

## THE REDISCOVERY OF THE PUERTO RICAN WHIP-POOR-WILL

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In southwestern Puerto Rico the vegetation on the many hills varies from limited grass and thorny shrubs to somewhat restricted growth of trees and cacti. Rainfall of less than 30 inches per year, falling principally in summer and fall, and limestone hills with a very thin clay soil add to the restricted growth and limit animal life. Even the amphibian chorus, so common in most parts of the island, is missing on many of the hills. Here, in one of the more heavily wooded sections, classed as a tropical dry forest, an area was set aside in 1919 as a reserve, with limited public access.

In connection with my interest in sound recording, I was taken to this area by Mr. Ricardo Cotté of the Fish and Wildlife Section, Department of Agriculture, Commonwealth of Puerto Rico, to attempt to hear and identify an unknown night call. We arrived in the forested area about 10:30 PM, 8 March 1961.

At 11:00 PM we heard the first calls, a series of whistled notes resembling in quality the sounds of a caprimulgid. They were distinctly different from the calls of the mainland Chuck-will's-widow (*Caprimulgus carolinensis*) and Whip-poor-will (*C. vociferus*). I tape-recorded them immediately and made additional recordings at 5:30 the following morning. All attempts to locate the source of the calls at night or to flush a bird by day were unsuccessful on this first visit.

### *Local Information*

A series of inquiries began at once, at first locally, then farther afield. Using the playback speaker of a battery-operated Nagra IIIB tape recorder, we reproduced the calls for some of the oldest people living in the area. All were familiar with the calls, having heard them every night of the year. In general they attributed them to an unknown amphibian or to the Pájaro Bobo (cuckoo). Both the Lizard Cuckoo (*Saurothera vieillotii*) and the Mangrove Cuckoo (*Coccyzus minor*) are found in the area. The suggestion of the Puerto Rican Screech Owl (*Otus nudipes*) was discarded because I was familiar with its calls and knew they were entirely different from the unknown calls.

Don Luis Soto, over 86 years of age, had worked in the forest for at least forty years and had heard the calls here every night for as long as he could remember — at least from 1900. He thought they were made by a bird like a capacho (nighthawk) which is found in Puerto Rico only in the spring and summer.

Mr. Diego Martinez, who now lives in the forest, had also heard the calls nightly for years. We also learned from local residents that the workers in the Civilian Conservation Corps, which had a camp in the forest from 1935 to 1943, were so annoyed by the night singers that they asked to have them chased away if possible.

The possibility that the call was made by an amphibian was ruled out by Dr. Juan A. Rivero, Director of the Institute of Marine Biology at Mayagüez, who had recorded calls of the amphibians of the island and found nothing similar to it.

We played the recordings for Dr. James B. McCandless of Mayagüez, author of a booklet on Puerto Rican birds (1958). The sounds recalled to him a letter he had written in 1958 to Mr. James Bond:

Near my home at 1000 feet just east of Mayagüez, I fairly frequently hear a nocturnal flight song which I have been unable to identify. It is a short "eyerp," more musical than the Ani's rolplaning call. The call is repeated two or three times with slight variations. Is there any description of the call of the Puerto Rican Whip-poor-will other than Wetmore's notes? Could this be the call of the Bare-legged Owl?

Mr. Bond was unfamiliar with any call of this description.

### *Available Information on Whip-poor-wills in Puerto Rico*

The possibility that the unknown call might be a Puerto Rican Whip-poor-will's seemed highly unlikely. The only specimen ever taken from the island was a female, collected in 1888 and reported by Cory (1889). Bond (1961) and McCandless (1958), in publications covering the birds of the island, listed this bird as "presumed extirpated" and "extinct." Wetmore (1916) published a sight record of one bird seen in 1911, and in a later report (1922) stated (p. 323): "The country people in Porto Rico told me on several occasions of a bird that in former times called loudly and continuously at night, that no one was ever able to see." He also stated (p. 324): "The species may still exist in small numbers, as a small goatsucker flushed in a tract of forest near Río Piedras in December 1911 may have been the present bird. None was heard singing during a period of ten months spent in field work on the island so that, if still existent, the Porto Rican Whip-poorwill must be very rare."

