

does not exist in the southern parts of New York or Pennsylvania. DeKay states that it is found in the northern parts of Virginia and Kentucky. We, however, sought for it without success in the mountains of Virginia, and could never hear of its existence in Kentucky."

Professor Baird states* that the species is found as far south as Northern Pennsylvania in some localities, in which State it is not rare even now.

Mr. J. A. Allen, the most recent writer on the porcupines, remarks,† that Professor Shaler had failed to hear of the species in Kentucky and Virginia. He was informed by Dr. J. M. Wheaton that a few porcupines still survive in Clark, Champaign, and Ross Counties, Ohio, and that it was common ten years since in Putnam County; and by Mr. E. W. Nelson that the species was formerly rather common, though never abundant, in all of the wooded region north of the Ohio River, but that it is not now found (west of Ohio) south of the forests of Northern Wisconsin and Northern Michigan.

DECEMBER 12, 1878.

CATALOGUE OF THE BIRDS OF GRENADA, FROM A COLLECTION MADE BY MR. FRED. A. OBER FOR THE SMITHSONIAN INSTITUTION, INCLUDING OTHERS SEEN BY HIM, BUT NOT OBTAINED.

By GEORGE N. LAWRENCE.

In my Catalogue of the Birds of St. Vincent, I stated that Mr. Ober expected to leave that island for Grenada on the 29th of February. He must have left about that time, as some of his notes from Grenada are dated early in March. His collection from there was received at the Smithsonian Institution on the 22d of May, and sent to me a few days after. It consists of but 66 specimens.

In the following communication from Mr. Ober, he gives the geographical position of the island, with other matters of interest.

Under most of the species found there, are his notes of their habits, etc.

His communications are marked with inverted commas.

"Grenada, the southernmost of the volcanic islands, lies just north of the 12th degree of latitude north of the equator, that parallel just touching its southern point.

"It is about $18\frac{1}{2}$ miles in length, from N. N. E. to S. S. W., and $7\frac{1}{2}$ miles in breadth.

"From Kingston, the principal town in St. Vincent, to St. Georges, that of Grenada, the distance is 75 miles; from the southern end of St. Vincent to the northern point of Grenada the distance is 60 miles; the intervening space being occupied by the Grenadines.

* Mammals of North America, 1859, p. 568.

† Monographs of North American Rodentia, by Elliott Coues and Joel Asaph Allen, 1877, p. 393.

"It is very rugged, the interior of the island being one mountain chain with its offsets, and there is a less area of fertile land than in St. Vincent. The valleys that make up from the coast, and the levels lying between the hills and some portions of the coast, however, are very fertile. It is not a promising island for ornithological research, though at first glance it would seem to be able to afford rich reward.

"The mountains in the interior are volcanic; there are several extinct craters, in the largest of which is an attractive lake, 2,000 feet above the sea; it is $2\frac{1}{2}$ miles in circumference and has an average depth of 14 feet. St. Georges, the only port of any size, lies on the southwestern coast, and is highly picturesque in location, but not so attractive in the eyes of an ornithologist as it might be; the surrounding hills are rocky, and those not rocky are cultivated, so that they are inhabited by very few birds.

"Across the bay from the town, on the borders of the 'lagoon,' which is fringed with mangroves, may be found a few water birds, and in the sloping pastures at the foot of the high hills a small variety of the smaller birds.

"The southern point, Point Saline, is an excellent place for the migratory birds: plover, duck, etc., which visit this island in quantities, and some points on the eastern coast are equally good.

"I spent two weeks in and near St. Georges and St. Davids, and two weeks in the mountains and on the eastern coast.

"As this island is so near the South American continent, being but 100 miles from Trinidad and 70 miles from Tobago, I expected to find some forms of animal life different from those in the northern islands among the resident species. But with the exception of now and then a straggler being blown to these shores, there is no species (if we may except two) that would indicate proximity to a great tropical country.

"Some species common in the northern islands, from Guadeloupe to St. Vincent, have disappeared, and in one or two cases their places taken by others; notably is this the case in the instance of *Eulampis jugularis* being replaced by *Glaucis hirsutus*.

