 • Fax: 719-578-1480 • Email: edcon@aba.org •
www.americanbirding.org

AVAILABLE OCTOBER 2002

THE FIRST CD VERSION



Copyright 2002

Este CD es un barrido sonoro exhaustivo del canto de las aves dominicanas que merece ser elevado a la categoría de "Gran Descubrimiento".

El Hombre ha sido un enamorado eterno del canto de las aves; para El no hay música celestial, concierto de violín, monumentos, pinturas, que llenen tanto su espíritu como la melodías de las aves.

Despúes de escuchar y captar todo su contenido, podemos emprender un viaje hacia la conciencia y la ilusión.

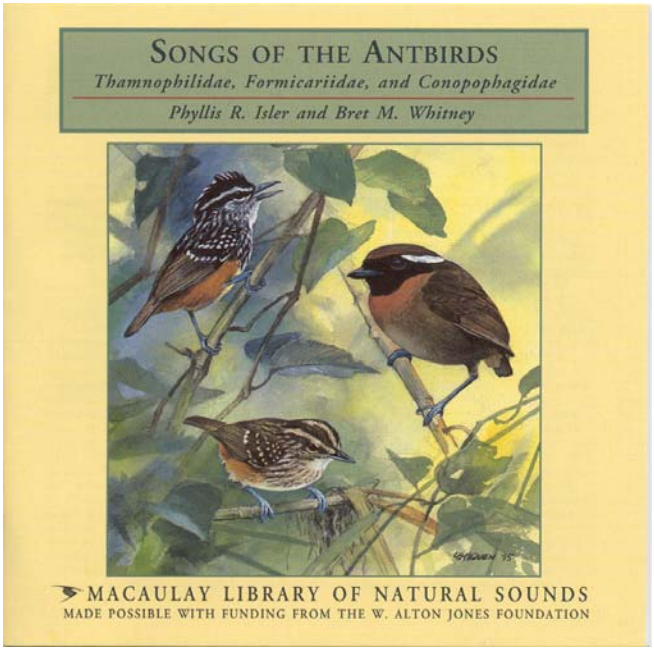
Desde esta primera tirada queremos expresar nuestra gratitud eterna al Banco Central de la República Dominicana y a la Universidad de Cornell, que nos cedió el derecho de su reproducción.

Dr. Fernando Luna Calderón
Director

BANCO CENTRAL DE LA REPÚBLICA DOMINICANA

MUSEO NACIONAL DE HISTORIA NATURAL

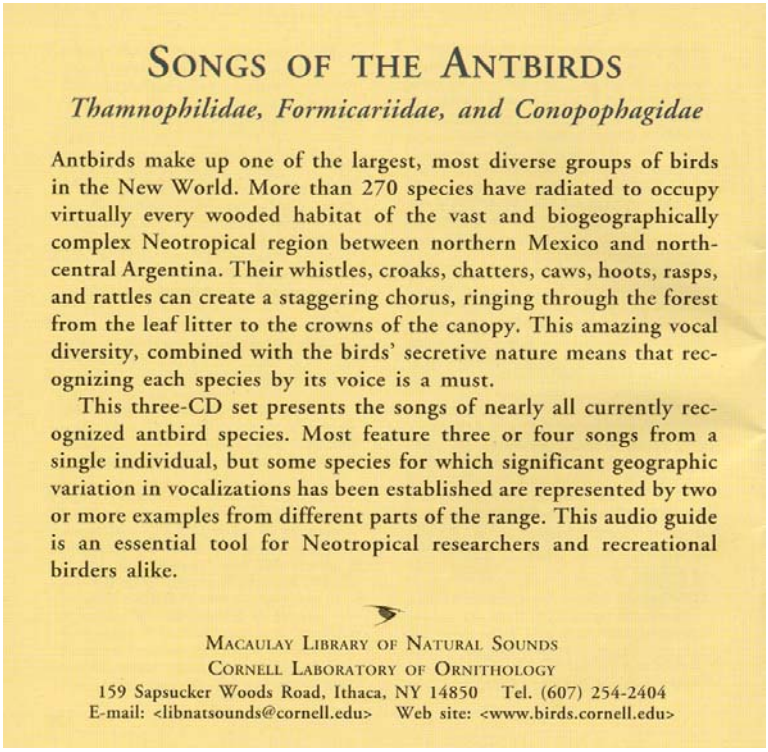
For further information, contact Dr. Fernando Luna Calderon, Director, Museo Nacional de Historia Natural, Santo Domingo: museohistnat@codetel.net.do



SONGS OF THE ANTBIRDS

Antbirds are one of the largest, most diverse groups of birds in the New World. They are also among the most secretive in nature. The Cornell Lab of Ornithology's Macaulay Library of Natural Sounds (MLNS) has responded by releasing an audio guide to help recreational birders and researchers alike tap into the mysteries of antbirds' wide-ranging vocal acrobatics.

