

THE BIRDS OF ANTIGUA.

BY STUART T. DANFORTH.

ANTIGUA is one of the more northerly of the chain of West Indian islands known as the Lesser Antilles, and is the seat of government of Britain's Leeward Islands colony. It is situated in latitude $17^{\circ} 6' N.$ and longitude $61^{\circ} 45' W.$ The island is roughly pentagonal in shape, with numerous deep indentations in the shoreline, which reaches about 70 miles in length. The greatest distance across the island from east to west is 12 miles and from north to south $9\frac{1}{2}$ miles; the area is 108 square miles, equal to approximately 69,275 acres.

Geologically, the island falls into three well-marked sections: (1) the northern and eastern, of coral-limestone formation, consisting of gently undulating country rising to not more than 456 feet elevation in the Pope's Head Hills; (2) the southwestern, of volcanic origin, which is decidedly mountainous, with numerous peaks rising above 1,000 feet in elevation (the highest being Boggy Peak, 1330 feet), and rugged ridges separated by innumerable little valleys of great fertility; and (3) the central plain, running diagonally across the island from northwest to southeast, separating the limestone from the volcanic districts, and seldom rising above 60 feet except on isolated hills.

A century or so ago almost every cultivable acre in Antigua was under sugar-cane, but to-day not more than about 9,000 acres are devoted to this crop, with the result that abandoned sugar estates occur throughout the territory from sea-level to near the tops of some of the highest hills. There is, however, a considerable area of peasants' small holdings, especially in the alluvial valleys to leeward, but they may also be seen on the steep hillsides throughout the Southwest.

The first impression the naturalist receives on landing at St. John's is rather one of disappointment. Antigua appears like a flat, dry, monotonous country without even the attractions of an interesting xerophytic type of vegetation. These first impressions soon change as he travels away from the city into the interior, and he finds himself most agreeably surprised in the really great variety

of types of country to be found. The rainfall in the north and east is relatively scanty, the annual average being around 35 inches, so that there are large areas of xerophytic vegetation, some of them wooded and of very interesting types, such as the magnificent stand of whitewoods known as Collins' Woods near the eastern extremity of the island. Throughout this area, which is very largely under sugar-cane cultivation, are scattered numerous wooded knolls rising above the surrounding canefields, and there are also considerable areas of low dry brush and scrub, especially near the coast, as well as of poorly-kept pastures partially overgrown with "cossie" (*Acacia arabica* and *A. farnesiana*). The xerophytic type of country culminates in a type of landscape showing agaves and cacti dominating. The xerophytic zone is not confined to the limestone region, and runs in a belt along the southwest coastline, but in the heart of the volcanic region, over an area of several square miles, and where there is a rainfall which must be close upon 55 to 60 inches annually, the vegetation is definitely mesophytic, though without the palms and tree-ferns characteristic of the more mountainous Caribbean islands. The mesophytic area of Antigua reaches its climax in a type resembling rain-forest, with a floor very largely of ferns, remnants of which are to be found on Sugar Loaf Mountain (1058 feet) and in a few other restricted localities. The disastrous effects of continual deforestation are particularly noticeable in the mesophytic area, and little serious attempt seems to be made to conserve the few acres of real forest remaining (that on Sugar Loaf being a notable exception).

There is only one permanent river (Bendal's Stream), and that is reputed to dry up in times of severe drought. In the rainy seasons several ill-defined watercourses which have their origin in the central plain or in the eastern part of the hilly region meander across the island to drain into eastern bays. The largest stretches of fresh water are the two reservoirs maintained by the Antigua Sugar Factory near Gunthorpe's on the northern edge of the central plain, and the Government reservoirs at Wallings and Body Ponds in the heart of the volcanic district, each of which covers several acres. Scattered around the more level parts of the island are astounding numbers of small fresh water ponds, few of them exceeding an acre in extent; it is probable that there are more than

two hundred of them, and many, despite their limited size, harbor numerous aquatic birds.

The coast is for the most part either rocky headland, sandy beach backed by the usual dune vegetation, or mangrove swamp and mudflats; there are hundreds of acres of shallow salt- or brackish-water lagoons, and shallow inlets of the sea, known locally as "flashes," where large numbers of shorebirds are to be found.