"There is no parrot as in St. Vincent, and the two species of thrush, locally known as the 'grives'—*Margarops densirostris* and *M. montanus*—do not exist here. Other minor differences occur, which will be apparent upon examining the catalogue.

"The most interesting fact regarding the higher order of animal life, is the existence here of an armadillo, once common in all the Lesser Antilles, but now extinct in all the northern islands.

"A species of monkey also lives in the deep forests of the mountains; a skin of one has been sent to the Museum.

"The most interesting portion is undoubtedly that of the mountains immediately adjacent to the mountain lake; but, if it were possible for a naturalist to spend an entire year in the island, doubtless the more southern portion would reward him better in species: for the season of

migration would probably bring many stragglers from the continent, that do not make a longer stay than a few days.

"It is only a matter of regret with me that I could not give the requisite time to this island during the 'winter months'. I am satisfied, however, that the few resident species are now fully known.

"FREDERICK A. OBER.

"My thanks are due to Wm. Sharpe, Esq., Wm. Simmons, Esq., Dr. Wells, Canon Bond of St. Andrews and John Grant Wells, Esq., for courtesies shown me."

Fam. TURDIDÆ.

1. *Turdus nigrirostris* Lawr.

"Thrush ('Grive').

"Length, ♂, 9 in.; alar extent, 15½; wing, 5.

"Length, ♀, 9 in.; alar extent, 14½; wing, 4¾.

"In the deep woods one may be startled by a low note of alarm from this bird, like the single cluck of the Mocking-bird of the Southern States. Searching carefully, you may discover the author of it sitting upon a low tree, with head protruded, eagerly examining the surroundings for the cause of the noise your coming makes. Discovering you, it hastily makes off, with a parting cluck. Its song is often heard in the high woods, strange notes, 'fee-ow, fee-oo,' etc., often repeated. Another cry it has when alighting and unexpectedly discovering your presence, similar to the cry of the Robin as heard at evening time in spring—a harsh cry mingled with softer notes. I have only found it in the high forests. It must be well along in the nesting period, judging from the condition of those dissected."

I was much pleased to find four specimens of this species in the collection, as but one was obtained in St. Vincent, and that had the plumage somewhat soiled. These are in good condition and more mature: they have the color of the throat as originally described, *i. e.*, the feathers of a dull white, with shaft-stripes of brown; there are no rufous terminations to the wing-coverts, as in the St. Vincent specimen; and the irregular rufous-brown markings on the upper part of the breast, as seen in that, are only just perceptible in two of the specimens: they have the breast and flanks of a darker shade of brown: the bills of these are not so dark throughout as in the type—shading into brown on their terminal halves: this difference of color is doubtless attributable to age.

2. *Turdus caribæus*, Lawr. Ann. N. Y. Acad. of Sci. vol. 1, p. 160.

"Thrush.

"Length, 9¼ in.; alar extent, 15½; wing, 5.

"Iris wine-red; naked skin around the eye, ⅜ inch wide, yellow; beak olive-green, tipped with yellow. I am positive that I heard this bird in St. Vincent, but only once, and did not obtain, or even fairly see it. Its cry is peculiar, and once heard could not be mistaken. It resem-

bles the cry of the Whippoorwill in the morning, just as it utters the 'poor-will', and just preceding the final cluck. It was not a stretch of the imagination, either, to fancy a cry like 'how de dew' (as uttered by the country gentleman when saluting an acquaintance), with the stress upon *dew*. It has also, when alarmed or when threading a strange thicket, the soft call-note of the Thrushes, similar to that of the *grive* or Mountain Thrush. It inhabits the thick growth of old pastures, and seems to prefer the dark recesses beneath the overhanging trees and bushes of the hillsides on the borders of the opens."

3. *Mimus gilvus*, Vieill.

"Mocking-bird.

"Length, ♂, 9½ in.; alar extent, 14; wing, 4½.

"Rather plentifully distributed on the hills sloping seaward; found also well up the sides of the mountains, but not in the high woods, nor far away from cleared land."

Fam. TROGLODYTIDÆ.

4. *Thryothorus grenadensis*, Lawr. Ann. N. Y. Acad. of Sci. v. 1, p. 161.

