## BIRDS OBSERVED IN THE VICINITY OF SANTIAGO DE CUBA by stuart t. danforth

During the summer of 1926 the author spent nine days, from June 29 to July 7, studying birds in the vicinity of Santiago de Cuba. This is the second largest city in Cuba, and is situated in the southeastern part of the island. Very little has been written recently about the birds of this particular part of the Republic, though many visitors from the North spend a short time there, either to visit or in transit to other places. This list may be of interest to ornithologically inclined visitors, as from it they may obtain some idea of what resident birds it is possible to see during a short stay. A few rather unusual records were also obtained during the short time spent in this region. An annotated list of the fifty-four species observed follows.

LEAST GREBE. Colymbus dominicus dominicus Linne. About twenty pairs were breeding at the Laguna del Sitio, a fresh water lake some four miles east of the city. On July 5 eight nests with eggs and a number of adults accompanied by young birds were observed. The nests were floating and anchored to nothing but floating pondweeds (*Naias*), where the water was about eighteen inches deep, and were constructed of the same weeds. Those which were examined closely contained four eggs apiece. On leaving the nests the incubating birds would cover the eggs with pondweeds, but if I waited quietly they would return in half an hour, remove the weeds, and resume incubation. This occurred at noonday, in the broiling sunshine, thus tending to disprove the theory sometimes advanced that grebes let the sun incubate their eggs whenever possible.

WEST INDIAN PIED-BILLED GREBE. Podilymbus podiceps antillarum Bangs. About 125 were noted at the Laguna del Sitio on July 3 and 5. Many young birds of various sizes ranging from a quarter to three-quarters grown were seen, and about ten nests with eggs. The nests were floating affairs made of *Naias* and anchored to bits of brush. Some of them were too far out in the lagoon to be examined closely, but on those the incubating adults could be observed. Four nests were examined closely. Three of these had six eggs apiece, old and stained, while the fourth had one fresh white egg. One adult was noted in a grassy slough nearer the city.

ROYAL TERN. Sterna maxima Boddaert. Six were seen in Santiago harbor on June 29.

CABOT'S TERN. Sterna sandvicensis acuflavida Cabot. Five were seen over the mudflats at the head of the bay on July 3.

LEAST TERN. Sternula antillarum Lesson. Not seen at Santiago, but one was observed from the boat at Punta Negra on June 29.

RED-FOOTED BOOBY. Sula sula sula Linne. Not seen at Santiago. but one was seen from the boat, diving repeatedly half a mile from the shore at Punta Negra on June 29.

BROWN PELICAN. *Pelecanus occidentalis* Linne. Common in Santiago Harbor.

YELLOW-BILLED TROPIC BIRD. *Phaethon lepturus catesbyi* Brandt. One was seen at Punta Negra on June 29.

RUDDY DUCK. *Erismatura jamaicensis* subsp. Four full plumaged males were noted at the Laguna del Sitio. Unfortunately it was not possible to collect them to determine their subspecific identity.

SNOWY EGRET. Egretta thula thula Molina. One was observed July 5 at the Laguna del Sitio.

SOUTHERN LITTLE BLUE HERON. Florida caerula caerulescens Latham. Not common. A few were seen in the mangroves and at the Laguna del Sitio.

WEST INDIAN GREEN HERON. Butorides virescens maculatus Boddaert. Was seen in the mangroves; at the Laguna del Sitio, and along the Rio Rafael Diaz near Hongolosongo.

CUBAN CLAPPER RAIL. Rallus longirostris cubanus Chapman. Common in the mangroves near the bay.

CUBAN KING RAIL. Rallus elegans ramsdeni Riley. One of these rare birds was seen running along the edge of the Laguna del Sitio on July 5.

FLORIDA GALLINULE. Gallinula chloropus subsp. About 800 were counted at the Laguna del Sitio, including many young of all sizes from newly hatched birds still in the nest to nearly full grown birds. Ten broods of tiny downy young were observed, and several nests with from one to six eggs. Most of the nests were made of sticks and lined with leaves or pondweeds (*Naias*), though some were constructed entirely of Naias. One nest contained four newly hatched young and two eggs on July 5. The young dived into the water when I approached the nest closely, and swam well, but were easily captured to be photographed. The subspecific identity of the Cubau bird is uncertain.

CARIBBEAN COOT. Fulica caribaea subsp. About forty adults and many young, including two pairs followed by broods of downy young were observed at the Laguna del Sitio. A nest containing one egg was also discovered. It was made of sticks and was lined with coarse grass. It was a floating affair anchored to a small dead thorny tree in water eighteen inches deep. I greatly regretted being unable to collect any specimens, as the status of the Coot breeding in Cuba is in doubt.

BLACN-NECKED STILT. *Himantopus mexicanus* Miller. Four pairs were apparently nesting in a salt swamp at the head of Santiago Bay. and a noisy flock of forty, apparently not nesting, frequented the shallow end of the Laguna del Sitio.

ANTILLEAN KILLDEER. Oxyechus vociferus rubidus Riley. One was observed on June 30.

WEST INDIAN JACANA. Jacana spinosa violacea Cory. About twenty of these pugnacious birds formed a conspicuous feature of the bird life of the Laguna del Sitio.

CUBAN QUAIL. Colinus cubanensis Gould. Fairly common in suitable localities.

CUBAN MOURNING DOVE. Zenaidura macroura macroura Linne. Abundant. A nest was found near the Laguna del Sitio.

ZENAIDA DOVE. Zenaida zenaida zenaida Bonaparte. Not uncommon.

WHITE-WINGED DOVE. Melopelia asiatica asiatica Linne. Not uncommon. A few were seen on almost every 'day's trip.