Off the coast of Antigua, especially in the northeast, there are numerous outlying islets of coral origin, where that scourge of the West Indies, the mongoose, has not been introduced. With the exception of Guana Island, which is separated from the mainland by a channel so narrow that the mongoose has been able to cross, the largest of these is Long Island, of 138 acres; it is very flat and supports a xerophytic scrub; there are few trees and the bush is of a rather open nature. Long Island has two mangrove-bordered lagoons and a small artificial pond. The birds are essentially the same as those of the mainland. Nearby, to the south, is tiny Maid Island, of about 7 acres. Great Bird Island is barely 20 acres in extent, but is of much ornithological interest due to the vast numbers of seabirds which nest on its 110-foot limestone cliffs. Many seabirds also nest on Hell Gate Island, a diminutive rocky islet close to Great Bird Island. In the general vicinity there are a number of other islets, some being hardly more than the tops of submerged reefs with no vegetation other than seaside purslane (*Sesuvium portulacastrum*), but they do not appear to be of special interest from the ornithological point of view. Off the leeward coast there are many small islets composed of rocks of volcanic origin, but none of these were visited.

Antigua has been somewhat neglected by ornithologists, some of whom were doubtless discouraged by the somewhat unpleasant first impressions which many naturalists casually visiting the island receive. The first collections of birds on Antigua were made by F. A. Ober for the Smithsonian Institution in August and September, 1877. George N. Lawrence reported on this collection in the Proceedings of the U. S. National Museum, I, 1878, pp. 232-242. He lists 42 species from Antigua, but by no means all of these were collected, and five were doubtfully recorded, some on hearsay evidence only. Ober also made collections on Barbuda.

In the early summer of 1890 Cyrus S. Winch, collecting for Cory, visited Antigua, and collected 32 species. A list of these was published by Cory in 'The Auk' for 1891, pp. 46-47. Nine of the species had not been listed by Lawrence.

The next collector to visit the island was H. G. Selwyn Branch, who spent the late summer, fall, and early winter of 1903 collecting on Antigua and Barbuda. On Antigua he collected 166 specimens representing 37 species. These were later obtained by the U. S. National Museum, and reported upon by J. H. Riley (Smithsonian Miscellaneous Collections, Quarterly Issue, II, 1905, pp. 277-291). Branch's work brought the total number of species known from Antigua to 59.

In the latter part of December 1929 and early January 1930, James Bond, of the Academy of Natural Sciences of Philadelphia, spent a few days in Antigua and Barbuda, but collected very few birds in Antigua, and has published no report upon them.

Mention should also be made of Dr. J. G. Myers, Entomologist of the Colonial Development Fund, who has made some interesting observations on the birds of Antigua and Long Island, although he has made no collections. He published a few notes of an economic nature in 'A Preliminary Report on an Investigation of West Indian Insect Pests' (London, Empire Marketing Board, No. 42, July, 1931).

The present writer, accompanied by an assistant, Virgilio Biaggi, Jr., spent the period from July 26 to August 17, 1933 (except for three days spent on Barbuda) studying and collecting birds in Antigua. During this time he made observations on 61 species of birds, of which 42 were actually collected, and as a result of this work 20 species previously unrecorded from the island have been added to its known avifauna. This brought the total list of birds positively known from Antigua to 79. Two additional species forwarded by Mr. Box from Antigua since then have increased this list to 81, exclusive of six which have been doubtfully recorded, and which are listed hypothetically.

The writer is greatly indebted to many persons who gave him assistance in many ways during his stay in Antigua, and since then. Words cannot express his gratitude to Mr. Harold E. Box, Entomologist attached to the local government. The fact is that what-

ever success the little expedition has achieved is in large measure due to the whole-hearted and unselfish interest which Mr. Box took in its work. His assistance took such diverse forms that it is impossible to recount them. He gave up much of his time to take us around the island to favourable collecting localities, well known to him, representing all types of country. His profound knowledge of the island and of its natural history was placed completely at our service, preventing much loss of time, and he came to our assistance in many other ways. His generous interest in the work has continued long after our departure from the island, and up to the time of writing this account the writer is continuing to receive much valuable assistance of many kinds from him. The part of this paper descriptive of Antigua is in part his work.

The writer also owes a special debt of gratitude to Major Hugh Hole of Nottingham, England, and to his representative in Antigua, Mr. Marion Moore, for permission and facilities for visiting Great Bird Island and Hell Gate Island; and to the Hon. L. I. Henzell, of Antigua, for similar courtesies in respect to Long Island. Special mention must also be made of the interest in the work and assistance given to it by His Excellency Sir Reginald St.-Johnston, K.C.M.G., Governor of the Leeward Islands, and of Commander D. J. D. Noble, R.N., one of the results of which was the official publication of a preliminary report on the birds of Antigua (Supplement to the Leeward Islands Gazette of Nov. 16, 1933). Mr. W. G. Heath of Parham, Antigua, has kindly sent me some notes on the birds of Antigua, use of which has been made in writing this paper.

An annotated list of the birds known from Antigua follows. The specimens collected by the writer are in his private collection, which is at present deposited at the College of Agriculture and Mechanic Arts of the University of Puerto Rico.

