

## THE BIRDS OF SABA

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During the course of a leave of absence granted by the Hon. Board of Trustees of the University of Puerto Rico, the author spent the first seven months of 1937 making collections and continuing investigations already begun on the fauna of the Lesser Antilles.

One of the first islands to be visited was Saba, on which the author, accompanied by Mr. Gustavo Biaggi as assistant, spent the period from January 23 to February 4

Saba is merely a solitary extinct and rugged volcano arising precipitously from the sea in the northern Lesser Antilles, at a distance of 17 miles northwest of St. Eustatius, 21 miles northwest of St. Kitts, and 26 miles southwest of St. Martin. It is a Dutch possession, and is regarded as a dependency of the colony of Curaçao, though it is approximately 500 miles from the island of that name. Although it is a Dutch possession, English is the only language spoken by the residents, and United States currency is used for all business except dealings with the government.

The only ordinary means of reaching the island is by means of the small Dutch mail steamer "Baralt" which makes two round trips a month between Curaçao, St. Thomas, St. Kitts, and the three small Dutch islands in the northern Lesser Antilles (Saba, the Dutch port of St. Martin, and St. Eustatius). The landing at Saba is very difficult, as there is no harbor and the small boat which takes passengers ashore from the steamer merely lands them on the rocks on a beach in an exposed position on the southern coast. There one should count on receiving a ducking from the spray and waves as part of the ordinary landing procedure. A complaining passenger was very simply rebuked by the stolid boatman with the admonition "This is Saba". From the landing place, (where the only building is a small customs house), a pathway in large part cut as steps in the solid rock of the mountainside leads up to the town known as The Bottom, occupying an extinct volcanic crater at about 900 feet elevation. This is the seat of government, and here resides the "Gezaghebber", or district governor. After obtaining permission from him to make our collections, we continued on up the moun-

tain pathway to another village of about equal size known as Windwardside, at an elevation of about 2000 feet on a shoulder on the eastern slope of the mountain. Here our friend, Mr. Stanley Johnson, had made arrangements for us to stay, there being no regular hotel or boarding accommodations on the island. This was the center of our activities during our entire stay.

The rugged volcano which comprises Saba attains a height of 2820 feet, according to the British Admiralty charts. Its upper parts are known locally as "the Mountain", and are clothed by an almost pure stand of tree ferns extending to the very summit. At that point there is a rather small extinct crater in which bananas are planted to protect them from the wind. Some large boulders have been thrown up on the rim by volcanic action these constituting the extreme highest points of the island.

From the higher parts of the mountain there extend down to the sea a number of steep walled, deep, rugged ravines known locally as "guts". These are filled with a dense semi-xerophytic growth of brush and small trees, and together with the mountain top are the best places to find birds. The rest of the mountain side (and practically all of Saba is mountain side) has rather sparse vegetation due to its exposed position and the cultivations of the residents. In the northwestern part of the island there is an abandoned copper mine, comprising various caves and tunnels. Here many bats occur. Iguanas and snakes abound in the guts.

Previous to our visit I find record of only two ornithological collectors who had visited the island. F. A. Ober visited Saba approximately sixty years ago, and apparently collected but very few birds (among them the type of *Geotrygon saba*). No report was written on them, but reference to a few specimens in the U. S. National Museum secured by him is made by Ridgway (U. S. Nat. Mus. Bull. 50). James Bond, of the Academy of Natural Sciences of Philadelphia, made a short visit to the island in November and December, 1928 and collected a few birds which are now in the collections of that institution. He published no report on his work there, but reference is made to a few Saba birds in his "Birds of the West Indies".

I have been able to find published records of 19 species of birds (2 of them doubtful) from Saba prior to our visit. Eight forms were added to the list as a result of our work, bringing the list of birds known from Saba up to 28 forms (including three which are doubtful). A few records obtained on a very short visit to

Saba in December, 1927 while travelling on a sailing vessel en route to other islands are included. Doubtless this list could be increased considerably by long continued observations, chiefly through the addition of migratory birds.

In conclusion I must express a debt of gratitude to the many people in Saba who most willingly and whole-heartedly assisted us in our work. Without the kindly cooperation of De Plv. Gezaghebber it would have been impossible for us to obtain permission to collect in a place where this is now difficult to obtain. To Mr. H. Stanley Johnson of Windwardside we are especially indebted for making all the physical arrangements for our stay and for the transportation of our luggage and equipment, and for many other favors shown during our visit. Mr. J. Lambert Johnson, a local hunter who knows every foot of his native island, and who is possessed of unbounded energy, was of special assistance due to his knowledge of the island and its birds. Without his aid our collections would have been much poorer. The greater part of the population of Windwardside and nearby country willingly helped in every way that they could, and it is a matter of regret that space forbids mention of more of these good people who treated us with such universal genuine hospitality and willing helpfulness as is rarely found.