The 1888 female, taken by Clark P. Streater and deposited in the Chicago Natural History Museum (then the Field Museum), was entered by Cory (1889) as a migrant Whip-poor-will. Wetmore (1919), studying the bones of a whip-poor-will from cave deposits in Puerto Rico and examining the 1888 bird, described it as a new species, *Setochalcis noctitherus* Wetmore. It was later united by Peters (1940) with the mainland species as *Caprimulgus vociferus noctitherus* (Wetmore).

### *Information Sought from Other Sources*

Tape recordings of the unknown call were played for or sent to ornithologists, who had worked in Puerto Rico, including Dr. Virgilio Biaggi, Jr., University of Puerto Rico at Mayagüez, Mr. James Bond, Academy of Natural Sciences, Philadelphia, and Dr. Alexander Wetmore, Smithsonian Institution, Washington, D.C. The call remained unidentified.

With the thought of comparing this call with those of the Caprimulgidae, the recording was sent to Dr. P. P. Kellogg of the Laboratory of Ornithology, but it was not duplicated among the caprimulgids in the Library of Natural Sounds nor did Dr. Kellogg or his associates recognize it. The call was also unfamiliar to Mr. L. Irby Davis of Harlingen, Texas, an expert on the sounds

of birds in Mexico and Central American countries. Mr. Herbert L. Stoddard and Mr. and Mrs. E. V. Komarek of Thomasville, Georgia, and Mr. Paul Schwartz of Venezuela, all familiar with a wide range of bird songs, had never heard the Puerto Rican song in question. The same was true of several members of the Delaware Valley Ornithological Club in Philadelphia and of members attending a meeting of the Linnaean Society of New York.

### *Attempt to See and Capture "the Bird"*

With the failure to identify the tape recording, subsequent overnight stops were made in April and July 1961, and, in November, approximately a week was spent in an effort to discover the source of the song. On 19 April and 8 and 9 July, mist-netting, with tape-recorded calls played on the opposite side of the nets from the direction of near-by singing, failed to entice the singer into the nets. Repeated attempts to find something in daylight by scanning the ground and tree branches were in vain, even though at the cessation of singing at daylight the calls seemed to be as close as 75 feet.

On 9 July at 7:00 PM one bird was finally seen flying overhead while its call was being played from the tape recorder. Although there was not sufficient light for identification, this was the first real proof to me that the sound was from a bird.

Mr. Stephen T. Harty of the Philadelphia Academy of Natural Sciences and a member of the Eastern Bird-Banding Association accompanied me in November when efforts were continued with mist nets. We had from four to 10 nets up for six nights. The highest net reached to about 15 feet. Knowing by now the possible identity of these birds and hearing them singing loud and long, we approached the net area with great anticipation each morning only to be disappointed. The nets caught several known species but none that were unfamiliar.

### *New Sightings*

At 7:00 PM on 24 November, Mr. Harty caught a singing bird in the beam of his flashlight and was able to approach within 20 feet. The bird stopped singing and gave short *quert* notes. It was resting on a network of twigs at the top of a small tree. The vivid eye reflected in the light and, from below, the white-ended tail feathers were clearly seen. It was to all appearances a whip-poor-will!

At 2:30 AM on 30 November, I saw the bird resting lengthwise on a limb. It was silent, having been located by a flashlight from the large, bright, yellowish-orange eye reflections. As it turned its head from side to side, one and then two reflections were seen alternately. The bird flew off on silent wings.

On this same day, several trees, believed to be singing perches, were shown to Mr. Cotté. With this information, added to his knowledge of perches from his previous visits, he made plans to revisit the area with a hunter that same evening. We removed our nets and decamped, preparatory to leaving the island the following day.