Podilymbus podiceps antillarum Bangs. ANTILLEAN GREBE. "Diver." Fairly common resident. A nest with eggs was found at Gunthorpe No. 2 Pond on August 3. The stomach of a three-quarters grown young, unable to fly, collected at Body Ponds on August 5, contained a crayfish and a Naucorid bug, *Pelocoris femoratus*. An adult male taken at Dead Sands Bay the following day had eaten 2 damselfly naiads; 2 dipterous larvae; 2 *Pelocoris femoratus*; 4 Hydrophilid beetles, *Tropisternus lateralis*, and some unidentified insect material. The measurements of

this specimen are: Exposed culmen 24.8; wing 126.5, and tarsus 40.0 millimeters.

Phaëthon aethereus mesonauta Peters. RED-BILLED TROPIC BIRD. Three individuals observed at Great Bird Island on August 3. Mr. Box tells me that in May he saw large numbers breeding on the cliffs. Not previously recorded from Antigua.

Pelecanus occidentalis occidentalis Linnaeus. BROWN PELICAN. "Booby." A few occur regularly around the coast, but not known to breed in Antigua. Observed at Fort James, Long Bay, Old Road, Indian Creek, Rabbit Island, Hell Gate Island, and Long Island.

[***Pelecanus erythrorhynchos*** Gmelin. WHITE PELICAN. Clark (Proc. Bost. Soc. Nat. Hist., 32, 1905, p. 233) states that J. H. Fleming tells him he has seen White Pelicans in the harbor of St. John's. On account of the fact that the only unquestionable record of this species for the West Indies is that of a specimen taken in Cuba, I am listing it hypothetically.]

Fregata magnificens rothschildi Mathews. MAN-O-WAR BIRD. "Scissor-tail." Common resident around the coast, but not known to breed in Antigua. Noted at numerous points on the coast, also at the Gunthorpe Reservoirs, Rabbit Island, Great Bird Island, and Long Island.

[***Ardea herodias adoza*** Oberholser. WEST INDIAN GREAT BLUE HERON. Ober reported that this species was said to arrive in the fall. There is no definite Antigua record.]

Casmerodius albus egretta (Gmelin). AMERICAN EGRET. "White Crane." A flock of three was observed closely at Goat Head Lagoon on August 1, and constitutes the first record for the island.

Egretta thula thula (Molina). SNOWY EGRET. Rather uncommon. A male with nuptial plumes was collected at Weirs Pond on July 30; its stomach contained two crayfish. Others were seen at Gunthorpe's No. 2 Reservoir and at Body Ponds.

Florida caerulea caerulescens (Latham). SOUTHERN LITTLE BLUE HERON. "Blue Gauding." "White Gauding." This heron is one of the most conspicuous features of the avifauna of Antigua, abounding in the dry canefields of the inhabited parts of the island, as well as at the ponds and flashes. White, blue, and pied birds were all common at the time of my visit. An almost completely blue male was collected at Dead Sands Bay on August 6. Its stomach contained 7 grayish blue crabs with a shell about 15 millimeters in width; 27 dragonfly naiads; a bug, *Pelocoris femoratus*; and 5 Stratiomyid larvae, *Odontomyia*.

Butorides virescens maculatus (Boddaert). WEST INDIAN GREEN HERON. Tolerably common. Seen at Vernon Pond (a female with empty stomach taken on July 30), The Narrows, Carlisle Pond, Donovan's Pond, Gunthorpe's No. 2 Reservoir, and on Great Bird Island and Long Island.

Nyctanassa violacea violacea (Linnaeus). YELLOW-CROWNED NIGHT HERON. "Crab Gauding." Common resident. Many adult and im-

mature birds were noted at Body Ponds, Church's Bay Lagoon, Five Islands, Winthorpe's, and on Great Bird Island. A male with nuptial plumes was collected at Mercer's Creek on July 30. Its stomach was empty.

Nycticorax nycticorax hoactli (Gmelin). BLACK-CROWNED NIGHT HERON. Status uncertain; listed by Cory.

Phoenicopterus ruber Linnaeus. FLAMINGO. Clark (Auk, 1905, p. 318) states that the Flamingo was found casually on Antigua until about 1860, on the basis of a statement by Mr. Francis Coull that he had seen several in the Five Islands swamps at about that time.

Dendrocygna arborea (Linnaeus). WEST INDIAN TREE DUCK. "Whistler." From descriptions given me by Mr. Box and others I feel very sure that the bird known in Antigua as the "Whistler" is this species, but am placing it in the hypothetical list, as it has not been reported by any ornithologists, and no specimens have been obtained. Mr. Box informs me that on October 8, 1932 he flushed two large Ducks from the vicinity of a nest containing 11 dull whitish eggs, much larger than those of the Bahama Duck, on the ground under some mangroves on Maid Island.]