An annotated list of the birds known from Saba follows:

*Puffinus lherminieri lherminieri* Lesson

Audubon's Shearwater

Wedrigo

An adult male and an egg taken from a hole in the rocks at Hell's Gate (altitude about 2,000 feet) on January 27 were brought to me. The egg, which was fresh, was white, and measured  $52 \times 38.8$  millimeters. The bird had the iris dark brown; bill bluish slate, black at the tip; legs and feet bluish slate anteriorly, the backs of the tarsi and the soles being black. The species was said to nest commonly on the higher parts of the island.

*Phaëthon aethereus mesonauta* Peters

Red-billed Tropic-Bird

White Bird

There is a rather large nesting colony of this species on the Booby Hill Cliffs. At the time of our visit most of the birds had downy young, and it proved possible to find but two eggs, both

rather heavily incubated. Local boys managed to capture considerable numbers of both adult and young birds alive. Of these we preserved three adult males, one adult female, and two downy young as specimens. The adults had the iris dark brown; bill bright orange red; legs, base of toes and webs light bluish tinged with yellow in parts; tips of toes black. The downy young had the iris brown; bill, legs, and basal part of feet bluish gray slightly tinged with yellow; tips of feet and webs black.

The two eggs collected on January 29 were so completely covered with brown, red and bluish speckling as to appear like earth. They measured  $58.8 \times 46.4$  and  $63.3 \times 43.5$  millimeters.

We were told that these birds frequent the vicinity of Booby Hill Cliffs during the entire year. On December 20, 1927 I observed one at sea about 20 miles north of Saba. The species has not been previously recorded from Saba.

[*Phaëthon lepturus catesbyi* Brandt.

Yellow-billed Tropic-Bird.

Bond (Birds of the West Indies, p. 8) states that he observed this species at Saba, but I regard the record as somewhat doubtful in view of the facts that no specimens were taken, and that the Red-billed bird is certainly the common if not the only nesting species of the island.]

*Sula leucogaster leucogaster* (Boddaert)

Booby

On December 20, 1927 three were observed at sea some miles to the north of Saba.

[*Dendrocygna autumnalis autumnalis* (Linnaeus).

Black-bellied Tree-Duck

There is an extremely doubtful record by Bond (Birds of the West Indies, p. 48) who merely lists "Saba?", with no explanation among the islands from which the species is recorded.]

*Buteo jamaicensis jamaicensis* (Gmelin)

West Indian Red-tailed Hawk.

Chicken Hawk or Macaw

Seen regularly soaring over the higher parts of the island, but oddly all specimens noted were immature examples which had not yet attained the red tail. One of these, a male, was shot on the

top of the mountain on January 30. It is remarkable for being smaller than any of six specimens of this race from Hispaniola and Puerto Rico in my collection. It exhibits the following measurements: Length (in flesh) 473; extent 1,109; wing 317; tail 188; culmen from base 45.7; culmen from cere 25.1; tarsus 76.3 millimeters. Bond obtained a specimen in 1929, but unfortunately it was apparently lost before measurements could be made of it.

The stomach of the specimen collected in 1937 contained a large rat.

*Falco sparverius caribaeorum* Gmelin

Antillean Sparrow Hawk

Killi-killi

Rather locally distributed; observed at Windwardside, on the Mountain, and at the Sulphur Mine. Two pairs were collected. The stomachs of one pair were filled with large yellowish brown spiders, while those of the other pair contained exclusively crickets.

*Sterna fuscata fuscata* Linnaeus

Sooty Tern

On December 20, 1927 a flock of 25 was observed feeding at sea some twenty miles north of Saba.

*Zenaida aurita aurita* (Temminck)

Martinique Dove

Ridgway records an adult male from Saba.

*Zenaida aurita zenaida* (Bonaparte)

Zenaida Dove

Mountain Dove

Fairly common; noted from sea level to about 2,000 feet. A male collected in Spring Bay Gut on January 27 unquestionably represents this race.