### *"Capturado"*

Mr. Cotté and an expert marksman, Mr. William Blasini of Yauco, Puerto Rico, returned at dusk to the area of the singing birds. In response to whistled imitations of the call, a bird flew overhead and was secured with one shot. It was taken immediately to Dr. Biaggi in Mayagüez together with the following notation: "Capturado por Ricardo Cotté y William Blasini en el Bosque de Guánica Nov. 30, 1961, a las 6:30 P.M." Dr. Biaggi and his family, Dr. Mc-

Candless, Mr. Harty, and I were present and examined the "mystery bird." It was a male caprimulgid. That same evening it was photographed in black and white by Mr. Harty.

On the following morning, 1 December, both black and white and color photographs were taken; Dr. Biaggi prepared the skin and I took it to the States, delivering it on 3 December to Dr. Wetmore in Washington. The body and contents were kept for future study.

### *Nomenclature and Commentary*

by Dr. Alexander Wetmore

The ancient bones from prehistoric cave deposits near Morovís in north central Puerto Rico that led me to the description of the Puerto Rican Whip-poor-will, Wetmore (1919), are so different from those of the mainland species that I have never been satisfied that it was proper to allocate the bird that I named *noctitherus* as a geographic race of *Caprimulgus vociferus*.

The single museum skin (No. 42,099) in the Chicago Natural History Museum that finally served as type, had been long identified by Cory (1889) as a supposed migrant from North America, and the external differences in color, markings, and size found in it are those normally accepted as of subspecific value. I believe it was these facts that influenced Peters (1940) to unite the Puerto Rican bird with typical *vociferus* in his review of the Caprimulgidae in the fourth volume of his check-list, since he had not had the advantage of study of the osteological material.

It was, therefore, with the keenest interest that I listened to the first brief recording by Dr. Reynard of the curious calls that indicated the presence of an unidentified nocturnal species in the Guánica region. News of the capture of an example of the bird came to me by radio-telephone on 1 December 1961, the morning after it was taken, and two days later Dr. Reynard and Stephen T. Harty, who had been his companion in Puerto Rico, brought me the specimen. This had been prepared with care by Dr. Virgilio Biaggi, Jr., but only partially, since the body was fat and the skin, as is always the case with birds of this group, was flimsy. Fortunately it was possible to place it immediately in the skilled hands of Mrs. Roxie Laybourne who made it into an excellent museum specimen.

The type specimen for the original description was a female taken by Clark P. Streater on 29 October 1888 labelled only as from the island, but I learned from Mr. Streater subsequent to my published accounts that he had collected it near Bayamón.

The second specimen, now U. S. National Museum No. 476,241, a male, when compared with the continental whip-poor-will, shows the same main differences in small size and darker color that are found in the female. The color difference is shown to some degree in Figure 3, with the male *C. noctitherus* between two male specimens of *C. vociferus*. Color difference in the male is in definitely darker color, though this is masked somewhat by the blended pattern of the markings found in all birds of this genus. The back in *noctitherus*, compared to typical *vociferus*, is decidedly black, the brown shades in the pattern on the crown much darker, being russet, and those elsewhere on the ear coverts and across the hindneck ochraceous-tawny instead of paler buff. The dorsal view, Figure 1, gives an indication of the dark coloration as well as showing the vertical, light wing patches and the tail markings.

The throat and upper breast, and the edge of the wing, are marked with russet, and the black pattern on the under surface is bolder and in stronger contrast (Figure 2).

The tail was damaged in shooting so that the four outermost rectrices are missing on the left side, as is the second from the outside on the right (Figure 2). The amount of white marking at the tip on the first and third rectrix which remain is decidedly less than in *vociferous*. The character is one that is variable in birds of this group, but in no male in the extensive series of *vociferus* in the National Museum is it as reduced as it is in the bird from Puerto Rico (Figure 3).