CUBAN GROUND DOVE. Chaemepelia passerina insularis Ridgway. Common. A nest with two eggs was found about three feet from the ground in a small mangrove at the head of the bay on July 3.

SOUTHERN TURKEY VULTURE. Cathartes aura aura Linne. Abundant and exceedingly tame.

BLACK VULTURE. Coragyps urubu urubu Vieillot. Four vultures were seen flying around near the summit of a high hill above El Cobre which I feel confident were of this species, despite the fact that there is only one previous Cuban record for the species. They were observed closely, and I was already familiar with the species in other places. Their black heads, all black plumage with the exception of white under the wings, and small size were all noted distinctly.

CUBAN SPARROW HAWK. Falco sparveroides Vigors. Several were seen, about half in the red phase and half in the light phase.

SIJU OWL. *Claucidium siju* d'Orbigny. These little owls, which are active by day, were noted at Serafina and Hongolosongo. At the latter place one was calling to and answering another a short distance away. The call was a loud rather high pitched *tsweep*, a most unowl-like sound which had me baffled for awhile until I saw the bird.

ANI. Crotaphaga ani Linne. Common.

CUBAN LIZARD CUCKOO. Saurathera merlini d'Orbigny. Frequently observed in brushy places.

MAYNARD'S MANGROVE CUCKOO. Coccyzus minor maynardi Ridgway. A flock of five were seen east of the city on July 5.

YELLOW-BILLED CUCKOO. Coccyzus americanus americanus Linne. A few were seen.

EASTERN CUBA TODY. *Todus multicolor exilis* Barbour and Brooks. Fairly common in the hills west of El Cobre, and one was seen close to Santiago.

CUBAN WOODPECKER. Centurus superciliaris superciliaris Temminck. A few were seen at El Cobre and Hongolosongo.

CUBAN TROGON. Priotelus temnurus temnurus Temminck. Common in the wooded hills near Hongolosongo and Serafina.

RICORD'S HUMMINGBIRD. *Ricordia ricordii ricordii* Gervais. A few were seen near Santiago.

CUBAN NIGHTHAWK. Chordeiles minor gundlachii Lawrence. Common near Santiago.

GRAY KINGBIRD. Tyrannus curvirostris curvirostris Hermann. Common at the Laguna del Sitio and at Hongolosongo, but apparently rather scarce in the immediate vicinity of Santiago.

CUBAN PETCHARY. Tolmarchus caudifasciatus d'Orbigny. Common at Hongolosongo, but not seen nearer the city.

BOBITO. Myiarchus sagrae sagrae Gundlach. Seen only in the hills near El Cobre and Hongolosongo.

CUBAN PEWEE. *Blacicus caribaeus* d'Orbigny. A few seen near Santiago and El Cobre.

CUBAN REDWING. Agelaius humeralis Vigors. Quite common.

CUBAN ORIOLE. Icterus hypomelas Bonaparte. A few were seen. mostly adults accompanied by their young.

CUBAN GRACKLE. Ptiloxena atroviolacea d'Orbigny. Quite common, and found in flocks, sometimes in company with the Wedge-tails.

EASTERN CUBA WEDGE-TAIL. Holoquiscalus jamaicensis gundlachii Cassin. Not seen as frequently as the Grackles, and seen only in company with them.

ORANGE-FACED GRASSQUIT. *Tiaris olivacea olivacea* Linne. Common.

MELODIOUS GRASSQUIT. *Tiaris canora* Gmelin. A few were seen in the hills near El Cobre and Hongolosongo.

CUBAN MARTIN. Progne cryptoleuca Baird. Many were nesting in the city of Santiago. One followed the steamer for about half an hour near Punta Negra, in extreme eastern Cuba. CUBAN CLIFF SWALLOW. *Petrochelidon fulva cavicola* Barbour and Brooks. Was found nesting in the caves under the Morro Castle at the entrance to Santiago Harbor. Considerable numbers were also seen at the Laguna del Sitio.

BLACK-WHISKERED VIREO. Vireosylva calidris barbatula Cabanis. Common.

BLUE HONEY CREEPER. Cyanerpes cyaneus Linne. One was seen at Hongolosongo on July 4.

CUBAN GOLDEN WARBLER. Dendroica petechia gundlachii Baird. Common in the mangroves at the head of Santiago Bay.

WEST INDIAN MOCKINGBIRD. *Mimus polyglottos orpheus* Linne. Abundant.

EASTERN CUBA THRUSH. *Mimocichla schistacea* Baird. These noisy birds were common in wooded hilly regions near El Cobre, Sera-fina and Hongolosongo.

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BIRDS OF UPPER SOUTH CAROLINA: A STUDY IN GEOGRAPHICAL DISTRIBUTION

## BY A. L. PICKENS

The great Carolinian or Upper Austral (biological) Zone, which includes nearly all of the middle states, is joined to the Atlantic slope portion of the same zone, by a very narrow strip, that passes through the upper part of Georgia and South Carolina. Upper South Carolina, is that part of the state, between the Fall Line and the top of the first ridges of the Appalachians. The Fall Line is a geological boundary, marking the points at which the streams plunge over falls or shoals, in their descent from the hard rocks of the hill country to the softer sediments of the Tertiary formations of the Coast Plain. It runs through the central part of the state from Augusta, past Columbia, to the Yadkin or Peedee River near the North Carolina line. Above this natural boundary occur five distinct topographical belts, each with a preference, beyond that of neighboring zones, for some particular species of pine. First we have the Sand Hills featured by long-leaf pines; next comes the Lower Piedmont, with rocks of a slatey nature, and hills covered with loblolly pines. A secondary fall line occurs at river-bed elevations of about four hundred feet, where the streams drop from the granitic region into the slate regions, and then we find the Upper Piedmont with yellow pines. Still higher, at general eleva-