Upon examination of the material from the northern Lesser Antilles in my collection I find it impossible to agree with Wetmore (Journ. Agric. Univ. P. R., 21, 1937, p. 11) in his statement that *zenaida* and *aurita* are distinct species, confined respectively to the Greater and Lesser Antilles. In addition to the specimen from Saba,

I have one from Antigua which is typical *zenaida*. These specimens from Montserrat are more or less intermediate, one being closer to *zenaida* and two to *aurita*. Single specimens from St. Martin, St. Eustatius, and St. Kitts are *aurita* without doubt. During a few hours spent on St. Martin on January 20, 1937 I had the opportunity of observing 9 captive birds, all said to have been obtained on St. Martin. Of these two were typical *zenaida*, three were typical *aurita*, and four were intermediate.

The stomach of the bird collected on Saba was filled with seeds, some leguminous, and some unidentified hard, round black seeds.

*Columbigallina passerina nigrirostris* Danforth

St. Kitts Ground Dove

Six were observed, and a male was collected at Spring Bay on January 27. Its bill was entirely dusky brown.

*Oreopeleia mystacea mystacea* (Temminck)

Bridled Quail-Dove

Wood Hen

This bird is rather rare, being found in the brush-grown guts which run down the mountain side in Saba. Here the bird is very difficult to obtain, the bird's shyness, the rugged topography, and the dense brush making it difficult to approach within gunshot of a bird once it is heard calling. After much effort three birds (two males and a female) were obtained at Hell's Gate Gut, Island Gut, and Spring Bay Gut. These specimens differ in no wise from specimens from the islands of St. Kitts to St. Lucia. As I have shown in the Proceedings of the Biological Society of Washington, May 19, 1938, p. 73 Riley's description of *Geotrygon sabae* was evidently based on an immature bird which he mistook for an adult, and consequently this name should be regarded as a synonym of *Oreopeleia m. mystacea*.

An adult male collected in Hell's Gate Gut on January 28, 1937 had the iris orange; the bill rose red at the base and whitish at the tip; the legs and feet of a pinkish flesh color, the claws light slate.

The three stomachs contained seeds 68.3 per cent (mostly of an unidentified hard, round black variety); leaves 5 per cent, and fragments of some starchy root with a hairy epidermis, 26.7 per cent.

*Sericotes holosericeus holosericeus* (Linnaeus)

## Blue-breasted Hummingbird

Not common. A few were observed at Windwardside, Spring Bay, and on the Mountain. A male was collected at Spring Bay on January 26.

*Orthorhynchus cristatus exilis* (Gmelin)

## Gilt-crested Hummingbird

The commonest of the hummingbirds in Saba, but still scarcely abundant. More were observed near the summit of the Mountain (where a male was collected on January 30) than elsewhere.

*Eulampis jugularis* (Linnaeus)

## Garnet-throated Hummingbird

Half a dozen were observed in the tree fern forest and banana plantation at the summit of the Mountain on January 30. The stomach of a female collected contained exclusively small spiders.

[*Tyrannus dominicensis vorax* Vieillot.

## Large-billed Kingbird.

## Woodpecker.

A bird known locally as the "Woodpecker", which answers the description of this bird, and is said to perch on the telephone wires and sally forth after insects is said to occur on Saba only during the summer months. No specimens from Saba have been recorded, so the species is listed hypothetically.]

*Elaenia martinica riisii* Selater

## Riise's Elaenia

Apparently very scarce on Saba, only three being observed during the course of our visit, and residents of the island knew no name for it. A silent female was collected deep in the ravine of Spring Bay Gut on January 27, and another female, also silent, in deep brushy woods at Spring Bay the next day, and one was heard singing on the top of the Mountain on January 30. As I have already demonstrated (Journal of the Barbados Museum and Historical Society, Vol. S, May, 1938, p. 123), these specimens exhibit characteristics (particularly those of size) of *riisii* rather than of typical *martinica*. The measurements of a male from Saba given by Ridgway (U.S.N.M. Bull. 50, 1907, p. 427) also agree best with *riisii*.

The first stomach contained two berries and the second some hard, round, black seeds.

*Cinclocerthia ruficauda pavid*a Ridgway

St. Kitts Trembler

Trembling Thrush

This bird was found only in the tree fern growths on the higher parts of the mountain, and even there it is not very common. It is said to nest in holes in the trunks of rotting tree ferns, and to lay blue eggs. A male was collected in Island Gut on January 28, a male near the top of the Mountain on January 29, and a female at the same place the next day. 90 per cent of the contents of their stomachs consisted of land snails which were identified by Dr. Paul Bartsch as *Helicina fasciata* Lamarck. Coleoptera formed 7 per cent, and other insects 3 per cent.

Specimens of *C.r. pavid*a from Saba and Montserrat in my collection are much more rufescent above, and to some extent below, than *C.r. tenebrosa* from St. Vincent.