Dafila acuta tzitzihoa (Vieillot). PINTAIL. "Duck." The only record I can find is that of Bent (U. S. Nat. Mus. Bull. 126, 1923, p. 144), and as he does not state the source of his information, I am forced to relegate the species to the hypothetical list.]

Dafila bahamensis bahamensis Linnaeus. BAHAMA DUCK. "White-throat Duck." Fairly common resident. Sixty were observed at Church's Bay Lagoon August 6, and the same day four adults and a half-grown young were seen at Dead Sands Bay. August 9 on Maid Island a female was flushed from a nest on the ground not far below the top of the islet, at an elevation of about twenty feet, and a distance of about forty feet from a sandy beach. The nest was well concealed in a tuft of *Sporobolus virginicus* grass, and had no lining, consisting merely of a hollow in the grass to receive the eggs, which were five in number, of a light buff color, and measured 49 x 31.5 millimeters. In addition to the localities already mentioned, Bahama Ducks were observed at Gunthorpes No. 2 Pond, Five Islands, and on Long Island.

Oxyura jamaicensis jamaicensis (Gmelin). WEST INDIAN RUDDY Duck. The Ruddy Duck has not previously been recorded from Antigua. On August 1 a flock of 15, only one of which was in male plumage, was noted at Dead Sands Bay, and a male and female were collected from the flock. The remainder of the flock was seen on subsequent days. The male is in the brown plumage, but is beginning to show some red feathers. It shows the following measurements: Culmen 39.2; breadth of bill at widest part 24.1; wing (arc) 131.0; wing (flat) 138.5; tarsus 32.9; tail 81.0 millimeters. The corresponding measurements for the female are 42.0; 23.0; 134.9; 141.0; 33.0; and 92.8 millimeters. These specimens are

remarkable for their very long tails; the other measurements agree well with those of Puerto Rican examples.

Buteo platypterus insulicola Riley. ANTIGUA BROAD-WINGED HAWK. "Chicken Hawk." This form of the Broad-winged Hawk is one of the few birds the known range of which is confined to Antigua. There are probably less than a hundred individuals living to-day, although due to their conspicuousness they are frequently observed in widely separated parts of the island. I have recorded the species at Body Ponds, Sugar Loaf Mountain, Belmont Estate, Dead Sands Bay, and Indian Creek, and collected a female at Body Ponds on August 7. Its stomach contained 7 large grasshoppers, *Schistocerca* sp. Mr. Box has recently sent for my examination a specimen which he secured at Mount Joshua on December 9, 1933. Despite the large numbers of these Hawks that are shot each year by planters, they seem to be quite far from the point of extermination, but some protective measures would be advisable in an attempt to save an interesting, and, to a large extent, beneficial bird.

Pandion haliaetus carolinensis (Gmelin). OSPREY. "Eagle." One was observed at Five Islands on August 10. Previously recorded by Ober (seen September 1, 1877).

Falco peregrinus anatum Bonaparte. DUCK HAWK. Mr. Box has sent me an immature specimen taken at Winthorpe's on December 23, 1933. He remarks that its stomach contained the remains of small birds, and that it was said to have taken Pigeons shortly before its capture. This is the first positive record of the Duck Hawk for Antigua, although Ober recorded it on hearsay evidence.

Falco columbarius columbarius Linnaeus. PIGEON HAWK. I have recently received from Mr. Box a specimen taken at Scotts Hill on December 18, 1933, constituting the first Antiguan record for the species.

Falco sparverius caribaeorum Gmelin. LESSER ANTILLEAN SPARROW HAWK. "Killi-killi." Rather uncommon. The stomach of a male collected at Long Lane on July 30 contained two large *Schistocerca* grasshoppers, while another taken at Dead Sands Bay had eaten an *Anolis* lizard and a grasshopper. The species was also observed at Five Islands, The Narrows, St. John's, Weirs, and Sugar Loaf Mountain.

Colinus virginianus virginianus (Linnaeus). QUAIL. Introduced many years ago. In 1877 Ober found Quail "in sufficient numbers to make good sport," and collected a male. Winch collected three specimens for Cory in 1890. It must have become extinct soon after that, as Branch found none in 1903, and at the time of my visit old settlers informed me that it became extinct very soon after the introduction of the mongoose.

Rallus longirostris manglecola Danforth. ANTIGUA CLAPPER RAIL. Plentiful in the mangroves at Five Islands, where about a hundred could be heard calling any day, but not observed elsewhere. Two specimens collected (a male on August 10, and a female on the 8th) proved to represent a new form, distinguished chiefly by its long bill and short tarsus,

which I have recently described in the Proceedings of the Biological Society of Washington. The stomachs of these specimens contained Fiddler Crabs (*Uca* sp.).