"Wren; 'God-bird.'

"Length, ♂, 5 in.; alar extent, 7; wing, 2½.

"A sprightly bird, found in houses in the country, in the forests and in the towns.

"Its song is a pleasing warble, and this, with its bright ways, make it a welcome visitor. The blacks will eat nearly every bird but this and the *corbeau*; but this, they say, 'make you dead,' for it is God's bird.

"Found an old nest in the house at Grand Etang, but the young had gone ('it make child, but he go'), I was told. They were hatched in February. A nest under the veranda now has four young, recently hatched. Going down to examine them one day, I found one of them had about four inches of a 'God's horse' ('Walking-stick') (*Phasmida*) protruding from its mouth. The nest is of dried grass, lined with feathers. Had it not been that these little beggars excited feelings of compassion in my breast, I would have added the old ones to my collection, well knowing that they would be valuable acquisitions."

Fam. SYLVICOLIDÆ.

5. *Setophaga ruticilla* (Linn.).

"Only one seen. This was shot, but lost in the thick matting of the loose leaves that covered the ground. It was near the border of the mountain lake."

Fam. VIREONIDÆ.

6. *Vireosylva calidris* var. *dominicana*, Lawr.

"*Vireosylva*.

"Length, ♂, 6 in.; alar extent, 10; wing, 3¾.

"Length, ♀, 6 in.; alar extent, $9\frac{1}{2}$; wing, $3\frac{1}{4}$.

"Through the woods came a strangely familiar note, 'peow, peow'. The bird I could not discover at first, but thought I detected a note akin, and was confirmed that it was an old acquaintance of Dominica and St. Vincent, when I had it in my hand. Not very abundant."

Fam. IIRUNDINIDÆ.

7. *Progne dominicensis* (Gm.)?

"*Progne*.

"One species seen, but never within shot; to all appearance, it was identical with that obtained in St. Vincent."

Fam. CEREVIDÆ.

8. *Certhiola atrata*, Lawr.

"*Certhiola*. Scarce. Resident.

"Length, ♂, $4\frac{1}{4}$ in.; alar extent, $7\frac{3}{4}$; wing, $2\frac{3}{4}$.

"This bird is not found in great numbers, as in some of the northern islands; indeed, I have seen it but twice—on the mangrove flats of Point Saline, where its habits were in great contrast to those of its northern congeners, being shy and retired, while in other islands bold and obtrusive."

Fam. TANAGRIDÆ.

9. *Euphonia flavifrons* (Sparm.).

"Louis d'Or. Rare. Resident.

"Length, 5 in.; alar extent, $8\frac{1}{4}$; wing, $2\frac{1}{2}$.

"I have not seen this bird here alive. These specimens were shot by A. B. Wells, Esq., of St. Davids. It is not easily discovered, more from its rarity than from its shyness. Frequents the skirts of woods and nutmeg groves."

10. *Calliste versicolor*, Lawr.

"Sour-sop Bird. Abundant. Resident.

"Length, ♂, $6\frac{1}{8}$ in.; alar extent, $9\frac{1}{4}$; wing, 3.

"Length, ♀, 6 in.; alar extent, $9\frac{1}{4}$; wing, $3\frac{1}{8}$.

"Though in St. Vincent I saw the bird only in small numbers and solely in the mountains, here it is everywhere. The same chattering cry, noisy in feeding, calling one to another, gregarious, is greedy in its search for food, a flock of from 8-12 may be seen swarming over a small tree or bush. It is very partial to the seed of the Sour-sop, which gives it its local appellation. It is now nesting."

Fam. FRINGILLIDÆ.

11. *Loxigilla noctis* (Linn.).

"Length, ♂, $5\frac{1}{4}$ in.; alar extent, $8\frac{1}{2}$; wing, $2\frac{3}{4}$.

"Length, ♀, $5\frac{1}{8}$ in.; alar extent, $8\frac{3}{4}$; wing, $2\frac{3}{4}$.

"One of the most common birds, second only to the small 'grass bird' (*Phonipara bicolor*)."

12. *Phonipara bicolor* (Linn.).