Table 1 gives measurements of the new specimen compared with those of the female, secured in 1888, and with measurements for males of the continental form *Caprimulgus vociferus vociferus* given by Ridgway (1914). The wing measurements for *noctitherus*, 135.8 and 135 mm for the male and female specimens, respectively, are well outside the range of 149 to 168.5 mm for males of *vociferus*. The tail length

of the island species male is within the limits of *vociferus* but at the lower limit of the range. Exposed culmen and tarsus measurements are similar for the two species.

In my account of the cave bones published in 1922 I noted that the humerus in *noctitherus*, compared to that of *vociferus*, was shorter, with the various processes weaker, and the shaft slightly more curved. The metacarpal also was smaller. These are differences of greater value than those that separate subspecies, and have always seemed sufficient in my own mind to warrant specific status, which now appears fully established through the really extraordinary difference in voice.

In the present study of this interesting problem I have examined again my personal field notes from Puerto Rico, and find that on the afternoon of 23 December 1911, in a remnant of forest across a hilltop above the experiment station at Río Piedras, I flushed a whip-poor-will from a low stump only a few feet away. While I reported this as questionable in subsequent accounts (1916, 1919) of birds of the island, I feel certain now that it was *noctitherus*, since that bird is still known to be living, and no migrant whip-poor-wills have been known in the Greater Antilles east of Cuba.

TABLE I  
Comparative Measurements of *Caprimulgus vociferus*  
(Ridgway, 1914; range for males) and *C. noctitherus*

	<i>C. vociferus</i>	<i>C. noctitherus</i>	
	Males	1961 male	1888 female
Wing	149-168.5	135.8	135
Tail	113.5-128	116.1	112
Exposed culmen	10.5-14	11.7	11
Tarsus	15.5-18	16.7	16.3

### Song

*General description.* A series of nearly identical, short, abruptly but only slightly ascending, richly whistled calls. Each call lasts only about one-fifth of a second. Careful listening reveals an almost "two-note" effect, which is shown in the arch-shaped spectrogram (Figure 4). Although a word is rarely adequate for a call it might be best described as *whler*.

Singing is sometimes begun with a few introductory, comparatively faint "quert" notes, similar in pitch to the call, but without the whistled quality. This practice is in common with the mainland Whip-poor-will. The same note apparently is used also as a disturbance note and was heard from birds at rest as well as in flight. Once in July during a quiet period — about 10:00 PM—the recorded call was played for ten seconds and a bird flew overhead giving three of its quert notes in flight.

A third vocalization, heard by both Mr. Harty and myself, was a "gaw" or "growl" note similar to that of *vociferus* but of shorter duration.

From a distance it seemed at first that some songs were heard from birds in flight, but we now consider this erroneous, the effect having been achieved by frequent changes of singing perches. On no occasion were birds flushed from roads at night, nor were their eyes reflected in the lights of the cars as is sometimes the case with *vociferus* and the Chuck-will's-widow on the mainland.

*Period of Singing.* All singing was nocturnal; the most abundant, crepuscular. In November, for example, singing commenced about 6:05 PM, reaching a peak with six or more birds singing within earshot in about 15 minutes, continued for an hour, diminishing to sporadic calls about 7:30. Morning twilight singing began about 5:15, continuing heavy until about 6:00. Scattered calls were heard as late as 6:30 as daylight increased.