Gallinula chloropus portoricensis Danforth. ANTILLEAN GALLINULE. "Red-seal Coot." Common; observed at numerous small ponds, and in many of the mangrove swamps. A beautiful breeding pair was collected at Body Ponds on August 5. On July 31, 1931, on a previous brief visit to Antigua, an adult followed by three half-grown young was observed on a small pond near St. John's. The measurements of the pair collected are as follows, the first measurement given being in each case that of the male: Wing (arc) 168.2, 156.1; wing (flat) 174.0, 159.0; tail 78.3, 77.2; tarsus 54.1, 52.0; bill from gape 31.0, 28.9; culmen with frontal shield 49.0, 45.0; width of frontal shield 15.8; 12.2 millimeters. The coloration agrees well with that of specimens from Santo Domingo, Puerto Rico, St. Thomas, and Virgin Gorda in my collection.

Fulica caribaea Ridgway. CARIBBEAN COOT. "White-seal Coot." Sixty were noted at Dead Sands Bay on August 1, and forty on August 6 and 12, and four at Gunthorpe's No. 2 Pond on August 3. One of these (a female) was collected. Its measurements are as follows: Wing (arc) 170.5; wing (flat) 180; tail 54.1; culmen with frontal shield 53.0; depth of bill at base 15.3; length of frontal plate 20.6; width of frontal plate 10.8 millimeters.

Charadrius semipalmatus Bonaparte. SEMIPALMATED PLOVER. Two noted at Dead Sands Bay on August 12. Not previously recorded from Antigua.

Pagolla wilsonia rufinucha (Ridgway). RUFIOUS-NAPED PLOVER. Common resident; observed at many points on the coast, and also on Long Island and Maid Island. Not previously recorded from Antigua. The stomach of a female collected at Corbizon Point on July 29 contained fragments of small crabs.

Pluvialis dominica dominica (Müller). GOLDEN PLOVER. Migrant; apparently formerly common. Ober describes their arrival in large flocks. Mr. W. G. Heath of Parham writes me in a letter regarding these birds "In my early days they used to come regularly every year, following the first stormy weather in August, in great flocks, flying always from the west, and were shot in great numbers over decoys. . . . They invariably arrived about daybreak flying in crescent formation. They come only rarely now, and in smaller flocks."

Squatarola squatarola cynosurae Thayer and Bangs. BLACK-BELLIED PLOVER. One observed at Long Island on August 9 constitutes the first record for the Antigua region.

Arenaria interpres morinella (Linnaeus). RUDDY TURNSTONE. Not previously recorded from Antigua. A male was collected at Corbizon Point on July 29, and others were observed subsequently at Five Islands, Winthorpe's, and on Long Island. The stomach of the specimen collected contained many sedge seeds (*Abildgradia monostachya*) and sand.

Capella delicata (Ord). WILSON'S SNIFE. Reported by Ober on hearsay evidence. Mr. W. G. Heath informs me that "it arrives about November, and only stays a short time."

Phaeopus hudsonicus (Latham). HUDSONIAN CURLEW. Migrant; recorded by Ober. Mr. W. G. Heath also informs me that formerly Curlews were occasionally shot.

[Bartramia longicauda (Bechstein). UPLAND PLOVER. "Cotton-tree Plover." This species is listed hypothetically on the basis of a description given me by Mr. W. G. Heath of the "Cotton-tree Plover," which he says is rarely seen, is solitary, and lives in plowed lands.]

Actitis macularia (Linnaeus). SPOTTED SANDPIPER. Although this is the most widely distributed and one of the commonest shorebirds in Antigua, for some reason it has not previously been recorded. It was found at practically all points on the coast as well as at many interior ponds, and also on Long Island, Great Bird Island, and Maid Island. The first record was July 29 at Corbizon Point. A female in breeding plumage, with spotted breast, was taken at Old Road on August 1. It had eaten small crustaceans.

Tringa solitaria solitaria Wilson. SOLITARY SANDPIPER. A female was collected August 1 at Walling's Reservoir.

Catoptrophorus semipalmatus semipalmatus (Gmelin). WILLET. Three were seen and a male collected at Corbizon Point on July 29; its stomach contained small crabs. Three more were noted at Church's Bay Lagoon on August 12.

Totanus melanoleucus (Gmelin). GREATER YELLOW-LEGS. "Piker." One noted at Corbizon Point on July 29; two at Old Road August 1; five at Dead Sands Bay August 6, and 25 at Church's Bay Lagoon the same day.

Totanus flavipes (Gmelin). LESSER YELLOW-LEGS. Common migrant, though not previously recorded from Antigua. 100 were seen at Corbizon Point on July 29; 200 at Dead Sands Bay August 6; 250 at Five Islands the same day, and lesser numbers at other localities.

Pisobia melanotos (Vieillot). PECTORAL SANDPIPER. Six noted at Dead Sands Bay on August 6, and two on the 12th. A female collected on the former date had eaten six Stratiomyid larvae (*Odontomyia* sp.). First record for Antigua.