Two males from Saba measure: Wing 101.4–103 (102.2); tail 84–87.1 (85.5); culmen from base 34.9–38.5 (36.7); tarsus 29.2–29.4 (29.3). One female measures, wing 99.8; tail 88.3; culmen from base (broken, but it is over 40); tarsus 30.8 millimeters.

An adult male collected in Island Gut on January 28, 1937 had the iris bright orange yellow; bill black; legs and feet yellowish brown, the soles tinged with yellow, and the claws grayish brown.

*Margarops fuscatus fuscatus* (Vieillot)

Pearly-eyed Thrasher

Thrush

This is undoubtedly the most common bird on Saba, frequenting all wooded and brushy regions, from which it calls with great persistency.

Four specimens were collected, three at Spring Bay and one on the top of the Mountain. These appear to represent typical *fuscatus*, but the races of this species are very poorly marked, making identification of specimens from islands near where the ranges of *fuscatus* and *densirostris* meet at times somewhat problematical.

The four stomachs contained an *Anolis* lizard, 6.2%; lepidopterous larvae 10%; insects 1.3%; berries 45%; drupes 16.2%; hard, round, black seeds 21.3%.



*Alenia fusca* (P.L.S. Müller)

Scaly-breasted Thrasher

Thrush; Black-billed Thrush

Six were observed on a wooded hillside near Windwardside known as "The Level" (due to its top being so much flatter than most of the land on this rugged island), and one at Spring Bay. At the former locality two males were collected on February 1. The iris of one of these was bright yellow; its bill black; its legs and feet dusky slate, claws dusky, soles yellow. One stomach contained berries and the other drupes.

*Vireo calidris calidris* (Linnaeus)

Jamaican Vireo

Ridgway (U.S.N.M. Bull. 50, III, 1904, p. 138) refers a female Vireo from Saba to this form. As this species is usually either a migrant or summer resident in the West Indies, none were found at the time of our visit.

*Coereba bartholemica* (Sparrmann)

St. Barts Honey Creeper

Yellow-breast

Common, but not so abundant as honey creepers in most islands. Two males were collected. Both have considerable white in the frontal region. They measure: wing 61.3-61.8 (61.65); tail 40.4-42; (41.2); culmen from base 16.5-17.7 (17.1); tarsus 17.8-17.8 millimeters. Their stomachs contained insects 50 per cent (small Coleoptera 25 per cent); and small seeds (mostly soft), 50 per cent. One stomach contained a large piece of gravel and several fine grains of sand, very remarkable to find in this typical, diminutive, weak Coerebine stomach.

*Compothlypis americana pusilla* (Wilson)

Northern Parula Warbler

A male was collected at Spring Bay on January 27. Previously recorded by Bond.

*Dendroica discolor discolor* (Vieillot)

Northern Prairie Warbler

Two were observed, and a female collected, at Spring Bay on January 26. Another was seen on January 28. Not previously recorded from the island.

*Setophaga ruticilla* (Linnaeus)

American Redstart

An apparent female was collected at Spring Bay on January 28. Its stomach contained a moth, Coleoptera, and other insects. Not previously recorded from the island.

*Tanagra flavifrons flavifrons* (Sparrmann)

Green Euphonia

On February 1 a pair was observed in Spring Bay Gut. They kept so continually on the move on the densely wooded precipitous ravine sides, usually managing to keep on the opposite wall of the ravine to their pursuer, that it proved impossible to collect them. This constitutes a new record for the island.

*Tiaris bicolor omissa* Jardine

Carib Grassquit

Tobacco Seed

Common at Spring Bay, Windwardside, and the lower parts of the mountain. The stomachs of a pair collected contained small seeds with the addition of sand for grinding purposes.

*Loxigilla noctis coryi* (Ridgway)

St. Eustatius Bullfinch

Robin

Common at the top of the Mountain rare on the rest of the island, where observed on a few occasions at Spring Bay and Windwardside. Four adult males, an immature male, and an immature (?) female were collected. These agree well with specimens of *coryi* from other localities. Their measurements are as follows: 4 adult males, wing 68.1-69.6 (69); tail 51.2-53 (52.3); culmen from base 15.6-16.2 (15.9); tarsus 19-20.2 (19.65). 1 immature male, wing 63.9; tail 45.6; culmen from base 16; tarsus 19.1. 1 immature? female, wing 57.2; culmen from base 16; tarsus 18.5 millimeters.

Five stomachs examined contained seeds 80 per cent, and berries 20 per cent, and all had sand or gravel in addition for grinding purposes.