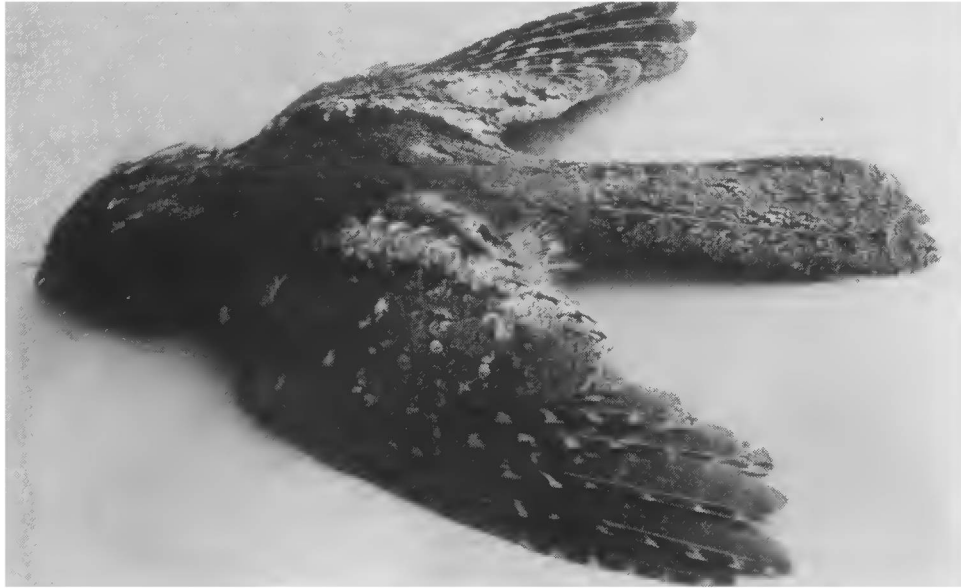


Figure 1. The male Puerto Rican Whip-poor-will (*Caprimulgus noctitherus*) collected on 30 November 1961. Photographed by Stephen T. Harty about four hours after it was shot.

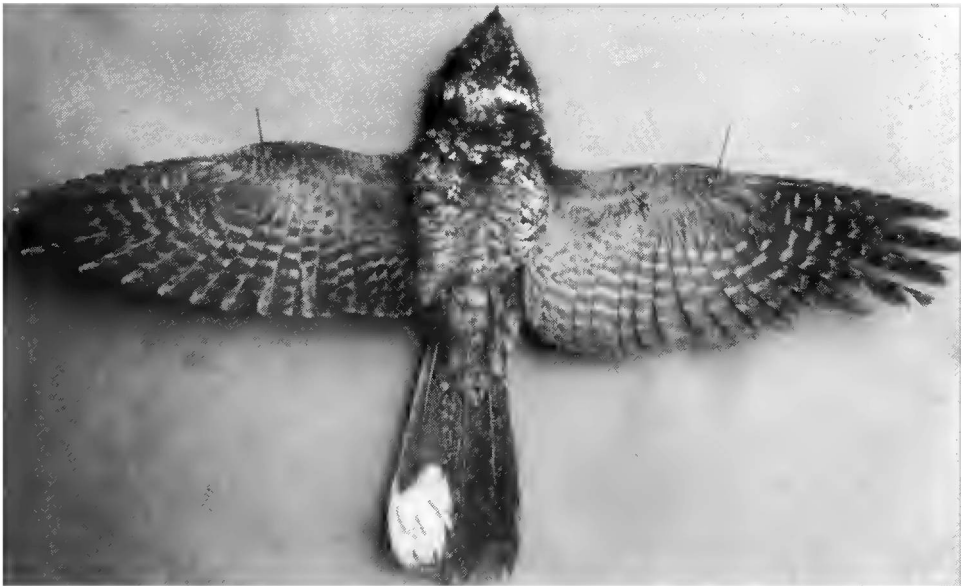


Figure 2. Ventral view of the same bird, showing wing pattern. The tail was damaged by shooting. Photographed by Stephen T. Harty.