Antbirds are found in the vast, complex Neotropical region between northern Mexico and north-central Argentina. Their habitats range from the steaming rainforests of western Amazonia to Andean cloud forests to the arid woodlands of the Paraguayan/Argentine *chaco*. In some locales, up to 50 species of antbirds may be present, and some sites host poorly known and very shy antpittas whose voices have become known to humans only in the past few years. Their whistles, croaks, chatters, caws, hoots, rasps, and rattles ring from the leaf litter of the forest floor to the dense green canopy above, and are captured on this audio guide.



Accompanying the CD is a 56-page booklet describing the birds' foraging strategies, habitat, and behavior information, and a play list keyed to put each song in behavioral context.

For researchers or recreational birders, it is a complete guide to these fascinating birds.

The CD may be purchased at:

The Cornell Lab of Ornithology's online store at www.withoutbricks.com/clo

Wild Birds Unlimited at Sapsucker Woods — Tel.: (877) 266–4928

Bird Songs International Tel.: +31 595 528679

Retail price is US$39.95 for the three-CD set.

VIITH NEOTROPICAL ORNITHOLOGICAL CONGRESS

Dates.–The VIIth Neotropical Ornithological Congress will take place from Sunday, 5 October through Saturday 11 October 2003. Working days will be Monday 6, Tuesday 7, Wednesday 8, Friday 10, and Saturday 11 October 2003. Thursday 9 October 2003 will be a congress free day. After the last working session on Saturday 11 October, the congress will end with a banquet, followed by traditional Chilean music and dance.

Venue.–Congress Center, in Puerto Varas, Xth Region, Chile (about 10 km N of Puerto Montt, an easy to reach and well-known travel destination in Chile. The Congress Center, with its meeting rooms and related facilities, perched on a hill overlooking Puerto Varas, is only an 800-m walk from downtown where participants will lodge and dine in their selection of hotels, hostels, and eating facilities.

Host City.–Puerto Varas is a small, friendly, and picturesque city of about 35,000 people in Chile's beautiful Lake District. The spectacular Volcanoes Osorno (2652 m) and Calbuco (2015 m) can be seen across the Lake from the city and the Congress Center. Puerto Varas has a wide range of accommodations, from modest hospedajes to luxurious 5-star hotels; it has seven banks (obtaining money from your home bank is very easy through conveniently located ATM's). Most residents speak only Spanish, or Spanish and German, although they know a few English words and attempts to communicate by non-Spanish speakers will result in a meaningful exchange. Puerto Varas has several outstanding restaurants (including sea food, several more ethnic kinds of food, and, of course, Chilean fare). In spite of its small size, Puerto Varas is quite a cosmopolitan town, with a well-marked European influence. There are shops, boutiques, and other stores, including sporting goods stores. Congress participants will be able to choose from a variety of lodging alternatives ranging from luxury five-star establishments to ultra-economical hostels. Because our meeting will be during the "off" season for tourists, participants will be able to enjoy the town's tourist-wise facilities and amenities (e.g., the several cybercafes, competitive money exchange businesses, and the many local tour offerings) without paying typical tourist prices.

Puerto Varas is only 18 km from Puerto Montt's El Tepual Airport, a modern facility with several daily flights to and from Santiago, Chile's capital, only about 1 h and a half away. Several car rental companies operate offices at the airport. Puerto Montt, the nearest large city, with about 150,000 people, is only 10 km away by a new divided highway. Public bus service between Puerto Montt and Puerto Varas is frequent, convenient, and cheap. The administrative seat of Chile's Xth Region, Puerto Montt has excellent hospital facilities, many shops, banks, and restaurants. Its waterfront faces the beautiful Seno de Reloncaví, the northernmost point of the famous Chilean channels, with a grand backdrop of snow capped Andean peaks. Puerto Montt's harbor, Angelmo, is the place to visit for local and superbly fresh seafood, and shops that sell a great assortment of locally knit woolens and leather objects. Early October is spring in the Lakes District of Chile, and plants blossom everywhere in the mild weather. Much of the lushness of southern Chile is due to its rainfall, and so you might expect occasional showers. A raincoat and jacket are recommended. For those interested in becoming acquainted with the area's geography, people, and natural history, we will provide a list of books, maps, and other publications, and relevant web sites on our Congress Meeting web page (under construction). A thorough and reputable tour book (in Spanish) for Chile that we recommend is TurisTel 2001 (or 2002) Chile, ISBN [for the 2001 edition] 956-7264-70-8, published and distributed by Turismo y Comunicaciones, S.A., Ave. Santa Maria 0120, Providencia, Santiago, Chile; e-mail: info@turistel.cl.