"*Phonipara bicolor*. 'Si Si Zerbe.'

"Everywhere abundant, so common in fact that, thinking I could obtain it at any time, I devoted my attention to other rarer birds, and finally left without a specimen."

Fam. ICTERIDÆ.

13. *Quiscalus luminosus*, Lawr. Ann. N. Y. Acad. of Sci. v. 1, p. 162.

"Blackbird. Resident.

"Length, ♂, $10\frac{1}{2}$ in.; alar extent, $15\frac{1}{4}$; wing, 5.

"Length, ♀, $9\frac{3}{4}$ in.; alar extent, 14; wing, $4\frac{3}{4}$.

"This bird first occurs in the Grenadines. It has seldom been seen in St. Vincent, although abundant on the small islands of Balliceaux and Bequia. The latter is not ten miles distant. It is there called the 'Bequia Sweet', from its notes: 'Bequia sweet, sweet.'

"It is social, gregarious, seeming to delight in company, spending a great part of the day in sportive play. The first I saw were in Balliceaux, one of the northernmost of the Grenadines. I was struck with the similarity of a habit of theirs to one of the Boat-tailed Grackle of Florida and the South, as I had observed it on the banks of the St. John's River. A party of them had come down to drink at a small pool in one of the pastures. After drinking, each male would lift its beak perpendicularly, spread out its wings and one leg, and give utterance to a joyous cry, as though giving thanks for the enjoyment afforded by the drink. Then the whole crew would join in a general outburst, both females and males. Then they would adjourn to a near fence rail, and keep up a social conversation, stretching their legs and wings and showing their glossy feathers to the sun. The air would then resound with the cries, said by the islanders to be, 'Bequia sweet, sweet, sweet.' That was in February. Though I then expected to get them to send home with the St. Vincent collection, I was disappointed, as our boat was smashed on a neighboring rock next day, and we were picked up and carried to St. Vincent without an opportunity for getting the birds.

"In Grenada I found them in abundance again, flying in flocks and inhabiting exclusively the lowlands, the swamps and borders of the lagoons. It is easily attracted by unusual sounds, as I once proved while hunting Yellow-crowned Night Herons in a swamp on the eastern coast, by calling around me not less than forty, who filled the bushes and trees around and above me, staying a long while.

"Think it is exclusively confined to Grenada and the Grenadines."

Fam TYRANNIDÆ.

14. *Elainea martinica* (Linn.).

"Flycatcher. Resident. Rather numerous.

"Length, ♂, $7\frac{3}{8}$ in.; alar extent, 11; wing, $3\frac{5}{8}$.

"Length, ♀, $6\frac{5}{8}$ in.; alar extent, $10\frac{1}{2}$; wing, $3\frac{1}{2}$.

15. *Myiarchus oberi*, Lawr.

"Flycatcher. Not abundant.

"Length, ♂, 9 in.; alar extent, 13; wing, $4\frac{1}{8}$.

"Length, ♀, $8\frac{3}{4}$; alar extent, $12\frac{1}{2}$; wing, 4.

16. *Tyrannus rostratus*, ScL.

"*T. rostratus*. Resident. Abundantly distributed.

"Length, ♂, 10 in.; alar extent, $15\frac{3}{4}$; wing, 5.

"Length, ♀, 9 in.; alar extent, $14\frac{3}{4}$; wing, $4\frac{3}{4}$.

"Occurring at all altitudes, but preferring the lowlands, open fields, and hills. Delights in a shrub with bare protruding prongs, or an open-foliaged tree like the trumpet tree and bread fruit. Its cry is a shrill 'piperee, piperee'; hence its name. Especially partial to the tall cabbage palm (palmistes), making its home in the fronds, and darting thence upon any passing insect.

"More abundant in Antigua than elsewhere. Its large flat bill, the concealed flushes of yellow beneath the wings, and the beautiful silken feathers of saffron and crimson concealed in the crown, make it an interesting specimen in the hand, though it is a very ordinary looking bird as seen in activity."

17. *Tyrannus melancholicus*, Vieill.

"*Tyrannus* ———. The first seen.

"Length, ♂, 9 in.; alar extent, $14\frac{1}{2}$; wing, $4\frac{3}{4}$.