Pisobia fuscicollis (Vieillot). WHITE-RUMPED SANDPIPER. One observed at Dead Sands Bay August 6; first record for Antigua.

Pisobia minutilla (Vieillot). LEAST SANDPIPER. Common migrant, observed at many points on Antigua, and also on Long Island. One was collected at Yepson Pond on August 2, and five at Dead Sands Bay on August 6. One bird had eaten exclusively insects, including Carabid beetles and small coleopterous larvae. Not previously recorded from Antigua.

Limnodromus griseus griseus (Gmelin). DOWITCHER. Six were

observed on some mudflats by a small salt lagoon at Winthorpe's on August 9, and a male collected. Another male was collected the same day on Long Island. Both birds had eaten some small seeds, while one had also eaten a small crab, and the other some extremely minute snails. Not previously recorded from Antigua.

Micropalama himantopus (Bonaparte). STILT SANDPIPER. On August 2 a flock of fifty was noted swimming like Ducks in the center of Five Islands Salt Pond. Occasionally a few would approach the shore to feed, but when alarmed would return to the main flock. A female was collected from this flock. On August 9 five were observed at Winthorpe's, and a female collected. The stomachs contained seeds, small crustaceans, and the larvae of insects. Not previously recorded from Antigua.

Ereunetes pusillus (Linnaeus). SEMIPALMATED SANDPIPER. Twelve noted at Corbizon Point July 29, and two males collected. Both stomachs contained exclusively black, pointed seeds of sedge (*Abildgradia monostachya*). One was observed at Weirs Pond July 30, and a few at Yepson Pond August 2. Not previously recorded from Antigua.

Himantopus mexicanus (Müller). BLACK-NECKED STILT. Common, and apparently breeding. Noted at Corbizon Point, Five Islands, Church's Bay Lagoon, and Dead Sands Bay. The stomach of a male collected at Corbizon Point on July 29 contained a small crab, and some Stratiomyid larvae (*Odontomyia* sp.).

Larus atricilla Linnaeus. LAUGHING GULL. Seen commonly at many points on the coast. An adult male collected at Yepson Pond on August 2 had eaten a fiddler crab (*Uca* sp.). A few birds were noted on Long Island on August 9, and about 25 on Great Bird Island on August 3. The same day about 20 were present on Hell Gate Island, including three young unable to fly, proving the nesting of at least one pair. One of the young was collected. Its stomach contained the remains of fishes and fragments of the shells of marine mollusks. I believe this constitutes the first definite West Indian breeding record for the Laughing Gull.

Sterna hirundo hirundo Linnaeus. COMMON TERN. Ten observed at St. John's July 31, 1931 (on a previous visit to Antigua), and five at Long Island August 9, 1933. Not previously recorded from Antigua.

Sterna dougalli dougalli Montagu. ROSEATE TERN. Reported by Ober to breed in large numbers on islands and rocks offshore, and collected by Winch in 1890. Mr. Marion Moore informs me that in April large numbers of white Terns, apparently this species, breed on Great Bird Island, but none was seen at the time of my visit. The only Roseate Terns noted by me were three on Long Island August 9.

Sterna fuscata fuscata Linnaeus. SOOTY TERN. A few were seen on Great Bird Island and Hell Gate Island on August 3, but they were apparently not breeding at the time. A female was collected on Hell Gate Island. It had eaten three small fishes and two crab larvae.

Sterna anaethetus melanoptera Swainson. BRIDLED TERN. A few

were present on Hell Gate Island on August 3, and a male was collected. Its stomach was empty. Not previously recorded from the Antigua region.

Sterna antillarum antillarum (Lesson). LEAST TERN. Common and breeding at the time of my visit. Breeding colonies were noted on an island in the lagoon at Corbizon Point, on Guana Island, and on Water Rock, opposite Rabbit Island. At the latter locality new-hatched young were found on August 3. These Terns were also noted at numerous localities on Antigua, and on Long Island and Maid Island. A female was collected at Corbizon Point on July 29.

Thalasseus maximus maximus (Boddaert). ROYAL TERN. Two noted at Goat Head Lagoon August 1, and at St. John's on August 2 and 17.

Thalasseus sandvicensis acufavidus (Cabot). CABOT'S TERN. Collected by Winch in 1890.

Anotis stolidus stolidus (Linnaeus). NODDY TERN. About 2000 pairs frequented the cliffs on Great Bird Island on August 3, and about 200 pairs those on Hell Gate Island the same day. Many old nests were in evidence, but no eggs or young were observed. A male was collected on each island. One had eaten small fishes, while the stomach of the other was empty. Not previously recorded from Antigua.