Congress Languages.–English and Spanish will be the working languages of the congress. Translators will be provided for most, if not all sessions.

Organization.–The VIIth Neotropical Ornithological Congress of the Neotropical Ornithological Society will be held in conjunction with the VIIth Congreso Chileno de Ornitología of the Unión de Ornitólogos de Chile (UNORCH).

Neotropical Congress Officers

President: François Vuilleumier, vuill@amnh.org
Secretary general: Luis Espinosa G., legpvar@entelchile.net & legpvar@hotmail.com
Congress Organizer for North America: M. Vickie McDonald, vickiem@mail.uca.edu & ewawoman@yahoo.com
Co-chairs of the Scientific Program Committee: Jaime Jiménez, jjimenez@ulagos.cl
Cristina Y. Miyaki, cymiyaki@usp.br

Proceedings Committtee:

Editor: Raymond McNeil, Raymond.McNeil@umontreal.ca

Assistant to the Editor: Ivan Lazo, bubo@entelchile.net

Scientific Program.–The scientific program will include plenary lectures, concurrent symposia sessions, oral papers, poster sessions, and round-table discussions. In addition, special evening sessions with talks and films are planned. Details about the Scientific Program will be announced in future issues of *Ornitología Neotropical*, in the NOS webpage (http://www/.neotropicalornithology.org), and in the VIIth Neogropical Ornithological Congress webpage (the webpage address will appear in the next issue of *Ornitología Neotropical*.

Proceedings.–The proceedings of the VII Neotropical Ornithological Congress will be published after the congress as a special issue or supplement of *Ornitología Neotropical*. This publication will be peer-reviewed and edited (see Proceedings Committee, above) and will include the full texts of the plenary lectures and of the symposia papers.

Ornithological Tours.–Tours of ornithological interest will be offered during the congress free day, Thursday 9 October 2003, in the environs of Puerto Varas (native forest, lake, estuarine, wetland, and seashore habitats). Highlights might include *Podiceps major*, *Spheniscus magellanicus*, *Theristicus caudatus*, *Merganetta armata*, *Rallus sanuinolentus*, *Limosa haemastica*, *Sterna trudeaui*, *Columba araucana*, *Enicognathusferrugineus*, *Colaptes pitius*, *Cinclodes patagonicus*, *Sylviorthorhynchus desmursii*, *Aphrastura spinicauda* (the emblematic species on the cover of *Ornitología Neotropical*), *Scelorchilus rubecula*, *Phytotoma rara*, and *Phrygilus patagonicus*. A variety of Pre- and Post-congress Tours, each 3-5 days in duration, will be offered to allow congress participants to enjoy a wide array of habitats and birds in Chile, that 4000 km (2500 mile)-long country. These excursions will range from the Atacama desert and high Andes in the far north (hoping to see species such as *Tinamotis pentlandii*, *Phoenicoparrus andinus* and *Phoenicoparrus jamesi*, *Chloephaga melanoptera*, *Vultur gryphus*, *Fulica cornuta*, *Attagis gayi*, *Geositta punensis*, *Muscisaxicola albifrons*, *Conirostrum tamarugense*, and *Phrygilus atriceps*), to the Patagonian steppe and *Nothofagus* forests of the archipelagic zone of the far south (with such birds as *Pterocnemia pennata*, *Diomedea melanophris*, *Fulmarus glacialoides*, *Pelecanoides magellani*, *Chloephaga hybrida*, *Tachyeres patachonicus*, *Pluvianellus socialis*, *Geositta Antarctica*, and *Sicalis lebruni*), including the central area with its Mediterranean-type climate (with the possibility of sighting *Phegornis mitchellii*, *Chilia melanura*, *Pteroptochos megapodius*, *Scelorchilus albicollis*, *Tachuris rubrigastra*, *Mimus thenca*, and *Phrygilus gayi*). Details about these excursions will be published at a later date.

Official Host.–The host organization in Chile is the Unión de Ornitólogios de Chile (UNORCH), the national ornithological society of Chile. Founded in 1987, it was incorporated as a non-profit organization under Chilean law in 1989. UNORCH promotes the development of ornithological research in Chile, supports the conservation and protection of birds and their habitats, and diffuses ornithological knowledge and education throughout Chile. UNORCH publishes a journal, *Boletín Chileno de Ornitología*, which includes the results of scientific research on Chilean birds, and a newsletter, *Boletín Informativo*, which includes ornithological news and information about events and publications on the birds of Chile and other parts of South America. Street address is: UNORCH, Avenida Providencia 1108, Local 32, Providencia, Santiago, Chile; mailing address: UNORCH, Casilla 13.183, Santiago-21, Chile; e-mail: unorch@entelchile.net.