"The first bird of this species shot seemed fatigued from a long flight, and I thought it must have come from another island, Tobago or Trinidad. It has never been seen by those who observe the birds of the island. I still think it a straggler from Tobago."

Two specimens are in the collection. This and the following species (*Glaucis hirsutus*) are the only South American forms that were procured, showing how strictly this and the islands north of it are defined as a distinct zoological province. In the islands to the south, viz, Tobago and Trinidad, the birds assimilate to those of the South American continent.

Fam. TROCHILIDÆ.

18. *Glaucis hirsutus* (Gm.).

"Brown Hummer. (New to me.)

"Length, ♂, $5\frac{1}{2}$ in.; alar extent, $6\frac{3}{4}$; wing, $2\frac{1}{2}$.

"Length, ♀, $5\frac{1}{4}$ in.; alar extent, $6\frac{1}{2}$; wing, $2\frac{1}{2}$.

"This species entirely replaces the Garnet-throat (*Eulampis jugularis*), of which latter I have not seen a single specimen. This one is confined to the same haunts, viz, the cool depths of the high woods, and is never seen in the valleys or below the last ring of high cliffs and forest-trees. So closely does the plumage of this hummer assimilate with the color of the fallen leaves, dry as well as green, that I lost my first specimen and found the others only by long search."

19. *Eulampis holosericeus* (Linn.).

"Green-throat. 'Colibri.' Scarce.

"Length, ♀, 5 in.; alar extent, $6\frac{1}{8}$; wing, $2\frac{1}{2}$.

"Feeding from the crimson flowers of a huge cactus, I saw this humming-bird this morning, in a hedge row bordering the road to St. Davids. It does not occur in the abundance that I find of the small crested hummer, and I have not seen it in the mountains."

20. *Orthorhynchus cristatus* (Linn.).

"*O. exilis?* March 16th.

"Length, ♂, $3\frac{5}{8}$ in.; alar extent, 5; wing, 2.

"The crest seems brighter and deeper than in those of Dominica and St. Vincent. It is distributed profusely throughout high woods, hills, upper valleys, and sea-coast; everywhere I see its glancing crest, hear the whirring of its wings. Just a year ago I found a nest in Dominica; here in the mountains they have not yet built their nests, though it is possible they may have commenced in the lowlands. They are in the thickets between the Grand Etang and the deep woods, visiting the different flowers so frequently that it seems to me they must be exhausted of sweets and insects."

Fam. CYPSELIDÆ.

21. *Chætura* sp.?

"I was unfortunate with this bird, never getting one within range. It is of the same shape, size, and color of the species obtained in Dominica. Only one species seen."

Fam. ALCEDINIDÆ.

22. *Ceryle alcyon* (Linn.).

"Length, ♂, $12\frac{1}{2}$ in.; alar extent, $20\frac{1}{2}$; wing, $6\frac{1}{4}$.

"Though nearly a year has passed since I first saw the Kingfisher of these islands (in Dominica), this is the first island in which I have been able to shoot one. It is very shy, and somehow I have always just missed it, in Dominica as well as St. Vincent, in neither of which islands is it plentiful; and it was only by the most arduous bushwhacking that I at last got this one. Not abundant; resident."

Fam. CUCULIDÆ.

23. *Coccyzus minor* (Gm.).

"'Cuckoo manioc.' Abundant; resident.

"Length, ♂, $12\frac{1}{2}$ in.; alar extent, 16; wing, $5\frac{1}{2}$.

"The harsh cry, resembling somewhat that of the Yellow-billed Cuckoo, may be heard almost any day, proceeding from the low growth of some overgrown pasture or hillside.

"Of unsuspecting demeanor, this bird will allow a near approach; if it flies, it is but for a short distance, to a low tree or thick shrub, where, if unmolested, it hops about with apparently aimless intent, though keeping a good lookout for its food, butterflies, moths, etc.

"Very common on the hillside beyond the Carenage."

24. *Crotophaga ani*, Linn.

"'Corbeau.' Abundant; resident.

"Length, ♂, 15 in.; alar extent, 17; wing, 6.