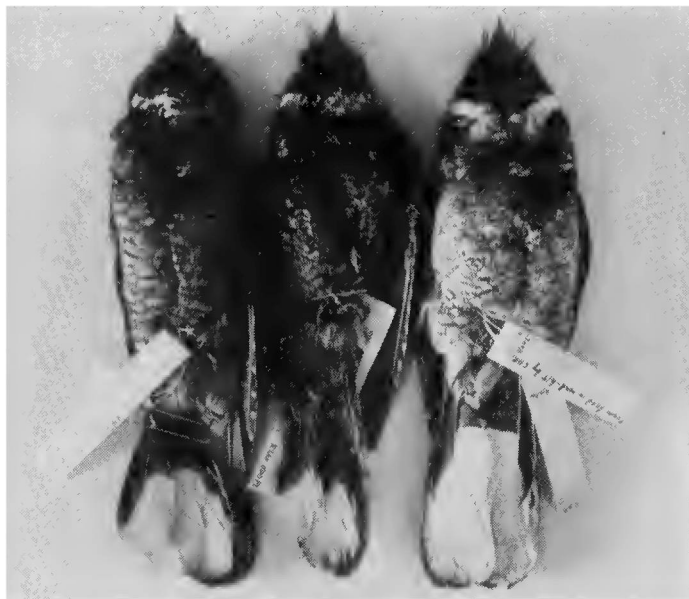


Figure 3. The 1961 Puerto Rican specimen between two male specimens of the mainland Whip-poor-will (*C. vociferus*) taken in eastern United States. Note the reduced white in the lateral rectrices of the Puerto Rican specimen.

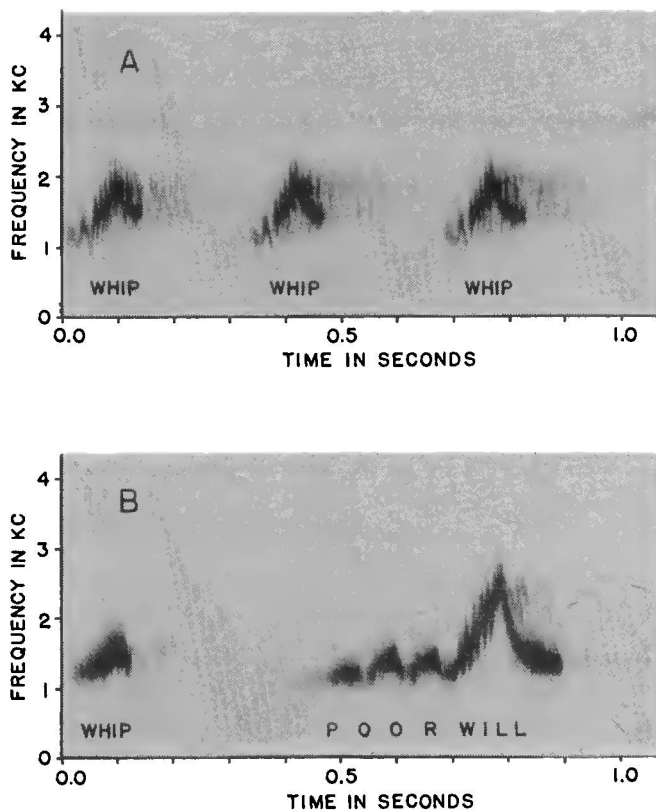


Figure 4. Spectrograms of songs of the Puerto Rican Whip-poor-will (A) and mainland species (B), selected from recordings to show the great differences in vocalizations.

Throughout the main period of darkness the amount of singing was apparently regulated by the amount of moonlight and cloud cover — the brighter the night, the more frequent the singing. During comparatively dark nights singing was erratic with periods of an hour or more of silence. On one occasion, when continuous observations were made from 7:00 PM until 3:00 AM, the amount of singing before midnight was restricted. At 12:15, as moonlight reached the area, the singing recommenced and continued with greater frequency until dawn.

Singing was somewhat “contagious.” When a long period of silence was broken by one bird, others near by joined in. Several times singing was initiated by the playing of the recorded song.

*Pitch.* Songs of *noctitherus* in my tape-recording collection are essentially of same pitch as recordings of *vociferus*. Although the vertical frequency scale is not shown in the spectrogram (Figure 4), measurements of the originals from the songs illustrated show the range frequency for *noctitherus* to be from 1200 to 2200 cycles. The “whip” of *vociferus* ranges from about 1500 to 2000 and the “poor-will” from 1200 to 2800 cycles. To the ear, the predominant pitch of the song of *noctitherus* was near the third A above middle C.