Columba leucocephala Linnaeus. WHITE-CROWNED PIGEON. Common and widely distributed on Antigua, and one was observed on Great Bird Island. On July 26 a pair was building a nest in a thick-foliaged tree right in the city of St. John's.

Columba squamosa Bonnatere. SCALED PIGEON. "Red-headed Pigeon." Apparently scarce. A few were observed on Sugar Loaf Mountain, at Walling's Reservoir, and Christian Valley.

Zenaida zenaida aurita (Temminck and Knip). ZENAIDA DOVE. "Mountain Dove." Common and widely distributed on the main island; also observed on Guana Island, Great Bird Island, Hell Gate, and Long Island. The stomach of a male collected near Morn's Bay on August 1 contained 10 fruits of *Solanum bahamensis*, 15 small leguminous seeds, 1 samara of *Stigmaphyllon*, 60 seeds of *Jatropha gossypifolia*, and a ground pearl, *Margarodes* sp.

Columbigallina passerina trochila Bonaparte. ANTILLEAN GROUND DOVE. Common and widely distributed; seen on Great Bird Island, Long Island, and Maid Island, as well as at many points on the main island. The stomach of a male collected at Indian Creek on August 7 contained seeds, mostly leguminous, and a ground pearl, *Margarodes* sp.

Oreopelela mystacea mystacea (Temminck). BRIDLED QUAIL DOVE. "Partridge." Rare. One was heard July 28 in the mesophytic forest on Sugar Loaf Mountain.

Coccyzus minor rileyi Ridgway. ANTIGUA MANGROVE CUCKOO. "Soursop Bird." Locally tolerably common in dense brushy regions. A male collected July 30 on Diamond Estate had eaten three Tenebrionid

beetles. Also observed at Willok's, Gunthorpe's, Falmouth, and Dead Sands Bay.

Coccyzus americanus americanus (Linnaeus). YELLOW-BILLED Cuckoo. Winch collected a specimen for Cory in 1890.

Speotyto guadeloupensis amaaura Lawrence. ANTIGUA BURROWING OWL. Extinct. Ober collected three, including the type, in 1877, and Winch collected specimens in 1890. Branch found none in 1903. It is said to have become extinct soon after the introduction of the mongoose, and only the old-timers among the residents can remember it. Mr. W. G. Heath gives me his recollections regarding it in the following words: "As a boy I used to see the small Owls living in burrows in a road cutting of marl. . . . It appeared only at dusk. It was never very plentiful as far as I know."

Orthorhynchus exilis exilis (Gmelin). CRESTED HUMMER. Observed commonly at many localities on the main island, and on Great Bird Island and Long Island.

Sericotes holosericeus holosericeus (Linnaeus). BLUE-BREASTED HUMMER. Common and widely distributed. Observed also on Maid Island. A female was collected on Sugar Loaf Mountain July 28, another at Body Ponds August 5, and a male on Maid Island August 9. Chalcid wasps constituted 49 per cent of the contents of the three stomachs. Cucujid beetles, other small Coleoptera, mosquitoes, Cicadellidae, and a small seed were also found.

Eulampis jugularis (Linnaeus). RED-THROATED HUMMER. One was observed at very close range in a lime plantation at Body Ponds on July 27. It is unfortunate that I did not have my gun at hand to collect it, as it constitutes the first record for Antigua.

Megaceryle alcyon alcyon (Linnaeus). BELTED KINGFISHER. Winter visitor, probably common. Branch collected a male October 23, 1903.

Tyrannus dominicensis dominicensis (Gmelin). GRAY KINGBIRD. Accidental straggler; listed by Ridgway.

Tyrannus dominicensis vorax (Vieillot). LARGE-BILLED KINGBIRD. "Loggerhead." Abundant and universally distributed resident. Observed also on Great Bird Island, Long Island, and Maid Island. The stomach of a female collected at Sweet's Village on August 5 contained four *Polistes* wasps.

Elainea martinica riisii Selater. ANTILLEAN ELAENIA. Common wherever there are thick stands of trees or bushes on the main island; also observed on Great Bird Island, Long Island, and Maid Island. The stomachs of a female collected July 28 on Sugar Loaf Mountain and of a male from Goat Head August 1, contained exclusively the fruits of *Solanum bahamensis*.

Progne dominicensis (Gmelin). CARIBBEAN MARTIN. "Swallow." Observed at St. John's, Johnson's Point, Dead Sands Bay, Shirley Heights and Indian Creek. The stomach of a male collected at Johnson's Point

on August 1 was jammed with fragments of black Hydrophilid beetles, and also contained one Hemiptera (*Catorintha* sp.). Not previously recorded from Antigua.