"Length, ♀, 14 in.; alar extent, 16½; wing, 5½.

"Called the 'Tick-bird' in St. Vincent; here the 'Corbeau', French for Raven. Said to have been blown over from Trinidad in a gale some years ago. It has increased wonderfully; not held in favorable repute; eats ticks, bugs, etc., but also eats corn and guinea-grass grain. The same stupid unsuspecting bird everywhere; breeds abundantly; gregarious. Where one goes and persistently calls, the rest of the flock, from 6 to 12, will surely follow. In a tree or bush they cluster close together; have a squeaking cry.

"They build a large loose nest, and lay in it eggs of a greenish color. A curious habit of theirs is to build a second nest upon one already filled with eggs. The only nest I have examined had not a full complement of eggs, and I cannot tell just what number they lay."

Fam. STRIGIDÆ.

25. *Strix flammea* var. *nigrescens*, Lawr.

"Owl; 'Jumbie Bird.' Rare.

"Length, ♂, 12 in.; alar extent, 30½; wing, 10.

"In different parts of the island are the towers of ancient wind-mills, which, in various stages of ruin and dilapidation, are going to decay. Being made of stone, and generally covered with ivy and running vines, without roof and full of holes, they offer excellent places of abode for the owls, and there is rarely a ruin without its occupant to frighten the negroes to the verge of insanity with its nocturnal hootings. From a superstitious dread of the 'Jumbie bird,' and from the fact that these old mills are well hung with the nests of 'Jack Spaniard'—a wasp, it is difficult to get a negro to climb into a tower to dislodge the owl.

"I am indebted for this one to Mr. Goddard, the manager of the Estate of Clarke's Court."

Fam. FALCONIDÆ.

26. *Pandion haliaëtus* (Linn.).

"An infrequent winter visitor on the east or Atlantic coast."

27. *Buteo pennsylvanicus* (Wils.).

"Length, ♀, 15½ in.; alar extent, 35; wing, 11.

"At this time (March 25) it is engaged in incubation. Not abundant; resident."

28. *Tinnunculus sparverius* var. *antillarum* (Gm.).

"Very rare, and, so far as I can ascertain, confined to the eastern coast."

Fam. FREGATIDÆ.

29. *Fregata aquila* (Linn.).

"Breeds on the rocks north and northeast of Grenada, sparingly, but in increased numbers on some of the smaller Grenadines."

Fam. PHÆTHONIDÆ.

30. *Phæthon æthereus*, Linn.

"Cannot tell if it breeds in Grenada, but am of the opinion that it does. The specimens obtained in the northern Grenadines were included in the St. Vincent catalogue."

Fam. PELECANIDÆ.

31. *Pelecanus fuscus* (Linn.).

"Breeds on the rocks north of Grenada as well as throughout the Grenadines."

32. *Sula fiber* (Linn.).

"Inhabits the rocks off the northern coast. Most plentiful in the Grenadines."

Fam. ARDEIDÆ.

33. *Ardea herodias*, Linn.

"Extremely wild. I have seen it on different occasions, and in the different islands in different months, and pronounce it a straggling resident (if this term be allowable), that is, one or two may remain after the spring migrations and may breed, though I have heard of no authentic instance of its breeding."

34. *Garzetta candidissima* (Gm.).

"'Gaulin blanc.'

"Length, 23 in.; alar extent, 37; wing, 11.

"The abundance of this species is in striking contrast to its scarcity in St. Vincent. This may be attributed to the increased extent of low wet land, swamps, and lagoons.

"Only Antigua exceeds this island in the number of this species. As in Dominica and the other French-speaking islands, it is called the 'Gaulin blanc', and the heron in the blue plumage 'Gaulin noir' or 'bleu'. This is second in point of numbers of the herons, the 'Gaulin bleu' third, and the yellow-crowned fourth. The *B. virescens* is the most numerous of the whole. It breeds in the mangroves bordering the lagoon later in the season."

35. *Florida cærulea* (Linn.).

"It is not so common as the 'Gaulin blanc' and exceedingly shy."

36. *Butorides virescens* (Linn.).

"Length, ♂, 18 in.; alar extent, 25; wing, 7.