*Quality.* General quality of songs of *noctitherus* and *vociferus* was alike. It was the character of the quality, supported by the generally repetitive nature of the calls and their nocturnal delivery, which originally convinced me that the unknown call was from one of the Caprimulgidae. Ornithologists who heard the tape-recorded song, without knowing its source, generally agreed that it could belong to one of this group.

*Cadence of delivery.* Irregularity was one of the most characteristic features of the song of *noctitherus*. This is in marked contrast with the almost metronome-like regularity of the song of *vociferus*. The calls of the former are given in short series varying in number of calls per series. There are, for example, first 3, then 2, then 10, then 3, then 6, then 3, then 4 calls per series, or similarly unpredictable numbers in the next performance.

A segment of a tape-recorded song of *noctitherus*, illustrating the frequent breaks in singing, is shown in Figure 4. The calls were delivered with approximately 0.3 second between the first notes of three successive calls, and then the next call came 0.5 second after the first note of the previous call. As the song is heard, it resembles a "breath-catching" interruption.

The difference in number of calls per minute, related in part to the length of the calls themselves, is indicated by the time-interval marks in Figure 4. The rate of delivery for *noctitherus* was about 3 calls per second, or, without pauses, 180 per minute, in contrast with *vociferus* which utters slightly less than one "whip-poor-will" per second, or about 53 per minute. The speed of the song delivery of *noctitherus* varied somewhat from individual to individual and periods of faster or slower delivery were noted, as is the case with *vociferus*. In some instances, the speed of the song of the Puerto Rican bird accelerated as dawn approached.

### Discussion

It is of interest to consider the possible reasons why this bird has not been detected over the years and why it has been able to survive as a permanent resident in a very restricted area. The reason must be in part attributed to chance, that for more than a hundred years no ornithologist spent time at night, or more particularly at dusk or dawn, in an area of singing; or, if he were there, did not recognize the call as different from that of a known species.

Considerable ornithological work was done in Puerto Rico before Wetmore, Danforth, and Bond. Danforth (1936: 4) referred to investigations and publications as early as 1810, with periodic additions by a dozen or more people up to his time. Gundlach (1878), in a major work, summarized the published lists of species to date and added his own contributions. In commenting on the Chuck-will's-widow, then *Antrostomus carolinensis*, he reported (1878: 202) that on rare occasions he had heard its song. Since this species is believed to be silent (Bond, 1961) in its winter quarters, it is suggested that Gundlach actually may have heard the Puerto Rican Whip-poor-will. This is the only published reference we have found concerning the possibility of the song having been heard by an ornithologist.

Danforth (1936), although never having seen or heard the Whip-poor-will in Puerto Rico, reported it as a resident because of the 1888 female specimen (Cory, 1889) and the work of Wetmore (1919, 1922). He assumed its call was *gau-bai-ro* like that of the Cuban bird, the Greater Antillean Nightjar, *Caprimulgus cubanensis*, which he had heard in that island, and he assigned the common name "Guabairo Pequeño."

In view of the fact that the present bird does not sing *gua-bai-ro* or *whip-poor-will*, and has been known erroneously as Pájaro Bobo, it really has no appropriate "common name." However, since it was originally described as a whip-poor-will (Cory, 1889; Wetmore, 1919) and is of close appearance to the mainland bird, the name Puerto Rican Whip-poor-will is continued here.

An explanation is needed for the fact that the night song, so well known to local residents in the immediate area of this population, was unknown or uninvestigated by ornithologists. Whether the ornithologists ever questioned the local residents about the bird life in this forest is unknown. Probably the general belief that the Pájaro Bobo called here at night was so taken for granted that no one ever bothered about further investigation.

Dr. Biaggi has made a recent, thorough study (unpublished) of the known birds of the island and Dr. McCandless has made many field trips in southwestern Puerto Rico, but neither happened to find this singing population.