Margarops fuscatus fuscatus (Vieillot). PEARLY-EYED THRASHER. "Thrush." Fairly common; found chiefly in the mesophytic woods. The stomach of a female collected near Walling's Reservoir on August 1 contained five fruits which were identified by Mr. Box as *Tabernaemontana citrifolia*, and two unidentified fruits. That of another female collected at Christian Valley on August 6 contained one large and 18 small drupes. The species was also observed at Fig Tree Hill, Body Ponds, and English Harbour.

Allenia apicalis (Hartlaub). SCALY-BREADED THRASHER. "Thrush." Apparently very rare. One was observed at Fig Tree Hill on August 1.

Vireo calidris barbadensis Ridgway. BARBADOS VIREO. Common and generally distributed; breeds. Not observed on the outlying islets. The stomach of a male collected on Sugar Loaf Mountain July 28 contained a small Cerambycid beetle and a small seed.

Coereba dominicana (Taylor). DOMINICA HONEY CREEPER. "Yellow-breast." Abundant and generally distributed resident on the main island; observed on Great Bird Island, Long Island, and Maid Island. A male was collected on Sugar Loaf Mountain July 28.

Dendroica petechia bartholemica (Sundevall). GOLDEN WARBLER. "West Indian Canary." Very common resident, widely distributed in the mangroves, xerophytic brush, and even in woods approaching a mesophytic type. Observed on Rabbit Island, Red Head Island, Long Island, and Maid Island in addition to the main island. A female was collected at Corbizon Point July 29, a female at Collins' Woods on July 30, and a male the same day at Willok's Village. The stomachs of all three contained finely comminuted insects.

Dendroica discolor discolor (Vieillot). PRAIRIE WARBLER. Winter migrant; collected by Branch.

Seiurus aurocapillus aurocapillus (Linnaeus). OVEN-BIRD. Winter migrant; collected by Branch.

Seiurus noveboracensis noveboracensis (Gmelin). NORTHERN WATER-THRUSH. Winter migrant; collected by Ober and Branch.

Seiurus motacilla (Vieillot). LOUISIANA WATER-THRUSH. Winter migrant; collected by Ober and Branch.

Setophaga ruticilla (Linnaeus). AMERICAN REDSTART. Winter migrant; collected by Ober and Branch.

Icterus sp. ORIOLE. Mr. Box has given me a clear description of an oriole which he observed in woodlands above Wetheralls, near the north-west extremity of the island, on November 4, 1933. This may possibly be an escaped cage bird, or a stray from Montserrat or other island where Orioles occur, as it does not seem likely that so conspicuous a bird as an Oriole could be a resident of Antigua and have been overlooked until now.]

Holoquistalpus fortirostris fortirostris (Lawrence). BARBADOS GRACKLE. "Blackbird." Introduced and locally common. A male and female were collected from a flock of about fifty which was noted in the fields with cattle and sheep at Cade Bay on August 1. Five were seen at Dead Sands Bay on August 6. On a previous visit to Antigua a number were noted near the city of St. John's on July 31, 1931. One stomach contained two large noctuid caterpillars, a grasshopper, and a spider. The other bird had eaten seven Lepidopterous larvae, an earwig, a small fresh water snail, and the leaf of a sensitive plant (*Mimosa*). The wing of the male collected measures 103.8 and of the female 91.2 mm.

Tanagra flavifrons flavifrons (Sparmann). LESSER ANTILLEAN EUPHONIA. Probably a rare resident; known from Antigua only from a specimen collected by Branch in 1903.

Piranga erythromelas Vieillot. SCARLET Tanager. Accidental migrant. A specimen was collected by Winch in 1890.

Loxigilla noctis ridgwayi (Cory). ANTIGUA BULLFINCH. "Robin." "Sparrow." Probably the most abundant and generally distributed bird found in Antigua. Also noted on Great Bird Island and Long Island. On July 28 a nest was collected in lianas of the genus *Gonania* attached to a Red Cedar tree (*Cedrella odorata*) 40 feet above the ground in the mesophytic forest on Sugar Loaf Mountain. The nest contained two fresh eggs, white spotted all over with red. Birds in the plumage of the female or immature male are frequently seen singing. The song is a somewhat shrill, unmusical, monotonous *szwee-szwee-szwee*, this syllable repeated from five to eight times in rapid succession. Specimens were collected on Sugar Loaf Mountain and at Long Bay.

Tiaris bicolor omissa Jardine. CARIB GRASSQUIT. "Sparrow." "Cane-bird." Very abundant in cleared country, and also found in regions of xerophytic brush. It is one of the few birds that feed freely in cane-fields. Mr. Box tells me that he has seen Grassquits pecking through cane trash to get at the mealy bugs. Observed on Long Island and Maid Island. A male was collected at Corbizon Point July 29, another at Mercer's Creek July 30, and a third at Belmont Estate August 5. The stomachs of all three contained nothing but minute seeds.

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