"As my boat skirted the fringe of mangroves bordering the lagoon across the bay from St. Georges, it ousted numbers of this small species. They would fly a little ways, then dive into the deep foliage of the mangroves, where a very close inspection might detect it crawling among the spider-like roots, or threading its way through the mesh-work of aerial suckers seeking the mud. When started by the boat or gun, it gave utterance to its guttural cry, and as we moved along, the crackling and shutting of oyster shells accompanied us throughout."

37. *Nyctiardea violacea* (Linn.).

"A very shy and cautious bird, inhabiting the swamps near the sea-coast. I have at different times waited for hours for a shot at it in the deep mangroves, which it loves to frequent."

Fam. PLATALEIDÆ.

33. *Platalea ajaja* (Linn.).

"A very rare migrant, said to have been seen here."

Fam. COLUMBIDÆ.

39. *Columba corensis*, Gm.

"'Ramier.'

"Length, ♂, 16 in.; alar extent, 26½; wing, 9.

"I arrived at the Grand Etang, the lake in the mountains, about noon; within an hour, the only man living there started with me around the lake. After walking half an hour or so, we reached comparatively open woods, the trees thick and very high. We heard a pigeon coo, and after some time found him perched on the topmost branch of a tall 'figuer' tree, so high up that I at first mistook him for a 'grive'. At the report of my gun, he started wildly, flew a few yards upward, and then fell hurtling through the air, striking the ground with a thud. His crop was full of hard seeds, large as small bullets. They seem to be in these woods in good numbers."

"They are now (March 12th) mating. In November, December, and January, they visit the islands off the coast in great numbers, and are said even to extend their flight to Tobago, in which latter island they are not resident."

40. *Zenaida martinicana*, Br.

"'Tourterelle.' Not plentiful.

"Length, ♂, 11½ in.; alar extent, 18; wing, 6¼.

"Length, ♀, 11 in.; alar extent, 17; wing, 6.

"In the mangroves bordering the bay of 'Clarke's Court' estate, near the southern end of the island, I found this dove. It was near noon of a very hot day, as the manager and another friend accompanied me into

the deep shade of the 'mang' (as it was called), where the mud was half knee-deep, and stagnant pools crossed the surface. At that time the doves came in from the surrounding hills for the shade, and we did very well with them and the Ground Doves, as a dish of them at dinner amply testified. It is abundant outside of these mangrove swamps; it prefers the vicinage of the sea-coast."

41. *Chamæpelia passerina* (Linn.).

"'Ground Dove.' Abundant; resident.

"Length, ♂, 6½ in.; alar extent, 10; wing, 3¼.

"Length, ♀, 6½ in.; alar extent, 9; wing, 3½.

"Among all the dry hills about St. George's this little dove can be seen and heard. It frequents the pastures, the cane-fields, and, in the heat of the day, the mangroves for shade. Equally abundant on the east coast."

42. *Geotrygon montana* (Linn.).

"'Perdix.'"

"I saw several of this species in the forest around the Grand Etang, and shot a fine female, which was unfortunately lost. By some strange mischance, I did not finally succeed in securing any specimens.

"They are exactly the same in size and coloring as those of Dominica and St. Vincent. I discovered two nests, each containing two eggs. They choose strange places for their nests, generally placing them upon some great parasite, attached to a small tree, 4-6 feet from the ground. Upon a slight covering of leaves they lay two coffee-colored eggs; the season for incubation is March and April."

Fam. RALLIDÆ.

43. *Gallinula galeata* (Licht.).

"Gallinule. Not common; resident.

"Length, ♀, 14½ in.; alar extent, 21; wing, 7."

44. *Porzana* ?

45. *Fulica* ?

"This was described as occurring in the volcanic lake near the north coast; also the preceding species."

Fam. CHARADRIIDÆ.

46. *Charadrius virginicus*, Borkh.

"At time of migration."

Fam. SCOLOPACIDÆ.

47. *Tringoides macularius* (Linn.).

"Sandpiper.

"Length, ♂, 7¼ in.; alar extent, 12½; wing, 4¼.

"Shot on the east coast; frequents the coast and rivers in small numbers and seems to be a resident."