Many bird students have made daytime visits to seashore areas within two miles of the hilltop haunts of this bird. Mr. Frank H. Wadsworth, Director of the Institute of Tropical Forestry in Puerto Rico, informs me, in personal correspondence, that he had heard the night calls and, knowing of the presence of the Chuck-will's-widow in Puerto Rico, assumed the calls were made by this bird.

Even more intriguing is the question of why the bird survived at all. It is only conjecture at this point, but two reasons may be considered: First, the character of the habitat, so uninviting with its tangled, thorny undergrowth and small trees, its limited rain, and its few roads, added to the fact that it was in a forest preserve, definitely resulted in a minimum of human disturbance. Second, the thin cover of only dry leaves and practically no refuse may have limited such possible predators as mongoose and rats.

With the exception of verbal information from island residents (Wetmore, 1922) and the one female specimen, there has been nothing known to science about the life history of this species. The present study contributes something to the knowledge of its song. Yet to be learned are the time and place of nesting, size and color of eggs, courtship, and daytime haunts. The all-important information on distribution and number of survivors is under way by investigators, making use of the tape-recording, playback techniques which first tracked down *Caprimulgus noctitherus*, the source of the mysterious night calls of the Guánica forest.

### Summary

On 8 March 1961, an unknown nocturnal call from an unseen source was heard and tape-recorded in southwestern Puerto Rico. Local residents, interviewed after hearing the recording, indicated that the call had been heard nightly, at least since 1900, and expressed the belief that it came from the Lizard Cuckoo or the Mangrove Cuckoo. Unsuccessful attempts were made to identify the call by sending copies of the recording to ornithologists.

The song had the quality of a caprimulgid's, but was not the song of the Chuck-will's-widow which winters on the island. One caprimulgid, a female taken in 1888, one sight record in 1911, and the bones of specimens (1919) were the only evidences of this bird's presence, and most publications listed it as probably extinct. The one specimen had first been called a migrant Whip-poor-will, *Antrostomus vociferus*, by Cory, then designated a full species, *Setochoalcis noctitherus*, by Wetmore, and later listed as *Caprimulgus vociferus noctitherus* by Peters.

Unsuccessful attempts were made to see the bird clearly and to catch it in mist nets by using its song playback to attract it. On 30 November 1961, a bird was finally collected. It was a male caprimulgid. Photographs were taken; it was then brought to Washington; and, in a section of this paper contributed by Dr. Wetmore, the bird is described and returned to specific status as *Caprimulgus noctitherus* (Wetmore), the Puerto Rican Whip-poor-will.

The song is described for the first time and compared with the entirely different song of *C. vociferus* by means of spectrograms. Possible reasons are presented as to why the bird, although a permanent resident, has escaped detection and why it survived at all.

The distribution and size of the remnant population are not known, and, with the exception of the song, all phases of its life history remain to be determined.

### Acknowledgments

The success of this venture is due to a great many people. Acknowledgment is made of the assignment of sound-recording equipment from the Laboratory of Ornithology, and of help from two of its members, Dr. P. P. Kellogg for advice and training in its use, and Dr. Robert C. Stein for the preparation of the two important spectrograms (Figure 4). The assistance of Mr. Stephen T. Harty in the critical November trip is greatly appreciated together with two photographs from his series (Figures 1 and 2). Dr. James B. McCandless arranged for field trips, directed me to Mr. Cotté, and shared his knowledge of the birds as well as permission to quote from his correspondence. Dr. Virgilio Biaggi, Jr., resident ornithologist, although rightfully skeptical of the species' presence, shared in the enthusiasm of our success and made the initial skin preparation.

Special thanks are due the Fish and Wildlife Section of the Department of Agriculture in Puerto Rico through their agent, Mr. Ricardo Cotté of Yauco, who initiated my quest and supplied valuable aid in the field and in the collection of the specimen; and the expert marksman, Mr. William Blasini, for his important contribution in actually securing the bird.

Finally, I am particularly grateful to Dr. Alexander Wetmore for contributing an important section of this paper, with the description and identification of the specimen, returning it to full species status.

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