SUBMITTAL OF MANUSCRIPTS, ANNOUNCEMENTS, AND OTHER MATERIALS TO *EL PITIRRE*, THE BULLETIN OF THE SOCIETY OF CARIBBEAN ORNITHOLOGY

FORM OF SUBMISSION

Hard Copy
One copy on 8.5" x 11" paper.
Mail to Jim Wiley, *Maryland Cooperative Fish & Wildlife Research Unit, 1120 Trigg Hall, University of Maryland Eastern Shore, Princess Anne, MD 21853, USA*.

Faxes
Discouraged.
If this is your best option, please ensure that the type used is larger than 12 point.
Fax number: *410-651-7662*.

Electronic mail
Encouraged
Preferred as a MS Word file attachment.
E-mail address of editor: *jwwiley@mail.umes.edu*

Floppy disk
Preferred
Submit in PC or Macintosh environment, preferably using WordPerfect or MS Word software. A 3.5" disk is preferred. Submit a hard copy with the computer disk.
Mail to Jim Wiley, *Maryland Cooperative Fish & Wildlife Research Unit, 1120 Trigg Hall, University of Maryland Eastern Shore, Princess Anne, MD 21853, USA*.

Also, manuscripts may be submitted, as above, to Associate Editors:
Associate Editor: Adrianne G. Tossas, *Department of Biology, University of Puerto Rico, Río Piedras, PR 00931; e-mail: agtossas@hotmail.com*
Associate Editor for French West Indies: Philippe Feldmann, *CIRAD-Micap, TA 179/03, F-34398 Montpellier cedex 5, France; e-mail: philippe.feldmann@cirad.fr*

LANGUAGE

Contributions can be in English, Spanish, or French. Translation of the entire text in an alternate language is encouraged. At a minimum, the abstract of longer manuscripts should be provided in at least one of the other two languages.

FORMAT OF SUBMITTED MATERIALS

- All submitted materials must be typed, and hard copies must be clearly legible.
- The manuscript should conform to usage in recent issues of *El Pitirre.*
- Double spaced all written materials, including tables and figure legends.
- Number pages through the Literature Cited.
- Do not hyphenate words at the ends of typewritten lines.
- Type tables separate from the text.
- Type figure legends consecutively on a separate page.
- Title page (numbered) — should contain full title, and authors' names and addresses at the time of the research. The present address, if different, should be indicated as a footnote. The title page also includes running heads (less than 36 characters), and the name and contact information for the author who can be most easily contacted.
- An Abstract (less than 5% of paper length) should precede each longer article. It should summarize important premises, summarize findings, and give conclusions.

- Key Words — include an alphabetically arranged list of up to 10 pertinent key words that address the material included in the text.
- Text Citations — should include the author and year (e.g., Smith 1990, Smith and Jones 1991, Smith et al. 1992). Multiple citations should be arranged chronologically.
- Acknowledgments — precede the Literature Cited.
- Scientific and common names are given at first mention and, for birds, follow the AOU's *Check-list of North American birds* (1983) and its supplements.
- Measurements should be in metric units.
- Use continental dating (e.g., 14 October 1992) and the 24-hour clock (e.g., 08:00 and 21:35 h).
- Tables and figures should not duplicate material in the text or in each other. Each table requires a short heading, including descriptive information that would answer the reader's questions of what, where, and when.
- Literature Cited: Follow the most recent issue of the bulletin for style. In general, format will follow the following style:

  Journal citation

  Include full journal name, volume, and inclusive page numbers; e.g.,

  Levy, C. 1997. Nesting of *Euneornis campestris*, the Orangequit. Pitirre 10(1):30–31.

  Book or report

  Include publisher and place of publication; e.g.,

  Hochbaum, H. A. 1959. The Canvasback on a prairie marsh, 2nd ed. Stackpole Books, Harrisburg, Pennsylvania.)

  Chapter in book

  Include editor(s) name(s), inclusive pages of chapter, book or report title, publisher, and place of publication; e.g.,

  Oring, L. W., and R. D. Sayler. 1992. The mating system of waterfowl. Pages 190–213 *in* Ecology and management of breeding waterfowl (B. D. J. Batt, Ed.). Univ. Minnesota Press, Minneapolis.

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CONTENTS (CONTINUED FROM FRONT COVER)

2003 MEETING

This is to advise that the SCSCB 2003 meeting will be held in the wonderful island of Tobago in the Twin island Republic of Trinidad and Tobago.

The meeting dates are July 21 - 26 2003. Please stay in touch and watch the website for future announcements and additional information. We are currently in discussions with the local committee from Tobago and will have additional information shortly.

Plan to be there!

Eric Carey
President