48. *Numenius hudsonicus* (Lath.)?

"At time of migration."

Fam. LARIDÆ.

49. *Anous stolidus* (Linn.).

"The Noddy Tern."

50. *Sterna mazima*, Bodd.

"*S. cayenensis*."

51. *Sterna dougalli*, Mont.

52. *Sterna fuliginosa*, Gm.

53. *Larus atricilla*, Linn.

"This and the preceding four species of tern breed in the smaller of the Grenadines, principally upon the southern coast."

Fam. PODICIPITIDÆ.

54. *Podiceps*?

"*Podiceps*."

"Not seen by me, but described with sufficient accuracy to identify it as a *Podiceps*."

"It was greatly my desire to visit the curious volcanic lake, near the northeastern coast, which is said to be well supplied with water-fowl. Strange as it may seem, in an island black with negroes, I could get no one to transport my necessary equipments, nor could I get a horse to carry me until too late for the purpose."

"The Grenadines!

"Consist of small islets and rocks forming a chain between St. Vincent on the north and Grenada on the south. Unlike the other islands, they are not volcanic, have little elevation, no running streams, and are rather barren.

"Bequia, Mustique, Cannouan, and Carriacou are the largest, and some portions of these islands are cultivated. The inhabitants subsist principally upon fish. Some cotton is raised; also sugar.

"From their conformation and from their barrenness it will be readily seen that the birds characteristic of the larger islands cannot be found here. The Ground Dove (*Chamaepelia passerina*) and the Turtle Dove (*Zenaidura martinicana*) are very abundant, as the low scrub, with which a great part of the islands are covered, afford them protection and food, while the shallow water-holes give them the little necessary drink.

"The Blackbird (*Quiscalus luminosus*) is very abundant. The Cuckoo manioc (*Coceyzus minor*) is also found here, as well as the *Certhiola* sp.?, the small Sparrow (*Phonipara bicolor*), the Mocking-bird (*Mimus gilvus*), the Green Heron (*Butorides virescens*), and the Chicken Hawk (*Buteo pennsylvanicus*). In one of the islands, Union, the Cockrico (*Ortalia ruficauda*) has been successfully introduced, and some attempts have been made with the American Quail (*Ortyx virginianus*). Some of the islands are in private hands, and have been stocked with deer and goats, which, having become thoroughly wild, afford excellent hunting.

"The sea birds frequent the small islands, and the outlying rocks of the larger, in myriads, where they breed.

"The Little Crested Humming-bird of Grenada and St. Vincent is also found in the Grenadines."

NEW YORK, December 10, 1878.

ON THE BREEDING HABITS OF THE SEA-CATFISH (*ARIOPSIS*
MILBERTI?).

By PROF. N. T. LUPTON.

VANDERBILT UNIVERSITY,
Nashville, Tenn., February 19, 1877.

Prof. SPENCER F. BAIRD:

About the middle of July, 1868, while on a visit to Mobile, Ala., I accompanied a party of friends on a fishing excursion to Fish River, a small stream on the eastern side of Mobile Bay, some 25 miles below the city. This river near its mouth widens out, forming Berwicks Bay, a sheet of water about three miles wide by four in length. This Berwicks Bay is a favorite fishing-ground, being the resort, especially after a storm in the Gulf, of immense schools of mullet. A great variety of other fish, such as the croaker, trout, redfish, &c., abound in this bay.

Captain Wemyss, who owned a large saw-mill on the bank of the river, and whose hospitality we were enjoying, kindly proposed to show us the different kinds of fish which frequent these waters, and to this end furnished a large seine and the necessary force to draw it.

While examining the fish my attention was called to several cat, each about 10 inches in length, which seemed to have a wonderful development of the throat. On examination, the enlargement was found to be caused by small catfish and eggs which were carried in the mouth. From the mouth of one I took out eleven small fish, each about an inch in length, and from another eight or nine eggs the size of a small marble, the eyes of the embryonic cat showing distinctly through the thin membrane enveloping the egg.

On inquiry made of several old fishermen in the neighborhood, and of a large number elsewhere, I have failed to find one who knew anything